



**European Foresight Platform**

supporting forward looking decision making

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**EFP Deliverable 4.1 – WP 4 – Other – Public**

**First version of the manual: how to use the EFP in policy support (with further updates)**

## **How to use the EFP in policy support?**

**Description of a methodological approach and framework to provide foresight information and support to policy-makers and practitioners as well as to organise the policy workshops**

**Period covered: month 1 – month 6**

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### **European Foresight Platform**

*The European Commission is providing the means to continue the important networking activities of foresight initiatives. Setting out on the previous work of the European Foresight Monitoring Network and For-Learn the new European Foresight Platform resumes its work.*

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## 1. Introduction to EFP policy support

The Coordination and Support Action “EFP European Foresight Platform – supporting forward looking decision making” aims at consolidating the knowledge base on foresight and forward looking activities in Europe and internationally. It reinforces foresight and forward looking actions initiated under the 6th Framework Programme, in particular EFMN and FOR-LEARN. By building on and integrating these two lines of activity, and by expanding their scope to cover current foresight actions of FP7, as well as at national and international level, a unique knowledge hub for foresight-related information will be created to facilitate European foresight and forward looking exercises. The ultimate purpose of EFP is to better exploit foresight as a resource from different expert-perspectives to support policy-making and to become an evolving web-based information platform which disseminates foresight and forward looking good practices. The knowledge hub will be used in a series of national and European policy workshops, geared towards major future challenges for Europe.

A robust methodological approach and the resulting framework are presented in this manual to provide foresight information and support (including both quantitative and qualitative analysis) to policy-makers and practitioners. This does include the development of key modules addressing different approaches to using EFP in supporting policy-making, such as data-mining of emerging issues, internet searches on foresight activities and most important forward looking studies, and online surveys. Guidelines are being developed on how to use the EFP material and resources in policy support and to organise the policy workshops, for instance by preparing background information.

Building on the information available on the EFP, European and national policy workshops will be organised to support policy-makers in addressing key future challenges and in learning how to benefit from the platform and its related expert network. A total of four to five European-level workshops will be organised under the lead of EFP on specific issues of major interest to EU policy clients (e.g. DGs). Four further national-level workshops will be organized in collaboration with and under the lead of national partners, i.e. correspondents and partner networks. The policy workshops should focus on a core policy issue to enable the provision of important inputs in early phases of foresight development as well as support to European and national level policy in preparing strategic action on the major challenges with which Europe is faced. The findings of the workshops will also support and feed back into the further development of EFP.

According to the EFP Technical Annex, the EU policy and national workshops are planned to be organised close together to benefit from organisational synergies. The first workshops are planned for November - December 2010, the second for April - May 2011, (perhaps a third additional in September - October 2011), the fourth for February - March 2012 and the fifth for June - July 2012.

This EFP Manual for Policy Support is thought in the first instance for the project partners but also for the organisers of national and European workshops. The Manual will be updated during preparation and review of upcoming policy workshops. A second version of this Manual is expected in December 2011. Further information on the format of the workshops is available within D5.1 and on data collection and analysis within D5.2.

## 2. EFP providing foresight and forward looking information

By providing dissemination of an interconnected Online Foresight Guide with case study briefs, the EFP will be able to support action-oriented and participative ways of addressing future challenges. It guides policy-makers and others who want to learn how to apply foresight and forward looking activities in policy development throughout the critical steps of design, implementation and follow-up of a foresight project and gives a description of the main methods that can be used. All this shall be linked to achieved or potential impacts and specific contexts in which identified case study examples have been launched.

Clear and easy-to-access information is provided, with real case illustrative examples gathered either in the predecessor projects EFMN and FOR-LEARN or currently within EFP and other sources. The information to be disseminated will be enhanced and cross-linked with the evolving database of foresight and forward looking projects being developed through a mapping process (i.e. WP2) in order to link the existing and up-to-date information with selected foresight or forward looking case studies and their findings. The community of foresight and forward looking practitioners will be concerned about and involved in further developing these contents in order to have a unique resource on foresight and forward looking techniques.

Furthermore, the EFP will support policy-making with anticipatory intelligence to identify the key policy issues related to future grand challenges. Data-mining of emerging issues, internet searches on foresight activities and most important forward looking studies as well as online surveys are the available tools for this purpose.

### **3. EFP assessing the opinions in online surveys**

In addition, the EFP could be used to assess online opinions of different stakeholders and experts. Having the brief correspondents and a wider community of foresight and forward looking practitioners united under the EFP, it makes sense to take advantage of these future-oriented experts to assess their opinions on specific issues, such as the prioritisation of the grand challenges to be urgently tackled, the identification of the corresponding key policy issues and the assessment of actions to be taken by policy and decision makers.

A password-protected workshop sub-page on the EFP could be for instance used to provide information to the participants and to invite them to take part in a pre-workshop online survey assessing e.g. the main elements/conclusions of the background document.

The mapping environment will contain a list of players familiarised with the future orientation of specific areas. The surveys could even be opened beyond this list of players addressing the community of experts related to the policy workshops in order to support the preparation of discussions around the workshop topics beforehand.

### **4. EFP disseminating foresight and forward looking good practices**

Building on the Online Foresight Guide and the database of foresight and forward looking projects available, EFP will ensure the dissemination of accurate and up-to-date information with a focus on good practices to enhance the perceived impact of foresight and forward looking activities on policy-making. For this purpose, EFP will merge the content of EFMN and FORLEARN into one platform, and will thus establish a single entry point to latest methodological foresight aspects linked to case studies. It is aimed to advance and optimise the content of the new online information platform with regard to the exchange of experiences and good practice models.

In the end, these building blocks aim at improving the quality of support to policy-making that foresight and forward looking activities can provide, especially by drawing on the source material available on the EFP and by providing tools and methods to exploit these materials for policy support activities.

The results of the mapping environment as well as the briefs available on the EFP website will serve as input material to the identification of good practices, which shall link successful methodological aspects to particular contexts and specific impacts. Selection criteria for good practices will consider usability of the foresight or forward looking approach in focus, efficiency, effectiveness and impacts on policy-making. This information will be synthesized – drawing lessons and recommendations from good practices – and disseminated to both practitioners and policy-makers, e.g. by using the online platform and by organising policy workshops to inspire further progress.

This is a major tool for networking and building a knowledge base. In order to improve the transparency of good practice on foresight, within the brief production (WP3) a sample of about 30 follow-up assessments will be conducted on the lessons learned from foresight initiatives that were covered during the previous EFMN project.

## 5. EFP supporting the organisation of policy workshops

As overall objective, the workshops serve as an interface to create stronger linkages between the work of the foresight respectively forward looking community and policy- as well as decision-makers, but can also contribute to general issues such as improving foresight methods and activities. Policy-makers responsible for strategic work at regional, national or European level are the main target audiences. However, collaboration partners, correspondents and partner networks are also invited to participate in the workshops to support the translation of foresight results into policy outcomes. The knowledge base available on EFP (briefs, process, surveys, networks, good practice, case-studies) shall be used as preparation for the policy workshops and for the background documents to serve as input to the workshops. In the workshops, specific topics relevant to policy-makers shall be discussed as well as strategies how to tackle them. The outcomes of the workshops are expected to provide added value to policy makers and could be published as structured policy-briefs. Moreover, the workshops will enlighten the room for improvement of EFP.

### European and national workshops strongly interlinked

During the 3 years the project is running 4-5 European workshops which will be organised by the EFP. In addition, the ambition is to find clients in the European Member States to finance a national workshop on similar issues as the European workshop. To achieve this, it is important to align Member State policy needs and European policy needs in the topic selection phase. Furthermore, it is highly beneficial to have a longlist of possible workshop topics in the first phase of the project to be able to approach EU policy makers and possible national agencies quickly to be able to create commitment. This strong interlinkage between the European and national workshops should also be reflected in the scheduling of the workshops, with the national workshops following the European workshops in timely sequence.

The underlying objectives of the policy workshops comprise:

- The workshops aim to provide support to European, national and regional level policy in preparing strategic responses to the major challenges Europe is facing to ensure that results of foresight and forward looking studies are better understood and used by policy-makers.
- The workshops serve as an interface between EFP and policy- as well as decision-makers in Europe to inform about the EFP and its expert network, and to create better understanding on how to improve the platform to better meet the information needs of potential clients.
- The workshops serve as a testing environment for developing targeted processes to exploit the full potential of the EFP in serving policy-making.

Two types of workshops can be differentiated:

- One type dealing with cross-cutting themes addressing different policy fields, economic sectors and scientific fields to identify new societal challenges and corresponding proactive responses. Cross cutting workshops are organised by inviting a balanced set of policy-makers and FLA experts with different methodological expertise (both quantitative and qualitative approaches). Their presentations benefit from but are not limited to the use of the EFP data.
- Another type with a focus on a specific policy field or in the sharply defined crossroad of the policy fields to identify specific challenges and proactive policy responses. The workshop is organised together with the domain experts. Their presentations benefit from but are not limited to the use of the EFP data.

The purpose of the EFP policy workshops is to cross-fertilize ideas by using ongoing forward looking activities (EFP supporting policy workshops): how can EFP support stakeholders (within JTI, ERA-Nets, etc.)? Use the knowledge base (briefs, process, etc.) and the community network for workshop preparation (background documentation from mapping) and offer a menu on how to proceed based on good practice. Outputs will be structured policy briefs (re-contextualised for national workshops).

## 5.1 Selection and identification of workshop topics

A longlist with themes for the workshops (see 5.2) will serve as a basis for the final choice of a central topic to be discussed in the workshop. The major aim of the workshop is to translate foresights into support for policymaking. Identification of specific issues / challenges to be addressed at the policy workshops will additionally make use of the following:

- current (e.g. [Europe 2020 strategy](#)) and future (e.g. results from horizon scanning activities and grand challenges detection) policy needs,
- important issues and challenges to be addressed that come up from the foresight studies included in EFP (cf. Mapping Environment in WP2) which could be assessed previously in online surveys,
- optionally EFP web survey facility to identify topics of high policy relevance,
- consultation with policy DGs and DG Research on upcoming needs for fine-tuning specific interests and on basis of the flagship initiatives, such as:
  - Innovation Union
  - Youth on the move
  - A digital agenda
  - Resource efficient Europe
  - An industrial policy for the globalisation era
  - An agenda for new skills and jobs
  - European platform against poverty

## 5.2 Proposed workshop topics for selection

The following proposed topics are relevant policy-issues, taking into account the Europe 2020 strategy and other European communications. These should be proposed to the European Commission for consultation, and will be further refined. At this stage the EFP Mapping Environment is not yet operational, allowing taking results into account when writing the workshop background documents. The following solution-oriented topics have been proposed by EFP partners and serve as a longlist for consultation / refinement with stakeholders, but shall not be limited to:

### 1. Education and skills, research and innovation

Apart from research and teaching, European universities have a third mission, which cannot be disconnected from the first two, and which focuses on engagement with wider society. This third mission is related to innovation development, technology transfer to industry, contribution to the solution of grand challenges, participation in policy making or in public engagement and societal debate, etc.

- Knowledge and Innovation Communities (KICs) in boosting innovation in Europe
- Shaping FP8 and joint programming to focus on specific prioritised issues aligned with Europe 2020 strategy
- Developing, disseminating and promoting sustainable S&T cooperation programmes between ERA and neighbour areas

## 2. Digital Agenda 2020 – New Challenges for an European Information Society

Europe's primary goals are focussed on a sustainable future. To achieve this, the Digital Agenda makes proposals for actions that need to be taken to get Europe on track for smart, sustainable and inclusive growth. The Digital Agenda for Europe is one of the seven flagship initiatives of the Europe 2020 strategy, set out to define the key enabling role that the use of Information and Communication Technologies (ICT) will have to play if Europe wants to succeed in its ambitions for 2020.

- What insights can we learn from analyses of the previous decade and the Lisbon goals for 2010?
- What are the major trends and drivers/barriers influencing the realisation of this Digital Agenda, their impact and policy issues?
- Identification of the upcoming competences and skills (and professions) that will contribute to strengthening the European (labour) market, and how can these be related to e.g. productivity issues
- What are interesting new models for governments to cooperate with markets and companies to engage with critical government actors?

## 3. (Sustainable) Energy

Energy has been on the agenda of many foresight and forward looking activities in the last decade. However, a number of highly relevant subtopics have received less policy attention so far.

- One of such subtopics a workshop could focus on is the rebound effect. The rebound effect states that as technological progress allows to book productivity gains in energy, the total use of it will increase instead of decrease if real prices for energy do not rise. This is a crucial factor as most energy policies focus on technology development and ignore the cost of energy.
- A second important sub-topic could be issues related to renewable energy, such as geothermal energy. The underground is currently not a well defined policy area. However, with several technologies wanting to make use of the underground and affecting the underground, e.g. carbon capture and storage, natural gas reserves, geothermal energy), policy issues arise to avoid conflicts and ensure that sustainable energy potentials can be exploited.

## 4. The scarcity of resources (energy, water, food), behavioural changes and use efficiency

Scarcity of resources is a topic that pops up frequently in the policy sphere since the Club of Rome publication in the 1970's. Recently this topic has hit the policy agenda with issues of scarce metals in industrial production such as lithium needed for batteries in sustainable transport. A workshop collecting the different views on this topic and discussing potential policy actions could be organised.

There is a risk of global water bankruptcy due to humanity's consistent under-pricing of water and its consequent waste and overuse. Measures to save natural resources (mainly water and food) have to be applied worldwide. In addition, technologies have to be developed and/or applied to provide sufficient water and food in many parts of the world.

## 5. Smart and sustainable living

Health and sustainable care, scarcity of energy resources are among the key issues in society, with increasing costs. One specific aspect a workshop could explore is how technology can help improve the quality of our lives as well as reduce costs.

The concept of 'Smart Living' aims at a redesign of our houses and living environment, which is strongly related to health and care, but also interconnected with supply and use of scarce resources

(energy, water) and ICT enabled making use of shared infrastructures. The analysis and approach of the current (malfunctioning) society is a trans-sectoral innovation perspective.

## 6. (Technology)Policy issues in sustainable production and consumption

Sustainability is high on the political agenda but despite many policy efforts little results are booked in practice. Many efforts have focused on technology development and alternative materials and products.

- A workshop on this topic could look back at key conclusions of foresights on sustainable production and consumption and raise questions what reasons could explain the disappointing changes in practice.
- Another topic of interest in this context could be the exploration of enhanced policy alignment towards sustainability.
- The food industry might be a specific case (renewable, footprint, waste reduction)

## 7. Resource efficiency in European manufacturing

Related to the above point of sustainable production and consumption, resource efficiency is an important challenge for European industry. With few own raw materials Europe is a net importer of resources and relies heavily on imports for industrial production. Expected price increases in future mean that resource productivity increases can help European industry to remain competitive. While resource efficiency has increased greatly in some industries others have developed less favourable over the last decade.

Dematerialisation refers to transition from material goods to services as a key driver of the creation of economic value in society. This can improve eco-efficiency but also improve the competitiveness and quality of life providing better solutions faster.

- A workshop could focus on this specific aspect linking sustainability efforts and industrial competitiveness.

## 8. Assessing (fast) technological changes and their impact on law, policy and society

Based on the so-called Moore's law related to accelerating advances in properties of ICT and computing technologies (e.g. processing speed, memory, declining costs etc.) similar assumptions of "acceleration" have also been proposed for other scientific and technological developments (e.g. Vinge/Kurzweil).

Although especially the forecasts of Kurzweil (and Vinge) are often being criticised as being too technologically deterministic, they actually seem to be quite accurate if looking from a perspective of technological development without any societal interfering factors (i.e. predicting what could be principally possible in technology). Regardless of this and the actual speed of developments, societal and legal adaption seems to lag behind technological developments. This becomes visible if looking at the developments in human embryonic stem cell legislation, end-of-life regulations, privacy protection and security (in the context of intelligent surveillance and defence robotics), DRM, HET etc. Converging new miniaturization technologies could help to solve socio-economic challenges.

So some major questions to be addressed refer to the measurement of technological development, the relation between forecasting and foresighting in regard to technology forecasts, technology assessment and "vision assessment" and the most important question of how to proactively deal with (at least assumed) fast changes in legislation, education and other areas of society.

## 9. How to balance innovation and precaution



The EU has an enormous potential for fostering innovation, driven by social, cultural and societal needs. Using this potential is needed to maintain economic growth of the EU in the long term, to maintain the same economic and political power and to address internal and external societal needs. Joint actions of both the EU and the Member States are needed to make the shift towards a new innovation strategy.

Innovation is regarded as central topic and goal for Europe. Since innovation is something new by definition, where no long-term experience exists, conflicts with the call for precaution and strict interpretations of the precautionary principle could occur.

Thus one major question to be addressed is how innovation and precaution can be balanced without hindering each other and how can foresight methodologies help to better assess risks and guide innovations and new developments towards safer trajectories.

### **10. The impact of robotics and AI on society, law, safety and security**

Robots have already left the factory halls and are entering our offices, homes, hospital and military. They and the underlying Artificial Intelligence (AI) are getting increasingly sophisticated, human like and are already outperforming humans in some areas.

“Intelligent” artefacts that display properties that have for a long time been considered exclusively human are something new to society and legal systems. As robots and AI are increasingly being included into human decision-making processes and as more and more human activities depend on their actions and services, the existence of robots and AI leads unprecedented questions in regard to legal questions, ethics and society.

- Who should be held responsible for the actions of a robot? (legal, policy)
- What may be special concerns about using robots in critical situations or environments such as the military or healthcare? (legal, policy, society, ethics)
- What are the major (future) developments in AI and robotics and where may be the constraints for development? (science, technology)
- What impact could further developments in robotics and AI have on the job market? (policy, science, technology)
- Do we need legal, social, ethical guidelines for the further development, deployment and possibly treatments of AI and robots?

### **11. Human Enhancement Technologies (HET)**

Human Enhancement Technologies (HET) are defined as means and practices based on science and technology that (are realistically expected to) improve or positively modify physical, cognitive and emotional capabilities and features of healthy individual humans. Thus there is a formal distinction between HET and therapeutic or preventative medical interventions, but the differences are blurry. HET includes a wide area of topics including neurotechnology, “smart drugs”, life extension, functional food, biotechnology/genetic engineering, ICT devices, implants, prosthetics etc. and possibly even methods like meditation, educational and memorizing techniques if based on scientific assessment and technological methods.

As the scientific insights and technological possibilities for achieving such goals are becoming increasingly realistic, the interest of policy makers and the general public is slowly shifting towards concrete considerations and discussions.

HET has been chosen as topic for one of the SESTI project evaluation workshops. Several workshops and symposia have already been conducted around this topic by the Rathenau Institute, the last in cooperation with the Dutch Ministry of Justice.

The new and emerging possibilities of HET raise new question for the future that especially address laws and regulation, justice, business, education, competition, human rights, freedom, risks and the assessment of chances and dangers.

## 12. Climate change and implications for water safety (flooding)

Climate change is expected to not only result in an increase in sea levels but also in more extreme and frequent precipitation leading to floods in areas not expected and prepared. Recent examples are Central and Eastern Europe, where high precipitation in mountainous regions led to rivers flooding areas far from coastlines. With large percentages living close rivers large shares of European population are likely to be affected by climate change and water safety.

- A policy workshop could focus on the impacts of climate change on water safety and with rivers crossing several European countries needed policy cooperation between Member States.

## 13. Emerging risks

In a rapidly changing world, governments are frequently confronted with unforeseen crises as well as longer term challenges arising from a broad range of domains. As a consequence, policy makers are now becoming increasingly aware of the importance of having robust systems in place to identify emerging risks at their early inception. Ideally, such a system would provide an opportunity for risk assessors to undertake their full risk characterization, and for risk managers to put in place strategies for prevention and control, possibly avoiding unnecessary scares at a population level.

The emergence of new risks, including those in the food chain, may depend on a variety of different factors and circumstances which may be very difficult to predict. As data leading to a correct identification of risks at their early inception are likely to be characterised by considerable limitations and uncertainties, the identification of emerging risks requires a structured intelligence approach, based on a high level of organization and expertise in a broad range of sectors.

- Discussions at a policy workshop could focus on available methods to identify emerging risks, strategic sources of information and strategies for data collection, identification of drivers of change as underlying causes of emerging risks, and on opportunities for the establishment of networks to communicate on emerging risks.

Other workshop topics, which still need to be elaborated, comprise security, safety, defence and privacy issues, democracy at risk as well as exploring the policy-makers' needs for forward looking activities. Note that any of the (sub-) topics may be combined to discuss cross-cutting challenges.

### Draft schedule with proposed dates for the European and national workshops

- The first workshops (November - December 2010)
- The second workshops at the FTA conference (May 2011)
- The third workshops (September - October 2011)
- The fourth workshops (February - March 2012)
- The fifth workshops (June - July 2012)

## 5.3 How to develop the workshop

Workshops can be organised applying a horizontal or a more vertical approach (c.f. D5.1). Workshops focus on a theme on the specific policy field or in the sharply defined crossroad of the policy fields to identify specific challenges and proactive policy responses. Additionally cross-cutting theme(s) can be introduced addressing different policy fields and economic sectors and scientific fields to identify new societal challenges and corresponding proactive responses. The workshops are organised involving

domain experts, policy-makers and forward looking experts with different methodological expertise (both quantitative and qualitative approaches).

Several ideas will be followed to develop the policy workshops:

- Standard template for a workshop design that can be adapted to specific requirements for the individual workshops and which describes the activities taking place during the workshop (this standard template for workshop proposal shall serve to inform the client),
- Guidelines for applying different modules to prepare background material for the workshop,
- A password-protected workshop sub-page on the EFP can be used to provide information to the participants and to invite them to take part in a pre-workshop online survey assessing for instance the main elements/conclusions of the background document,
- Manual framework on how to use EFP in policy support,
- Guidelines on how to use outcomes from policy workshops to improve EFP as a whole and to get the desired political impacts within the workshop topic,
- Guidelines for proposing future needs for foresight projects.

### Invitation of participants

The project partners and their networks identify potential participants including policy-makers and experts working in the fields related to the identified area and forward-looking activities. They are contacted by the partners to be informed about EFP and to indicate their availability to participate in the workshop. Project partners will liaise with DG RTD in the identification of possible participants to EFP workshops.

- Workshop participants are selected in view of the following criteria:
  - 12-14 participants in total
  - Approx. half of the participants policy-makers
  - Approx. one quarter of the participants scientific experts in the area
  - Approx. one quarter of the participants foresight and forward looking experts (project partners)
  - Gender balance
  - Geographical coverage
  - Representatives from different methodologies and foresight approaches
  - Travel costs of participants
  - Availability of participants
- External participants (through web streaming, see below 'organization of the workshops')
  - External participants are selected from the initial list of identified participants
- Invitation of participants
  - Potential participants should be approached at the latest six weeks before the workshop
  - At least two weeks before the workshop takes place, both selected workshop and external participants are invited by the project coordinator
  - The invitation consists of a pre-workshop survey requesting the participants to send:
    - i. a short bio addressing especially their expertise in relation to the identified area and scanning
    - ii. short notes on their interests in the area and in forward looking activities
    - iii. Expectations on the workshop.
- Background material for the workshop
  - At least one week before the workshop the participants receive the background material for the workshop:

- i. Invitation letter from organizing authority
- ii. Instructions for the workshop including travel arrangement and reimbursement
- iii. Agenda
- iv. Summary of the pre-workshop survey
- v. Background paper for the workshop

## 5.4 Transnational/European workshops

The following points should be considered when organising the policy workshops as kind of checklist:

- Target audience
- Specific objectives
- Approach to initiate and run the workshops, finding partners
- Structure of the workshop paper
- Profile of the participants
- Organisation of the workshops
- Role of the consortium partners
- Advanced tools to enhance participation in the workshop could be considered:
  - Web streaming: Workshop monitored through the password protected EFP project website.
  - Twitter: The external participants provide feedback during the workshop through twitter which is shared among the workshop participants.
  - Mindmapping: The workshop discussions are visualised using the mind-mapping technique to support the structuring of discussion.
- Workshop structure and roles of the consortium partners
- Collect feedback on workshop experience of the participants, e.g. through a survey

The following workshop structure could be applied for a more focused approach:

### **Block 1: Introduction to the workshop**

10:00 Introduction to the workshop (5 minutes)

- Agenda and chairing
- Mind mapping support
- Webcam, twitter, rapporteur
- Catering
- Tour de table (10 minutes): the name, the organisation and the expertise

### **Block 2: Identified area, its origin and evidence on emerging issues**

10:15 Research and methodological input to workshop based on background document

- Linkage of topic identification with EFP methodological aspects
- Overview on the area
- Overview on emerging issues / challenges
- Linkage with either an identified policy need or to why such an issue should be considered by policy

12:30 Lunch break

### **Block 3: Identification of implications on policy domains and proactive policy responses**

13:30 Discussion of policy needs and coordination plans (setting the agenda for discussion)

- Policy implications and required policy responses in different domains
- Possible areas of applications and evolution and associated trends and strategies
- Possible needs for coordination across policy domains

### **Block 4: Conclusions – Linking results back to EFP**

16:00 Sum up of main policy needs and discussion on how EFP could provide possible support through case examples and methodologies and expected policy impacts

16:45 Wrap up and conclusion

## **5.5 National workshops**

The European workshop paper will serve as background paper for the National workshop. As resources are required from a national actor to organise the national workshop the structure will be handled with flexibility and adapted to national needs.

- Alignment with topics that are of interest for the EFP consortium as well as national actors
- Target audience and profile of the participants – the target audience and profile of participants is similar in terms of competences as for the European workshop. However, the participants should reflect the needs and regional background relevant to the national workshop.
- Specific objectives – translating European workshop results to national context.
- Organisation of the workshops – a national actor needs to be found willing to organise a national workshop providing workshop premises, inviting relevant experts as well as travel arrangements.
- Role of the consortium partners – the networks of the consortium partners are key to find national actors willing to organise national workshops.

## 6. Annex I

### Grand Challenges and related Subtopics

Overview on key topics which may serve for the development of workshop issues (EFP Task 5.2) by taking into account the Europe 2020 strategy, the Lund and Donostia Declarations, the JRC Strategy 2010-2020, the JRC-IPTS study "Facing the future: time for the EU to meet global challenges", etc.

#### Boosting the New Sources of Growth and Social Cohesion [1, 2, 5, 6]

- Green growth: a sustainable and competitive economy
- A vigorous and coordinated EU wide economic strategy
- Stemming the rise in unemployment
- A new generation of responsible financial regulation
- Integration of legal migrants contributing to social diversity & security
- A single market fit for the 21st century
- Smart regulation to make markets work for people
- Increasing global markets changing the global geopolitical & economic map

#### Sustainable Development, Climate and Energy policy [1, 2, 3, 4, 5, 6]

- Turning the challenge of a sustainable Europe to our competitive advantage
- Keeping world leadership in fighting climate change and loss of biodiversity, and in promoting energy security & efficiency and agri-food development
- EU environmentally-friendly industries, services and technology
- Sustainable Production and Consumption
- Change the current ways in which essential natural resources are used
- Decarbonising our electricity supply and the transport sector
- Adapt EU policies to sustainable development & climate change challenges

#### Knowledge society and Innovation [1, 2, 3, 4, 5, 6]

- Research & development and innovation for a knowledge society
- Industry, services, agriculture and the maritime sector
- Develop Europe's international relations and co-operations in research and innovation – Focus on opening the ERA to the world (e.g. emerging markets)
- Create knowledge diversity through strengthening frontier research
- Taking a global lead in the development of enabling technologies such as biotechnology, information technology, materials and nano-technologies
- Modernisation of (higher) education and training – lifelong learning
- Achieving excellence in all three knowledge triangle dimensions
- Demand for innovation-based new solutions need to be stimulated through lead market policies
- Development of the digital economy and the sustainability science & research
- An employment agenda for a changing workplace
- Networks of the future – considering new legal issues, values and ethics
- Bridge innovation gaps by improving academia and industry relations
- Target excellent transdisciplinary research to meet Grand Challenges
- Humanities as an integral part in the research and innovation landscape to allow the full European knowledge and research potential to contribute to the global well-being

### **New governance reinforcing EU citizenship and participation [1, 2, 3, 4, 5]**

- Empowering citizens to be involved in decisions affecting their lives, including by ensuring transparency on how they are taken
- Promoting democracy, rights and providing protection
- Removing obstacles for citizens and using ICTs to empower citizens
- Supporting mobility for young people
- Enhancing dialogue and information
- Focus on Grand Challenges to transcend policy silos and generate (international) governance synergies

### **Ensuring safety and security of Europeans [1, 2, 3, 4, 6]**

- Fight against terrorism, international crime and human trafficking
- A Europe confident in its supply of energy, water, food and other raw materials, in the face of increasing international competition
- Tackling the demographic challenge (e.g. ageing societies) and pandemics
- Activities to promote public health, social security and consumer protection
- Crisis management including natural disasters, nuclear safety and security

### **Policy alignment towards sustainability [4, 5]**

- Alignment of sectoral policies to address cross-cutting challenges
- Links between research policies and industrial, environmental and social policies, as well as agriculture and regional development must be strongly improved
- Develop public innovation procurement related to Grand Challenges at all policy levels

### **Anticipation of future challenges to transform them into new opportunities [3, 4, 5, 6]**

- Alert functions and inclusive foresight processes should be developed for flexible and prompt actions to meet unforeseen challenges
- Development of processes and stakeholder platforms for identifying further Grand Challenges
- Customer-driven approach complemented by forward-looking, horizon scans
- Develop new platforms for global priorities and new instruments for improved impacts, e.g. by strengthening policy analysis and impact assessment

## **References**

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