

MEMORANDUM OF UNDERSTANDING

**for the implementation of a European Concerted Research Action
designated as**

COST A22

Foresight Methodologies – Exploring New Ways to Explore the Future

The Signatories to this Memorandum of Understanding, declaring their common intention to participate in the concerted Action referred to above and described in the Technical Annex to the Memorandum, have reached the following understanding:

1. The Action will be carried out in accordance with the provisions of document COST 400/01 "Rules and Procedures for Implementing COST Actions", the contents of which the Signatories are fully aware of.
2. The main objective of the Action is to develop certain aspects of foresight methodology so as to ensure systematic use and optimum benefit specifically in the areas of identifying seeds of change, integrating narratives and numbers, and interaction between researchers, decision makers, and the public.
3. The economic dimension of the activities carried out under the Action has been estimated, on the basis of information available during the planning of the Action, at Euro 6.5 million per year in 2002 prices.
4. The Memorandum of Understanding will take effect by being signed by at least five Signatories.
5. The Memorandum of Understanding will remain in force for a period of four years, calculated from the date of first meeting of the Management Committee, unless the duration of the Action is modified according to the provisions of Chapter 6 of the document referred to in Point 1 above.

TECHNICAL ANNEX

COST A22

Foresight Methodologies – Exploring new ways to explore the future

A. Background

Foresight

What is foresight? Notably, foresight is not forecasting or prediction. According to Richard Slaughter, President of the World Future Studies Federation, foresight is:

the ability to create and maintain a high-quality, coherent, and functional forward view and to use the insights arising in organisationally-useful ways, for example, to detect adverse conditions, guide policy, and shape strategy and to explore new markets, products and services.

The term foresight is often used interchangeably with terms such as futurology, future studies, 'la prospective', and prospective analysis and there is no established consensus on the boundary lines between the various fields that the terms are said to represent.

The notion of foresight can be traced as far back to novels such as Edward Bellamy's *Looking Backward: 2000 – 1887* (1887) and H.G. Wells' *The Time Machine* (1895). Foresight emerged in decision-making contexts following the Second World War in fields such as US military strategic planning with the RAND Corporation, and in French spatial planning with DATAR (the national institute for spatial planning). In the 1960s, General Electric and Royal Dutch/ Shell introduced foresight techniques in their corporate planning procedures. In the 1970s, foresight included scenarios of socio-economic and environmental futures accompanied the introduction of the first global models that attempted to address these issues in an integrated fashion. In recent decades, foresight has also been adopted in many areas of public policy, policy analysis, technology assessment, and scoping studies for various sectors and industries.

Foresight aims to identify opportunities and areas of vulnerability in complex strategic issues. Its application ranges from strategy development to the raising of the general public's awareness of developments that are likely to influence society's future. Common to all use of foresight, however, is the structuring of knowledge about complex issues into manageable elements so that these issues can be understood better and more informed decisions can be made.

Foresight can be practised in a number of ways. Examples include:

- Scenario analysis: the development of descriptions of possible future situations in order to anticipate and prepare for upcoming developments.
- Participatory methods: examples are Delphi studies and focus groups where respectively expert and non-expert opinion on a specific issue is collected and analysed.
- Computer simulations: the representation of possible future situations through computer modelling in order to investigate how present developments might turn out in the future.

- Technology assessment: the analysis of technological innovation, its application, and its impacts for use in policy-making contexts.

Foresight in Europe

Although foresight techniques have been actively applied since the late 1960s European foresight is arguably more diverse and fragmented both in terms of the actors involved and the methodology applied than in the USA. In the USA activities organised by the World Futures Society draw thousands of participants annually and organisations such as Global Business Network and SRI International are well known within the wider foresight community. In Europe, many foresight initiatives are undertaken and they range from scenario development exercises for small and middle enterprises (SMEs), to regional and national foresight studies, to environmental assessments for European public policy. The methodology that is applied is diverse and leans on theory from various disciplines such as psychology, history, policy science, economics, and business administration.

The diversity in European foresight methodology makes for a rich pallet of techniques but it also leads to the reinventing of wheels and putting old wine in new bottles. On the other hand, the communication, co-ordination, and streamlining of European foresight activities are improving. Presently there are numerous initiatives such as magazines, conferences, discussion forums, and collaborative projects that harness European experience and expertise in foresight. The European Commission is an important facilitator in this process.

The developments in European foresight are encouraging. A challenge is to maintain the development of European foresight in all its facets such as methodology, product, communication, and dissemination. This COST Action addresses aspects of foresight that the signatories feel demand special attention. These aspects are:

- ∅ Research and development of foresight methodology: currently there is an imbalance between the high level of operational use of foresight and the relatively low level of research and development of its methodology. Addressing a number of specified methodological issues in the Action would serve to enhance the quality of foresight practice.
- ∅ Communication of and co-operation on foresight methodology among researchers and practitioners: communication and co-operation of foresight expertise and experience is improving but most takes place within disciplinary and thematic boundaries. More cross-disciplinary communication would enhance learning and the development of methodological aspects of foresight.

Foresight and the Social Sciences Domain

At two seminars in 2001, several European foresight institutes expressed an interest in creating a network for the research and development of foresight methodology. A COST Action is deemed an ideal vehicle for creating such a network because it can provide the framework within which European organisations can work together in improving foresight methodology. In so doing the COST Action will help support decision-making processes in Europe and the raising of awareness and understanding of factors that are likely to shape Europe's future. The drawing in of non-COST partners from industry and non-EU countries for example, will provide useful input to the network as well as provide a channel for the dissemination of results.

The Social Sciences Domain is an ideal fit for this Action. Foresight requires an understanding of social processes and discourse between the general public, decision-makers, foresight researchers, and practitioners. Furthermore, a key element of foresight is concerned

with the presenting of possible outcomes of social processes. Consequently, foresight draws strongly from social fields such as decision theory, discourse theory, game theory, cultural science, and cognitive psychology.

B. Objectives and benefits

The main objective of the Action is to develop certain aspects of foresight methodology so as to ensure systematic use and optimum benefit. This will be done within the framework of a European Network for Foresight Methodology that will facilitate communication and co-operation among researchers and practitioners. The Action will provide a coherent supportive framework at the European level.

The actual methodological research and development will be conducted within various foresight projects in which the participating members are involved. The participants will benefit from the sharing and comparing of expertise and experience between researchers and practitioners in Action activities, as they can apply insights gained through the Action in their own foresight projects. The aim is not methodology development for all aspects of foresight but specifically for the areas covered by the working groups (see section C of this proposal). A further goal of the Action is to enhance the training of a younger generation of foresight researchers and practitioners involved in PhD-research projects.

Although the Action's principle objective is not to be a platform for thematic dialogue, such dialogue will be used to support the focus on methodological research and development. Given the forward looking nature of foresight analysis, as well as the interest of the potential participants and existing projects, a natural theme is sustainability in all its social, economic, and environmental dimensions. Although certain foresight techniques have traditionally been employed for relatively short-term purposes, e.g. related to marketing and strategic management, even these can provide insight for longer-term concerns. In general, however, the research and development activities of this Action will explicitly take a long-term view with the well being of future generations as its point of departure.

The focus on methodology and the context of sustainability will necessitate a cross-disciplinary approach in drawing experience and expertise from a panorama of disciplines, fields, and communities. These include technology assessment, governance, corporate strategic management (for both small and medium enterprises and international companies), environmental science and policy, social and cultural sciences, and military science and strategy. Research within the Action will provide opportunities for previously unconnected communities to learn from each other's experience and expertise with foresight methodologies. This cross-disciplinary philosophy is reflected in the persons and institutions that have participated in the preparation of this proposal.

Links with European Union institutions¹ active in the field of foresight and other European initiatives² will be encouraged in the Action. Indeed, the European Commission will even be a participant in the Action in the form of the Institute for Prospective Technological Studies (IPTS) and the European Environment Agency (EEA). Links with European initiatives will provide a wider reach for the Actions' methodological research and ensure complementarities between research activities.

¹ For example, the European Commission DG-Research, Directorate K - Technology foresight and socio-economic research; the Institute for Prospective Technological Studies (IPTS); the European Environment Agency (EEA); and the Forward Studies Unit of the European Commission.

² For example, eFORSEE (Exploring the use of Foresight for Policy Makers in the EU and Accession Countries); FOREN Network (Foresight for Regional Development); EFIEA (European Forum for Integrated Environmental Assessment); The European Science Foundation's Forward Looks activities; FORMAKIN (Foresight as a Tool for the Management of Knowledge Flows and Innovation); and the European Commission's Futures Project on the techno-economic and societal impact of European enlargement (Enlargement Futures) conducted through IPTS.

C. Scientific Programme

The Scientific Programme will be structured around a series of topics related to foresight methodology. These have been clustered into a small set each providing the basis for a working group. These groups will explore the theoretical underpinnings of the topics and the tools and methods that have been used in previous and existing studies. The goal is to evaluate this experience and to provide recommendations for future efforts. As the concepts being explored within the working groups are of interest to the network as a whole and overlap at points, it will be important to maintain close communication across these groups.

The working groups and the topics upon which they will focus are described below. All working groups aim to establish a vibrant interaction between researchers and practitioners. The first working group differs slightly from the other three as it provides a foundation for the efforts of the entire network. This is reflected in its title.

Working Group 0: Definition of Concepts

The focus of this working group is the definition of concepts related to foresight. This will include an overview of the disciplines that foresight draws from and what role these disciplines play in foresight. It is important for the members of the network to use a common language and to understand how terms are used by different groups. Thus, this working group will begin its activities at the earliest stages of the Action. A key product, therefore, will be a glossary of terms, initially for use within the network but potentially for broader distribution later, highlighting both commonalities and differences in interpretations. The working group will continue to exist throughout the period of the Action, allowing for periodic revisions to the glossary. It will, however, assume a smaller role once the other working groups get underway.

Working Group 1: Identifying Seeds of Change

The focus of this working group is the identification of emerging issues in the form of weak signals, potential surprises, seeds of change, etc. The identification of these issues and planning for their eventuality is the central focus of many, if not most, foresight activities. A particular concern here is to identify points of vulnerability, i.e. parts of the system that are subject to sudden, discontinuous change.

There will always be events and developments that are unexpected, due to three types of indeterminacy — ignorance, surprise, and volition. First, insufficient information on both the current state of a system and on forces governing its dynamics leads to uncertainty about possible future developments. Second, even if precise information were available, complex systems are known to exhibit unpredictable behaviour, extreme sensitivity to initial conditions, and branching behaviours at various thresholds. Finally, for most issues of interest, future events are subject to human choices that have not yet been made. All of these point to the continuing possibilities for novelty, surprise, and emergent phenomena. There are techniques, however, to understand better the existence and likelihood of these happenings. Various typologies and classifications of surprise, risk, uncertainty, and ignorance have been proposed to help distinguish sources and types, and to suggest how these may be addressed. It is clear that many surprises arise from the increasing complexity of our society; this makes their identification difficult, but amenable to careful analysis.

Areas of focus for this working group will include, among others, complexity theory, risk and uncertainty analysis, cognitive psychology, and vulnerability analysis.

Working Group 2: Integrating Narratives and Numbers

The focus of this working group is the integration of qualitative and quantitative information in foresight analysis. Both approaches have their strengths. Qualitative scenarios can have a richness that is not bound by quantitative methods. They can explore relationships and trends for which little or no numerical data is available, including shocks and discontinuities; they can more easily incorporate motivations, values, and behaviour; they can create images that capture the imagination of those for whom they are intended. Quantitative scenarios, when done properly, provide a rigour, precision, and consistency that comes from their numerical and mathematical underpinnings. Their assumptions are made explicit and are, therefore, open for critical examination; their conclusions can be traced back to the assumptions and the effects of changes in assumptions can be easily checked, pointing to important uncertainties.

Several recent studies have attempted to combine narratives and numbers. In some cases, the quantitative analysis has been intended to underpin the qualitative narratives (e.g. VISIONS³ and UNEP-GEO⁴). In other cases, brief narratives have been used to structure inputs into quantitative analysis, but the latter has been the main focus of the foresight activity (e.g. IPCC/ SRES⁵). Finally, in at least one case, an iterative process was used to create the final narratives and numbers (World Water Visions⁶). It is clear that there is a big gap between the increasing complexity and the analytical tools that try to address this complexity. Furthermore, the quantitative and qualitative analysis and analysts should be integrated early in the process.

Areas of focus for this working group will include, among others, the representation of discontinuities and non-linear change in quantitative analysis, the methods of presenting qualitative and quantitative information in an integrated fashion, presentation of quantitative material to non-expert groups. This working group will also address the question of multi-scale analysis in foresight activities, as this is often an issue associated with quantitative analysis of scenarios.

Working Group 3: Interactions between Researchers, Decision makers, and the Public

The focus of this working group is the role foresight plays and can play in the interaction between researchers, decision-makers and the broader public. This follows from one of the main lessons learned from previous foresight work that the process is at least as important as the product. The interaction between researchers and decision-makers is necessary to ensure the relevance of the foresight activities to the decision-makers and to help the researchers in understanding decision-making processes and how these affect future developments. The communication between researchers and the broader public is based upon two premises: 1) the broader public has knowledge that is of use to foresight researchers and 2) public participation in decision-making processes can be improved by the presence of a better informed public. From the point of view of content, the breadth of perspectives, expertise, and knowledge that the participants have is needed to guarantee the richness of the work, both in the range of issues that are covered and in the detail to which these are explored. From a process point of view, concerns about participation and communication have become a requirement in many planning activities.

³ Integrated Visions for a Sustainable Europe (see <http://www.icis.unimaas.nl/visions/>).

⁴ United Nations Environment Programme – Global Environmental Outlook (see <http://www.unep.org/geo2000/>).

⁵ Intergovernmental Panel on Climate Change/Special Report on Emission Scenarios (see <http://www.grida.no/climate/ipcc/emission/index.htm>).

⁶ See <http://www.watercouncil.org/vision.htm>.

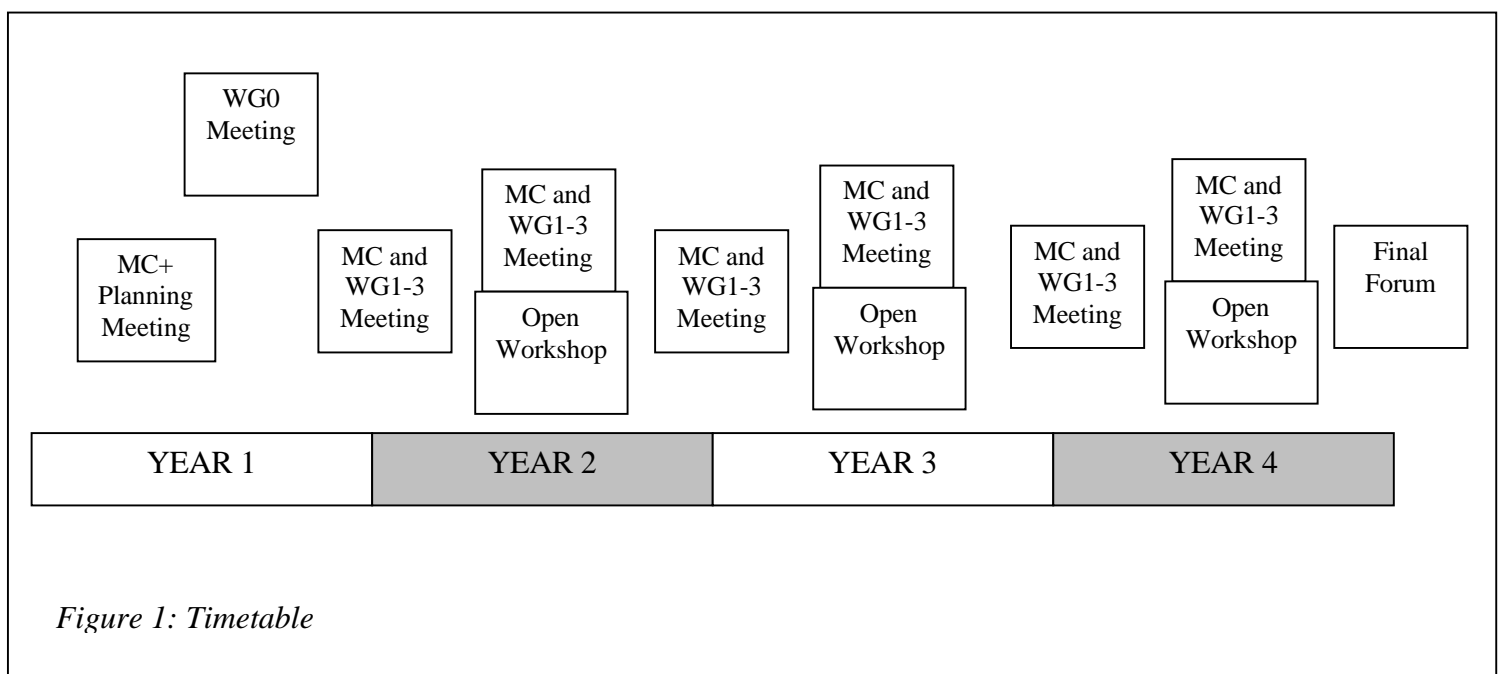
Foresight analysis can provide a common framework and language for persons from different disciplines, stakeholder groups, and regions to interact, reducing long established barriers. The best choice of tools and techniques to employ, and even the choice of whether to use participatory methods, are likely to vary depending upon both the nature of the actor network and the issues being addressed. In addition, this working group will address methodological issues related to the dissemination of the results of foresight analyses. The choice of communication vehicles has a strong impact upon their eventual effect. The process of analysis is often the first step in the dissemination process. In playing an active role, the stakeholders become co-designers and owners, helping to establish the analysis' credibility and authority. This engenders a sense of ownership of the scenarios and often leads to the participants becoming ambassadors for the analysis.

Areas of focus for this working group will include, among others, participatory processes, theories of decision-making, discourse analysis, and theories of communication.

D. Organisation and timetable

The duration of the programme will be four years. The Action will be guided by the usual COST structure with a Management Committee. Working Groups will be established following the schemata outlined in the Scientific Programme. Regular meetings of the Management Committee and the Working Groups will occur along with annual workshops and a final forum open to persons outside the Action. These will be scheduled as listed below and shown in Figure 1.

- Twice yearly meetings of Working Groups 1-3. One meeting each year will be arranged to coincide with the annual workshop.
- Twice yearly meetings of the Management Committee. One meeting each year will be arranged to coincide with the annual workshop.
- An annual workshop (1-2 days) hosted by a different Working Group every year. These will be open to persons outside the network. Working Groups 1-3 and Management Committee will arrange to meet either prior to or after this workshop. Reassessments of the need for further work by Working Group 0 will also occur at these meetings.
- A final forum that brings together the output of Working Group research. A publication will address the progress made in the foresight methodological development over the 4-year period and make recommendations for future research.



E. Economic dimension

The following COST countries have actively participated in the preparation of the Action: Denmark, Finland, France, Germany, Italy, the Netherlands, Sweden and United Kingdom.

Potential participants from other COST countries are Austria, Czech Republic, Estonia, Hungary, Norway, Slovakia, and Switzerland, Turkey, Malta, Poland, Spain, and Israel.

On the basis of national estimates provided by the representatives of countries that actively participated in the preparation of the proposal, the economic dimension of the activities to be carried out under the Action has been estimated, in 2002 prices, at roughly Euro 6.5 million.

This estimate is valid under the assumption that all the countries that actively participated in the preparation of the Action and no other will participate in the Action. Any departure from this will change the total cost accordingly.

F. Dissemination

Dissemination will take place through:

- Scientific and non-scientific articles in various international media. Examples of such media are the following journals: Futures, Scenario & Strategy Planning, Foresight, and Long Range Planning.
- Conference presentations, workshop proceedings, and other interactive sessions that are occurring ever more frequently within the field of European foresight.
- Participation of non-COST members such as industry and non-EU organisations in Action activities.
- PhD-dissertations on aspects of foresight methodology currently being carried out by younger foresight researchers and practitioners. Several PhD-research projects that fit within the framework of the Action have been initiated at signatory organisations in the last two years. The Action can provide a valuable forum for younger researchers to exchange ideas. These researchers in turn can be considered part of the Action's dissemination strategy when they pursue careers within the field of foresight after completing their research.

In accordance with COST rules a regularly updated website will form part of the Action's dissemination strategy.
