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Preface

Doing Foresight is a web-based tool intended for use by project managers, who wish to make evaluation before, during and after a foresight activity, in order to design, adapt and learn from the activity.

Doing Foresight has been developed by a task team consisting of Teknologirådet - the Danish Board of Technology (DBT), Malta Council for Science and Technology (MCST), the Research Council of Norway (RCN), and the Scientific and Technical Research Council of Turkey (TUBITAK).

The evaluation tool is based upon a typology of impacts of technology assessment, developed by Leonhard Hennen et al. in the TAMI project (Hennen et al 2004). Dr. Leonhard Hennen (ITAS, Kernforschungzentrum Karlsruhe) has been a consultant for the development of the web-tool, as have Dr. Danielle Bütschi Häberlin (Swiss Center for Technology Assessment and University of Lausanne), Dr. Attila Havas (Institute of Economics, Hungarian Academy of Sciences), Dr. Finn Hansson (Institut for Ledelse, Politik og Filosofi, Copenhagen Business School).

The tool is designed by the DBT team: Director Lars Klüver, project manager Anders Hoff, project manager Ida-Elisabeth Andersen and project manager Gy Larsen. Jonas Holbech made the coding. Appearance designed by Lars Koudal. The method module has been made in cooperation with task 3.4 Foresight toolkit and training schemes of the ForSociety ERA-Net, lead by Dr. Ellen Veie (RCN), with assistance from Dr. Mikko Syrjänen (Finnish ministry of Research and Technology).

Doing Foresight is available at www.doingforesight.org and readers of this report are encouraged to use the evaluation web-tool and to share their experiences with others. We hope that use of the tool will contribute to the establishment and maintenance of joint European learning circles, which, in turn, can improve the overall quality of European foresight.

We are grateful to everyone who has participated to the process of developing *Doing Foresight.*

Lars Klüver and Anders Hoff

1. Introduction

The purpose of the report is to present *Doing Foresight*, a web-based evaluation tool that has been developed in order to accommodate the need of a common evaluation scheme.

Evaluation of foresight needs to be strengthened. With a few exceptions there is a lack of systematic evaluation and there is no consistent approach that makes comparison between evaluations possible. Without systematic evaluation an accumulation of experience and learning in a European context is impeded. The development of foresight as a tool in societal development, and maybe especially in science, technology and innovation strategy making, is receiving political as well as public attention. This attention stresses the need to assess the functionality of foresight and other policy analysis and advisory activities and to continually develop and improve such activities in the future. Thus, there is a strong incentive to develop a common evaluation scheme, which can be used across different European cultural and social contexts.

To develop a common evaluation scheme is a task, which entails at least two significant methodological difficulties. Firstly, a central question is how to compare activities, which are organizational diverse and framed in different societal, cultural and political contexts? Secondly, the impact of foresight can be extremely difficult to register, measure and hence to evaluate on the basis of objective criteria. *Doing Foresight* meets these challenges by making use of a typology of impacts, which can be regarded as robust to changing contexts, and by letting the choice and definition of indicators be done by the user.

Doing foresight is based on an impact typology, consisting of a set of roles, which can be performed when executing a foresight project. *Doing foresight* is designed to contribute and feedback to foresight projects prior to, during and after the implementation of foresight activities, thereby giving project managers the opportunity to assess the ambition and outcome of the activities at different stages of the process. The evaluation scheme is developed to aid self-evaluation among practitioners and provides a broad information base for sharing insight with others who are working in the field of foresight. *Doing Foresight* can hence be used as a platform for shared learning across different European social and cultural contexts by supporting a systematic comparison of foresight activities.

Project Background

The task 3.1. *Development of a Programme Evaluation Scheme and its Pilot Implementations* is an integrated part of the ForSociety ERA-Net. The partners of the ForSociety ERA-Net are encouraging practitioners to perform systematic assessment of the organisation, implementation and impacts of foresight projects and to share the result of such evaluations with colleagues in the field of science and technology

policy analysis and policy consultancy. ForSociety foresaw that in order for such evaluation activities to have a substantial impact, a common platform for evaluation - a common evaluation scheme - was needed. Task 3.1 was therefore implemented as part of the activities of the ERA-Net.

It is on this background that the development of *Doing Foresight* should be seen. The web-tool responds to a need to develop means to evaluate and compare foresight projects across projects, programmes, and across different European cultural and social contexts. This need for comparable evaluation reflects the need to create learning cycles about the design and management of foresight projects and programmes.

Project Aim and Target Group

The aim of the task has been to create a common evaluation scheme mainly for self-evaluation, aiding self-reflection and open-mindedness among project managers. Furthermore, the task aimed at developing an evaluation scheme, which can support sharing experience with others with an interest in the field of foresight. We anticipate that *Doing Foresight* can satisfy these ambitions, as the tool is designed to contribute to:

- A discussion of the aims of foresight and how to obtain such aims
- European co-operation and exchange of knowledge and experience
- Learning cycles on design and management of foresight activities
- Development of foresight methodology

Doing Foresight is designed for practitioners of foresight. However, it is based upon a typology of impacts, which was developed by European practitioners in technology assessment. We are confident that the tool would be relevant for most types of policy analysis activities. Besides practitioners of foresight, the web-tool could be useful for practitioners in other policy analysis fields (technology assessment, policy advice etc.). We use the term “foresight” as a common term for any such activity – in this report and in the web-tool.

Project Output

The main delivery of task 3.1 is the web-based evaluation tool, *Doing Foresight*, which is publicly available on Open Source License by the end of April 2007. The web-tool is located at the site www.doingforesight.org. The tool can be used at the site or it can be downloaded for instalment at a local server. Besides the web-tool the following reports are available for download at the ForSociety website www.eranet-forsociety.net:

- Mr. KLÜVER, Lars, Mr. HOFF, Anders, Ms. ANDERSEN, Ida-Elisabeth and Ms. LARSEN, Gy (November 2005): *Project Description: Development of a programme evaluation scheme and pilot implementation*
- Mr. GERAY, Haluk (January 2006): *Existing Evaluation*
- Mr. KLÜVER, Lars and Mr. HOFF, Anders (December 2006): *A Common Evaluation Scheme*

This report largely builds upon the content of the previously released reports, but adds the documentation of the web-tool *Doing Foresight*. The next chapter refers to the review of existing evaluation written by Haluk Geray. In Chapter 3 the idea of creating a common evaluation scheme is discussed, based upon the report by Klüver and Hoff. In chapter four and five the web-tool and its pilot implementation is discussed. In Annex 1 a paper-based version of the web-tool can be found, which can be used as a tool in itself. However, we strongly recommend using the web-based version as this offer substantially more functionalities.

2. Evaluating Foresight

Foresight serves decision-making with knowledge, options, networks and arguments. Foresight is expected to do this in an effective and productive way. However, the impact of foresight projects can be extremely difficult to register, measure and hence to evaluate on the basis of objective criteria. It is not easy to assess the success of a foresight project and often a straightforward conclusion to whether a project was "successful" or "relevant" cannot be drawn.

Evaluation is a "social process", which is influenced by external as well internal factors, and it cannot, and should not, be reduced to the mere collection and analysis of data. As Georghiou and Roessner argues, it is very important to discuss not only *how* foresight should be evaluated, but also *why* foresight should be evaluated, because "broad social and political trends influence the practice of technology program evaluation" (Georghiou and Roessner 2000: 674). This is the central concern of this chapter. Departing from a review of existing evaluations, the incentive to improve the current evaluation effort is discussed from the viewpoint of why we think that we should evaluate foresight. In the end of the chapter, we return to the question of how to evaluate foresight.

Review of exiting evaluations[1]

An initial step of task 3.1 was to review the national programmes of the ForSociety partners from the viewpoint of a potential evaluation of their activities. The review repeats the finding of others that systematic evaluation lack and that no consistent and comparable approach to evaluation exists. The 15 partners of ForSociety enlisted 18 foresight projects. Of these eight projects have undergone systematic evaluation, while three have undergone some evaluation, and seven had no evaluation – or did not report that they had any evaluation. Of the 11 foresight projects, which incorporate an evaluation, independent/external actors have implemented 7. At least two of the ForSociety partners have undergone evaluations by international panels. Although most evaluations were ex-post evaluations, three partners have made ex-post and process evaluations. Only few partners have made the evaluations open to the public.

In short, systematic evaluation of outcomes and impacts of national programmes is lacking. This conclusion is coherent with that of Tait and Williams, who writes:

[1] The following is based on the review of existing evaluation written by Haluk Geray, TUBITAK, Turkey. The review is based on a literature study and an analysis of data from a benchmark study among the ForSociety partners.

> "Despite the considerable investment in Foresight initiatives in several countries, there has been surprisingly little experience of evaluation of these programmes beyond formal comparison of various national systems looking at aims, objectives, structures and analysis of the assumptions rather than detailed evaluation of outcomes and impacts embodied in national programmes" (Tait and Williams 2006:30).

Most of the evaluation studies examined in the review report have a view of foresight being a linear/sequential process. Thereby, the studies tend to neglect forward and backward linkages among actors and institutions. Most evaluations are post hoc, working with hindsight – often conducted to provide a "closure" to the activity. The result is a tendency to focus on effects, rather than on the processes and on the choices made inside the projects.

The review suggests that:

- A common evaluation scheme should link process and effects more clearly.
- Publicity is an issue that future evaluations will have to deal with.
- Evaluations of institutions and larger program evaluations tend to be made quite infrequently and with great time-span in between evaluations. The result is a lack of actuality and continuous learning from evaluation.
- Evaluations tend to be adapted from time to time, resulting in difficulties of comparing even between two evaluations of the same programme. This calls for a more systematic approach, which is more independent on the specific situation of the programme, an approach, which may be used as input to broader, more context specific, evaluations.

Why evaluate

In an international context evaluation can increase the development towards higher quality because evaluations can carry important messages between otherwise isolated organisational environment. Because of this it makes sense to develop the evaluation schemes internationally. Georghiou argues that there is scope for international cooperation in evaluation in two ways (Georghiou 2003: 11):

- Sharing results to increase the speed and reduce the cost of learning; and
- Carrying out comparative evaluation to improve the methodology and level of insight.

There are, however, several important reasons for evaluating foresight also as seen from a national point of view. The following three reasons should be highlighted (Georghiou 2003:3).

Accountability

Foresight and similar activities are usually costly and time consuming and because resources are limited, foresight projects must meet public standards of efficiency and effectiveness. If we take for granted that the spending in foresight are being made with due respect to roles and procedures of proper accounting then the issue of accountability is mainly an issue of relevance and effectiveness of the spending.

The greatest benefits of foresight are often long term, qualitative and not easily measured. Some benefits, such as knowledge sharing, learning and mediation between actors, can be extremely difficult to register, measure and hence to evaluate on the basis of objective criteria. For example it may prove very difficult to measure the benefit of involving concerned actors in the decision-making on GMO, as the benefits of such an exercise are not "easily translated into monetized form" (Georghiou and Roessner 2000: 675). Another of evaluating accountability is one of 'weak signals': developments and outcomes after some time will have been dependent upon a great number of factors, with Foresight being just one of them. (Miles and Keenan 2002: 155).

As seen from an accountability point of view it can be stated that there is a need for strong implementation of procedures that ensures the relevance and effectiveness of foresight. On such procedure can be an ex ante evaluation to focus the activity on those problems that seems most important to intervene into.

Justification

There is a growing interest for new types of policymaking activities. As Igor Mayer has pointed out, it is a general European trend that "traditional ways of governmental steering, mainly using financial and legal policy instruments, as well as a top-down approach to policymaking is being somewhat discredited" (Mayer 1997:239). New practices of policymaking have emerged. There are many reasons that justify that these new practices should be maintained and developed. However, any meaningful attempt to preserve a practice should originate in a sincere accept of the possibility that it should not be saved (Cooke and Kothari 2002:15), not in a passive accept based on unarticulated premises and presumptions.

There are important ethical reasons for evaluating the justification of foresight, as foresight requires a great deal of investment from the people involved in the process. Evaluation may, as Mayer points out, indicate whether the contributions are appreciated and worthwhile (Mayer 1997:240).

The current attention that foresight activities receive highlights the need to justify foresight and other policy analysis and advisory activities. Such justification may be enhanced by involving stakeholders in the evaluation procedures – ex ante as well as ex post.

Learning

Many different approaches and methods co-exist, ranging from simple techniques to highly sophisticated procedures involving many different actors. Different approaches, different methods and techniques are appropriate at different times and situations. There is no one best way of doing a foresight project, rather there are a myriad of different contexts and locations on which the successes (and failures) of a concrete project is dependent. Evaluation of the different approaches should allow initiators to establish, design, and implement an appropriate strategy, suited to the specific project context (Mayer 1997:240). Evaluation may, using a term from the TAMI project, contribute to a more accurate "situation appreciation" in future activities (Decker and Ladikas 2004:19).

Evaluations can contribute to an ongoing learning process. Evaluation responds to what has been coined "adaptive learning" (Georghiou 1998:49), or "the need to find out what works and how to make it work better" (Ibid:37). Foresight is a relatively new activity, still developing, and foresight activities therefore can be seen as experiments. Project managers need to learn by doing and to try out new approaches and strategies. The use of evaluations offers an essential contribution of feedback and information on successful and unsuccessful activities and policies. As Georghiou writes, for foresight to improve, it must be subject to rigorous evaluation and the evaluation must feedback into new design (2003:11).

The most profitable learning will come from evaluations that are performed before, during as well as after the foresight activity. This will improve the starting position and the adaptability of the activity as well as the carry-over to other activities.

Developing an Evaluation Scheme[2]

In light of the problems and concerns sketched in the above, we have suggested that a common evaluation scheme should be based on the following design principles:

- The scheme should be based upon a systematic approach to impacts.
- It should be useful for the broad set of policy analysis disciplines, which have elements of foresight in their portfolio.
- It should be aimed towards foresight projects, rather than foresight 'programmes'.
- Creating fast and continuous learning cycles on a project basis should be a dominating aim.
- Comparison between specific projects should be made possible.

[2] The effort to develop a common evaluation scheme has previously been discussed in Klüver and Hoff "A Common Evaluation Scheme" (December 2006).

- The scheme should not be directed towards larger programme/institution evaluations, since such evaluations, based on experience, will have to adapt to the situation and thus will result in low comparability.
- However, the results of the evaluations should have a form, so that it can be useful input for broader program/institution evaluations and benchmarking activities.
- The scheme should make the involved project managers feel safe and comfortable, and therefore, self-evaluation should be the dominating principle.
- However, the scheme should allow for invited third party assessors to contribute to the evaluation and the synthesis.
- The scheme should not focus on the end results alone, but, just as important, help the project managers to analyse the problem situation, choose the proper ambition level, design the project, and finally to assess the results and create learning,
- The evaluation scheme should be easy assessable and available to all with an interest in foresight or foresight-like activities.

In the next chapter we turn to how the principles are used to create a common evaluation scheme.

3. A Common Evaluation Scheme

The task team has developed *Doing Foresight*, a web-based evaluation tool, which responds to the previously described design principles. *Doing foresight* is based on a pre-defined typology of roles, which can be performed when executing a foresight project. *Doing foresight* is designed to contribute and feedback to foresight projects prior to, during and after the implementation of foresight activities. Thereby *Doing Foresight* gives the opportunity to self-assess an activity at different stages of the process.

Doing Foresight is designed to provide practitioners of foresight with the means to:

- Analyse the topic and the problem situation
- Choose roles for the activity to play
- Choose methods
- Assess and evaluate the merits of projects, based on indications of impact and on assessment of project qualities
- Create learning cycles about the design, adaptation and management of foresight activities
- Compare foresight activities
- Share information and learning across different European cultural and social contexts

Foresight

Foresight is an interaction with socio-technical networks. Such networks can be regarded as consisting of experts, industry, citizens, NGO's, politicians, etc, and in an extended understanding also of their manifestation in terms of technology, rules, conceptualisation, language etc. [3]. Foresight activities are made in order to make changes in such networks. In this perspective, the issue of how to do foresight becomes a question of how to make change. In a network perspective, the issue of evaluation becomes complex: What worked for whom, which changes were made, how and why – and was that satisfying? We have defined evaluation of foresight as

> a systematic process of assessing the problem situation, defining aims and ambitions, and reflecting on the changes facilitated by and the quality of the activity.

[3] The Actor-Network Theory (see Latour 2005).

Typology of Roles

The tool is structured around a typology – a matrix - of changes that can be made from policy analysis. The typology was developed in the TAMI-project.[4]

In the TAMI-project changes, or impacts, that can be made from policy analysis were defined as "any change with regard to the state of knowledge, opinions held and actions taken by relevant actors in the process of societal debate on technological issues" (Hennen et al. 2004:62).[5] The concept of "roles" was introduced in order to grab the complexity of aims and functions involved in Technology Assessment, as opposed to the more rigid concept of impacts (Bütschi and Nentwich 2002).

Performing a role can be defined as an activity that interact in and seek to change a societal situation. Based on this definition the TAMI-project crafted a 3x3 conceptual typology (Hennen et al. 2004:63):

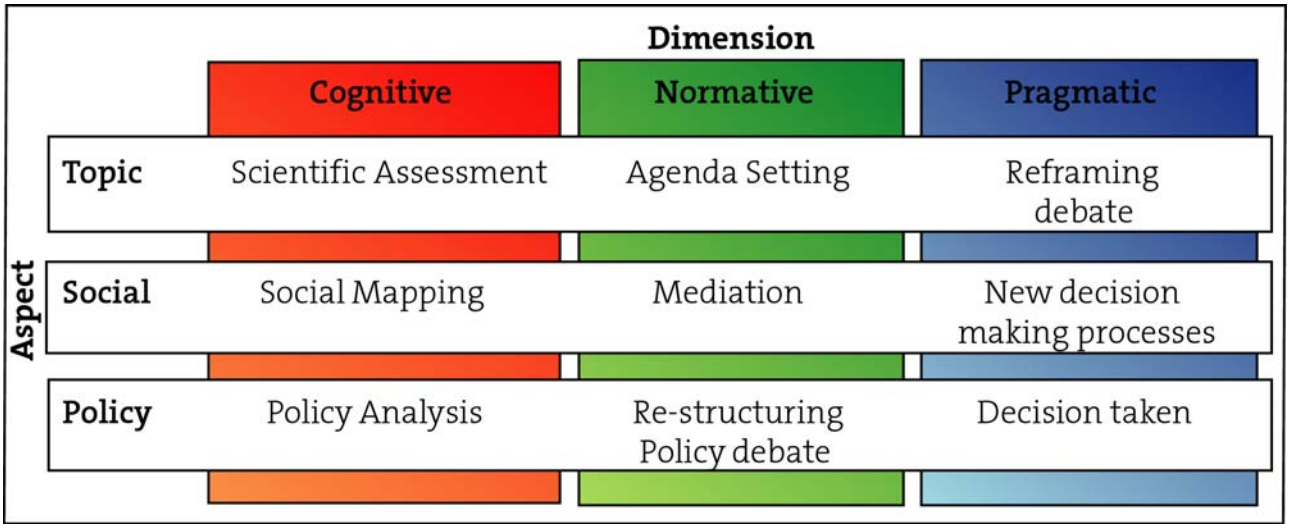


Figure 1: The TAMI-typology

The three columns reflect 'what policy analysis does' – split into the cognitive, normative and pragmatic dimensions: Raising knowledge; forming attitude/opinions; initialising actions. The three rows reflect 'what policy analysis does it to', in the sense that policy analysis can take up three kinds of aspects of the topic: The technological/scientific aspects; the societal aspects; the policy aspects.

[4] TAMI is an abbreviation for Technology Assessment – Methods and Impact. The TAMI-project is described in Decker and Ladikas 2004.
[5] This definition was made in the technology assessment domain, which may result in an overemphasis on technology. For the use in the foresight area, the word "technology" may be exchanged with "future-oriented strategies".

The typology is systematically implemented in *Doing Foresight*,. It is the "backbone" of the evaluation scheme. In order to get the most out of *Doing Foresight* the user will need to learn to make use of the typology. By time the user will learn to separate clearly between the roles and thus to become more clear in the choice of roles for her/his activities. In other words, repeated use of the tool will increase the yield.

By using the typology the evaluation scheme supports the evaluation goals of accountability, justification and learning by providing a starting ground for:

1. **Systematic Evaluations**: An open, universal, transparent evaluation scheme, based upon a systematic approach to impacts.
2. **Focus on Projects**: The focus on projects, which makes continuous, fast and instantly relevant evaluations possible.
3. **Sharing and Learning**: The possibility of inviting independent assessors to support the evaluation, and the possibility of using the evaluations as input to larger program/institution evaluations

Systematic Evaluations

The typology and the concept of roles makes it possible to break down the aim and the result of an activity into a set of specific roles, to which specific performance indicators may be identified.

As shown in figure 1, nine broad categories of impacts can be defined in the typology. Within each of the nine broad categories of impact 20 specific roles that can be performed are described.[6] For example,

- By making people meet a mediating role (the centre of the typology) can be brought about. By exchange of knowledge and opinions a 'bridge-building' role can be developed, so that relations afterwards are being built upon a relevant picture of the positions of other actors.
- Mediations can, however, also be about conflict resolution – for example, if the actors in a certain field block the initiatives of others because of power-games, a stand-still can happen even in a situation when everybody wants change. 'Blockade-running' by making processes, in which the actors are brought to an understanding about their interest in the development of common ground for the future, may be a role of relevance in that situation.
- Finally, 'Self-reflection' among the actors – maybe brought about by giving them insight into the expectations others have to their ability to create the right futures, might be a necessary mediating role.

[6] A complete list of roles and description of the roles can be found in Annex 1.

A given project typically performs several roles. An expert panel process may for example perform knowledge-creating roles, mediating roles as well as action-oriented roles.

The TAMI-typology sets the focus on the performance of roles and thereby provides a systematic approach to evaluation of impact of foresight. It will still be difficult to objectively assess the outcomes of a given foresight project, but the roles provide a detailed framework. The more precisely one knows what to look for, the easier the search for impact indicators gets and the more reliable the observations will be.

From an international or cross-national point of view, the typology of roles provides a generic framework for describing and comparing impacts. The typology has been developed in a European project, in which impacts were gathered across national projects and clustered into the roles. The roles therefore are expected to be quite culturally 'immune' and universal, thus providing for scrutiny of differences in performance across the European community and potentially worldwide.

Focus on Projects

The tool links the concrete process of doing foresight with the evaluation process – see figure 2.

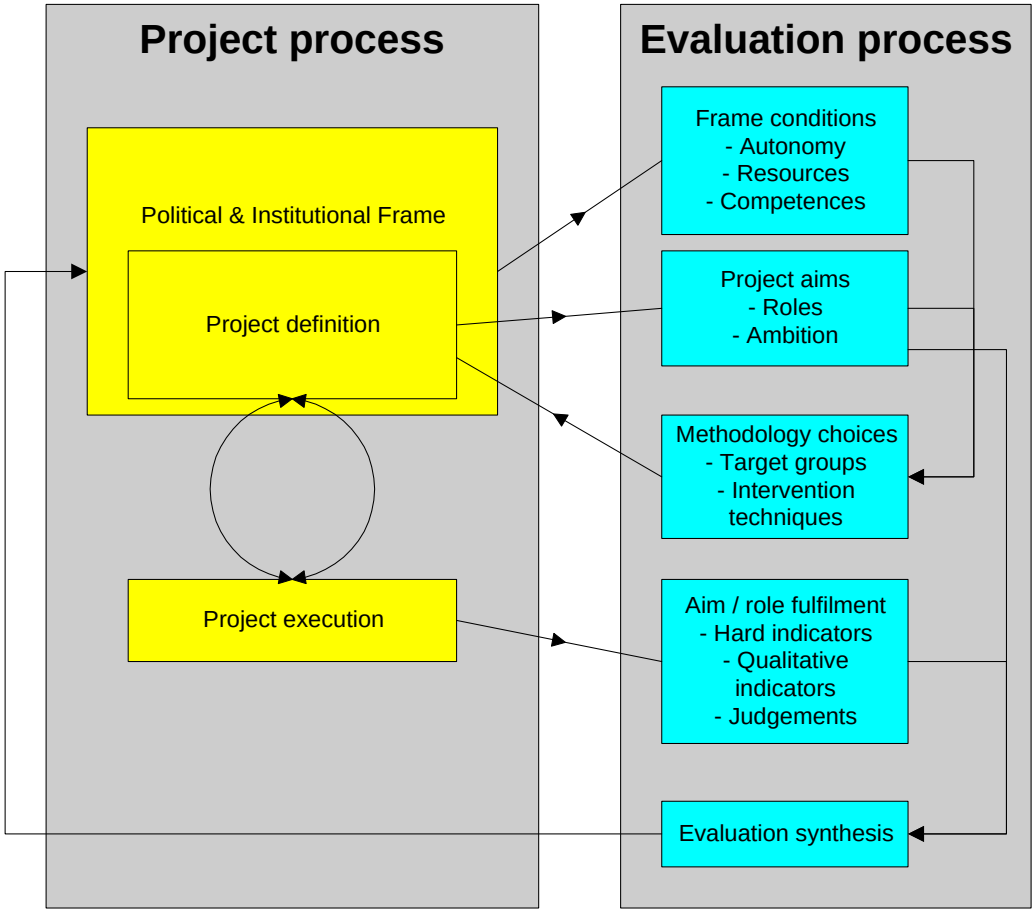


Figure 2: The relation between the project and evaluation processes

The *project process* is understood as a continuous process of redefining the project aims inside the political and institutional frame, and according to the needs appearing during the project execution.

The *evaluation process* is understood as consisting of three elements:

- The ex ante phase. The meaning and intentions of the project is defined inside and in accordance with the frame conditions. This is done by making a 'problem situation analysis' and choosing the aims of the project.
- The design phase. The consequences of the ex ante phase are taken in terms of picking the method that best suits the aims.
- The ex post phase. The achievements are assessed on the basis of indications of impact and the quality of the project is discusses in an evaluation synthesis. This feeds into the institution and the definition of new projects, and a learning cycle has been established.

Focusing on the project level allows for a continuous evaluation throughout the project execution, which ensures an immediate payback of the time invested in using the tool. Projects can easily be compared and experiences exchanged, even in parallel with the project process.

Sharing and learning

Sharing data from evaluations has a large potential for increasing the quality of foresight. The evaluation tool has some advantages over more ad hoc evaluation schemes with regards to comparing evaluations.

- It provides a common vocabulary and a common analytical frame.
- The typology of roles makes up a common ground for comparing evaluations from diverse social-cultural contexts.
- The tool is a template for the description as well as the for the synthesis phases of project evaluations.

Sharing of data is possible in different ways:

- Sharing profile. Make a specific username and password for the project and share that inside the evaluation group. Avoid being logged in at the same time, since this will involve a risk of overwriting each other's input.
- Sharing reports. The *report generator* is a valuable tool for sharing evaluations with colleagues, evaluators, sparring partners, and for filing. The reports are produced in pdf format.

Making use of *Doing Foresight* as a routine in project management will provide an environment for ongoing communication about projects across borders. Further, it will produce a stock of project evaluations that can serve as a valuable source of insight into and learning from past projects.

Using it for programme evaluation

The linkage between the ongoing process and the evaluation has the implication that the tool is made for evaluation of activities/projects. It can be used for evaluation of organisations or programmes in the sense that a major justification of such institutions/programmes comes from the performance of the underlying activities. An institution/programme therefore can build up a valuable knowledge base for broader evaluations by consequently making use of *Doing Foresight* as a project evaluation tool.

It is important to be aware of the fact that some foresight programmes in their outset do not make use of 'projects', but rather see a foresight process as a set of parallel activities with certain horizontal links. In this case it is necessary to break down the programme into activities and make use of *Doing Foresight* on each of these activities. Such an activity could for example be the activity of setting up and executing an expert panel process. To the extent that there are horizontal links between such activities, these may be seen as specific sub-topics that should be dealt with by all activities.

A Web-Based Evaluation Tool

The evaluation tool has been developed as a web-based program in order to facilitate a widespread continuous and easy access to the tool.

Due to the functionality and interactivity of the web, a web-based evaluation tool has some qualities that can hardly be met by a paper-based tool:

- It is easy to find and access
- It can be used disregarding time and location.
- It can be updated quite easily, without involving heavy and difficult distribution of versions
- Continuation of the service can be ensured without big expenses

4. Doing Foresight

Doing Foresight is designed to address the process of setting goals for foresight projects (ex ante evaluation) and of evaluating projects (ex post evaluation). *Doing Foresight* also helps the foresight practitioner coupling the initial problem analysis with the choice of methodology. *Doing Foresight* should be seen as an opportunity for establishing an ongoing learning process about – doing foresight.

The tool helps you in the analytical part of designing a project. But it cannot be a true sparring partner. You will need to discuss your ideas with colleagues and the actors involved in your project. It will not think for you, but it can hopefully provide a frame for your own creative thinking.

Doing Foresight cannot account for a formal, comprehensive evaluation. Formal justification of an evaluation calls for independent, external assessment, which this tool does not provide. However, observations, knowledge and experience obtained from using the tool can be integrated into formal evaluations by sharing insights with external evaluators.

In this chapter, the tool will be described with the intention to support the use of the tool and it's modules. Annex 1 supplies an overview of the full tool.

Navigating the Tool

Doing Foresight is structured around six modules:

- A frame condition module - to register the general and specific frame conditions of the institution and the project respectively
- A problem definition module - to draw a picture of the problem situation of the project
- A role selection module - to guide the choice of the aims and ambitions of a project
- A method tool-box module - to guide the selection of methods
- An evaluation module - guiding the reflection about the impacts of the project
- A synthesis module - to aid in the process of drawing conclusions and to learn from the execution of a project.

In the web-tool you can navigate between the modules using the main tabs. Each module consists of several pages, shown as sub-tabs, which make up a sequential flow inside each module - starting from left tab and

ending with the outermost right tab. Clicking the left tab will bring you to an introduction page, while clicking the outermost right tab will bring you to a summery page.

Each page you open contains a short description of what to do – highlighted in a light blue box. This description gives you a very quick guide to the functionality of the page, i.e. what you do, what to think about. By clicking the about-tag you can find a more in-depth introduction to the individual pages.

Each page has a Save-button and a Reset-button. Click Save to keep your changes. If you do not use the Save-button after changes have been made, you will get a warning before leaving the page. Click Reset to delete all the information on the page and re-start – but be cautious with that!

Clicking the *Doing Foresight* icon in the top-left corner of the screen will bring you back to the introduction.

In the opposite corner, the top right corner, you see five links:

- About - learn about the tool, the reasons for making it and the institutions and persons behind it. Also you can find a collection of useful links here.
- Generate report - allows you to create a report as pdf-file.
- Log - a log-book where your choices are recorded.
- Log-off - log-off the current project
- Edit/switch project - here you can edit the information you initially have given about your project or you can start working with another project.

The Modules

The modules can be used individually or in conjunction. You don't have to use the modules one after the other – if you want to jump between the modules, you can do that. However, using all modules will enable more functionalities, since information from one module makes functions in other modules possible. The modules are interlinked through:

- Warnings: Using the *Frame Condition* module will generate general “warnings” in the *Role Selection* module and the *Method* module. The warnings are based on comprehensive project management experience.
- Comparisons: The modules interact by comparing input. E.g. input made in the *problem definition* module will be used to guide input in the *Role Selection* module.

- Link between roles and methods: The method module presents methods rated according to the ambitions chosen in the *Role Selection* module.

Executing a foresight project is far from being a linear process. Project managers should be aware that things change and projects should do so accordingly. The tool is designed to support an on-going process of adjustments and re-orientations by allowing changes in data at any time[7].

The modules allow for individual remarks and comments to the choices made and the analytical outcome of the evaluation. This is so in order to motivate for reflection at different stages of the foresight process.

Now let us turn to the individual modules.

Frame conditions

Policy analysis activities are situated in a context, being made up of the political culture and situation, the institutional settings, resources etc. Such "Frame conditions" affects the scope of activities that can be set up and thus the kind of impacts that can be achieved. Frame conditions are to some extent given, but sometimes they can be changed.

The first step of *Doing Foresight* is to register the frame conditions of your project. Only those frame conditions that can directly be coupled to project decisions are registered in order to focus on the purpose of *Doing Foresight* and to ease your workload. Conditions that cannot be operationalized in the logics of *Doing Foresight* are left out (as for example the broader political/cultural context).

A distinction is made between general and specific frame conditions. General frame conditions are conditions that are inheritable, in the sense that they, potentially, influence all projects of the same institution/programme. They include issues such as institutional setting, maturity of the institution and level of autonomy. Specific frame conditions are directly coupled to your project/activity. They include the set-up of the projects, cost and time constrains.

The general frame condition can be inherited from an earlier project evaluation while creating a new project. This is done by using the 'Base this project on:' facility at the Start page.

[7] You can consult the Log in the upper-right corner, in which your changes are recorded. This makes it possible to re-establish a former set of date, and to give a historic picture for the synthesis.

Using the frame condition module will enable "warnings", which are shown in the *Role Selection* and the *Method module*. For example, indicating that you work in a public organisation situated in the government, e.g. agencies etc. will generate the following warning if you at a later point select a knowledge producing role: "In order not be perceived as biased, you should consider inviting actors who can balance your own institutional background."[8]

It will be up to the user of the tool to consider the warnings. They are made automatically on the basis of experience about conflicts in policy analysis project management. This means that they are not authoritative and they may prove irrelevant in the specific case. You should do something about them if you find them relevant, ignore them if not. Furthermore, it is important to remember that a conflict may be rooted in a too restrictive frame condition and if so, consider if the frame condition can be changed.

Problem Definition

The problem definition module focuses on what the problem is, rather than on what you can do about it. A proper analysis of the problem situation of your topic is a prerequisite for an effective project design. The problem situation may be defined as a dynamic state of the issue involving, for example, the state of policies, public debate, relations between actors, the scientific documentation of the situation/problem, etc. It is dynamic in the sense that it changes over time. The project/activity may be understood as an intervention into the problem situation, which in itself changes the situation.

Every foresight project, every policy analysis, has a starting point, which you need to analyse in order to be able to design the most effective intervention. *Doing Foresight* takes you through this in two steps. First, the user is asked to describe the state of the issue and the actor situation. This is mainly done to support sensibility to the topic and to register initial thoughts for use in the evaluation phase. Second, the user is presented with a list of specific questions about problems and needs arising from the state of the issue. The list is structured upon the TAMI-typology and covers:[9]

1) Problems with regard to the state of knowledge
2) Problems connected to the lack of normative clarification, and
3) The needs to take decisions and act.

[8] A complete list of warning can be found in Annex 2.
[9] For the full list of problems see Annex 1.

Answering the questions should aid the user evaluating the problem situation precisely, narrowing down a complex 'problem situation' into a set of major/substantive problems, which can be handled in a foresight project. The text fields below each problem can be used to describe the problem in more details.

Since the problem situation changes by time, you should consider re-examining the situation during the lifetime of the project in order to make corrections to the course of the project.

Using this module will provide users with input in the *Role Selection* module.

Role Selection

When the problem situation is clarified, it is time to decide on the aim of the project - the roles you want to perform. The decision to take now is *What do you want to do? What effects do you want your project to have?*

The tool guides you through the process of scoping the project in three sequential steps. First, you are asked to reflect on the initial thoughts about the aim of the project. This is done to support sensibility to the topic and to register initial thoughts for use in the evaluation phase. Second, you are presented with a typology of roles. If the Problem Definition module has been used, the result is shown as red bars reflecting how much weight you have put to the problems behind the roles. It is important to remember to:

- Set proper and realistic project goals
- Limit yourself - if everything is important, nothing is important.
- Be attentive to surroundings. Relevant actors may be valuable in the scoping of your project, so you may want to invite them for a discussion.
- Look out of the box. Institutions may have a certain approach to foresight. Perhaps it is time to challenge such presumptions?

Above the typology a coloured bar (green-yellow-red) indicates the sum of ambition that users have assigned to the roles. If you find yourself in the red zone, it may be worthwhile to consider whether you are being too ambitious within the frame of one project. Perhaps your topic is too complex for one project/activity to handle? On the other hand, the bar is made automatically and you may have good reasons for choosing many roles with high ambitions.

Selecting the degree to which the roles are to be performed defines the ambition with the project. The mission of an institution/programme and other frame conditions may be of major importance in defining the

goal of the project. Some institutions understand themselves as knowledge producing; others see their mission in facilitating discourse or mediating conflicts. Such presumptions may be necessary to take into account when deciding the roles and ambitions of the project. If the Frame Condition module has been used, then warnings, which can guide such self-reflection, will appear.

The third step in deciding on the scope of the project is to compare ambitions with the problems defined in the *Problem Definition* module. This is done under the *Comparison* sub-tab. The scheme shows the roles inside/outside the blue 'harmony line', on which there is a balance between the weight of the problem and the role ambition.

Though the problem situation may guide the choice of roles, this may not be the only relevant parameter. Perhaps other projects are dealing with certain sides of a problem. Perhaps you are not commissioned to perform certain roles. A role may be too difficult to play and attention should be turned towards more realistic aims. You may be bound to deliver certain kinds of result, though they do not seem to relate to the most important problems. Still, for use in the ex post evaluation phase the project manager will need to explain any discrepancies between the problem analysis and the choice of roles, and the tool reminds the user to do so.

Having used the Role Selection module should contribute to a clear formulation of goal setting. However, foresights should be adaptive to changes as they occur. You can return to the *Role Selection* module during the course of a foresight project to adjust your ambitions.

Using the role selection module will aid a structured choice of methods in the *Method* module.

Methods

In *Doing Foresight* the choice of method is regarded as depending upon the choice of aims. Methods have their specificity in being good at delivering certain aims and less suited for other aims. For the purpose of *Doing Foresight* such specificities have been analysed, which makes the tool able to suggest methods in correlation with your choice of roles.

In the *Method* module you will find short descriptions of the methods. These descriptions contain information concerning the specificity of the individual method, e.g. its strengths and weaknesses. The descriptions presented in the tool are not comprehensive. More information can be found using the links provided.

The purpose of the method module is to guide the selection of methods. The module presents methods in a) an alphabetic list, b) a Total Score list and c) a Score from Role list.

The *Alphabetic* list provides an unfiltered overview of the methods in the database. In the list a distinction between methods, techniques and 'other' is made. A method is a well-defined process that is fit to perform a specific set of roles. Often the method has a procedural form, making use of several techniques in sequence. A technique is a tool (e.g. a specific way of brainstorming), which potentially can be used in many methods, and which is less role-specific. 'Other' contains generic activities that might help producing results.

The *Total score* is a 'best guess' of suitable methods for the set of roles selected in the Role Selection module. It is calculated from estimates of the extent to which a given method contributes to the roles in the typology. If you indicated that *knowledge mapping* and *conflict mapping* are very important roles for your project, methods, which contribute to those specific roles, will get a rate. The *Total score* is merely a prioritised list of methods that you might want to scrutinize further. The list should be used for overview and inspiration. The final choice of method is too complex for a piece of software to handle. Use the list to select a set of methods that could be relevant to your project, by clicking the icon.

In the *Score from role* list, you find the methods listed according to their fruitfulness in relation to the individual roles in you role selection. Use this list to find methods that are relevant to the single roles. E.g. if you wish to *stimulate self-reflection among actors* then consult the methods listed below this role. The Score from Role figure is a rough indication of how well the method contributes to the role and the Total Score indicates the sum of ratings received from all selected roles (see previous description of 'Total score').

Each method has unique strengths. The ratings have been made as experience-based estimates of the contribution of each method to each role. The rating scale is as follows:
4: The role can fully (or near-fully) be covered by the method.
3: The method gives considerable coverage of the role.
2: The role can receive a worthy coverage as side effect of the method.
1: The role could be a minor side effect of using this method.
0: None or negligible contribution to the role

The estimates were made in co-operation with task 3.4 *Development of Training Schemes and Foresight Tool-kit*.[10]

[10] For a more substantial discussion on methods please refer to the report of task 3.4. A complete overview of the methods and their contribution please refer to Annex 1.

Use the listings to select your methods for the project. There are several points to have in mind in the process of selecting methods:

- Some sets of roles may only be reached through the use of a combination of methods.
- The selection of methods maybe should not be regarded as final. Your problem situation may change so much during the project that you will need to reconsider the choice of methods.
- Discuss the selection of methods with your team and maybe with the participants that you intent to involve. It is not only you who will need to understand why you selected those methods.
- Include generic methodology – such as the formulation of a communication strategy – to strengthen the contributions from your methods.

Evaluation

The evaluation module is designed to stimulate a process of self-evaluation of impacts. Central questions concern what you have achieved, to what extent, and how this can be explained. Besides the impacts that you have planed for, it is important to acknowledge unexpected impacts and roles that you planned to play but eventually did not fill out. Success and failure can find their reasons in the project design, management, communication etc., but they may also depend on external factors or sheer luck. The evaluation module makes it possible to describe the reasons for impacts or the lack of such.

The evaluation module proceeds in three steps.
First you are asked to sort the impacts into boxes of ‘medium’ or ‘high’ realization, leaving those impacts that you do not think were realised at any mentionable degree. You can make this initial categorization by dragging and dropping impacts with the mouse.

Second, when this rough categorization is made, you are asked to document the impacts. Clicking an impact reveals some questions, which are made to stimulate your reflection. Use them, but do not let them limit your imagination. The questions point at concerns, which are central to the specific impact. Impacts can be documented in different ways depending on the availability of indicators and on the level of documentation claimed:

- Hard indicators (Questionnaires; News coverage; Number of downloads; Number of citations; etc)
- Qualitative indicators (Interviews; Hear-saying; Discourse analysis; etc)
- Judgements (Discussion at evaluation meeting; Own observations; etc)

At the third and last stage in the evaluation module you are asked to evaluate the ambitions (indicated in the *Role Selection* module) in relation to the impacts. The scheme plots the roles that have been selected either in

the *Role Selection* module or in the *Evaluation* module – or both. Roles plotted inside the blue 'harmony line' are characterised by a reasonable fit between the ambitions (role selection) and the impacts (evaluation) of the activity. Roles plotted in the red areas are characterised by a discrepancy between ambition and impact – either because ambitions exceeded impacts, or because impacts exceeded ambitions. Below the scheme you can write about reasons for such discrepancies. When you do that, it might be good to consider some of these points:

- Discrepancies between ambitions and impact may have occurred because of changes in the problem situation, the frame conditions, or other external factors out of your control. If so, describe such factors.
- Maybe you have taken decisions that changed the course of the project, resulting in a mismatch between the initial ambitions and the effective impact? If so, describe why the project was changed and what it meant for the ambitions/impacts of the project.
- There might be good or bad reasons for a lower impact than the ambition called for – describe good as well as bad reasons.
- Or there might be good as well as bad reasons for getting a bigger impact that you planned – describe both.

The *Evaluation* module gives the opportunity to make a clear description of the contributions of the project to the problem situation and it makes a ground for discussing what could be learned from the project. The evaluation module is based on self-evaluation. It is up to the user to indicate to which degree a certain role was performed. Observations, knowledge and experience obtained from using the tool can be shared with external evaluators or sparring partners. The more precise and specific your input into the module is, the more you will get out of using it.

Synthesis

Use the *Synthesis* module to conclude on the performance of your project, across the roles and impacts. The module presents four quality issues of designing and executing projects. These are the scientific issues, democratic issues, project management issues and communication issues. Each set of issues is investigated through a set of open questions. Use the text fields to write down your thoughts/answers to the questions.

In general, the standards needed inside the four quality issues depend very much on the roles involved. For instance, if the mediation oriented roles were important in the project, then democratic issues will be important. If you focus on knowledge creation and dissemination, then scientific issues become central. Did you want to make a public debate then you should seriously consider the communication issues.

The first set of questions concerns the scientific standard of the project. The need for scientific quality criteria depends very much on the need for producing valid, reliable, comprehensive knowledge in the project. This in turn means that there can be projects in which scientific criteria are less important. Also, consider the national/local culture with respect to the importance of a scientific approach to knowledge. Some cultures are 'scientific' in the strict meaning of the word – others are more practically oriented.

The second set of questions concerns the democratic issues – fairness, inclusion, steering/responsibility, agreement, and openness/transparency. The chance of having an impact is greater if the project can prove a high degree of democratic legitimacy – for the external target groups as well as for those target groups involved in the project. Actors can be included at different stages of the project and can be attributed different degrees of responsibility.

Thirdly, a set of questions concerns project management. Project management is an important - yet often underestimated – factor for the success of a project. Even though the project plan is followed throughout the process, a project may easily fail because of bad project management. Project management concerns flexibility, openness, and the ability to make rapid changes, but also issues such as availability of the necessary resources and know-how.

The last set of questions concern the communication aspect of the project. Communication goes beyond communicating about the results of a project. Selecting a certain topic for the work plan of your organisation already gives a message to the outside. It is important to be conscious about communication before, during and after the project. Fine projects may be judged as unsuccessful due to a failed communication strategy.

Self-Evaluation and Sharing Results

You can use the tool alone. The tool is made for self-evaluation, because this will give the most *confident* environment for learning.

However, being two might make up the most *productive* environment for learning. A good co-operation with a by-sitter is to be preferred. If you invite others to your evaluation, then do it in a manner that preserves your comfort and keeps the decisions and the final word with you. Keep it a self-evaluation tool and make a co-operation climate with your by-sitter that supports you.

It will pay back to invite another person to review your input and your decisions. You are free to invite colleagues or external auditors to take part in the process of using the tool. This can be done by sitting together in front of the same computer. However, due to the tool being available on the Internet another

possible strategy is to share a profile. By creating a shared profile the web-tool can support a foresight process, which involves several project managers or by-sitters. You may want to supplement such text-based cooperation with Internet phone meetings. In this way input and ideas can be shared and exchanged. Another way is to use the option of generating reports, which document the choices made by the users. Such reports can be exchanged via e-mail.

The evaluation tool does not in itself guarantee that results are shared. It only provides a common platform. Using the role typology makes sharing knowledge easier, because it provides a common ground from which different experiences can be compared and discussed. Thus using the tool, we think, is a valuable first step on the road to shared learning across different European social and cultural contexts by supporting a systematic comparison of foresight activities.

5. Further Use: Feedback and Pilot Implementation

The purpose of this report has been to encourage everybody with an interest in foresight and other policy analysis activities to make use of *Doing Foresight*.

Doing Foresight is a complete evaluation scheme for projects and activities as this has been defined in the ForSociety ERAnet. Still, improvements and additions are relevant and can be made. We wish to encourage users of the tool to contribute to the further development of the tool.

An initial round of pilot implementations resulted in very positive feedback and some constructive suggestions for improvements. There has been a second and final round of pilot implementations at the end of May 2007. Besides delivering feedback, these pilot implementations were meant to ensuring that the practitioners of foresight involved in ForSociety became familiar with the tool.

An editor group is established to oversee the further development of the tool. Some ideas for improvements and additional features have been recorded at the 'development' part of www.doingforesight.org, and hopefully these can be incorporated into the evaluation tool in the future. The editor group will recurrently evaluate the need for changes or supplements to the tool. Suggestions for changes can be e-mailed to the group.[11]

Pilot Implementation

In order to initiate an implementation of *Doing Foresight* in the European community of Foresight a pilot implementation round has been executed. The first part of the pilot implementation was a test run of the tool with the project managers at the Danish Board of Technology. The second part was a training and test by the ForSociety task 3.1 and task 3.4 teams. In both situations the participating project managers and team members were given the opportunity to work with a project of their own choice, using the tool to support and guide a structured process of self-reflection. Both tests resulted in very positive feedback and can be regarded as successful pilot implementations.

In order to get the tool out to as wide a range of practitioners as possible, a second round of pilot implementations was undertaken at a presentation and training workshop for the ForSociety partners. This

[11] Email address is available at www.doingforesight.org

was undertaken for two reasons. Firstly, a second series of pilot implementation would contribute to a broad dissemination of the evaluation tool among the ForSociety partners, since the best way of ensuring implementation is to let the practitioners work with the tool. Secondly, in order to improve *Doing Foresight* a broader feedback was welcomed.

The pilot implementations all resulted in a constructive dialogue that lead to corrections, adjustments and improvement of the evaluation tool.

Using *Doing Foresight*

Doing Foresight is available at the website www.doingforesight.org. From the website, the tool is downloadable for local installation, or the tool can be used at the site by subscribing as a user. All partners of ForSociety and other practitioners of policy advisory activities can use the tool freely and with no costs. Use of the tool is entirely at the risk of the user. Projects, which have not been in use for a certain time, will be automatically erased.

No hot-line services are offered. Training sessions can be offered for new user groups/organisations. The price of such training depends on a wide range of factors, so please contact the Danish Board of Technology tekno@tekno.dk to discuss these matters.

The tool is published as Open Source under a Creative Common License. The license can be found on the website. In short, the license states that:

a) The tool can be downloaded by anyone for free instalment on a local server.
b) Changes can be made to the tool on the local server, but they may not be published.
c) Changes can be suggested or offered to the owner of rights, who can include them in the program at his will.
d) It is not allowed to use the tool for commercial purposes (i.e. sell the tool as a service) without prior accept from the owner of rights.

The website is a service from ForSociety task 3.1 until the closure of ForSociety. Hereafter, the Danish Board of Technology (DBT) will have the right to close or continue the website at will, and the tool will then be downloadable from the ForSociety website and the DBT website for as long as these websites are functional and wish to publish the tool.

The owner of rights is the Danish Board of Technology (DBT).

The future

Doing Foresight is a full project evaluation tool as it is provided in version 1.0. It can be used by anyone who wants to scrutinize her/his project activities before, during and after the project execution.

This, however, does not mean that there is not room for improvements. As earlier described an editor group has been established, suggestions for changes can be received at doingforesight@listserv.tekno.dk, and future versions will be published at www.doingforesight.org.

At the time of editing this report a wish list of the following issues has been recorded:

New Modules
- Actor module - a module that can guide a mapping of relevant actors and connect to method choice
- Project design module - help building a foresight project by combining methods, projects steering and communication plans
- Project management module – a desktop for the project manager, in which records can be made on economy, contact persons, bibliographic data and references, calendar, etc.

Frame Conditions
- More detailed information on each frame condition
- Price, man month and time warning in relation to methods (cross-references)

Problem Definition
-

Role Selection Module
- Typology dynamic print-out with ratings
- Indicating roles by numbers, indicating square in typology and role number – e.g. 2.2 for second role in square 2 (instead of existing letter indicators)
- Possibility of acting on warnings
- New role: Actor mapping – raising knowledge/societal aspects

Method module
- Expansion of the method tool-box, i.e. more methods (especially decision making methods)
- Graphic overview over contribution of method to the roles in each method description
- Possibility of acting on warnings
- Price, man month and duration in method descriptions

Evaluation module
- Example indicators of success/failure for each role

Synthesis
- Interaction with frame condition module
- Move the two questions in Evaluation/Summary to a first folder in Synthesis

Other features
- Multi-user interface, handling multiple frame conditions
- Admin-interface from version 1 to version 2
- Generate report, pdf as html/word
- Save/import data as XML, save report as HTML
- A new name that reflects the usefulness for all types of policy analysis

The possibility of providing these functions and improvement will depend largely upon the resources in the editor group.

Any user of *Doing Foresight* is encouraged to contribute to the further development of the tool. This may be by giving feedback or suggestions for improvements or by contributing to the work of the editor group.

References

Bütschi, D. and M. Nentwich (2002): "The Role of Participatory Technology Assessment in the Policy-making Process", in: S. Joss & S. Bellucci (Eds.), *Participatory Technology Assessment. European Perspectives, Centre for the Study of Democracy*, University of Westminster, London, 2002. This article is available for download at: www.tekno.dk/europta)

Cooke, Bill og Uma Kothari (2002): *Participation, the new tyranny?* London: Zed Books

Decker, M. & M. Ladikas (Eds.) (2004), *Bridges between Science, Society and Policy. Technology assessment – Methods and Impacts*, Springer Verlag, Berlin

Georghiou, L. (1998): "Evaluation of Innovation and Technology Policies" in *Evaluation* vol 4(1), s. 37-51.

Georghiou, L. (2003): "Evaluating Foresight and Lessons for Its Future Impact" The second international conference on technology foresight, Tokyo, 27-28 Feb. Accessed at http://www.unido.org/file-storage/download/?file_id=10631, 12 January 2006.

Georghiou, L. og D. Roessner (2000): "Evaluating technology programs: tools and methods" in *Research Policy* vol. 29, s. 657-678.

Hennen, L. et. al. (2004): "Towards a Framework for Assessing the Impact of Technology Assessment", in: M. Decker & M. Ladikas (Eds.), *Bridges between Science, Society and Policy. Technology assessment – Methods and Impacts*, Springer Verlag, Berlin

Latour, Bruno (2005): *Reassembling the Social: An Introduction to Actor-Network-Theory*, Oxford University Press, UK.

Mayer, I. (1997): *Debating Technology – A Methodological Contribution to the Design and Evaluation of Participatory Policy Analysis*, Tilburg University Press, The Hague.

Miles, I., Keenan M., and Kaivo-Oja, J. (2002): *Handbook of knowledge society foresight.* [Prepared by PREST and FFRC for the European Foundation for the Improvement of Living and Working Conditions].

Tait J. and Williams R. (2006): *Integrating technological and social aspects of foresight in Europe: ITSAFE Project Final Report*. Accessed at www.eforesee.info/cyprus/itsafe.doc on January 6, 2006.

Annex 1: Paper based version of the evaluation tool

This annex to the report on the web-based foresight evaluation tool *Doing Foresight* is a "paper-based" version of the tool. The annex is a copy of the system, but without those elements that only makes sense in a software system. In principle you can perform an evaluation of a project by considering the questions in this paper-based version, but it is strongly recommended to use the web-tool instead. In practice, this annex is best used as an off-line reference to the system, in which you can see the elements of the system on print, make notes and comments, etc.

Future oriented policy analysis serves decision-making with knowledge, clarification processes, networking, arguments and policy options. The impacts of such activities are of a kind, which are difficult to measure and hence to evaluate on the basis of objective criteria. Evaluations of policy analysis institution and programmes have been made, but quite infrequently and with large differences in scope, focus, methodology and depth of the evaluations. This results in lack of comparability and continuous learning from evaluation. Doing Foresight is constructed to fulfil the need for a systematic approach, which can be used in connection to each activity, in order to support the design of and learning from the activities. Doing Foresight is a support instrument for future oriented policy analysis activities/projects. It will help you examine your problem and choose aims. You can use it to screen for relevant methods. And you can examine your performance compared to your aims/ambitions. Eventually, it will support you in evaluating your activity and sharing the results with other with an interest in foresight – and foresight-like activities.

Frame Conditions

Policy analysis activities are always situated in a context, being made up of the political culture and situation, the institutional settings, resources etc. Such 'Frame conditions' may affect the scope of activities that can be set up and thus the kind of impacts that can be achieved. Frame conditions are to some extent given, but they are seldom static and they can sometimes be changed.

The first step of Doing Foresight is to register the frame conditions of your project. Only those frame conditions that can directly be coupled to project decisions are registered in order to focus on the purpose of Doing Foresight and to ease your workload. Conditions that cannot be operationalised in the logics of Doing Foresight are left out.

A distinction between general and specific frame conditions is made. General conditions are attached to the institution and surroundings. Specific conditions are attached to the project.

General Frame Conditions

You should register your general frame conditions. These are conditions that are inheritable, in the sense that they potentially influence all projects of the same institution/programme. They include issues such as institutional setting, maturity of the institution and level of autonomy.

Use the following questions to register your general frame conditions - e.g. the institutional/cultural background

Formal Institutional Setting
Please indicate your institutional setting:

Public situated in the government, e.g. agencies etc.	○
Public, scientific/educational, e.g. universities etc.	○
Public independent, e.g. advisory councils etc.	○
Private, fund	○
Private, NGO	○
Private, enterprise	○
Other	○

Experienced/Maturity of the institution
How much experience does you institution have?

Temporary, time-limited	○
New, developing	○
Established, experienced institution	○
Not relevant	○

Relation to other actors, politicians, stakeholders, experts etc.
The institution can advice, work together with, involve, or in other ways has a relation to:

Political actors

National	
Parliament	☐
Government	☐
Local government	☐
EU	
EU Parliament	☐
EU Commission	☐
Trans-national political actors, e.g. WTO, WHO, OECD etc.	☐

Stakeholders

NGO, e.g. Environment organisations, patient's organisations etc.	☐
Industry, financial sector etc.	☐

Experts

Public research organisations, universities, sector research etc.	☐
Private research organisations	☐

General public

Representatives for the general public, laypeople	☐
Mass media, newspapers etc.	☐

Economical Sources and Autonomy
Please indicate how your institution is financed

Financed by another institution which influences the work, e.g. public agency	○
External funding without conditions, e.g. public funded, independent organisation	○

Balanced external funding, e.g. balanced employer/employee organisation	○
Own funds, self-financed e.g. a fund	○
Commercial, e.g. consultancy firm	○
Not relevant	○

Process
Please indicate the types of processes that your institution can initiate

Information, e.g. press, websites, reports, distribution, etc.
Never ○ Doubtful ○ Potential ○ Standard ○ Not relevant ○

Survey, e.g. Desk research, poll, Delphi, interview, hearings, etc.
Never ○ Doubtful ○ Potential ○ Standard ○ Not relevant ○

Consultation, e.g. Scenario workshops, Stakeholder consultation, panel, Citizen conferences
Never ○ Doubtful ○ Potential ○ Standard ○ No relevant ○

Negotiation, e.g. Stakeholder commissions, Conflict resolution etc.
Never ○ Doubtful ○ Potential ○ Standard ○ Not relevant ○

Delegation of power, e.g. joint decision-making, public democratic processes etc.
Never ○ Doubtful ○ Potential ○ Standard ○ Not relevant ○

Specific Frame Conditions

Specific frame conditions are directly coupled to your project/activity. They include the set-up of the project, cost and time constrains and the nature of the topic.

Register the frame conditions that are specific for your project/activity

Responsibility
Who has the responsibility for:

Initiating: (own text)
Financing: (own text)
Executing: (own text)

Please indicate if the project is an international project ☐

Cost Issues
Please indicate the budget of the project, excluding personnel, administration and overhead

Financial € (in thousands):
Min: Max:

Personnel budget, research, project management, project assistance, excluding administration

Man Months:
Min: Max:

Duration of the project
Please indicate the duration of the project:

Start:
Max duration: Months

Involvement
Indicate the ability to involve actors in the processes

Restricted, pre-defined to certain actors, e.g. experts or certain stakeholders	○
Moderate, some actors expected, but some flexibility	○
No restrictions, own decision according to need	○
No relevant	○

Autonomy over Content
Indicate the actor able to conclude, make decisions and/or recommendations based on the project

Please select the dominating mode

Institution, management, e.g. minister, director etc.	○
Project; e.g. the project responsible	○
Participants; e.g. the actors involved in the project	○
No relevant	○

Warnings

One way of thinking about frame conditions is to conceptualize them as generating warnings, i.e. things that you should consider when doing foresight. An institution with no prior experience may not have the reputation to ensure impact; some methods may be more suited when handling controversial issues; some methods are less expensive than other and so on.

Whether the warning is relevant is up to you to consider and it is furthermore important to remember that sometimes a conflict may be rooted in a too restrictive frame condition. If so, you should consider whether the frame conditions can be changed rather than your ambition or you choice of method. In the web-based version such warnings will be displayed when relevant. This is of cause not possible in this paper-based version.

Summery

The data from this module will be used to generate "warnings" in other modules when there is a risk of conflicts between your project decisions and your frame conditions. Again this is of course not possible in the paper-based version and you will therefore have to keep the frame conditions in mind when reading through the paper-version.

It will be up to you to consider the warnings. They will be made automatically on the basis of experience about conflicts in policy analysis project management. This means that they will not be authoritative and they may prove irrelevant in your case. Do something about them if you find them relevant, ignore them if not. A conflict may be rooted in a too restrictive frame condition and if so, consider if it can be changed.

You have now indicated your frame conditions. You can at any time come back and make adjustments if necessary. Such changes may affect the responses in other modules of Doing Foresight.

Problem Definition

This tool will not aid the process of picking the topic. At this stage the broad topic should have been chosen. You may further have a rough picture of the challenges surrounding the topic, and this module will guide you through a process of refining that picture.

A proper analysis of the *problem situation* of your topic is a prerequisite for an effective project design. Doing Foresight takes you through this in two steps. First, you describe the state of the issue and the actor situation. This is mainly done to support your own sensibility to the topic and to register your initial thoughts for use in the evaluation phase. Second, you will answer a series of specific questions about problems and needs arising from the state of the issue. This is done in order to make Doing Foresight able to evaluate your choice of ambitions of your project.

The problem situation may be defined as a dynamic state of the issue involving, for example, the state of policies, public debate, relations between actors, the scientific documentation of the situation/problem, etc. It is dynamic in the sense that it changes over time. The project/activity may be understood as an intervention into the problem situation, which in itself changes the situation. There is a starting point for any policy analysis, which you need to analyse in order to be able to design the most effective intervention.

Since the problem situation changes by time the project management will need to re-examine the situation during the lifetime of the project in order to make corrections to the course of the project. You can come back to this module if you want to reassess the situation.

Background information

First step is to describe the current situation and the central actors and concerns, i.e. to describe the background of the issue.

Describe the problem situation. Focus on the facts about the topic. You may need to do some research in order to make these descriptions. Limit the description to an appreciation of the current situation and hold back reflections about what you would like to do about it.

Current situation
What makes the issue important? Are there data to be found that documents the relevance of the issue? Why/how did we end up in the current situation? Are there trends that need to be taken into account when considering the scoping of the project?

Actors and concerns
Who are the central actors and what positions do they take? What are the points being discussed or the reasons for conflicts? Are there initiatives/agendas from other actors that could influence the scoping, need for timing, need for cooperation etc in your project?

Problems

To get an overview of the problem situation it may be useful to consult a list of problem-types. Below we present such a list based on the TAMI-typology (M. Decker & M. Ladikas (Eds.), Bridges between Science, Society and Policy. Technology assessment – Methods and Impacts, Springer Verlag, Berlin, 2004. ISBN 3-540-21283-3).

The list of problems presented below covers

1) Problems with regard to the state of knowledge,
2) Problems connected to the lack of normative clarification, and
3) The needs to take decisions and act.

If you do not find that the list covers the central problems at stake in your topic, this may be resolved in different ways. First, consider if your central problem might be a complex one, which may be broken down to several problems on the list. Second, you may want to record this central problem in the text-fields of the preceding introduction page to keep it in mind for the later processes in Doing Foresight. Third, if you really find that the list is non-comprehensive, then please report this to the editor group.

Consider whether the following problems are relevant for your project. Remember, if everything is important, nothing is important.

a) Lack of knowledge

Is this a problem?
Is there a need for new knowledge to be made or gathered?
Do facts need to be presented in their complexity?
Do actors lack access to knowledge?

What is the problem?
The problem is an un-informed situation. The facts are under-researched. There is a need to figure out what the problem is about and a need for systematic examination of the issue. Knowledge should be understood widely, e.g. dealing with both scientific-based expert knowledge and with practical/tacit knowledge. In some situations lack of knowledge is not the main problem, but there is a need for synthesising and presenting existing knowledge.

b) Lack of knowledge on consequences

Is this a problem?
Are the consequences connected to the issue known?
Are the future pros and cons of the issue unexplored?

What is the problem?
There is a lack of knowledge concerning the consequences of a technology or other development. Possible future developments are unexplored. Consequences are the after-effects of the issue in a short- or long-term perspective. Consequences could for example be about risks to health or environment, threats to privacy or human/social rights, or about unwanted economic or social development. It can also be the case that while short-term consequences are known and mapped, there is no knowledge on possible long-term consequences.

c) Unclear structure of conflict

Is this a problem?
Is there a need for transparency in the conflict?
Are the different positions among actors unclear?
Are the reasons (interests, values etc.) behind the positions un-known?

What is the problem?
Solutions to a problem may be hindered by conflicts of interests, values, culture, etc. The real conflicts may not be clear to the actors, resulting in twisted enemy-pictures and pseudo-conflicts. It may seem as if there is only a vague disagreement upon some aspects of the subject, but on the other hand, the real conflict could be quite severe. The networks seem to need knowledge about interests, preferences and values of the involved actors.

d) Lack of knowledge on policy objectives

Is this a problem?
Is the landscape of policy objectives and options unexplored?
Is there a lack of overview of the qualities of the different objectives?
Or is there a need to explore assumptions on which existing policies or policy options are based?

What is the problem?
New developments can result in very different endpoints, depending on the decisions taken. A given policy instrument can be used in different ways depending on different objectives. There are most often different assumptions, interests and consequences connected to the objectives. However, the objectives and options may be unexplored. The values they carry with them may need to be scrutinized. Therefore there is a need to give an overview of the policy objectives and options available. The values and interests connected to them and the possibilities and consequences they open up for may need to be mapped as well.

e) Existing policies need to be revisited

Is this a problem?
Is there a need to evaluate existing policies?
Is knowledge on the effects or effectiveness of existing policies missing?
May new developments mean that existing policies can be outdated?

What is the problem?
There is doubt about the adequacy of existing policies. Maybe the issue at stake raises new options and new questions to existing policy. Policies may potentially be outdated because they are based upon old knowledge or old standards. There is a need to evaluate existing policies in order to improve the quality and validity, and to make sure that policies are capable of meeting future challenges.

f) Lack of political awareness

Is this a problem?
Is the issue being overlooked or ignored in the political debate?
Is political awareness in relation to the issue needed?

What is the problem?
The lack of political awareness on the issue or on important aspects of the issue – may result on the issue being considered politically irrelevant. Potential beneficial developments or risks may not be treated as needed, because they are out of political sight. The lack of political awareness may go beyond the primary political actors and even be present among the general corps of actors.

g) Public debate needed

Is this a problem?
Is the issue not being publicly debated?
Is the issue for only discussed in closed circles?
Is public debate necessary in order to make change?

What is the problem?
There is a lack of debate on the issue, or the discussion is limited to a too narrow community of actors. Maybe the wider public does not know about the issue and there may be a need of more inclusive debate involving a wider range of actors. Lack of debate can result in slowing down the decision-making process. Or, it may lead to public mistrust, if the debate goes on 'behind closed doors'. Public debate can be crucial in order to include certain dimensions or perspectives that otherwise may be underrepresented in policy-making.

h) Lack of forward thinking

Is this a problem?
Is there a lack of future-oriented visions and ideas?
Do actors only see threats and possibilities in a short-term perspective?
Is there a need to explore alternative future paths?

What is the problem?
Stagnation may be foreseen because of lack of new perspectives and visions. Actors may need to consider their strategies in an expanded time horizon. Introduction of visions may be needed in order to help actors find common goals and strategies, or to make them consider pros and cons of different possible futures.

i) Actors need reconsidering their positions

Is this a problem?
Have actors developed own world-views that may be out of line with the surrounding society?
Do inflexible interests blind for further development?
Do new developments demand new thinking or reconsideration of actors' perceptions and interests?
Is there a need for self-reflection?

What is the problem?
Lack of self-reflection among actors can hinder development. Lack of self-reflection can lead to their ambitions being out of line with the demands of wider society, which may lead to social conflict and controversy. Development thus calls for self-reflection in the sense of reconsidering own aims, motivations and interests in the light of the perspective of other actors.

j) Actors caught in deadlock situation

Is this a problem?
Are actors keeping each other in a locked situation?
Is there a need for dialogue on possible common ground?
Is there a need for mutual learning about perspectives and interest?

What is the problem?
No actors are willing to alter or reframe their position. Each social actor defends a rigid line. A deadlock situation may be present if actors block the initiatives of other actors, instead of making alliances or cooperation. This may be due to the actors being unwilling or unable to proceed and pay a certain price (i.e.

in terms of economic loss or influence). As long as the deadlock situation persists, no dialogue seems to be possible and solutions cannot emerge. There may be a need for a neutral ground for dialogue and to initiate dialogue on possible common ground and mutual benefits of opening the deadlock.

k) Lack of mutual understanding

Is this a problem?
Is there a lack of trust and communication between actors?
Are self-made ideas about others' intentions a problem between actors?
Is there a trust problem between those in charge and those affected?

What is the problem?
The actors do not listen to each other because of lack of trust or incentives. Actors may not have the opportunity or desire to meet in dialogue. In-grown stereotypes or self-made ideas about the others' intensions and perspective may be the reason. Such unconstructive positioning may distort the discussions, thereby missing the points of real relevance. There is a need for building up communication in order to overcome barriers of trust and misunderstandings.

l) Policies do not tackle complexity

Is this a problem?
Is policy dominated by a certain set of values/interests, ignoring important needs?
Are the democratic claims of a diverse input to policy-making being ignored?
Is the complexity of the issue being underestimated in policy?

What is the problem?
The issue is treated narrowly or in a one-sided manner by policy or by the policy-making process. The situation can be caused by domination of specific stakeholders/lobbies. This may lead policy-makers to disregard the interest of other groups or to explore alternative solutions. Relevant knowledge, opinions or interests may be ignored. This may lead to missed opportunities or unnecessary risks.

m) Democratic legitimacy of policy is needed

Is this a problem?
Is the issue (potentially) controversial?
Is the issue handled in a way that is perceived to be undemocratic?
Is there a need for acceptance of the process of decision-making?

What is the problem?
The issue in question raises controversies caused by opposing interests, values and perspectives. No immediate solution based on consensus is possible. Opposing views cannot meet. Openness and fairness of the decision-making processes is needed, so that the process has democratic legitimacy, even if consensus on the content cannot be reached.

n) Follow-up activities will be needed – beyond the scope of one project

Is this a problem?
Is there a foreseeable need for a longer process of research and debate than this project can make?
Is the issue dominated by uncertainty making continuous scrutiny necessary?
Will there be a need for larger follow-up research/analysis/debate (programmes, institutions..)

What is the problem?

The issue call for a major scrutiny of opportunities and risks, beyond this project. There is a severe lack of knowledge, which it will take many years and a large effort to deliver. This may be because there is a need for great diversity in the perspectives needed or because uncertainty plays an important role for policies. Or, because the field is new. There might be a need for further information and debate in order to ensure a public understanding and continuous debate on the issue.

o) New orientation in policy needed

Is this a problem?
Is there a need for applying new models of policies into the existing policy-areas?
Do new policy strategies need to be implemented?
Do policy actors need to orientate themselves towards new objectives or new definitions of a problem?

What is the problem?
There is e need for renewed framing of policies. This may be caused by new over-arching policy objectives (for example 'sustainable development' or 'security') or, by shifts in policy paradigms. Also, a shift in maturity of the issue may demand new orientation (for example a shift from 'innovation focus' to 'regulation focus' on a new technology), or a shift in public opinion. The new orientation may mean that policy branches, ministries, agencies etc. need to change or accommodate their strategies and management concepts.

p) Governance needs to be improved

Is this a problem?
Is there a need of improving the process of policy-making?
Are signs of malfunctioning governance evident or at risk?
Are there social conflicts about the current model of governance?
Is there a democratic deficit around the issue?

What is the problem?
Certain societal voices may not be heard in the current model of governance. The issue in question in itself may be subject to controversies, but these are even more increased by the lack of adequate governance approaches. The issues in that sense represent an eye-opener by making obvious that existing government instruments are insufficient to meet the societal challenge.

q) Substantial public debate will be needed – beyond the scope of one project

Is this a problem?
Is there a need for public awareness, beyond the scope of this project?
Is (public) investment into debate and dialogue necessary?
Is there a continued need to for an inclusive dialogue?

What is the problem?
There is a foreseeable need for initiatives, which makes it possible to involve the broader society into the debate. This may be because the issue can affect peoples' lives, so that they have a legitimate demand for being involved in the debates. The need for an initiative may be reasoned in uncertainty, high risk, large economic effects, environment problems etc - problems, which democratically need to be openly discussed, or which may easier find their solution if a societal process has been going on.

r) A choice between policy alternatives necessary

Is this a problem?

Is there a need to come to conclusion about the choice between alternatives?
Are transparent and inclusive processes needed in order to reach conclusions?
Is there a need to set up filtering criteria for the choice?

What is the problem?
A range of policy alternatives is present as a result of knowledge presented and value clarification through debate. However, there is a need for setting up processes that can facilitate the final choice in a legitimate way. This may demand that policy alternatives are compared and scrutinised with regard to their viability in a pragmatic sense. A process that can embrace judgements of among other things technical, social and political nature is needed. Transparency is needed in the evaluation of the policy alternatives.

s) Innovation processes need to be improved

Is this a problem?
Is the market unable to pull innovation in the needed direction?
Are externalities of a kind that cannot easily be incorporated into the market?
Is there a need for an innovation process that includes answers to externality problems?

What is the problem?
The issue is confronted with 'market failure' in the sense that innovation supply does now cover the demand for new solutions. This may be due to the market being dominantly private economic, while the problem is dominantly felt at a societal level (for example energy saving devices). There is a need to address the innovation processes in order for them to produce solutions that answers the societal demand.

t) Need for new legislation

Is this a problem?
Do actors point at the need for new legislation/regulation?
Is existing legislation (or lack of legislation) an obstacle to achieving commonly agreed goals?

What is the problem?
Solution of the problems in the issue will eventually mean that there is a demand for new legislation. Advice and recommendations and maybe even concrete proposals of new legislation are needed. Therefore it is necessary to explore the possibilities for new regulation or to set up processes that can conclude on the need.
Summary

You should now have evaluated your problem situation by having considered the above questions. If you evaluate the problem situation precisely, this can help you narrow down a complex situation to less than a handful of major/substantive problems. If you have more than a handful, then consider if your topic might be too complex for one project/activity to handle.

Role Selection

Before choosing methods it is necessary to decide on the aim of the project - the roles you want to perform. Selecting the degree to which each role is to be performed defines your ambitions with the project. The decision to take now is: *What do you want to do? What effects do you want your project to have?*

The mission of your institution/programme and other frame conditions may be of major importance in defining the goal of the project. Some institutions situate themselves as knowledge producing. Others see their mission in facilitating discourse or mediating conflicts. Such presumptions may be necessary to take into account when you decide the roles and ambitions of the project.

You should remember to

- Set proper and realistic project goals
- Limit yourself - if everything is important, noting is important
- Be aware that there is no unique - perfect - answer to a problem situation. There a many ways of addressing a situation
- Be conscious of the type of impacts that you strive fore. Negative impacts may occur, i.e. a foresight project may create more problems than it sought to solve
- Be attentive to your surroundings. Other actors may have an important and valued say. You should involve relevant actors in the scoping of your project
- Look out of the box. You institution may have a certain way of doing foresight, perhaps it is time to challenge this robust ways

Furthermore you should be adaptive to changes as they occur. Things may change and you should be ready to change your ambitions accordantly. Hence, you should allow for sufficient flexibility to adapt to potential change.

Initial goal description

Before you begin to choose roles, it can be fruitful to describe your initial thoughts about the aim of the project. When you are done move on to the typology to specify the roles to perform with the project.

Topic
Why was the topic selected?

Purpose
What was the original purpose behind initiating the project? What was the initial aim?

Typology

The TAMI typology – presented in this chapter – is made up of twenty roles, which have been performed in cases of policy analysis (M. Decker & M. Ladikas (Eds.), Bridges between Science, Society and Policy. Technology assessment – Methods and Impacts, Springer Verlag, Berlin, 2004. ISBN 3-540-21283-3). The columns represent 'what policy analysis does', and the rows represent 'what it does it to'. For example, knowledge can be raised about the societal aspects - which can be performed by mapping and communicating the conflicts of the topic.

Though the problem situation may guide your choice of roles, this may not be the only relevant parameter. You may consider a problem too difficult to solve and turn your attention towards more realistic aims. You may be bound to deliver certain kinds of result, though they do not seem to relate to the most important problems.

It certainly takes some time to decide upon the roles, but it is a crucial decision, and experience tells that many project management problems can be avoided through a thorough and conscious selection of aims.

Use the typology to pick the roles that you want to perform.

Doing Foresight

Typology of Roles

Issue Dimension	Cognitive/Knowledge	Normative/Opinions	Pragmatic/Actions
Topic	**Scientific Assessment** a) Knowledge mapped and made available Role: Prob: b) Comprehensive overview on consequences Role: Prob:	**Agenda Setting** f) Setting the agenda in the political debate Role: Prob: g) Stimulating Public Debate Role: Prob: h) Introduce visions (and scenarios) to actors Role: Prob:	**Re-Framing of Debate** n) New action plan or initiative to further scrutinize the problem at stake Role: Prob: o) New orientation in policies established Role: Prob:
Social	**Social Mapping** c) Social conflicts made transparent Role: Prob:	**Mediation** i) Self-reflecting among actors Role: Prob: j) Blockade running Role: Prob: k) Bridge building Role: Prob:	**New Decision-Making Processes** p) New ways of governance introduced Role: Prob: q) Initiatives to broaden public debate or dialogue among actors Role: Prob:
Policy	**Policy Analysis** d) Policy objectives explored Role: Prob: e) Existing policies assessed Role: Prob:	**Re-Structuring the Policy Debate** l) Comprehensiveness in policies increased Role: Prob: m) Democratic legitimisation perceived Role: Prob:	**Decision Taken** r) Policy alternatives filtered Role: Prob: s) New innovation-process implemented Role: Prob: t) New legislation is passed Role: Prob:

Adapted from Hennen et al. 2004

The next pages will explain the 9 clusters of the typology

Scientific Assessment

Raising knowledge can be seen as the “classic” mission of policy analysis. The cluster *Scientific Assessment* comprises roles that are related to making comprehensive scientific knowledge available for the actors. This is done by mapping and disseminating knowledge on the topic. This could be knowledge on the paths of development, risks, chances, technical options, unintended consequences etc. These roles are typically performed to qualify the processes of decision-making.

In order to fully perform these roles, the knowledge has to be comprehensively mapped and effectively communicated.

a) Knowledge mapped and made available

What is the role?
This role is about generating knowledge and/or disseminating knowledge about the issue, e.g. by systematically mapping what is known about the issue and/or making it available to relevant actors. The central questions are: What do we know, who knows it, and who needs to know about it?

What can be gained by performing the role?
Mapping what is know about an issue and making the knowledge available to relevant actors is especially important in a society with rapid scientific and technological development and the overall dependence of social welfare on the application of R&D. Mapping knowledge and making knowledge available is often performed with the intention to support a knowledge-based decision-making.

Barriers
Knowledge is power. It is not self-evident what counts as valid knowledge and projects may be opposed if some actors feel that their perspectives, their knowledge, has not been included. A strategy to handle potential conflict may be needed. Furthermore, whether the input is taken into consideration depends to a large extent on factors such a visibility, timeliness of the process as well as contextual factors that are out of reach of the individual institution.

Relations to other roles
Mapping what is known about the issues is often a prerequisite of the performance of other roles and this role is therefore often performed in the initial phases of any foresight processes.

Examples
Raising knowledge can be seen as the "fundamental" mission of foresight. The development of foresight and foresight-like activities has to a great extent been encouraged by policy-makers who perceived a lack of access to reliable scientific information of growing importance to decision-making in almost every field of policy making.

b) Comprehensive overview on consequences

What is the role?
This role is focusing on mapping knowledge about the consequences of the issue. It is about using scientific methods (such as risk assessment, economic modelling etc.) to foresee possible long term and short term consequences and give an overview of them. Technology foresight is a classical way of providing overview of possible consequences.

What can be gained by performing the role?
The aim is to map and establish knowledge and overview on the consequences of the issue, which can be relevant to the use and possible regulation. Therefore, assessment and considerations on relevance is a necessary part of this role also.

Barriers
There may substantial disagreements about consequences, which can make project work very difficult. Lack of knowledge can turn out to be too big a problem for handling in the project. Furthermore, whether the input is taken into consideration depends to a large extent on factors such a visibility, timeliness of the process as well as contextual factors that are out of reach of the individual institution.

Social Mapping

Creating and distributing knowledge about the actors and their positions to the issue and to each other may prove very valuable. Knowledge about the public opinions or about the controversies between actors may ease mediation or make policy-making more relevant and effective. Knowledge on interests, preferences and values is of course of big importance if the same interests, preferences and values are to be taken into account in policy-making.

The *Social Mapping* should be effectively communicated to the actors in order to perform this role fully.

c) Social conflicts made transparent

What is the role?
The task is to identify and map conflicts and the interests involved and make these relations transparent. It is about describing the social conflicts, identifying the attitudes, the conflicting parties and their motives in a structured way, so to contribute to a solution by challenging attitudes towards a more concrete and transparent arguing. Transparency is a first step in resolving social conflicts.

What can be gained by performing the role?
The aim is to gain better understanding of different actors and their interests in a certain field. In a short term perspective this can lead to mutual understanding about perspectives and interests. In a longer term perspective the aim is to move a discussion from diffuse discrepancies towards concrete and argued disagreements that can be described, negotiated and perhaps solved.

Barriers
Not all actors may be able or willing to speak openly about the conflict. In such cases performance of this role may be seriously hindered. Also it is very important to work very inclusively as social conflict may intensify if certain actors feel that they are not allowed to speak. Furthermore, whether the input is taken into consideration depends to a large extent on factors such a visibility, timeliness of the process as well as contextual factors that are out of reach of the individual institution.

Relations to other roles
Prerequisite to mediating roles, i.e. self-reflection among actors (role i), blockade-running (role j) and bridge-building (role k) as conflicting interest and perspective can rarely be mediated without a prior understanding of the conflict.

Policy Analysis

Policy Analysis as a specific cluster of roles refers to knowledge creation about existing and potential future policies: Which goals and measures are available for policy-making and at what cost can they be achieved?

Knowledge about the quality of policies, as it is reflected in the objectives, the feasibility, effectiveness, side-effects etc. is necessary in order to make policy-making an informed process.

To fully perform the roles of this cluster, the exploration/assessment of policies have to be performed and effectively communicated - often best done by involving the target groups in the process.

Policy objectives explored

What is the role?
The role concerns mapping different policy objectives. It is about exploring different, and sometimes conflicting, policy objectives. Making obvious what was previously concealed or hidden can help expose potential differences, thereby making it possible to navigate the possibilities and consequences of the policies in a more efficient and potential transparent way.

What can be gained by performing the role?
The aim is to avoid "jumping to conclusions" by making sure that decisions are made based on an overall picture of policy objectives. An overall picture of policy objective renders a comprehensive comparison between different policies possible and ensures that a variety of consequences and possibilities of the individual policy objective are highlighted. In the long this supports a structured debate about the choices/priorities that have to be made.

Barriers
It is not certain that all actors are able or willing to discuss the objective in an open debate. Hidden objectives may be an issue that a project will have to deal with. Furthermore, whether the input is taken into consideration depends to a large extent on factors such a visibility, timeliness of the process as well as contextual factors that are out of reach of the individual institution.

Relations to other roles
This role is a pre-requisite to establishing a structured debate concerning policies.

e) Existing policies assessed »

What is the role?
This role is about getting knowledge on new options and explore new questions to existing policy. The focus is on assessing existing policies with regard to their knowledge base: controversies, consequences, effects, effectiveness etc. Policies can be assessed in relation to assumptions behind certain political options, possible consequences of such options, effects or effectiveness of political instruments etc.

What can be gained by performing the role?
The aim is to delivering an input to the overall setting of goals and measures for policy-making or an actual political debate, where new policy options are discussed. Thereby contributing with knowledge based assessments to the quality of political and social debate and therefore also to contribute to the quality of policy making.

Barriers
New assessment of policy options may create new controversies. Furthermore, whether the input is taken into consideration depends to a large extent on factors such a visibility, timeliness of the process as well as contextual factors that are out of reach of the individual institution.

Relations to other roles
Pre-requisite to increasing comprehensiveness in policy (role l) and to filter policy alternatives (role r)

Examples
Future Panels - ageing/ welfare policy " energy " etc.

Agenda Setting

The dimension “attitudes and opinions” reflects the normative clarification that can be facilitated by policy analysis. The roles of the cluster *Agenda Setting* aim at initiating awareness and debates about the issue - among stakeholders; on the political scene; among the public.

To perform these roles fully you will need to actually set the agenda - meaning that people actually choose to focus on the issue because of your initiative.

f) Setting the agenda in the political debate

What is the role?
This role is about influencing or affecting the debate among politicians on the issue or even initialise a new political agenda on an issue that has not been considered relevant to politics so far, e.g. by making the issue a topic in the political debate.

What can be gained by performing the role?
The aim is to create political awareness. The aim is to initiate a political debate, so that the issue is considered politically relevant. The goal is to affect what to discuss politically rather that what to decide. In a longer-term perspective of cause political awareness may lead to better decision-making.

Barriers
Politicians receive input from a lot of different sources and getting through with a message may not be easy. Relating to a foresight project may be less important than a highlighted media exposure. Also timing is essential as the political agenda can shift very quickly. Finding the right moment to suggest a new issue to the agenda may be of key importance. In some situations the results of a foresight process can be considered relevant for political consideration in itself, in other situations crafting political awareness need a lot of attention.

Examples
Danish Board of Technology: "Oil-based Technology and Economy - Prospects for the Future" (2004)

g) Stimulating Public Debate

What is the role?
The role is about stimulating the public debate, i.e. highlighting the issue so that affected actors are included in the debate. It concerns the involvement of more voices in a discussion on the issue in question. The definition of the “public” may vary, e.g. from narrow local debates to broad societal involvement supported by media.

What can be gained by performing the role?
The immediate aim is to attract public attention to the issue in question. The ambition may be locale debates, but it can also be extensive societal debates supported by media. A further aim may be to qualify the dialogue on the issue.

Barriers
Like the political agenda, the media agenda isn't always easy to affect. Making sure that the issue is discussed may not be so easy as other – totally unrelated – issues may steal all the attention. Hence, timing again is of major importance.

Relations to other roles
There is a strong link between this role and the introduction of new ways of governance (role p) and initiative to intensify public debate (role q). Here however the aim is to set focus on the issue or topic, while focus in the other roles is on creating a new way of discussing the topic.

Examples
The Danish project "Gratis offentlig transport" (Free Public Transportation) (2006) generated a lot of media attention, due to its provocative message. Note that: Provocation is an effective tool that used with caution.

h) Introduce visions (and scenarios) to actors

What is the role?
This role is communicative: it is about communicating new perspectives and ideas – images about possible future – in a way, which is sufficiently powerful, to change the prevailing ideas about future in a given field. Visions must be based on careful analysis to be transformed into usable scenarios. A scenario is a tool to structure or present visions. Criterion for good scenarios can be: plausible, feasible, knowledge based etc.

What can be gained by performing the role?
Performing this role means to make a systematic effort to influence the political agenda e.g. to change the perspective for policy action from short term to longer term, and/or introduce visions about alternative futures or alternative paths to the future as a realistic idea to lead politics in the issue. In the long term the aim is to contribute to finding common ground regarding policy objectives, and/or finding common ground regarding existing obstacles to action and judgement of alternative paths.

Barriers
In some situations opinion-making and decision-making may be paralysed by a lack of forward-looking. However, in other situations the problem is not lack of forward looking that is a problem, but rather a lack of willingness to change. In this case merely introducing visions may not be enough.

Relations to other roles
In situations were actors are not willing to discuss blockade running (role j) may be an alternative.

Examples
Visions and scenarios are very used in foresight and other policy-advisory processes. One example among many others is "Sustainable urban living" made by the Danish Board of Technology.

Mediation

Mediation is the common term for those roles that create learning among the actors about their positions, interests and mutual relations. Often societal groups hold conflicting opinions and interests. Policy analysis can provide neutral ground and open and transparent procedures, in which the actors can consider and change their relations.

If you want to play the mediating roles fully, you will need to have the actors communicating not only about content, but also about process - the way they act in relation to others.

i. Self-reflection among actors

What is the role?
This role is about providing the actors in the field with a chance to consider their own perspective. Foresight is intervening in already established and robust fields composed of various interests and actors. In an environment of conflicts and alliances an important contribution is to provide the actors in the field the

opportunity of self-reflection. Thereby giving the actors the opportunity to see their own position from the position of other actors with conflicting interests.

What can be gained by performing the role?
Self-reflection among actors can potentially endorse mutual learning processes, open-mindedness and readiness to modify aims and expectations. Self-reflection may provide insight into the limits of own perspective and interests, thus creating a path for development. Furthermore it may provide a much-needed basic for negotiation and thus creating the possibility for a commonly agreed further path of development.

Barriers
Conflict may be so deep-rooted that self-reflection is not an option. Actors may be too embedded to be able or willing to commit themselves to a process of self-reflection

Relations to other roles
Understanding the conflict, i.e. mapping social conflict (role c), is a prerequisite to this role.

j) Blockade running

What is the role?
The role is about breaking a deadlock by establishing a blockade running. It is an attempt to loosen up a deadlock situation by addressing all relevant actors. To contribute to a process that brings conflicting actors together to seek for better understanding and solutions. A framed process can contribute to blockade running by providing a neutral ground for dialogue where the issue can be discussed on equal terms. New ideas for problem-definition and/or problem-solving may help actors to redefine their position.

What can be gained by performing the role?
In the short term the aim is to provide room for dialogue, thereby making it possible to find solutions to the deadlock. In future oriented terms the aim is to stimulate mutual learning about experiences, perspectives and interests to diminish the risks of new deadlock situations.

Relations to other roles
Understanding the conflict, i.e. mapping social conflict (role c), is a prerequisite to this role.

k) Bridge building

What is the role?
This role is about building a bridge so that diverse actors can meet. Building bridges makes it possible for people to meet and learn to know about the actual interests and positions of actors ”on the other shore”. It is about giving actors the possibility meet despite being embedded in different, and perhaps even opposite, paradigms. Thereby, self-made ideas about the others, i.e. their intentions etc. Theses potential biased pictures are confronted with reality and will be revised. Insight into the actual position of opponents can contribute to a more constructive dialogue.

What can be gained by performing the role?
A foundation for trust and constructive dialogue is built, hopefully ending up with a discussion climate in which a common search for solutions is made possible. Thereby potentially the debate is changed into a respectful meeting between clearly stated interests and positions and trust is built up as a base for constructive dialogue.

Barriers
The opponents may not have an economic/social interest in abolishment of enemy pictures. Also the differences in interests may be so big that even arranging a meeting may be impossible

Relations to other roles
Understanding the conflict, i.e. mapping social conflict (role c), is a prerequisite to this role. Self-reflection between actors (role i) may be a prerequisite for making the opponents accept a bridge-building effort. Blockade-running (role j) on active obstructive actions may be made possible when bridges on a more intellectual basis have been built.

Examples
At a Consensus Conference, two experts who had fiercely been attacking each other s scientific and normative positions met physically and had to explain themselves to a lay panel. This resulted in a constructive dialogue between them during which many misunderstandings were cleaned away.

Re-structuring the policy debate

The title *Re-structuring the policy debate* covers roles, which should be selected if the aim is to reframe the debate on policy options. Open debate and involvement of actors and the public into the discussions on policy objectives and options may increase the qualities of policy and the acceptance of the policy-making process.

Full performance of these roles demands broadly inclusive and fair processes, and effective communication lines to those making the policies.

l) Comprehensiveness in policies increased

What is the role?
This role is about affecting the policy-making processes by expanding the scope of issues that is taken into consideration in the debate, thus increasing the comprehensiveness of policies. It is about introducing a more comprehensive foundation of knowledge, perspectives and interests to the policy-makers. Comprehensiveness can also be increased by evaluating the policies through debate, thus introducing a wider variety of viewpoints into the policy-making process.

What can be gained by performing the role?
The aim is to affect the policy making by changing attitudes in relation to what inputs are considered relevant in the policy making process. Hence, in the short term the aim is to re-structure the policy debate by broadening the perspective and taking more aspects into consideration when making policies. In the longer term the aim is that increased comprehensiveness in policies paves the way for better policy making.

Relations to other roles
Raising knowledge on a policy level (role d and e) is a logic step before the performance of this role, as in-depth knowledge about the existing policies and about policy options relevant to the issue is essential before presuming that comprehensiveness needs to be increased. The aim of this role is merely to introduce new knowledge, perspective and interests, not to press for a new policy (role r) or legislation (role t). Establishing new political procedures (role q) such as consensus conferences is a possible way of introducing alternative or underprivileged voices in the policy-making debate. This could be especially relevant in cases, where policies are perceived to be democratically illegitimate (also see role n).

m) Democratic legitimisation perceived

What is the role?
The role is about ensuring that the decision-making process itself is legitimate. The role concerns the inclusion of all relevant perspectives, making sure that they have been acknowledged and is appropriately scrutinised. This role depends on the ability to represent the perspectives of all social actors in a fair and

open manner. This can be done by setting up a neutral ground for open debate on policy options. Given all interest actors a change to contest and discuss different solutions to the issue at hand.

What can be gained by performing the role?
The immediate aim is that social actors acknowledge that the decision-making process has been fair and democratic, even though they may not agree with the actual result or conclusions of the process. Direct influence on decision-making should not be expected, as the process should only be considered an input to decision-making (one among many). However, in a longer-term perspective the aim is to contribute to an easier implementation of decisions, as decision-making is considered the result of a fair and open process.

Barriers
It is important to scrutinize thoroughly the position of the institution/organisation itself as it is important for the success of this role that the executing party is perceived as neutral and as having legitimacy.
In some situations only some societal actors lack the opportunity to speak. In these cases the foresight institution should focus on these actors

Relations to other roles
Knowledge on different perspectives, interest and social conflicts (role c) is necessary in order to navigate these and ensure a fair and open discussion on decision-making.
In a long time perspective inclusive processes may be perceived as relevant, routine contribution parliamentarian work in this sense this role is pointing to new ways of governance introduced (role p).

Re-framing debate

Policy analysis is expected have 'impact' on policy-making and in the most direct way this means changing action and decisions. 'Initializing action' refers to the situations where policy analysis influences the outcome of the policy making process. Though having no mandate to directly influence decision-making in the sense of doing politics, the relevance of policy analysis will sometimes lie in its' usefulness for policy decision-making.

Action, which focus directly on the technological/scientific aspects of the issue have to do with *Re-framing of debate*.

When decisions have been taken about scrutinizing the issue or changing policies, these roles have been fully played

n) New action plan or initiative to further scrutinize the problem at stake

What is the role?
This role aims at initialising a new action plan or an initiative to further scrutiny of the issue. The issue may be so complex, that it is necessary to present an action plan regarding how to deal with the issue in the future. This may be a new research project, a new additional foresight project, a new R&D funding programme, or the setting up of an expert committee etc.

What can be gained by performing the role?
The aim is to promote that a decision is taken about a further scrutiny of the issue in the future. In a longer term perspective the idea is that a new action plan or more knowledge will lead to a better ways of handling the issue.

Barriers
It can be hard to evaluate the need for action already at the role selection phase as it often is not evident that further work is needed before the conclusion of a projects have been drawn. This might lead to low priority

of this role, resulting in too little focus on follow-up decisions. On the other hand it is always easy to recommend further research to take place. The recommendation and action regarding this should only be made if they deserve priority. Politicians for the same reason often develop some immunity to recommendations about further research/investigation.

Relations to other roles
Performing the role Setting the agenda in the political debate (role f) initially may be a valid path, as this can often lead to awareness, which will make further scrutiny more probable.

Examples
A Scenario Workshop project on Urban Ecology lead to the implementation of a research programme on the issue, the establishment of a competence centre, and a committee work under the ministry of Environment (DK)

o) New orientation in policies established

What is the role?
The role is about establishing a new orientation in the aims and objectives of policies. It is about using the knowledge you have collected from actors in the field to push initiatives, which can help establish new orientations for policy making by changing the way policy makers think about the issues and the actions and initiatives, which can change society.

What can be gained by performing the role?
To influence policy making by pushing a change/reframing of the political debate in a certain field. In the short run shifting orientation from one orientation to another, in the long run contributing to the making of policies which are adequate and adapt to the future situation.

Barriers
Deciding what orientation that is important to policies may be very controversial. Hugh disagreements both among politicians and among expert and stakeholders may persist making it extremely difficult to influence the direction of policy.

Examples
In the field of health many actors maybe think that better health conditions are dependent on more hospitals, doctors and medicine – and forget that prevention in the form of better hygiene or living conditions caused a major decline in mortality 75-100 years ago. In other fields you may illustrate with similar examples.

New decision making processes

Foresight may result in decisions about initiating public discourse, or in the introduction of new procedures of discourse and governance.

The roles included in the cluster *New decision-making processes* are fully performed if learning on governance methods have taken place or if decisions on new inclusive discourse activities have been taken.

New ways of governance introduced

What is the role?
The role is about introducing new ways of governing. Existing ways may have proven inefficient or incapable of dealing with the current issue. Policy formulation will have to be far more comprehensive, i.e. by drawing on an extensive range of knowledge, values and needs. The initiatives can emerge from specific governance arrangements where a wider input is needed (top-down), or they may respond to a perceived deficiency of established democratic channels (bottom-up).

What can be gained by performing the role?
New ways of governance can affect both the legitimacy and the efficiency of the steering of the issue. The legitimacy because actors may perceive the procedures a fair (although they may not agree with the decision made) and efficient because actors may feel more committed to the decisions as they have been included in the process of making them. Thus the aim is to replace insufficient – old fashioned – ways of government with a robust framework for both legitimate and efficient decision-making process.

Barriers
Though ineffective and insufficient, old procedures may be very robust and persistent to change. At the same time actors may have their reasons (power, influence, control) not to alter the procedures

Relations to other roles
New ways of governance can be a way of dealing with a lack of perceived legitimacy (role m)

Examples
The role is not about taking decision, but about how they are made! Activities like the Consensus Conference and other procedures of (public) participation involve actors in a more direct way in the decision-making.

q) Initiatives to broaden public debate or dialogue among actors »

What is the role?
The role is about initiating public debate or dialogue among actors to ensure that different interests and perspectives will be included in the discussion about the issue. It is about expanding the debate beyond a close circle of experts or about raising public awareness on the issue, thus getting a more comprehensive picture of interest and perspectives of affected actors in the field. This role may embrace conventional PR-campaigns, participatory activities such as consensus conferences, or the establishment of a new advisory committee that included representatives from interest groups that so far was not involved in the process of policy making

What can be gained by performing the role?
Performing this role may contribute to a continued, but broader public discourse, involvement of those affected, a broader base of knowledge, values and search for solutions, and greater legitimacy of decisions. Thus the long-term aim of this role is to enhance the chances for consensus, optimal solutions and legitimacy of decisions.

Barriers
Actors may have their reasons (power, influence, control) not to invite wide participation. Also follow-up activities may be needed as one thing is to listen, another is to feel obligated to act upon what you heard

Relations to other roles
This role is close to initiating a new action plan or initiative to further scrutinize the problem at stake (role o). The difference is to be found in 1) Subject: this role focus on societal debate and actor involvement while role r focus on more issue/scientific scrutiny; however, the distinction is somewhat blurred; 2) Societal value: this role is process oriented, whereas role r is product (knowledge) oriented.

Examples
In the Danish project “BIOSAM” the aim was to intensify the debate on genetics

Decision Taken

Foresight – like other policy analysis activities – has no mandate of doing politics, but it can lead to decisions being taken in several ways. These may have to do with organisational/technical innovations, with choices between alternative policies, or with new rules being decided.

When decisions about policies have been taken as result of policy analysis processes, the roles of the cluster *Decision Taken* have been played.

Policy alternatives filtered

What is the role?
By doing foresight practitioners may aim to scrutinized policies thoroughly and point to the alternative, which is most appropriate. The role is about evaluating policy alternatives and pointing to the best, e.g. most suited, alternative. Policies can be scrutinized with regard to their practical viability and their economic, social and environmental effects. Concrete criteria vary from case to case. Foresight institution may form a natural ground from which such evaluation can be performed, thus deliver a balanced proposal to decisions-makers

What can be gained by performing the role?
The aim is to warrant that policy alternatives are scrutinised properly in relation to a wide variety of criteria such as practical, social, environmental, and economical. The role may contribute to improved processes of policymaking and implementation of policy.

Barriers
Neutral ground is needed as to guarantee that relevant actors do not feel that the process of filtering policy alternatives is illegitimate

Relations to other roles
In order to filter policy alternative knowledge on policy options (role d) is needed. Also comprehensiveness in policies (role m) would ensure that the policy selected is also the most appropriate.

s) New innovation-process implemented

What is the role?
This role is about deciding to initiate new innovation-processes in the field. A field may have been driven by an un-reflected logic. This role is about highlighting this and orienting the innovation-processes toward new, explicitly formulated criteria in a R&D policy. Examples of criteria are environmental concerns, social concerns etc. The specific criteria vary from case to case.

What can be gained by performing the role?
The aim is to contribute to the development of a new innovation-process. In the long term this could support a sustainable innovation process, if it is made explicit what drives the process. By performing this role, coordinators can thus be said to open up the black box of innovation.

Examples
One example may be a shift from marked-driven to demand-driven innovation. By initiating such a shift development of technologies that are socially needed or useful, but not supplied for by industry, may be promoted.

t) New legislation is passed

What is the role?

This role is about pointing out that a new legislation is needed and to deliver a valid input to the process of making a new law in relation to the issue at stake. It can also be about producing input to the preparation of legislation by an input to finding the most adequate way of regulating in relation to an issue. Foresight institutions may prove a neutral ground for the negotiation of the new regulation.

What can be gained by performing the role?
The aim is to deliver a sound background for the formulation of a new legislation, or even to suggest a new regulatory scheme, thereby making contributing to an adequate regulation of the field.

Relation between problem definition and ambitions

It is a demanding task to narrow down what is to be the unique contribution of a project. Selecting what roles to perform is a major step. The ambitions of a project may in some cases reflect the problem situation; in other cases you will find discrepancies. Please note that discrepancies are not all bad. What may seem as incoherency may be perfectly explainable. Still, if you are evaluated, you probably need to explain eventual discrepancies. Perhaps other projects are dealing with a problem; perhaps you are not commissioned to perform certain roles.

Take you time to reflect on the coherence between your problem definition and your ambitions. Remember that lack of coherence is not necessarily a fault.

Comparison
What is the reason for possible discrepancies between what the problem is and what you want to do?

Summary

The project scope has now been narrowed somewhat down. A few roles among many have been selected. Based on your selections, you should be able to outline the project objectives, e.g. the questions that you want to inform with the project.

If you are satisfied, then move on to decide on methods. However, remember that things change - new scientific discoveries are made, reports are published, the subject suddenly achieved media attention, politicians decide to intervene. The situation will change during the duration of the project, and so you should allow for sufficient flexibility in your project design and you should be ready to renew your project ambitions accordantly.

Based on your role selection, take your time to reflect on the following questions.

Aims
What is the intended purpose with the project? What is it supposed to achieve? What is the unique contribution of the project?

Central questions
What are the central questions that you want to answer with the project?

Methods and Techniques

In Doing Foresight the choice of methods is regarded as depending upon the choice of aims. Methods have their specificity in being good at delivering certain aims and less suited for other aims. Such specificities have been analysed for the purpose of this evaluation tool, which makes the tool able to suggest methods in correlation with your choice of roles.

On the following pages, you will find short descriptions of the methods. These descriptions contain information concerning the specificity of the individual method, e.g. its strengths and weaknesses. The descriptions presented are not comprehensive, and more information can be found using the links provided.

The alphabetic list below presents an unfiltered overview of the methods in the database. These are clustered as methods, techniques and other. A method is a well-defined process that is fit to perform a certain set of roles. Often the method has a procedural form, making use of several techniques in sequence. A technique is a tool (e.g. a specific way of brainstorming), which potentially can be used in many methods, and which is less role-specific. 'Other' contains generic activities that might help producing results

Note that often, specific impacts can only be reached through use of a combination of methods.

Description of methods and techniques

In this chapter you can find descriptions of the methods in the methods toolbox. These descriptions contain information concerning the specificity of the individual method, e.g. its strengths and weaknesses. The aim is not to deliver all-comprehensive descriptions; rather the present presentation of method is a rough overview.

Scan the method toolbox to and learn more about the individual methods

Methods

Backcasting
Backcasting is based on an idea of writing a normative scenario(s) leading to a desirable future vision. Solutions and actions needed for achieving a joint vision are mapped out together with important stakeholders. Alternative solutions are explored, and bottlenecks identified. The aim is to create a joint action plan by involving the stakeholders. The detailed process can be implemented in many ways and the method is often combined with vision building and participatory methods.

Skills: Expertise on the use of the method is needed to guide the process

Access: Need access to relevant stakeholders who can legitimately define the future vision and to experts who know the current state of the art and understand knowledge required for achieving a certain goal

Output: Understanding of the actions that are needed for achieving a given vision

Link: ForLearn

Citizens Hearing
The overall purpose of a citizens hearing is to build a bridge between citizens and politicians – often at local level. In the course of the hearing citizens' recommendations and assessments are collected, so that by the end of the hearing there is a catalogue of ideas including all results of the day. Results are displayed so that they can be viewed and discussed by participants, politicians, the press and other interested parties

Skills: Project manager skills about design and planning of an appropriate process are needed

Access: Access to random recruitment of a group of citizens as representative as possible is needed

Output: Catalogue of citizens' visions and proposals how to realise them at local or national level

Link: Danish Board of Technology

Consensus Conference
The consensus conference allows the public rather than experts and politicians to set the agenda for the topic under discussion. A citizen panel is trained to formulate a set of questions for experts to answer at a public conference. The citizens panel writes a final document with conclusions and recommendations for policy makers and the public in general.

Skills: Quite demanding and time consuming for citizens. Need of a skilled facilitator

Access: Access needed to relevant actors (citizens, stakeholders, experts and/or politicians)

Output: Conclusions and recommendations for policy makers. Bridge building and dialogue among experts, policy makers and citizens.

Link: Danish Board of Technology

Delphi
The Delphi method is a structured survey exploring the opinions, experience and knowledge of participants (mainly experts) and confronting and comparing these with the opinions, experience and knowledge of other experts. Thereby emphasizing the development of a mutual consensus by forcing the participant to explain the reasons for their views in the face of the opinion of others.

Skills: Concise formulation of issue needed. Not suited for complex issues

Access: Access to experts from business, government, research, associations and other persons competent in the field of subject is needed

Output: Debates the issue among experts in the face of future uncertainty. Produces a structured thinking about future occurrences based on the opinions of the involved experts.

Link: ForLearn

Expert panels
Expert panels are one of the most frequently used methods in Foresight. The method aims at eliciting existing expert knowledge. The panels are typically groups of 12-20 individuals who represent different disciplines and who are given 3-18 months to deliberate upon the future of a given topic area, whether it be a technology, an application area, or an economic sector. The methods do not provide direct guidance for the implementation. It provides a flexible framework and other methods like scenarios and participatory facilitation methods are typically used as a part of the process.

Skills: Need a clear formulation of the panel task and good coordination and facilitation support for the process

Access: Access to experts needed

Output: Expert view on the future and possible actions combining various disciplines

Link: ForLearn

Future panel
The core idea behind the future panel method is that Parliament appoints up to 20 MPs as members of a future panel, which over a period of 1½ to 2 years is charged with carrying out a long-term, cross-sectorial, cross-disciplinary and cross-party project. Its goal is both to clarify and inform the public and the Parliament. The chief activity comprises 4 public hearings on selected topics of the overall theme (see also Parliamentary hearing)

Skills: Project manager skills are about networking the right panel of experts and communicate with MPs about focus and questions

Access: Access to experts from relevant disciplines is needed in relation to preparations and as participants at the hearing(s). Furthermore engagement of MPs is needed in relation to preparations and as participants at the hearing(s)

Output: A series of Parliamentary hearings produce knowledge on topic, public debate and debate among and between the 2 panels of experts and MPs. MP's follow up with policy seminar and report on questions for the future.

Link: Danish Board of Technology

Future Search Conference
Future Search or Community Workshop is suitable for controversial and conflict ridden topics, where it can be used to set disagreements aside for a time and then focus on other aspects of the topic. The workshop works with 64 participants, 8 from each of 8 different groups (experts and/or stake holders). Participants work in both role groups and mixed groups. Results are written down on flipcharts, timelines and mind maps. The workshop results are common understandings agreed upon in the last plenum. Weisbord and Jasanoff published a Future Search Guide in 1995.

Skills: Recruitment of the right combination of participants is a challenge in this method. Skills to facilitate - and networking skills to recruit participants is needed

Access: Access to experts and stakeholders from business, government, research, associations and other persons, who are competent in the subject

Output: Participants definition of common goals and possible courses of action for society concerning the topic. Disagreements are set aside in order to focus on common ground

Link: Danish Board of Technology

Future workshop
The Future Workshop is the classical, "prototype" workshop model designed by Jungk and Müller around 1980. Purpose is to formulate concrete solutions and action proposals in relation to a local issue or challenge. Participants are 15-25 directly affected actors. The workshop is a 3-phase process: critical analysis phase, visionary phase and implementation phase. Most common is a one-day workshop

Skills: Facilitator skills needed

Access: Access to concerned and interested actors

Output: Visions and common ground for action for involved actors. Local orientation and preferably actors, whose common action can produce change. Suitable when social/technical innovation is needed

Link: Danish Board of Technology

Interview Meeting
The interview meeting uses a combination of questionnaire survey and group interviews to ask citizens (about 30 at a time) about their attitudes, wishes, hopes and concerns in relation to threats and opportunities in relation to a topic. Prior to and during the meeting the participants are informed about the topic and possible threats and opportunities. The method can be compared with a focus group with survey in focus, but is more comprehensive and more self-reflecting.

Skills: Need to formulate both precise and unambiguous questions on topic - and a more open and qualitative approach on same topic

Access: Access to citizens and expert needed

Output: Knowledge on citizens' attitudes to e.g. ethical questions on technology and some of the background on which they are based. Method creates an excellent room for dialogue. Citizens discuss and reflect on their own answers to questionnaire

Link: Danish Board of Technology

Parliamentary hearing
A parliamentary hearing (by DBT) begins with an application from one or more parliamentary committees wishing to have a hearing. The cornerstone is that the MP's are in focus in such a hearing. They set the programme, choose the experts and ask the questions during the hearing. The topic of the hearing is often based in an actual Science-Society debate, which requires a clarification.

Skills: Project manager skills are about networking the right panel of experts and communicate with MPs about focus and questions

Access: Access to relevant stakeholders, experts from relevant disciplines and decision-makers is needed in relation to preparations and as participants at the hearing(s)

Output: A parliamentary hearing produces knowledge on topic, public debate and debate among and between the two panels of experts and MPs. Results are reported and published

Link: Danish Board of Technology

Perspective workshop
The Perspective Workshop presents: strengths, weaknesses, possibilities and threats in relation to the topic. 36-48 participants divided into 6 groups. Tasks of the groups are to assess the presentations seen from their own perspectives: to consider attitudes and values, policies and legislation at local, national and global levels

Skills: Project manager skills needed about design and planning of an appropriate process and knowledge on topics and perspectives

Access: Access to experts and citizens is needed

Output: Participants perspectives on all levels of change and action: national, global and local. Can be used on broad topics, not dependent on participants' common background

Link: Danish Board of Technology

S & T Roadmapping
Road-mapping is a vision driven (normative) tool for presenting the path from the current state of the art to the desired future state. It provides a graphical presentation of the nodes representing state of knowledge and their interdependencies, which link the current development trends to the desired future. The detailed process can be implemented in many ways and the method is often combined with vision building and participatory methods.

Skills: Need expertise on the use of the method to be able to guide the process

Access: Need an access to stakeholders who can legitimately define the future vision, and to experts who know the current state of the art and understand knowledge required for achieving a certain goal

Output: Path describing pieces (of knowledge) needed for moving from current state of the art to a given goal

Link: ForLearn

Scenario building
The method helps the decision-maker or any other potential user to consider a range of plausible futures, to articulate preferred visions of the future, and to use what is learned during the scenario process in informal or formal strategy-making and decision-making. It may also help to unleash the creativity of participants and encourage them to challenge conventional wisdom. Good scenarios stimulate participants to take the long view.

Skills: Scenario processes are usually complex and difficult to conduct. Experience and specific, professional skills are needed in the design, implementation and follow-up of processes

Access: You need to be able to include experts, relevant stakeholders and decision-makers. The purpose/degree of involvement may/should vary

Output: The use of scenarios may help decision-makers acquire knowledge and understanding that will enable them to anticipate the context in which they have to act, and may also provide them with a broad(er) range of strategic options.

Link: ForLearn

Scenario workshop
A set of scenarios is used to steer and stimulate dialogue and creativity. Participants in a Scenario workshop come from (around) 4 different action groups and the idea is to exchange experience and knowledge and develop action plans among different actors from same locality - as well as among same actor groups from different locality. Workshop normally two days – but with a month or so in between.

Skills: Skills to imagine different futures - skills to plan and organise precise processes

Access: Access to both expert knowledge and participating actors (stakeholders, decision-makers, citizens)

Output: Scenarios, visions and plan of action for involved actors - and proposals/recommendations for policy-makers at local/national level

Link: Danish Board of Technology, Cordis

Science theatre/festival
The science theatre can be used to make vivid and dramatic illustrations of dilemmas etc. related to a topic – and to focus the awareness of participants and qualify a subsequent discussion or focus group interviews

Skills: Project manager must be able to formulate and communicate precise guidelines to author, producer and director

Access: Need to be able to engage participants to take part

Output: Theatrical illustrations of visions and/or dilemmas combined with more or less structured debate with auditorium

Link: viWTA

Stakeholder consultation procedures
The method may be seen as a necessary step in the design and organisation of a process or project, rather than as a foresight method as such. SCP is participatory by nature, and is used to obtain new insights and perspectives for actors in a foresight process. A number of techniques can be used to consult stakeholders, including personal interviews, surveys and conferences.

Skills: Experience and specific, professional skills are needed to design the study and mediate the process

Access: Access to decision-makers usually crucial

Output: Ensures that anybody with an interest or stake in the foresight process can become involved, directly or indirectly. May elicit preferences and needs, reveal both common ground and differences, and contribute to consensus on the aims of the process

Stakeholder panel
The stakeholder panel method aims at eliciting knowledge from various interest groups. The panels are typically groups of 12-20 individuals who are given 3-18 months to deliberate upon their views on the future of a given topic area, whether it be a technology, an application area, or an economic sector. The process is similar to expert panels but different types of participants and hence different types of topics are involved. The method provides a flexible framework and other methods like scenarios and participatory facilitation methods are typically used as a part of the process.

Skills: Need a clear formulation of the panel task and good coordination and facilitation support for the process

Access: Access to stakeholders

Output: Platform for analysing and discussing knowledge and its implications

Link: Unido

Voting Conference
The voting conference presents the conflicting attitudes of interested parties as well as their proposed action plans, and each participant subsequently considers each of the proposals and prioritises them by voting. This type of conference is quite demanding for the participants and encourages active processing of the presented plans and proposals.

Skills: Precise instruction of "rules of game" and themes for voting is needed, i.e. facilitation is needed

Access: Access needed to stakeholders, decisions-makers, experts and citizens

Output: Voting results show views/attitudes of e.g. citizens vs. stakeholders and experts vs. policy makers and areas of conflicts. Produces public debate.

Link: Danish Board of Technology

Techniques

Agent Modelling (MACTOR)
A cross-impact matrix (Godet) that analyses the strategies of different actors, past and future plans. Expert-based consensus method to reduce uncertainty. *MACTOR is based on inter-actor influence; strategies, relationship, power, potential alliances and conflicts. Involve many actors, especially decision makers. The approach stems from the formalized scenario planning methodologies proposed by M Godet, used combined with MICMAC (Structural analysis)

Skills: Experience and specific, professional skills are needed to design and conduct the study

Access: Access to policy-makers/decision-makers is needed

Output: A method to support decision makers to identify and choose between strategic options and resolve conflicts between actors/groups. The model provides a wide variety of graphical representations, which help interpret the data calculated by the model.

Brainstorming, mindmapping etc.
This group of various techniques can be used for supporting the generation and development of new ideas in a group process. The tools aim at focusing the thinking, getting beyond the obvious ideas and structuring ideas. It supports creative, exploratory thinking. These techniques cam be used in combination with many foresight methods.

Skills: Require knowledge on the techniques. It is often beneficial to involve an independent process facilitator

Access: Most techniques are applicable in group processes and require a simultaneous access to relevant actors

Output: Support for creating more creative ideas

Link: ForLearn

Café Seminar/World Café
Café seminar is an informal and flexible brainstorming technique in which participants through common dialogue test views and opinions, exchange experience and develop visions and ideas. Participants work at

café tables, in small groups in a joint forum and share and exchange knowledge and views when they move to different tables

Skills: Demands skills to organise a process and "a café" - not much facilitation

Access: Willingness from participants (citizens, stakeholders, experts and/or politicians) to "jump in" and take part is needed

Output: Deeper understanding of actors views on topic/consequences - and of conflicts

Link: Danish Board of Technology, viWTA

Critical & Key Technologies
The method aims to highlight short-term (usually 3-10 years) research and development policy priorities for policy makers. It consists of applying sets of criteria against which the importance or criticality of particular technologies can be measured. It is usually based on interviews with experts in the forecast technology.

Skills: Specific skills are needed to design and conduct the study

Access: Access to experts is needed

Output: The outcome can be used as input to define and debate policy dealing with the impact of technological change. The resultant lists can be technology-push/supply oriented, or demand industrial needs driven. This will depend on whether the focus is on future technological capabilities, or on the emerging/future needs of industry.

Link: ForLearn

Cross Impact Analysis (SMIC)
A family of techniques designed to evaluate changes in the probability of the occurrence of a given set of events consequent on the actual occurrence of one of them, initially associated with the Delphi method.

Skills: Experience and specific, professional skills are needed to design and conduct the study

Access: Access to policy-makers/decision-makers is needed

Output: A method that helps to map the field of uncertainty. The results can be used as a basis for producing scenarios.

Link: ForLearn

Discourse analysis
The focus of a discourse analysis is typically on language use. Analysis of a discourse refers to the act of scrutinizing associations, e.g. describing connections, arguments, or ideas, made by actors in an oral or written form, thereby gaining an overview of the attitudes of actors that are involved in the debate. It is an analytic, qualitative approach. Discourse analysis can be understood in different ways depending on the scientific discipline using the term ranging from purely textual analysis to more dynamic reading of texts and signs.

Skills: Specific analytical skills needed

Output: Analysis of written, spoken or signed language use.

Environmental scanning and watching
This technique is an essential background activity or first step in any foresight exercise. Can be based on a systematic search on the web, on the use of on-line databases, media and literature reviews, etc. Text mining, bibliometrics or patents analysis are established tools to support the analysis.

Skills: Experience and specific, professional skills are needed to design and conduct the study

Access: Often, experts need to be committed

Output: The method aims at detecting weak signals in order to provide early warning about important future changes.

Link: ForLearn

Field Study
A field study is a study in which the researcher initiates in-depth research of a specific site. He/she observes the activities of those connected to the site and goes into details about wants, needs, conflicts, etc. The field study is a classical anthropological method. Different approaches and techniques exist, but the core of the method remains in-depth studies of a site (or multiple sites). It is a qualitative, analytic approach. In the extreme this sort of living with and becoming a part of a cultural community is very time consuming. However, more modest versions exist enabling a focus on social and cultural variations.

Skills: Anthropological knowledge on field study techniques needed

Access: Access to the field in question

Output: In depth study of relations, conflicts, cultural varieties and differences

Focus group
The core of focus groups is that if you bring a group of actors together in the same room and let them discuss an issue, thereby exploring the issues at stake. A mediator guides the debate. Through a careful analysis of the discussion the method provides in depth knowledge as to where the participant either agree or disagree on the issue. It is a qualitative approach in which different voices are heard and confronted. In this sense focus groups brings in a much more dynamic aspect to the classic interview situation, however focus groups may enforce group belongings and in that sense strengthen rather than challenge barriers of mutual understanding. Focus group covers a wide range of different techniques that emphasizes different qualities of debate.

Skills: Mediation skills needed to guide the debate

Access: Access to respondents whether that be politicians, experts, stakeholders, and/or laypeople

Output: Overview of conflicts or disagreement, different voices heard

Link: viWTA

Gaming
Games are mainly designed to aid decisions, planning, and policy implementation, by getting a clearer idea of possible reactions of other people involved. Gaming deals with human issues, making it a good way to help people understand the planning process and other people's viewpoints. They are particularly useful at an early stage of any community planning activity or to prepare people for a specific future challenge.

Skills: Experience and specific, professional skills are needed to design the study and mediate the process

Access: Access to decision-makers may be needed

Output: May encourage greater creativity in the design of processes and/or the setting up of joint future initiatives

Link: ForLearn

Horizon Scanning
Systematic examination of potential threats, opportunities and likely future developments that are at the margins of current thinking and planning. May explore novel and unexpected issues, as well as persistent problems or trends. Early warning system.

Skills: Experience and specific, professional skills are needed to design and conduct the study

Access: Experts should be consulted

Output: The method can help identifying issues with the potential to present significant new priorities

Link: OSI Horizon Scanning Centre

Identifying drivers and perspectives
Identifies important drivers (technological, social, cultural, economical, political, environmental) by e.g. the use of trans-disciplinary expert panels.

Output: Provides a picture of important forces that must be taken into account when deciding upon strategies for change. The method is often used as a basis for developing scenarios.

Interview
An interview is usually guided by a sequence of predefined questions (or at least guided by topic). Interview is a qualitative analytic approach. There exists lot of different interview strategies, e.g. an interview may be tightly structured, semi-structured, unstructured, in-depth or conversational. Some interview strategies are aimed for certain targets groups other for the achievement of a certain kind of information.

Skills: Interviewer abilities

Access: Access to respondents whether that be politicians, experts, stakeholders, laypeople

Output: In-depth study of ideas and knowledge

Modelling & Simulation (economic/risk analysis)
Modelling is a description of the issues, e.g. in terms of risk or economic measures. It is a quantitative, analytic approach that can be used for analysis and simulation of a possible future. Modelling of this sort makes available comparable information on the issue. However, to compare means to simplify and there is not just one way of simplifying. Many different things can be bracketed depending on the site and time that the comparison is made. This thus highlights the need to make explicit the criteria of the comparison. See also System dynamics.

Skills: Modelling and simulation skills are needed

Output: Technical measures, e.g. economical estimations etc.

Morphological Analysis & Relevance Trees
Relevance trees are used to analyse situations with distinct levels of complexity, in which each successive lower level involves finer distinctions or subdivisions can be used to identify problems and solutions, establish feasibility, select the 'optimum' solution and deduce the performance requirements of specific policies, technologies, etc.

Skills: Experience and specific, professional skills are needed to design and conduct the study

Access: Access to policy-makers/decision-makers is usually needed

Output: The output is a graphical representation with a hierarchical structure that shows how a given topic can be subdivided into increasingly finer levels of detail.

Link: ForLearn

Multi-criteria analysis
Multi-criteria analysis aims to compare or evaluate alternative actions or solutions according to a variety of criteria. The method supports the identification of criteria (objectives) and the selection of the best or a set of good actions or solutions on the basis of stated preferences and mathematical formulas that aggregate preferences. Often the identification and structuring the preferences is the most beneficial part of the analysis process.

Skills: Often require the use of a skilled facilitator/analyst and in some cases also specific software

Access: Need access to stakeholder and decision-makers to understand their preferences

Output: Better understanding of goals and preferences, and better understanding how various options meet the objectives

Link: ForLearn

Polling
The word poll often refers to the election itself, as the place where voters cast their ballots is called a polling station. However, polls may also be surveys that merely canvass opinions and have no binding force. Here a poll is seen as a structured inquiry into the opinions of actors conducted by asking a specific set of questions to a random sample of people. Several different kind of polling techniques exists depending on the sort of knowledge that is wanted. The core of the method is that it is a quantitative, explorative approach that delivers an overview of what people associate with the issue.

Skills: Statistical knowledge needed

Access: Access is needed to a randomly selected group of respondents (lay people or group otherwise selected)

Output: Predefined variable, easy comparable measures

STEEPV
An acronym for Social, Technological, Economic, Ecologic, Political and Values. Used in thinking about the future, to consider possible future factors of change and developments in a broader thematic context and in

analysing driving forces, strategic implications, etc. It is often used as part of a scenario process and prior to a SWOT analysis.

Skills: Experience and specific, professional skills are needed to design and conduct the study

Access: May be an excellent method to involve lay people. Access to decision-makers needed.

Output: A classification tool integrating the broader qualitative and quantitative dimensions of a given issue

Structural analysis (MICMAC)
Identifies and explores the key variables influencing the problem at hand with the aid of a cross-impact matrix. SA is based on an influence index, which measures the intensity of the variable's influence on the system, and a dependency index, which measures the degree to which a variable is affected by the system

Skills: Experience and specific, professional skills are needed to design and conduct the study

Access: Access to decision-makers is needed

Output: Gives a birds-eye view of complex problems or a set of interrelated issues. Contributes to a common understanding of the problem among the participants in the exercise. The results may, i.e. be used as a basis for developing scenarios.

Link: ForLearn

SWOT
SWOT analysis is a technique, which is widely used to identify and categorise significant internal (Strengths and Weaknesses) and external (Opportunities and Threats) factors faced either in a particular arena, such as an organisation, territory, region, nation, or city. It is a tool that synthesises expert knowledge and results of more detailed studies. In addition to just listing the factors also their importance for the future can be analysed. (See also Perspective workshop)

Output: A summary and increased consciousness of internal strengths and weaknesses and external opportunities and threats

Link: ForLearn, Unido

System Dynamics
System Dynamics is an approach for understanding the behaviour of complex systems over time. It is based on models describing internal feedback loops, time delays, and stocks and flows. These elements help in describing non-linearity that is present even in simple systems. The system is present as a quantitative model and computer software is used to simulate the system behaviour. By varying the initial situation, assumptions and parameters it can represent multiple possible future scenarios. The method does not directly include participatory elements and typically needs to be combined with other methods. (See also modelling and simulation)

Skills: You need a modelling and simulation expert

Output: Better understanding of the dynamic behaviour of a system

Link: ForLearn

Trend Intra & Extrapolation
Involves the construction and use of linear, exponential or s-shaped curves, which describe possible trends. The technique does not provide an analysis of complex underlying driving forces, but builds on projections of well-established causal relationships.

Skills: Experience and specific, professional skills are needed to design and conduct the study

Access: Expert-based

Output: Provides practical information on trends and possible future outcomes. Using curves and graphics the method may give quick and easy access to information relevant to the understanding of future issues

Link: ForLearn

Other

Communication Strategies
Making information available is fundamental to any foresight project. Depending on the effort and resources used an information campaign may contribute significantly to the stimulation of debate. Campaigns may be more or less targeted. Communication strategies range from small very specific, very narrow dissemination of information to huge, widespread commercial-like campaigns.

Skills: Knowledge on public reception, dissemination strategies etc.

Access: Access to media an advantage

Output: Making knowledge available through dissemination of reports, books, flyers, newspaper articles etc.

Desk research
Desk research is a continuous exploratory effort to map existing or generate new knowledge. As the name indicates desk research is confined to the desk of the project manager, therefore there is a general risk of being one-sided or too focused, overlooking some aspect of the issue. By gathering and analysing knowledge on the issue in question, the project manager may be able to determine what is commonly acknowledged as state-of-the-art knowledge of the issue.

Output: An overview of knowledge

Networking
In order to perform certain roles, networking may be an essential part of the process. Meeting the relevant actors, notably decision-makers, may be the only way to affecting the making of decisions or gaining support.

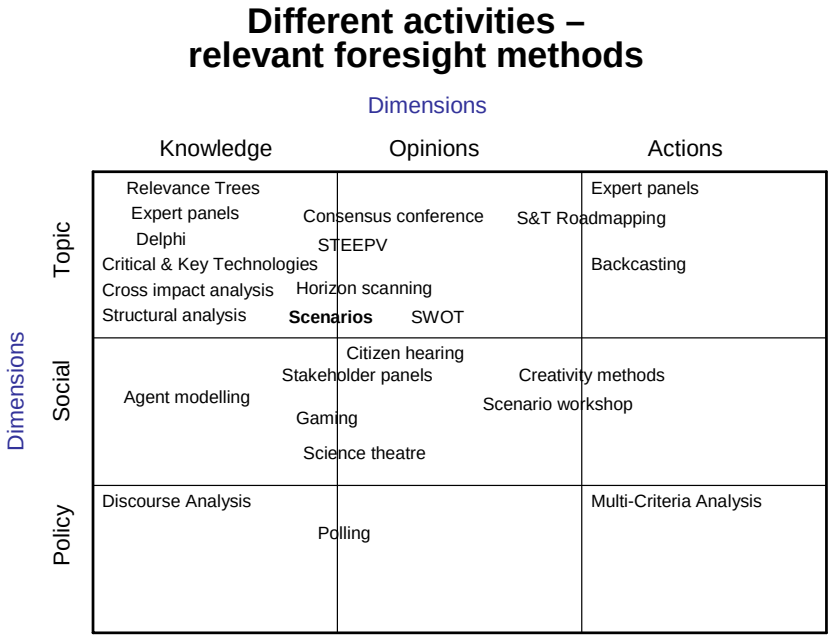
Access: Access to relevant actors in the field in question

Output: Networks e.g. contacts, associations etc.

Contribution of methods and techniques

In this chapter you can find an overview of the methods and techniques that is based on the extent to which a given method contributes to a specific role. The idea is that each individual method and technique has a

unique contribution in relation to the different roles that you perform when doing foresight. This is illustrated in the table below:



The rating found in the following is hence merely a rough indication of how well the method contributes to the individual role, not an indication of the general usefulness of the methods. The intent of our approach has been to give an overview of relevant methods depending on your ambitions of a given foresight project, rather than to assess the usefulness of methods and techniques as such.

Take some time to rummage the method tool-box and pick-out a combination of methods based on your selection of roles

Method/Technique	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**	**k**	**l**	**m**	**n**	**o**	**p**	**q**	**r**	**s**	**t**
Agent Modelling (MACTOR)	0	0	4	0	0	0	0	0	2	2	0	0	0	0	0	2	0	0	0	0
Backcasting	1	1	1	0	2	0	0	3	0	0	2	2	0	3	4	2	0	2	0	0
Brainstorming, mindmapping etc.	0	0	0	0	0	0	0	3	0	0	0	1	0	2	3	3	0	3	2	0
Café Seminar/World Café	2	0	2	2	0	0	0	0	2	3	2	0	0	0	0	0	0	0	0	0
Citizens Hearing	0	0	0	0	2	0	4	0	3	0	3	0	2	0	2	2	0	0	0	0
Communication Strategies	2	0	0	0	0	2	2	0	1	0	0	0	0	0	0	0	0	0	0	0
Consensus Conference	3	4	3	0	0	4	0	0	2	0	4	0	3	0	4	0	0	0	0	0

Critical & Key Technologies	4	3	0	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Cross Impact Analysis (SMIC)	4	4	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0
Delphi	3	3	2	0	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0
Method/Technique	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**	**k**	**l**	**m**	**n**	**o**	**p**	**q**	**r**	**s**	**t**
Desk research	4	3	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Discourse analysis	0	0	3	3	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
Environmental scanning and watching	3	2	2	0	0	0	0	3	2	0	0	0	0	2	2	0	0	0	0	0
Expert panels	4	3	0	1	2	1	1	1	3	1	2	1	0	4	2	0	1	1	0	0
Field Study	2	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Focus group	2	2	4	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future panel	4	4	0	3	3	0	0	4	2	0	0	0	0	0	3	0	0	3	0	3
Future Search Conference	2	0	0	3	0	0	0	4	4	0	3	3	0	0	4	0	0	0	0	0
Future workshop	0	0	0	0	0	0	0	4	3	4	0	0	0	0	0	0	4	0	0	0
Gaming	0	0	3	0	0	0	0	0	4	2	3	0	0	0	0	2	2	0	0	0
Method/Technique	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**	**k**	**l**	**m**	**n**	**o**	**p**	**q**	**r**	**s**	**t**
Horizon Scanning	4	3	2	0	0	0	0	3	2	0	0	0	0	2	2	0	0	0	0	0
Identifying drivers and perspectives	0	3	3	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Interview	3	2	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Interview Meeting	0	0	4	0	2	4	0	0	0	0	4	0	3	0	2	0	2	0	0	0
Modelling & Simulation (economic/ risk analysis)	3	3	0	0	0	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0
Morphological	4	2	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	3	0

Analysis & Relevance Trees																				
Multi-criteria analysis	0	1	3	2	2	0	0	1	3	3	1	2	0	3	0	0	0	4	0	0
Networking	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	2	2	2	2
Parliamentary hearing	3	4	3	0	3	0	0	0	2	0	4	3	0	0	3	0	0	3	0	2
Method/Technique	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**	**k**	**l**	**m**	**n**	**o**	**p**	**q**	**r**	**s**	**t**
Perspective workshop	0	0	4	2	0	0	0	3	0	0	3	4	0	0	0	0	3	0	0	0
Polling	2	2	4	2	3	0	0	0	0	0	0	3	3	0	3	0	0	0	0	0
S & T Roadmapping	2	1	0	0	1	0	0	3	0	0	0	0	0	4	3	2	0	2	1	0
Scenario building	2	3	3	0	1	3	2	4	4	1	0	2	1	2	2	0	2	2	2	0
Scenario workshop	0	0	0	0	0	0	0	4	4	3	4	3	0	0	0	0	4	0	1	0
Science theatre/festival	0	0	4	0	0	0	2	3	4	0	4	0	0	0	0	0	0	0	0	0
Stakeholder consultation procedures	0	0	3	0	0	4	2	4	3	0	3	2	2	0	0	0	0	0	0	0
Stakeholder panel	1	2	4	3	2	3	1	2	4	1	3	1	1	2	3	0	2	1	0	0
Method/Technique	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**	**k**	**l**	**m**	**n**	**o**	**p**	**q**	**r**	**s**	**t**
STEEPV	3	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Structural analysis (MICMAC)	3	4	2	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0
SWOT	0	0	0	0	3	2	0	1	3	0	0	2	0	1	0	1	0	0	0	0
System Dynamics	3	3	0	0	2	0	0	1	2	0	0	0	0	0	0	0	0	0	2	0
Trend Intra & Extrapolation	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Voting Conference	0	0	4	3	4	0	3	0	0	0	0	0	2	0	0	0	3	0	0	0

Summery

You have now selected a set of methods. This is a first step in designing a methodological framework. But distinguishing the appropriate set of methods is a continuing process. Your selection will most likely need to evolve and might be re-defined and refined throughout the process of finalizing the design of you project. Discuss the selection of methods with your sponsors, with you team and with other stakeholders that you intent to involve. A way of justifying the choice of method is to clarify whether the selected methods "covers" the ambitions that you have with the project, e.g. by referring to the project goal setting.

Remember that picking out relevant method is only a part of the project design process, it is also important to think about the quality requirements that the project has to meet and how to meet these. The quality requirements are reflected in the synthesis part.

Consider whether your method selection covers the ambitions that you have and whether your selection present any specific challenges that you should confront.

Coverage
Are the roles you want to perform covered by the set of methods that you have picked out?

Evaluation

It is not easy to assess the success of foresight projects as the impact of the projects can be extremely difficult to register, measure and hence to evaluate. Furthermore, there is no one best way of doing a foresight project, rather there are a myriad of different contexts and locations on which the successes (and failures) of a concrete project is dependent.

The evaluation module is meant to assist your self-reflection on the impacts of the project. About what you have achieved, to what extent, and how this can be explained. There are roles you planned to perform but maybe you didn't actually perform them. And there may be roles you have performed although it wasn't your initial intention.

In the following you are asked to reflect on such issues in a structured manner. Beside the impacts that you have planed for, it is also important to keep an eye out for unexpected benefits and to identify success stories. On the other hand you should remember that success and failure often depend on external factors such as sheer luck and the uncontrollable actions of others.

Documentation

It is very likely that it will be demanded that impacts are documented. At this stage, arguments or reasons that indicate that a certain impact was achieved should be reflected. This can be an important input to a more comprehensive external evaluation and you can be sure that you will be asked to document, what you say that you have achieved.

For each impact you can describe different indicators of the impact. These may be:

- Hard indicators (Questionnaires; news coverage; Numbers of downloads; etc)

- Qualitative indicators (Interviews; Hear-saying; Discourse analysis; etc)

- Judgements (Discussion at evaluation meeting; Own observations; etc)

Below some impacts from the impact typology are presented. Take some time to pin-point the contribution of your project

a) Knowledge is mapped and made available

Knowledge - mapping - availability - overview - experts

What knowledge was mapped and made available? - How was it done? - Whose knowledge? - Who did the mapping? - To whom was the knowledge made available?

b) Overview of consequences is given

Assessment - different perspectives - comprehensiveness - inclusiveness

What consequences were reviewed? - By what means? - Who contributed to the overview being made? - Who made the overview? - To who was the overview made available?

c) Social conflicts are mapped

Mapping of interests - make perspectives known to all actors - conflicts and distrust - shared understanding of conflict

Which interests became apparent? - How was it done? - Who was enabled to speak? - Who did the overview? - To who was the knowledge made available?

d) Policy objectives are explored

Conflicting preferences - link to different policy makers - availability of means - viability of options - social acceptability

What policy objectives have been explored? - By what criteria where the objectives explored? - And by what means? - Who decided on objectives to explore? - Who decided on the criteria? - To whom was the results presented?

e) Existing policy is assessed

Criteria of assessment - different actors and stakeholders - different aspects - transparency

What policies were explored? - Who initiated the assessment and selected the policies and the aspects to be explored? - By what criteria and means was the investigation done? - Who was included in the assessment? - On what background was the assessment initiated? - To who were the results delivered?

f) Issue is put on the agenda in the political debate

New issue or perspective - relevant advocates and stakeholders - change in political agenda - references to the issue - change in orientation

What agenda? - Which new issue(s)? - By which mechanisms was it put on the political agenda? - Who are the central advocates/stakeholders? - In which way did the agenda change?

g) Public debate is stimulated

New voices in public debate - openness to new actors and stakeholders - media resonance - information - public discussions

What kind of public debate? - What public and what kind of media? - Which new voice(s)? - How was the debate stimulated? - Who are dominant actors or stakeholders in the public debate?

h) Forward-looking is stimulated

New visions/scenarios explored - reference to visions/scenarios - level of attentiveness - forward-looking

What visions or scenarios? - What was the effect of the visions introduced? - How was the visions or scenarios constructed? - Which actors/stakeholders contributed to the development of visions or scenarios? - Where was the visions or scenarios introduces? - Who reflected upon the visions or scenarios?

i) Self-reflection among actors motivated

New or reformulated perspective - visible chance in arguments - re-formulation of own position

Who does the self-reflection? - Does the self-reflection include changed orientation and agenda-setting? - How is the self-reflection evident? - Is self-reflection visible among all actors and stakeholders? - By what means the self-reflection induced?

j) Blockade is resolved

Involved actors/stakeholders - controversial and fixed positions - opposition to change - mediation - new initiatives to negotiate

What blockade? - Are there any actors or stakeholder that have interests related to blockade? - Between which actors/stakeholders have a mediation process been initiated? - Who initiated the blockade running? - By what means was the blockade overrun made? - Who gained and who lost?

k) Bridge build

Mediation - contacts - network - communication

Who are the actors and stakeholders that are being build a bridge between? - What is transported over the bridge? - What means of transportation is used (media etc.) - What is the bridge made off? - How has lines of communication been established?

l) Comprehensiveness in policies is increased

Acknowledgment of new aspects - scope of relevant perspectives expanded - advocates/stakeholders - inclusion of outsiders

What policy debate? - Which actors and stakeholders are related to the policy debate? - Which new aspects or actors were included? - By what means was the comprehensiveness increased? - Who initiated the increase in comprehensiveness? - On behalf of which actors?

m) Democratic legitimation is gained

Open debate - transparency - balance of power - shift from confrontation to negotiation - conflict resolution

What conflict of legitimation? - Which interests are related to the conflict? - On what terms is legitimation gained? - Who has been included? - By what means?

n) Action plan to further scrutinize the problem enacted

Action plan set up - Funding - Actors - Support

What is the topic to be scrutinized further? - What kind of agenda is related to the plan? - Which actors and stakeholders gave interests in the subject matter? - For who is the action plan set up? - Who is to do the scrutinizing? - How was the initiative to scrutinize the issues further promoted? - How promoted a further investigation?

o) New orientation in policy is established

Input to policy - new options - reorientation of focus - new perspective

What change can be perceived in policy orientation? - Who supported a change in policy orientation? - How was a change initiated? - By who was the change initiated? - On behalf of who was the change initiated?

p) New ways of governance introduced

New procedures - modified institutional structures - new governance means - support to learning processes

What new way of governance? - What kind of change in governance has been introduced? - Who is the actors/stakeholders supporting the change? - With which means has the change been initiated? - Which policy interests are related to the changes?

q) Public debate is broadened

Open debate - inclusiveness - stimulated broad debate - powerful actors

What open public debate was initiated? - Who are the advocates that support initiatives for a broadened public debate? - Who is involved in the debate? - Who has policy interests in the debate? - By what means is the debate being broadened? - Are there benefits and who benefits from the debate being broadened?

r) New policy is enacted

Decision on policy - bargaining and compromise - common interests - accept by involved actors

What policy? - By what means has the policy agreement been achieved? - Who formulated the policy? - Who is supportive? - By what means did the project contribute to the policy making process?

s) New innovation process is implemented

User of innovation - user driven innovation - top down or bottom-up processes

What innovation process? - What kind of innovation is at play? - By what means has agreement on the new innovation process been achieved? - Who is supportive to the idea of a new innovation process? - What stakeholder interests are present? - By what means did the project contribute to the new innovation process?

t) New legislation is passed

Need for regulation acknowledge by relevant actors - exploration of impact of new legislation

What new legislation? - By what means has agreement on the new legislation been achieved? - Who has formulated the legislation? - Who is supportive? - By what means did the project contribute to the formulation of the new legislation?

Relation between initial ambitions and realization

You should evaluate your original ambitions in relation to the impacts you indicated on the previous pages.

Note that discrepancies are not necessarily problematic. There might be good reasons for such discrepancies. Perhaps, it turned out that the needed contribution of the project was another than originally thought. Perhaps the project made valuable non-intended side effects? Actually, a perfect match between ambitions and impacts may not be optimal - if the problem has changed during the project, such a match might reflect the lack of flexibility and accommodation to the situation.

When comparing your role ambitions and your impact evaluations, there may be explanations to match or discrepancies between ambitions and realisation. Describe these explanations.

Comparison
What is the reason for possible discrepancies between what you wanted to do and what happened?

Summery

Evaluation of the project impact and considering the consequences of the evaluation is necessary for doing foresight better the next time.

When you answer the two important questions below, focus on the path to impact: Is the set of impacts relevant? Did the project achieve reasonable outcomes? Was it worth the investment? Was the initial problem analysis and role selection good enough? What competences and lessons did the project give you and/or the organisation - for example with regard to choosing roles and methods to the situation?

When answering the following two important questions focus on the results and impacts of the project: Were the impacts satisfactory and what did you learn about problem/role-selection/method-choice relations?

Contribution
What has been the main contribution of the project? Is that satisfactory?

Lessons
What did you learn? What would you do differently the next time?

Synthesis

In this chapter some issues that project managers can think of when designing, implementing and assessing a foresight project are presented. It is certainly not an exhaustive list and perhaps not all the questions are relevant in all cases. Furthermore, there is not just one-way of doing foresight. These issues are general - issues that would be valid for a lot of different projects.

Use the list to conclude on the performance of your project across the roles and impacts. This chapter presents four quality issues of designing and executing projects. These are the scientific issues, democratic issues, project management issues and communication issues.

In general, the standards needed inside these four quality dimensions depend very much on the roles involved. For instance, if the mediating roles have been chosen, then democratic issues will be important. If you focus on knowledge creation and dissemination, then scientific issues become central. If you wanted to make a public debate, then communication issues should be considered.

Scientific Issues

The scientific issues concerns qualities such as the validity, reliability and comprehensiveness of the project. In some cultures the scientific quality is crucial for establishing trust around the results - in other cultures, the process of communication is of bigger importance.

For some roles, in some situations, scientific quality is crucial. Describe how the project performed with regard to the following scientific issues.

Was the project scientific reliable?

Have all scientific perspectives been integrated?

How was expert disagreement dealt with in the project?

Have facts and opinions been adequately separated?

Democratic Issues

The questions on this page concern democratic issues - fairness, inclusion, steering/responsibility, agreement, and openness/transparency. The chances of creating impact is greater if the project can prove a high degree of democratic legitimacy - for the external target groups as well as for those groups involved in the project.

Evaluate the project in terms of the democratic qualities. Answer the questions as far as they are of relevance to your project.

Did the project appear fair to all concerned actors?

Have some important stakeholder groups been excluded from the project?

How have decisions regarding steering of the project been taken?

Can we say that the results reflect a consensus? Do some important groups dissent?

Did the project occur in a transparent and open process, from its planning to its end?

Project-management Issues

Project management is an important - yet often underestimated - factor for success of a project. Even though the project plan is followed throughout tightly, a project may easily fail because of bad project management. Project management concerns flexibility, openness, and the ability to made rapid changes, but also issues such as availability of the necessary resources and know-how.

The following questions concern aspects of project management. Answer those questions that you find relevant for your project.

Did the project get enough resources?

Did the organisation have enough know-how for such a project?

How was the group dynamics (project team, other involved bodies)?

Did conflicts appear and how were they solved? Did these conflicts influence the outcome of the project?

Did the project experience external pressures? How were such pressures handled?

Was the project flexible enough, in order to adapt to the ongoing debate or to scientific advancements?

Did the involved persons have enough reactivity and flexibility, so as to modify the project if necessary?

Did the institution allow for short-term changes or the necessary decisions?

Did the project strive for synergies with other actors active in the field?

Communication Issues

Projects may be judged as unsuccessful due to a failed communication strategy. Key concerns are about target group relations, communication forms and channels, and the use of language, illustrations etc.

Communication goes beyond informing about the results of the project. Selecting a topic is a message to the outside. Communication is important before, during as well as after the project.

Communication is a key to achieving impact. Consider the communication before, during and after the project when you answer the following questions.

At which stage of the project did the target groups get informed? Was target group communication timely enough?

Did the target groups of the project participate in the communication process? (e.g. invite policy-makers or scientists in an expert group, in a press conference, etc.)

In which form have the results of the project been communicated?

Which communication strategy was applied? Which channels were used (e.g. reports, mass media, direct targeted communication (newsletters), web etc.)

Was the information easy to understand, attractive and easily accessible for all target groups?

Summary

Looking back at the project in hindsight is important. Reflecting what worked and what did not points to the issues that could be improved in a future project. Thereby the comprehensiveness of the understanding of the current project can be increased ... at the same time as future foresight projects can be improved.

Annex 2: List of warnings in the tool

The *Doing Foresight* evaluation tool includes the feature of creating warnings if the frame conditions may be in conflict with decisions taken by the user.

Such conflicts may – as the first line in the scheme indicates - for example arise if a certain role, which needs a strictly unbiased project management in order to gain the necessary credibility, is chosen by a user, who has stated the institution to be politically directed.

In the first column in the lists of warnings you will find the Frame Condition choice made by the user. In the second column, the roles (first list) or methods (second list), which are affected by the warning is listed. In the third column, the text of the warning is seen.

List 1: Warnings frame condition ↔ role

This list presents warnings, which are related to Frame Condition answers that may conflict with the choice of certain roles.

	Role	**Warning**
Formal institutional background		
Public, situated in government, e.g. agencies etc.	a, b, c, d, e, h	In order not be perceived as bias, you should consider inviting actors who can balance your own institutional background
Public, scientific/educational	j	You need to consider whether your institution have the impact needed to perform this role
	n, o, r, t	As a scientific institution you have to be aware about proper lines of communication to the political environment, when performing this role
Public independent, e.g. advisory councils	j	You need to consider whether your institution have the impact needed to perform this role
Private-public enterprise	m	To perform this role you need to ensure a wide scope of involved actors to counter balance your institutional background
Private, Fund	j	You need to consider whether your institution have the impact needed to perform this role
Private NGO	a, b, c, d, e, h	In order not be perceived as bias, you should consider inviting actors who can balance your own institutional background
	i, j, k	If you are an involved party in the problem situation, then it will be difficult to perform a mediating role
	m	To perform this role you need to ensure a wide scope of involved actors to counter

		balance your institutional background
Private enterprise	a, b, c, d, e, h	In order not be perceived as bias, you should consider inviting actors who can balance your own institutional background
	i, j, k	If you are an involved party in the problem situation, then it will be difficult to perform a mediating role
	m	To perform this role you need to ensure a wide scope of involved actors to counter balance your institutional background
Experience/Maturity of the institution		
Temporary, time-limited	f, g, h, i, j, k, l, m	You need impact to perform this role and as a newly established institution you need to consider whether you have the reputation needed to get the message across
	r, s, t, o	Because of your temporary institutional setting you need to think about a way of ensuring the continuity that is needed to perform this role
New, developing	f, g, h, i, j, k, l, m	You need impact to perform this role and as a newly established institution you need to consider whether you have the reputation needed to get the message across
Relation to other actors		
National Parliament	r, t	National political relation may not be sufficient to support impact on decision making roles
National Government	r, t	National political relation may not be sufficient to support impact on decision making roles
EU Parliament	r, t	International political relations may not be sufficient to ensure transnational policy making
EU Government	r, t	International political relations may not be sufficient to ensure transnational policy making
Process		
Never, consultation	l, m, k, s	You may not be able to initiate the necessary participatory processes
Doubtful, consultation	l, m, k, s	You may not be able to initiate the necessary participatory processes
Never, negotiation	l, j, m, k, r, s	You may not be able to initiate the necessary participatory processes
Doubtful, negotiation	l, j, m, k, r, s	You may not be able to initiate the necessary participatory processes
Never, delegation of power	l, j, m, k, r, s	You may not be able to initiate the necessary participatory processes
Doubtful, delegation of power	l, j, m, k, r, s	You may not be able to initiate the necessary participatory processes
Involvement		

Restricted, pre-defined to certain actors	c, j, l, m	In order to perform this role you should consider to move toward less restricted involvement of actors
Moderate, some actors expected, but some flexibility	c, l, m	Use your flexibility to ensure width of involvement

List 2: Warnings frame condition ↔ method

This list presents warnings, which are related to Frame Condition answers that may conflict with the use of certain methods.

Frame Conditions	**Method**	**Warning**
Process		
Never, Information-type	Communication Strategies	You indicated that you cannot use information-type methods
	Science Theatre/Festival	You indicated that you cannot use information-type methods
Never, Survey-type	Agent Modelling (MACTOR)	You indicated that you cannot use survey-type methods
	Critical & Key Technologies	You indicated that you cannot use survey-type methods
	Cross Impact Analysis (e.g. SMIC)	You indicated that you cannot use survey-type methods
	Delphi	You indicated that you cannot use survey-type methods
	Desk research	You indicated that you cannot use survey-type methods
	Discourse analysis	You indicated that you cannot use survey-type methods
	Environmental scanning and watching	You indicated that you cannot use survey-type methods
	Field study	You indicated that you cannot use survey-type methods
	Focus group	You indicated that you cannot use survey-type methods
	Horizon scanning	You indicated that you cannot use survey-type methods
	Identifying drivers and perspectives	You indicated that you cannot use survey-type methods
	Interview	You indicated that you cannot use survey-type methods
	Modelling & Simulation (economic/ risk analysis)	You indicated that you cannot use survey-type methods
	Morphological Analysis & Relevance Trees	You indicated that you cannot use survey-type methods
	Multi-criteria analysis	You indicated that you cannot use survey-type methods
	Polling	You indicated that you cannot use survey-type methods

	S&T Roadmapping	You indicated that you cannot use survey-type methods
	STEEPV	You indicated that you cannot use survey-type methods
	Structural analysis (MICMAC)	You indicated that you cannot use survey-type methods
	SWOT	You indicated that you cannot use survey-type methods
	System Dynamics	You indicated that you cannot use survey-type methods
	Trend Intra & Extrapolation	You indicated that you cannot use survey-type methods
Never, Consultation	Backcasting	You indicated that you cannot use consultation-type methods
	Brainstorming, mindmapping etc	You indicated that you cannot use consultation-type methods
	Expert panel	You indicated that you cannot use consultation-type methods
	Future Panel	You indicated that you cannot use consultation-type methods
	Future Search Conference	You indicated that you cannot use consultation-type methods
	Future Workshop	You indicated that you cannot use consultation-type methods
	Gaming	You indicated that you cannot use consultation-type methods
	Interview Meeting	You indicated that you cannot use consultation-type methods
	Parliamentary Hearing	You indicated that you cannot use consultation-type methods
	Scenario Building	You indicated that you cannot use consultation-type methods
	Scenario Workshop	You indicated that you cannot use consultation-type methods
	Stakeholder Consultation Procedures	You indicated that you cannot use consultation-type methods
	Stakeholder Panel	You indicated that you cannot use consultation-type methods
Never, Negotiation	Café Seminar/World Café	You indicated that you cannot use negotiation-type methods
	Citizens Hearing	You indicated that you cannot use negotiation-type methods
	Consensus Conference	You indicated that you cannot use negotiation-type methods
	Perspective Workshop	You indicated that you cannot use negotiation-type methods
	Voting conference	You indicated that you cannot use negotiation-type methods
Responsibility		
International project	Agent Modelling	May be suited for trans-European projects, provided a representative expert group with the

		necessary skills can be organised
	Backcasting	Often national contexts affect the current status and the desired future differs. This causes challenges for a joint process
	Brainstorming, mindmapping etc.	These techniques are applicable in an international context, but communicating the objective and process may require more time
	Café Seminar/World Café	Possible to use. It was done in Meeting of Minds
	Citizen Hearing	Could be used, but language difference is an obstacle for dialogue
	Communication Strategies	Suited, but will be costly
	Consensus Conference	Has been used in many countries at national level, e.g. in the project Meeting of Minds on brain science. For international cooperation important to remember that multiple languages can be an obstacle
	Cross Impact Analysis	May be suited for trans-European projects, provided a representative expert group with the necessary skills can be organised.
	Delphi	Suited for both international and trans-national cooperation, however translating statements is a demanding and costly task.
	Expert Panel	The method is suitable for international context, but attention should be paid to e.g. cost of travel and language issues
	Field Study	Multi-sited field study - otherwise not suited
	Future Panel	The method is suited for use in the European Parliament etc.
	Future Search Conference	Suited for both national and international (if common language)
	Future Workshop	The method is best at local level
	Gaming	Often national contexts affect the definition of problems and solutions. This causes challenges for a joint process.
	Identifying drivers and perspectives	Suited for both international and trans-national cooperation
	Interview	Possible language barrier
	Interview Meeting	International experience from EPTA project: PRISE
	Morphological Analysis and Relevance Trees	Often national contexts affect the definition of problems and solutions. This causes challenges for a joint process.
	Multi-Criteria Analysis	Applicable in an international setting if a joint decision is made
	Parliamentary Hearing	The method has typically been used in the national parliament, but it could be used in the European parliament etc.
	Scenario Building	Suited for both international and trans-national cooperation, but attention should be paid to e.g. cost of travel and language issues
	Scenario Workshop	The method has been used trans-national and

		international in European Awareness scenario workshops. EASW, from 1992-94 and in Europe and USA afterwards
	Science Theatre/Festival	Should be possible and even a good idea, especially if based on body language
	Stakeholder Consultation Procedures	May be highly necessary in any trans-European project
	Stakeholder Panel	The method is suitable for international context, but attention should be paid to e.g. cost of travel and language issues
	STEEPV	Suited for both international and trans-national cooperation
	Structural analysis (MICMAC)	May be suited for trans-European projects, provided a representative expert group with the necessary skills can be organised
	Voting Conference	Only national experience, but should also work both in trans-national setting
Duration of the project		
Time restrictions, limited time	Backcasting	Need time for building the vision, understanding the state of the art and required steps
	Citizen Hearing	Relatively time consuming to recruit citizens and cooperate with local organisers
	Consensus Conference	Quite intensive process to prepare and produce conference
	Delphi	Time consuming due to multi-round structure of the method
	Expert Panel	Typically relatively time consuming as sequence of meetings need to be organised with busy experts
	Field Study	Time consuming
	Future Panel	The method is not necessarily time consuming, however it is dependent of the ambitions
	Interview Meeting	Depend on ambitions, but can be arranged within short time frame
	Modelling and Simulation (economic/risk analysis)	In addition to collecting knowledge on the behaviour of the system, time is needed for building the mathematical model.
	Perspective Workshop	It is time consuming to find all the participants and to analyse/describe perspectives
	S & T Roadmapping	Need time for building the vision, understanding the state of the art and required steps
	Scenario Building	Need time for building the vision, understanding the state of the art and required steps
	Scenario Workshop	Time consuming due to scenario building and recruitment of participants
	Science Theatre/Festival	Method may be quite time consuming depending on how much is outsourced
	Stakeholder Panel	In addition to the participants time, need for coordination and facilitation

	System Dynamics	In addition to collecting knowledge on the behaviour of the system, time is needed for building the mathematical model
	Voting Conference	Relatively time consuming due to recruitment of panels and audit
Autonomy over content		
Institution, management, e.g. minister, director etc.	Citizen Hearing	When using this method you need to be able to allow the participants full autonomy over the content
	Consensus Conference	When using this method you need to be able to allow the participants full autonomy over the content
	Voting Conference	When using this method you need to be able to allow the participants full autonomy over the content
Autonomy over content		
Institution, management	Citizen Hearing	Necessary with prior political openness toward the conclusions of the participants
	Consensus Conference	Necessary with prior political openness toward the conclusions of the participants
	Future Panel	Necessary with prior political openness toward the conclusions of the participants
	Future Search Conference	Necessary with prior political openness toward the conclusions of the participants
	Parliamentary Hearing	Necessary with prior political openness toward the conclusions of the participants
	Perspective Workshop	Necessary with prior political openness toward the conclusions of the participants
	Scenario Workshop	Necessary with prior political openness toward the conclusions of the participants
	Stakeholder Panel	Necessary with prior political openness toward the conclusions of the participants
	Voting Conference	Necessary with prior political openness toward the conclusions of the participants
Project	Citizen Hearing	Necessary with prior political openness toward the conclusions of the participants
	Consensus Conference	Necessary with prior political openness toward the conclusions of the participants
	Future Panel	Necessary with prior political openness toward the conclusions of the participants
	Future Search Conference	Necessary with prior political openness toward the conclusions of the participants
	Parliamentary Hearing	Necessary with prior political openness toward the conclusions of the participants
	Perspective Workshop	Necessary with prior political openness toward the conclusions of the participants
	Scenario Workshop	Necessary with prior political openness toward the conclusions of the participants
	Stakeholder Panel	Necessary with prior political openness toward the conclusions of the participants
	Voting Conference	Necessary with prior political openness toward the conclusions of the participants

	Critical and key technology	Consider whether P.M has the legitimacy to conclude
	Expert Panel	Consider whether P.M has the legitimacy to conclude
	Horizon scanning	Consider whether P.M has the legitimacy to conclude