EFFLA-commissioned Report on

The Engagement of Member States (MS) in Forward Looking Activities (FLA) at EU-level

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Acknowledgements

Executive Summary

This document has been prepared in response to the European Forum for Forward-Looking Activities (EFFLA) initiative to launch a study on the engagement of Member States in Forward Looking Activities. The study focused on the development of an approach for the 'design of a European foresight process that contributes to a European challenge-driven R&I strategy process'. The involvement of Member States (MS) in forward looking activities (FLA) at EU-level is considered important and beneficial, and is proposed to be facilitated at an early stage through the Council High Level Group on Joint Programming (GPC), the most relevant MS-led group in this context. The process of involving MS is in particular relevant ahead of the planning of the next framework programme after Horizon 2020 (Horizon II).

Member states use of Forward Looking Activities (FLA) in decision making processes exhibits a rich diversity of rationales, approaches, functions, process and tools and a significant number of good practices which have relevance for the use of FLA at European level. The main approaches which have proven effective include the systemic/ full cycle foresight with experimentation and inbuilt learning processes, horizon scanning and short challenge-focused projects, the use of big data and web 2.0, online surveys, bibliometrics for identifying the disciplines involved and focusing on future topics at the interfaces between disciplines, scanning for hidden trends and assessing the 'transformation potential' of clusters of trends through collective imagination & experimentation and success scenarios for cities.

Member states FLA have adapted over time, becoming more enmeshed with the policy cycle in an effort to render itself more effective and tailored to government /policy needs. Foresight has become cyclical, switching into different modes, for example in the case of Germany, moving between search and transfer, and from technology-push (technology trends) to demand-pull (societal challenges). Foresight is also adapting to new social media, web 2.0 by incorporating these into foresight initiatives. In future, FLA will have to contend with increased complexity and inter-disciplinarity requiring more cooperation at European level, sustaining big data and scanning facilities and their accessibility and enhanced approaches for implementing social foresight. The study highlight ways of improving the effectiveness of European level FLA including identifying a key access point to strategy formation, being demand-driven and addressing a clear need, and being multi-directional, multi-level and multi-actor, engaging in continuous translation and based on a serious research effort.

FLAs have a key role to play in supporting the development of Joint Programming Initiatives by supporting the early identification of existing and emerging grand societal challenges, analysing changes in and around the RTI system, building genuine stakeholder commitment to action and translating an already identified grand challenge into an operational reality. European level FLA needs to be systemic, cyclical with in-built learning, and with clear roles for the policy-makers, combining European level investment in core shared facilities, with ways of fostering bottom-up activities and drawing on a good mix of experts.

The challenges for FLA ahead of Horizon II include developing the innovation ecosystem, articulating grand challenges and directing smart specialisation. European level cooperation in the use of FLA in policy making can prove beneficial both at European level and at national levels. However this may not be always the case. Therefore the framework developed needs to be flexible and open, allowing

member states the freedom to choose which initiatives to join. This can range from a basic level of cooperation (sharing of information on national and regional foresight activities and the foresight setup, approaches and tools) to a deeper level of cooperation (on joint projects and events).

National foresight programmes have generally undergone some form of evaluation, ranging from international evaluation, light evaluation and self-review. However the extent to which formal evaluation has been undertaken is limited in terms of number and scope. Thus the evidence base for innovation and related policy impacts resulting from foresight activity is limited, due to a number of factors.

Foresight exercises can address a number of deficiencies in innovation policy, including weak framework conditions, outdated policies, insufficient emphasis on the demand side, lack of critical mass, poor connection between national and regional innovation system. The rationales for foresight linked to innovation policy have evolved over time. Two broad types can be identified, namely an advisory or strategic role in reviewing/reconfiguring innovation policy and/or the innovation system as a whole or with a particular focus and a more instrumental role where foresight supports prioritisation, networking and/or articulation of challenges. The first category, foresight for innovation policy, in particular reviews of the innovation policy/system, have been generally well-received by sponsors and stakeholders, based on exercises where some form of evaluation has taken place. Evaluations provide endorsement for the use of foresight in undertaking a strategic review of the innovation ecosystem, setting priorities for research and innovation, building common visions between innovation actors, making decisions more robust through exploration of scenarios or drawing in wider expertise and increasing the likelihood of consensus by engaging a wider range of stakeholders through participatory elements.

The joint EFFLA-GPC workshop held in Brussels on 6 December identified a number of challenges for European FLA related to ensuring effective linkage of vision and strategy to societal challenges, and synchronising with the policy cycle. Recommendations included:

- making decision makers more accountable in terms of involving stakeholders more comprehensively in European foresight processes and evaluation;
- designing foresight reports to allowing different stakeholders to give evidence through recorded messages and images.
- FLAs need to be trusted and legitimate and there need to be clearer guidelines for the use of foresight in improving the engagement of societal players in policy and ways of securing optimal societal impacts.
- Ahead of Horizon II, there are particular challenges for the use of foresight in policy planning and implementation relating to focus on European added value, the strategic approach, the stakeholder terrain, the targeted impacts, the tension between the systemic and linear processes, the need for a sound foresight methodology and foresight expertise and creating orchestrated time-lines between member states using FLA activities as coordination mechanisms.

In order to connect national FLA with European level FLA, a number of actions are recommended including:

- Mapping of national networks and stakeholders complemented by a mapping of FLAs sponsored/implemented by EU institutions and agencies. Connection through platforms and wikis presents the challenge of identifying the range of persons and institutions to engage in the wiki.
- There is a need to approach the full range of European platforms using foresight with a view to enhancing their use of FLA by setting guidelines, while ensuring flexibility of membership and support from the EC.
- There is a need for further work on how best to develop joint FLA and operationalize it through guides and pilots, under the guidance of a joint strategic group and the DG RTD FLA hub. In order to achieve the full potential of FLA in JPIs, the following steps are recommended:
  - An evaluation of existing JPIs' FLA needs to be undertaken as a means for guiding follow-up action. It is important that EFFLA and GPC cooperate on enhancing and operationalising the use of FLA to address these functions, addressing in addition networking and infrastructure and defining procedures and scope.
  - On an operational level, there is a need to include foresight in the GPC framework conditions group.

Introduction

This document has been prepared in response to EFFLA's initiative to launch a study on the engagement of Member States in Forward Looking Activity in support of the work of the European Forum for Forward-Looking Activities. The scope of the study was linked to EFFLA's remit to enhance collective forward looking intelligence in Europe, particularly as a means for tackling emerging societal challenges and designing more comprehensive and pro-active European policies.

The study focused on the further development of the approach for the 'design of a European foresight process that contributes to a European challenge-driven R&I strategy process' and the setting up of a FLA-hub in DG Research and Innovation (RTD). The involvement of Member States (MS) in forward looking activities (FLA) at EU-level is considered important and beneficial, and is to be facilitated at an early stage through the Council High Level Group on Joint Programming (GPC), the most relevant MS-led group in this context. The process of involving MS is in particular relevant ahead of the planning of the next framework programme after Horizon 2020 (Horizon II).

The paper addresses the following key aspects:

1. the use of FLAs in decision making processes at governmental/agency-level in MS – illustrated with concrete examples as discussed in the preparatory workshop
2. the impact of FLAs at national level on innovation policy and practice – including description of experiences and lessons learned
3. assessment of the benefits and obstacles of connecting national level FLA with FLA at European level including e.g. interaction with the anticipated FLA hub in the Commission.

Part 1 of this document focuses on the key insights and results which emerged from the expert preparatory workshop held in Brussels on 25 October which included presentations of concrete examples of use of FLA in policy making at national and regional level and the use of FLA in Joint Programming.

Part 2 includes an overview of the impact of FLAs at national level on innovation policy and practice in selected countries worldwide, drawing on a report by the author for NESTA (National Endowment for Science, Technology and the Arts)[1] on the same theme.

Part 3 presents the key insights, results and recommendations emerging from the joint EFFLA-GPC workshop held in Brussels on 6 December which was organised in 'foresight mode' with breakout sessions addressing the challenges for FLA (relevant to policy) and the requirements and needs ahead of 'Horizon II' and ways of connecting FLA at national level with FLA at European level and best practices from MS which could be used at EU level.

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[1] In 2012-13, NESTA funded a project entitled the Compendium of Evidence on Innovation Policy led by the University of Manchester, which included a report by the author on the Impact of Technology Foresight.

Part 1: Current Use of FLA in policy making at European, national and regional level

Background

This part of the document outlines the main insights and results from the preparatory expert meeting held on 25th October 2013. This part was used as a background paper and to stimulate discussion at the EFFLA – GPC workshop held on 6 December 2013 on 'How to involve Member States in Forward Looking Activities at European Level'.

The first section focuses on insights emerging from the discussion of good practices in the use of the FLAs in decision making processes at governmental/agency-level in MS presented during the preparatory workshop. The second section outlines insights related to experiences in the use of foresight by the JPIs and the use of foresight more broadly at European level which constituted the second part of the discussion at the workshop.

The key themes for discussion at the preparatory workshop were:

Section 1: Use of FLAs by MS at national and regional level

1. What has been the approach taken by MS in the use of FLAs in decision making processes at governmental/agency-level?
2. What roles/ functions do national FLAs fulfil?
3. What FLA approaches, processes, tools have proven effective in terms of generating policy impacts?
4. What challenges were encountered and how were they addressed by MS FLA?
5. What challenges are foreseen for the future of FLA at MS level?

Section 2: Use of FLAs at European level

6. What are the different types of FLAs which have evolved at European level?
7. What are the key insights and lessons emerging from these European level FLAs?
8. What has been the approach taken by JPIs in the use of FLA in their work?
9. What JPI FLA approaches have proven effective so far?
10. How to improve the use of FLAs in JPIs?
11. What types of European level FLA frameworks and approaches could be considered for addressing Horizon II?
12. What are the challenges for FLA (relevant to policy)? Requirements and needs ahead of 'Horizon II'?

Section I: Use of FLAs by MS at national and regional level

1. What has been the approach taken by MS in the use of FLAs in decision making processes at governmental/agency-level?

The four examples of national foresight (Germany, UK, Romania and Finland[2]) presented at the workshop highlighted the different styles and functions of FLA in national policy-making and the diversity of approaches used. These include:

- Programme-based foresight: to anticipate long-term developments in research and technology and societal challenges; to identify new research and technology focuses, areas of activity covering a range of research and innovation, including potential for strategic partnerships and priority areas of R&D activity, as the basis for defining funding programme priorities.
- Project-based coupled with scanning/training facility: to address key challenges of national concern helping to define policies and strategies.
- Strategy-based foresight: to identify national strategies for research and innovation and to identify areas of smart specialisation
- Systemic foresight: to address the whole policy cycle using experiments and developing capacities and learning.

2. What roles/ functions do national FLAs fulfill?
   National foresight addresses a range of roles and functions – some intended and some unintended, including:
   - Agenda-setting in R&I policy and updating the agenda after a certain time span
   - Defining new directions for national R&I policy and new mission for R&I; defining national R&I strategy and providing inputs to the national high tech strategy
   - Generating new ideas for Ministries
   - Improved information for decision-makers
   - Facilitating cross-disciplinary and multidimensional constructive dialogue between different entities in government, society and industry, including "strategic dialogues" and dialogues between scientists from different disciplines under one headline
   - Discussion of results with specialist public
   - Scanning and training facility
   - Identification of key emerging developments in science, technology, economy and society (e.g. identifying key emerging technologies)
   - Defining strategic plans for key issues (e.g. future of a city or industry)

The key functions relate to:

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[2] Presentations by Kerstin Cuhls, Luke Georghiou, Adrian Curaj and Pirjo Kyläkoski

- Continuous discussion between leading brains
- Tuning in to trend breaks and encouraging transitions
- Free space for open creative discussions
- Serves as an antenna and backdrop for roadmapping and strategic dialogues.
- Backing up "findings" about future issues by evidence-based methods, legitimation of topics
- Telling plausible stories about the future

3. What FLA approaches, processes, tools have proven effective in terms of generating policy impacts?

The demand-driven aspect in each of these four examples is significant and having a client requiring/requesting an FLA is a key element in securing policy impacts. The German foresight was in the first cycle science and technology-driven. The second cycle is demand-driven and bottom-up. Both cycles are more search-oriented and exploratory, the results are geared to directly influence the development of new funding research programmes or to re-orient existing ones. The project-based foresight in the UK is effective in influencing policy and strategy since it directly addresses a government need, in particular cross-departmental issues. Indeed before a foresight exercise is launched, it has to meet certain criteria, including the need for a lead user/sponsor (typically a junior Minister). The Finnish system is structured in a way which ensures that the preliminary foresight work (on foresight insights) undertaken by TEKES serves as an input to the foresight work undertaken by the Ministry concerned and the outcomes are again taken up by TEKES as inputs for the next round. This coordinated system allows for continuous learning and experimentation among the players.

The societal impact of foresight work is marked in at least two cases, the Finnish and German foresight. In the former the topic is reflected in topics recently addressed in their programmes, namely sustainable growth and the well-being of citizens, while in the latter foresight results are discussed with a specialised public to foster new cross-cutting issues or well-known issues from a different perspective.

The Romanian foresight, which typifies foresight in the majority of transition/cohesion economies and regions in Europe, including Estonia and Malta, is embedded in ongoing national strategy processes to set R&I priorities up to 2020 and therefore is effective in feeding directly into the national policy cycle at a strategic level.

These exercises may not always be considered successful by the sponsors/managers but they generate impacts, even if these are unintended. This is the case with German foresight and in addition, the results here are taken up by companies and other organisations conducting their own foresights thus generating secondary or knock-on effects and impacts.

There is a diversity of approaches used which have proven effective including:

- Systemic/ full cycle with experimentation and learning over a 4 year cycle (government foresight, foresight report, implementation, next round of foresight); implemented through a 2-phase approach, foresight insight phase focused on megatrends, foresight themes and

foresight work, and the strategy phase linked to formulation of the report and implementation, including experiments.

- Horizon scanning and short challenge-focused projects (as opposed to more institutionalised forms of foresight)
- Use of big data and web 2.0, online surveys, panels, Delphi (including arguments),
- Bibliometrics identifying disciplines involved and focusing on future topics at the interfaces between disciplines while reflecting on future demands, surveys, consultations with each department involved, identifying trends Including hidden trends), assessing the 'transformation potential' of clusters of trends through collective imagination & experimentation
- Success scenarios (although this assumes a level of maturity and engagement on the part of the key stakeholders)

4. What challenges were encountered and how were they addressed by MS FLA?

The drive toward social foresight linked to STI impacts is rendering foresight more complex, and the assessments and sense-making in relation to interconnected impacts/ systemic dynamics difficult to understand. The topics addressed can be complex (e.g. human-technology cooperation) and require interdisciplinary approaches, but they often prove the more successful. The mapping of open trends which are known/obvious, need to be complemented by the search for normative and hidden trends (e.g. citizen science, death culture, culture of swapping).

Timing of foresight exercises can influence its success. In both the UK and Germany, the launch of a second round/repeat of foresight too early, led to reduced level of success.

Resource constraints can prevent the continuation of foresight-related processes such as training and the development of new tools which can enhance the quality and impact of foresight. In the UK the horizon scans developed have proven useful, however they have not been regularly updated. The production of big data requires substantial investment whose utility can be outweighed by its actual use and efforts need to focus on making it accessible to secondary users.

MS FLA have tended to become more enmeshed and embedded with the policy cycle in an effort to render itself more effective and tailored to government /policy needs. Foresight has become cyclical, switching into different modes, for example in the case of Germany, moving between search and transfer, and from technology-push (technology trends) to demand-pull (societal challenges).

Foresight is also having to adapt to new social media, web 2.0 by incorporating these into foresight initiatives.

5. What challenges are foreseen for the future of FLA at MS level?
a) Growing efforts to effectively connect FS to decision-making and strategy formation.
b) Use of foresight to enhance coherence between actors involved in the realisation of complex, multi-actor, multi-level, multi-domain strategies

c)   Dealing with the unexpected in a systematic fashion; obviously, this can be subsumed under the complexity heading, but it is easier to comprehend if you explicit refer to unexpected developments, crisis, etc.

d)   increased complexity and interdisciplinarity requiring more cooperation at European level

e)   sustaining and managing big data and scanning facilities and their accessibility

f)   social foresight - societal impacts, societal engagement and social innovation

Section 2: Use of FLAs at European level

6.   What are the different types of FLAs which have evolved at European level?

Table 1: Overview of Rationales and Impacts of European level FLAs (adapted from presentation by Matthias Weber)

Type	Rationale	Examples	Impacts
Platforms & Networks	Connecting communities Access to FL-information	Forsociety ERANET, EFMN/EFP, Forlearn, iKNOW, International Foresight Academy (IFA)	Building networks, developing reference materials and fulfilling an important function as reference points
	Drawing „big pictures"	SCOPE 2015, Europe 2015, ESPAS, The World in 2025	Significant impact and approach/results used in follow-up projects
Expert Groups	Forward-looking advice on a broad range of possible topics	Regional Foresight, Blueprints, Key Technologies, the World and Europe up to 2050, Europe in the world – AUGUR, Regional aspects and in particular on the Mediterranean area MEDPRO	Considerable impact with results being used in related projects.
Thematic I	Focused Foresight Projects Providing strategic intelligence „à la carte", but without embedding	Large number of projects, using a range of methods, e.g. Farhorizon, AgroFood, POLINARES, PASHMINA	Significant impact with results used in design of programmes at European and national level
Thematic II	Full-scale foresights embedded in strategy development Clear need and demand to underpin strategy development using foresight.	Very few examples: FISTERA, Freightvision, FOREN, eFORESEE and FORETECH	FISTERA and FOREN considered high impact projects (FOREN in particular developed region-specific guides, FISTERA adoption of methodology at national level, contributions to EC policy)
Thematic III	Strategy processes with	ESFRI, SCAR, JTIs, JPIs,	High potential impacts

7. W h a	a foresight component Providing inputs to the definition of S(R)As	ETPs	(realised in SCAR foresight which led to significant follow-up activity)

7. What are the key insights and lessons emerging from these European level FLAs?
The sum of national FLAs is not a **European vision**. The European level has special features, that are less relevant at national level, e.g. regarding Europe's global role, the question of complementarities between member states (e.g. the possibility to address national-level weaknesses by recurring to the strengths of other EU-countries), the need to recognize joint interests as well as competitive issues among MS.

European-level foresight can be more effective if it[3] :

- can identify a key access point to strategy formation and gain access
- addresses a clear need for input in a strategy-preparing phase and here timing is critical
- is **multi-dimensional, multi-level and multi-actor**.
- balances technology-driven and demand-driven approaches
- entails analysis based on a serious research effort;
- facilitates interaction and a continuous dialogue for balancing European and national perspectives as the basis for building a European vision. Processes should be designed so that visions at different levels (e.g. community, user) can be integrated;
- links foresight processes to **practice.**
- engages **people** and addresses relevant audiences in different domains and at different levels simultaneously. Interaction and dialogue requires continuous "translation" and sense-making for engaging the different audiences - **this can prove difficult but** essential for impact;
- rethink and redesign the foresight approach as necessary - quickly learn how to adapt the project methodology if approaches turn out to be ineffective.

8. What types of roles and functions do FLAs fulfil in the context of JPIs?

FLAs have to fulfil a range of functions including:

- early identification of existing and emerging grand societal challenges ,
- analysing changes in and around the RTI system,
- building genuine stakeholder commitment to action,
- translating an already identified grand challenge into an operational reality.

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[3] Based on presentation by Matthias Weber

9. What has been the approach taken by JPIs in the use of FLA in their work?

To date, the uptake of FLA in JPIs has been most evident in the JPI Urban Europe.

The JPI Urban Europe[4] has undertaken a Megatrend Study aimed at:

- Identifying and understanding the challenges stemming from megatrends for European urban areas.
- creating a differentiated perspective of challenges for urban areas across Europe taking into account regional disparities.
- highlighting the complex connections between the challenges and megatrends.
- identifying research and innovation needs.
- generating input for the JPI UE Strategic Research and Innovation Agenda.

This was followed by the organisation of a series of 3 foresight workshops, which explored the interlinkages between the different challenges (climate, transport..) and identifying for which countries which challenges are important.

10. What JPI FLA approaches have proven effective so far?
    To date, the FLA undertaken by the JPI UE has led to the identification of 9 Urban challenges, 5 R&D and innovation areas and 5 city images. A dedicated project to encourage stakeholder involvement, SEISMIC, has also been set up.

11. What are the challenges of use of FLAs in JPIs?
    Different types of challenges[5] have been encountered. The first relates to the reaction of JPI partners to the use of FLAs in designing and developing the JPI which ranged from scepticism and ignorance to curiosity and willingness to proceed. The second relates to clarifying the functions of foresight for JPIs, in particular the role of foresight in the development of public-public partnerships, in defining the transnational strategic research and innovation agenda (SRIA), as a vehicle for network building and in evaluating long term impact.

    There are also practical challenges relating to achieving consensus among different programme owners and other players, clarifying roles and resolving tensions relating to agenda-setting, and managing in-kind contributions. The foresight role needs to be made more explicit and a more detailed guide could be useful for enhancing the use and impact of FLAs in JPIs.

    There are a number of challenges regarding the use of FLAs in JPIs which go beyond their use in single JPIs, including :
    - Identifying / reformulating Grand Societal Challenges (new JPIs?)[6]
    - Developing common Framework Scenarios

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[4] Based on presentation by Klaus Kubeczko
[5] Based on presentation by Klaus Kubeczko
[6] This refers to the JPI cycle model, where FS is foreseen as a two stage process, the first stage referring to the identification of areas/challenges calling for the setting up of a JPI. It is important to better underpin also this first stage of selecting JPIs through better EU-level FS.

- FS infrastructure (e.g. FS database, FS expert database,)
- Process design (scoping, stakeholder involvement and network development
- Awareness raising and training

12. What types of European level FLA frameworks and approaches could be considered for addressing Horizon II?

The indicated European level FLA frameworks and approaches for consideration are:

- Systemic, cyclical with in-built learning, clear roles for the policy-makers.
- Combining European level investment in core shared facilities such as knowledge management/sharing, foresight training and tools (horizon scans) with ad hoc futures work bringing together interested MS and regions, in response to demand. Ad hoc futures work can find niches in policy-making but more consistent influence can be achieved when the channels are institutionalised and trust is placed in a mediating body.
- Some way of fostering bottom-up activities
- Experts to be rethought – mix of experts, covering different disciplines, sectors, perspectives.

14. What are the challenges for FLA (relevant to policy)? Requirements and needs ahead of 'Horizon II'?

There will be a greater focus on generating impact in Horizon 2020 and this will entail new (and renewed) demands on foresight, both in terms and process and content, linked to[7]:

- Grand challenges (identification and articulation – ad hoc or systematic) The grand challenge approach can both open and close the futures we perceive and prepare for
- Innovation ecosystem - competition and cooperation create a complex environment in which to place foresight activities but nonetheless there is an increasing dependence upon them to help moderate the flows of the innovation ecosystem, with less emphasis on stand-alone foresight and more emphasis on interface with emerging R&I policy scenario.
- Smart specialisation - emergent idea to tie regions down to strategy tailored to their strengths and opportunities and entails designing integrated, place-based economic transformation agendas, process of entrepreneurial discovery, entailing foresight with business engagement

Targeted foresight will be needed to bring together socioeconomic demand and innovation potential around common vision – both incubator and lobby.

It is envisaged that the use of FLAs in European level policy-making could have to contend with the following problems and constraints:

- Even where there is clear consensus about the importance of the challenge this may not be matched by agreement on the ensuing research and innovation priorities
- In addressing the demand to identify priorities, establishing meaningful level of granularity avoiding generic categories (eg 'environment') could prove problematic, together with the

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[7] Based on presentation by Luke Georghiou

interdependence of priorities including those below line and the reluctance among researchers to identify negative priorities.

- the impact of FLAs at national level on innovation policy and practice – including description of experiences and lessons learned
- assessment of the benefits and obstacles of connecting national level FLA with FLA at European level including e.g. interaction with the anticipated FLA hub in the Commission.

15. Taking forward the initiative

One of the challenges for taking forward European level FLA is the need to persuade member states of its importance, especially in the case of those member states already undertaking extensive activity at national level. It is therefore important to outline the different levels of engagement foreseen and the related benefits.

It needs to be pointed out at the outset that in some cases European level cooperation in the use of FLA in policy making can prove beneficial both at European level and at national levels, however this may not be always the case. Therefore the framework developed needs to be flexible and open, allowing member states the freedom to choose which initiatives to join.

1. Basic level of cooperation

1a. Sharing of information on national and regional foresight activities

This can take place after the event or before an activity is launched.

The potential advantages of European level of cooperation are wider dissemination of results, and obtaining feedback on results from experts in other countries. Sharing content broadens the currency of the approach taken, the scenarios used, and the scans can provide common reference. Sharing information before the event is useful for attracting international (expert/institutional) participation where this is needed or considered beneficial for the particular theme (where the international dimension is important, where international benchmarking is needed, where different cultural perspectives are needed, or where the role of other countries/international players is key).

1b. Sharing information on the foresight setup and/ or horizon scanning setup, the approach used, and the tools used (particularly useful where new approaches and tools are being introduced). Governments need to keep informed on how other countries are organizing themselves in terms of foresight and horizon scanning. Many of the setups are being re-organized and streamlined due to budgetary constraints. European level cooperation could take the form of sharing facilities, sharing manuals, sharing databases, expertise.

2. Deeper level cooperation

2a. Collaborating on joint events and projects

Member states may identify common interests and launch joint activities to enhance the scope, scale, robustness and diversity of the approach. Collaboration also provides access to expertise or data not available in one MS – for example, a comparative perspective or a lead market experience elsewhere. This could be organised by a group of member states and/or member states and European institution(s).

2b. Enhanced and wider use of foresight in European projects
By supporting this initiative, governments can secure a greater handle on the strategic approach and agenda setting in key EU projects/ initiatives. This includes JPIs but can extend to other initiatives prioritized by governments.

Part 2: Overview of the impact of FLAs at national level on innovation policy and practice

Background

This part of the report provides a brief review of the impact of FLAs at national level on innovation policy and practice in selected countries worldwide, drawing on a report by the author for NESTA on the same theme.

From this recent review of the experiences of a number of countries in Europe and worldwide which have undertaken national foresight activities related to innovation policy, it must be noted at the outset while national foresight programmes have generally undergone some form of evaluation, ranging from international evaluation, light evaluation and self-review, the extent to which formal evaluation has been undertaken is limited in terms of number and scope. Thus the evidence base for innovation and related policy impacts resulting from foresight activity is limited, due to a number of factors.

Foresight for policy-making can be and has been applied to a range of rationales, contexts, policy settings, sectors, domains and levels (including national, international, regional, local, city), which dictate form, scale and focus and therefore the results and impacts of foresight activity. In general, there has been a move away from large scale programmes, to more modest, discrete, often embedded processes as part of other strategy and policy development initiatives. Foresight's innovation policy-related rationales have evolved in line with innovation policy paradigms, reflecting systems of innovation and evolutionary economics thinking and responding to aspects of market or system failure (see Table 1: Five Generations of Foresight below). This framework allows a distinction to be made in the expectations of impact of foresight upon innovation policy and hence upon the criteria for its evaluation and the methods used to assess those impacts.

Foresight exercises can address a number of deficiencies in innovation policy, including:

- Innovation policy is ineffective and/or outdated
- Weak framework conditions for innovation and the need to reorient the science & innovation system and move towards an innovation-friendly ecosystem
- Poorly networked R&I system and need to include new actors into the strategic debate and re-configure old networks and build new networks linking fields, sectors & markets or around problems
- Lack of critical mass /scale and need for scaling up through R&D and technology clusters
- Weak connection between national innovation policy and the regional innovation system and the need for an effective regional innovation policy (tapping indigenous strengths and local tacit knowledge)
- Path-dependency and policy lock-in and the need to shift to a new policy paradigm, e.g. shift to the bio-economy
- Insufficient emphasis on the demand side and social innovation
- Fragmented policies and need for more coherent, joined up policies
- Insufficient investments in research and innovation and need to identify priority areas of strategic research and key critical technologies to target investments
- Poor anticipation and response to grand challenges and crises and need to identify the role science and technology can play and potential opportunities

Table 1: Five Generations of Foresight

Generation	First	Second	Third	Fourth	Fifth
Focus	Technology forecasts	Technology and Markets	Technology, markets and the social dimension	Distributed actors in innovation ecosystem	Tailored approaches in R&I ecosystem
Programme Structure	Science and technology	Industry & Service Sectors	Thematic, socio-economic, problem-solving	Distributed role in innovation system rather than single policy sponsor	A mix of foresight programmes and exercises, also distributed across many sites but in combination with other elements of strategic decision-making.
Actors	Experts	Academics and Industry	Academics, industry, Gov & social stakeholders	As for 3rd generation but widening scope for example to regional level	Domain experts working alongside stakeholders and foresight experts.
Objectives	Picking winners	Networking the economy	Wiring up NIS	Self-organising NIS – link to concepts of industry ecosystem and open innovation	Policies and structures or actors within the STI system or the S&T dimensions of broader social or economic issues.
Evaluation Criteria	Accuracy of prediction and diffusion of results particularly to non-experts	Take-up of priorities and development of networks among industry/academia participants	Involvement of stakeholders in evaluation and embedding of a foresight culture.	As for 3rd generation but reflecting different expectations and needs of stakeholders	Focus on additionality of foresight in wider set of activity in sector or domain.

Source: Adapted from Georghiou (2008)

Foresight exercises to shape innovation policy fall into two broad types: (i) an advisory or strategic role in reviewing/reconfiguring innovation policy and/or the innovation system as a whole or with a particular focus. (ii) a more instrumental role where foresight supports prioritisation, networking and/or articulation of challenges. The first category, foresight for innovation policy, in particular reviews of the innovation policy/system, have been generally well-received by sponsors and stakeholders, based on exercises where some form of evaluation has taken place. The types of impacts which can be generated from these two types of foresight are outlined in Table 2 below.

Table 2: Innovation Policy Impacts generated through national foresight

Immediate impacts	Intermediate impacts	Ultimate/End impacts
- bringing new actors into the strategic debate e.g. German FUTUR brought in 'informed public'	-strengthening the R&I ecosystem including building, transforming or reorienting the system, for example the Hungarian foresight, Swedish foresight.	-improvement in national innovation performance
- creating new networks and/or re-aligning existing networks e.g. first cycle UK Programme built academic-industry networks	-setting up of new R&I programmes and measures, e.g. Luxembourg foresight	-strengthen national competitiveness
- linkages across fields, sectors and markets or around problems e.g. second cycle UK Programme had thematic structure	- creating critical mass through technology platforms and clusters, for example, the European Technology Platforms and Joint Programming Initiatives.	- more competitive products and services
- mapping (demonstrating) the' vitality' of the R&I ecosystem, demonstrating current and emerging technological opportunities , e.g. French FutuRIS focused on systemic challenges.	- demand-driven innovation based on enhanced understanding of user needs and user-supplier links. Not present in country exercises rather embedded in good procurement practice.	
- scanning and exploring future opportunities to set priorities for investment in R&I and identifying niche areas of competitive advantage, e.g. the critical technologies exercises in France and US, Japanese and Korean Delphi		
- enhance interactions and learning, including science-industry links and user-supplier links and interactions across between domains and across sectors and markets or around problems and challenges, e.g. European Farhorizon Project		
- identifying barriers to innovation, e.g. French FutuRIS and FinnSight		
- producing significant strategy/policy documents, e.g. third cycle UK Foresight programme and European Farhorizon Project, Chinese CAS Foresight		
Timeline for implementation		
Short	**Medium-term**	**Long-term**

Source: Building on (Andersen and Andersen, 2012)

While bearing in mind that innovation systems failures and policy interventions differ from one country or sector to another, nonetheless some fairly consistent messages have emerged into when foresight can be usefully applied to innovation policy:

- When those sponsoring and/or implementing the exercise have sufficient standing to enjoy strong links at the highest level to policy makers responsible for innovation policy/system and are able to identify and address a set of current, emerging and furture policy needs/concerns.
- Where the exercise can attract and engage key players including those wielding power, interests, intellect, creativity and expertise relevant to foresight theme.
- Where the exercise is tailored to the needs of the policy maker and is able to adapt to those needs during implementation
- Where the policy context is sufficiently mature to take on more ambitious structural/systemic foresight
- Where the implementing team are sufficiently competent to ensure a level of preparation and organisation
- When the results are developed through a clear and transparent process, and presented in a coherent way to the policy makers
- Where the exercise is synchronised with the policy cycle and is able to deliver policy advice on time to fit the policy makers needs.
- Where the evaluation criteria address the specific concerns of the policy maker.

With these caveats, it can be concluded that evaluations provide some endorsement for the use of foresight in:

- Making an overall strategic review and direction of a national, regional or sectoral innovation ecosystem;
- Identifying priorities for research or innovation actions, again at multiple levels;
- Building common visions between innovation actors and/or stakeholders who may not be used to working together (e.g. industry-academic, procurer-supplier or different sectors in clusters);
- Making decisions more robust through exploration of scenarios or drawing in wider expertise;
- Increasing the likelihood of consensus by engaging a wider range of stakeholders through participatory elements.

Part 3: Exploring and institutionalising the broader and systematic use of FLA at European level

Background

This part of the document presents the key insights, results and recommendations emerging from the joint EFFLA-GPC workshop held in Brussels on 6 December. The broader backdrop of the workshop related to a core aspect of EFFLA's remit, namely to enhance collective forward-looking intelligence in Europe, particularly as a means for tackling emerging societal challenges and designing more comprehensive and pro-active European policies. The workshop was thus focused on the approach developed by EFFLA for the 'design of a European foresight process that contributes to a European challenge-driven R&I strategy process' and the setting up of a FLA-hub in DG Research and Innovation (RTD). The involvement of Member States (MS) in forward looking activities (FLA) at EU-level is in particular relevant ahead of the further planning of the next framework programme Horizon 2020 and in particular ahead of Horizon II and is to be facilitated at an early stage through the Council High Level Group on Joint Programming (GPC), the most relevant MS-led group in this context.

The workshop was convened to allow the sharing of insights and experiences among the members of the two groups as well as invited experts on effective ways of engaging Member States in Forward-Looking Activities.

The focus of the workshop was to:

- identify and reflect on challenges for use of FLA for policy-making and joint programming

- discuss the overview of best practices in the use of FLAs in decision-making processes at governmental/agency level in MS

- explore joint use of FLA to address societal challenges at national and European level and corresponding impact.

This workshop was organised in 'foresight mode' with breakout sessions addressing the challenges for FLA (relevant to policy) and the requirements and needs ahead of 'Horizon II' and ways of connecting FLA at national level with FLA at European level and best practices from MS which could be used at EU level.

Section 1.1: What are the challenges for FLA (relevant to policy)?

1. Ensuring effective linkage of strategy and vision to societal challenges in order to generate targeted impacts. How to strongly link and moor strategy to societal challenges/long-term issues (in order to address these challenges) and to the vision (in order to achieve the vision)?
Recommendation: The first step is to use FLA as a means to help link strategy/vision to societal challenges. Whether this attempt of linking them has an "impact on decision-making" is the next step to consider. There needs to be better defined ways of using foresight to address systematically vision, strategy and societal challenges and to link to

what the policy maker and society want from foresight. There needs to be greater clarity over expected impacts and how these are shared among stakeholders.

2. Synchronising FLA activity with policy making (timing) and the policy cycle. FLA needs to feed into the policy- making process more directly and to function in a cycle, letting the policy outcome cultivate the FLA.

3. Policy-making organisations need to nurture a culture of strategic and forward-looking thinking, including the capacity to detect significant trends, trends breaks, weak signals and emerging challenges. The speed of change can be abrupt and or slow. It is important to keep in mind that national and EU FLA takes place in a global context shaped by key players (e.g. USA, China, and Russia). Horizon scanning needs to be carried out with knowledge from the past. Attention has also to be given to how the sense-making takes place.

4. Securing effective linkage to decision-makers and all stakeholders to ensure effective implementation. How to convince the decision-makers to involve stakeholders, actors, citizens in the conceptualisation and implementation of the strategy (including funding) and how to commit these players to its concrete implementation?

Recommendations: to make decision-makers accountable in terms of involving stakeholders more comprehensively in foresight processes on European policy. Decision-makers can be made accountable by having them report to Parliament, drawing on good practice at national level. It is important that a pragmatic approach is adopted in bringing this to Parliament in terms of how to operationalize it, for example how to channel the opinion of societal groups.

In securing societal engagement, partipatory action research is recommended as a means for engaging stakeholders, not only in the ideation process but also when conducting experiments. Action research, as an experimentation approach, can also prove more effective in comparing potential impacts than an evaluation which is carried out in third person mode. The reports generated from such foresight approaches can reflect a more qualitative process.

It is also important in the reporting phase to consider who actually will give the account. Will it be the voice of the aggregator? Reports such as vision documents need to be designed in such a way as to allow different stakeholders to give evidence through soundbytes and images.

For example, in the UK, the National Health Service has been working on large group processes which involve the people rather than studying them. This implies a foresight aimed at promoting deliberative democracy by mobilising people to participate in projects and experimentation.

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5. Ensuring decision-makers agree to the full engagement of stakeholders, actors and citizens in the evaluation of policies and funding issues. It is recommended that an inclusive foresight approach is adopted with active involvement of stakeholders through the design of flexible, non-rigid structures[8]. The approach adapts as the situation changes over time. Through shared ownership and engagement, it will be possible to

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[8] It is important to highlight the fact that participation and engagement does not discharge policy makers from that responsibility which in the past was effectively delegated to expert groups. There is a delicate balance to be struck between political responsibility (also for non-popular decisions) and participation!

maintain active channels of communication by disseminating information on all aspects of the foresight and policy cycle.

For example, when the new action on societal challenges was being prepared, a number of methods were used including Delphi, consultation with NGOs on the monitoring and evaluation aspects and this was approved by the Council of Ministers.

6.   Managing the pull between policy and visions as political instruments and foresight as a science/art. Visions and policy are loaded with political messages and steering, while foresight tries to remain free of politics although this is difficult since foresight activities are in themselves political. This is also reflected in the actors, with some being more political, others more economic or social in outlook and each requiring different ways of involving them. There is also the dilemma between the need to project a long-term vision and the fact that the vision often needs quick revision.

7.   FLAs need to be trusted and legitimate. Legitimation through participatory foresight has become more important for legitimizing RTI policies. The challenge is how to involve the community at large and make FLA activity more visible and increase knowledge about FLA activity. **Recommendation**: FLA activity needs to be transparent and evidence-based (to the extent possible in the context of FLA) and on a level that is convincing enough to stimulate action among a wide range of actors (policymakers and stakeholders).

8.   Building trust among the stakeholder community through transparency and clarity over how the foresight process influences policy. How did certain topics make it into H2020? Stakeholders often perceive the policy formulation process and the selection of research priorities as an opportunity for lobbying specific interests, and at the same time as a threat. There are groups in society which can influence and have power and it is important to ensure influence/power is distributed more equally.
       Recommendation: The foresight process needs to be accompanied by efforts to build trust in our stakeholder community and to ensure that the process has legitimacy. This will be particularly important in the planning of Horizon II.

9.   Raising awareness among policy-makers on the need to address long-term questions. Policy makers are increasingly caught up in short term thinking and they need to take decisions now. The challenge even lies in awareness-raising and identifying /developing new mechanisms for this.
       Recommendation: Involving decision-makers by asking their opinion is not enough and it is recommended to include policy makers including forward-looking policy shapers in advisory boards and steering committees. This helps in terms of ownership of results.

10.   Defining the role of foresight in improving the relationship between society and decision-maker. While recent efforts have focused on improving the design of foresight, the process and tools so as to enhance its effectiveness in generating policy impacts, there needs to be greater emphasis on foresight's role in generating societal impacts.
       Recommendation: There need to be clearer guidelines for the use of foresight in improving the engagement of societal players in policy and ways of securing optimal societal impacts.

11.   Multilevel coordination: Coordination of FLA and exchange of information among member states and between member states and EU-level. Resistance and cultural differences can hinder this process. The main challenge is how to create a strong joint

commitment for FLAs at EU and national level. It may prove difficult to combine, share and use results from FLAs done for different clients with different objectives. Added challenges relate to how to identify and involve key stakeholders (e.g. research program managers in the case of JPIs)? How to convince policymakers of emerging challenges? Complexity is also increased as Grand Societal Challenge issues at national level between RTI policy and other policy fields (health, environment, agriculture, energy, mobility etc)

12. Exchange of best practices among member states and between member states and EU-level. This could focus on key foresight questions including: How to understand the new? What is new? How to see/want to see what is coming?! Overcome lobby groups (they take up time and space). Political short term policy is problematic since it tends to gain resources at the expense of FLA (broaden our perspective).

Section 1.2 What are the requirements and needs ahead of 'Horizon II'?

In Horizon II, there are particular challenges for the use of foresight in policy planning and implementation which are envisaged:

- Defining and agreeing on the European added value of particular areas and types of research and innovation will be challenging in terms of what is best addressed at European or member state level.
- In terms of the strategic approach, the EU will need to decide whether to adapt to the emerging trends in terms of where the world is going or to take a more ambitious approach and change the trend. Horizon II will be more interesting than h2020 in this respect.
- The stakeholder terrain is likely to be different and to require particular approaches. It is important to clarify for stakeholders at what point of the procedures we are and how they can intervene.
- In defining impacts, there is a tension between the systemic and linear processes and the impacts they generate which needs to be addressed.
- FLA needs to build on sound foresight methodology and foresight expertise. If FLA is to have an impact on the design of Horizon II, it needs to be evidence-based and unbiased with respect to specific political and industrial lobby groups.
- The process needs to start sufficiently early with orchestrated time-lines between member states and using FLA activities as coordination mechanisms (e.g. Urban Megatrend study in JPI Urban Europe, Foresight on Cultural Heritage).

Recommendations for GPC-EFFLA Action

1. Coordinate the timing of FLAs (e.g. in JPIs) action with the Horizon II process; be explicit about its policy cycle.

2. Information exchange; that GPC and EFFLA work close together.

Section 2.1: How to connect FLA at national level with FLA at European level?

1. There is currently very little connection between FLA at national and EU level and similarly there is a separation between sectoral and research ministries and DGs (though the latter are much more engaged with H2020).
   Recommendation: There is a need for greater coordination on both axes in order to address societal challenges in H2020 more comprehensively and effectively. It is recommended that a special group be set-up to help prepare the identification of new GCs, building on a combination of FS experts, policy experts, and JPI representatives.

> A rare success case is the role of SCAR (the Standing Committee on Agricultural Research). This has systematically used FLAs and has as a result achieved the setting up of two JPIs as well as influencing H2020. The Committee has a legal standing and has the advantage of serving as a reference point in the Common Agricultural Policy.

2. The challenge is that nowadays foresight is less centralised at the national level and is structured rather as a distributed/networked activity so it is not necessarily the case that national representatives will be in a position to build links between FLAs in the way that was possible in the era of single national foresight programmes.
   Recommendation: A comprehensive mapping is needed of national networks and stakeholders and an analysis of how these operate.

3. The current level and extent of FLA which addresses European challenges is not clear across the different European institutions and agencies. Linked to this, there is generally limited awareness of how this process works. For example, the European Parliament and MS national parliaments already work together in the area of technology assessment and this cooperation could be extended to FLA (however the technology assessment community and the foresight community do not necessarily overlap).
   Recommendation: There is need for a comprehensive mapping and analysis of FLAs sponsored/implemented by EU institutions and agencies. This will address the need to identify and focus on FLAs which have been successful (like SCAR) and to reinforce this type of activity. It will also allow the identification of areas (including European societal challenges) where FLA is needed and has not yet been undertaken. In addition areas where national stakeholders need to be more actively engaged in European level FLA can be highlighted and addressed.
   In general, the EC needs to adopt a concerted policy effort for the use of FLA at European and national level. The EU could introduce a type of requirement for foresight to be included in all European research undertaken, while ensuring that the FLA undertaken goes beyond previous exercises and rehashing of old ideas). The requirement needs to ensure that proper foresight is undertaken. This needs to be complemented by efforts to create a culture of awareness on the need and value added of undertaking FLA, particularly among politicians. H2020 calls for proposals could require a paragraph on foresight (same as the requirement for European value-add). In addition, this would impact on project sustainability/follow up.

4. The JPIs offer great potential for use of FLA to address a range of functions including exploring new societal sub-challenges, ensuring the sustainability of the financial system, development of strategic research agendas and alignment of agendas of national programmes with the JPI.

   Recommendation: In order to achieve the full potential of FLA in JPIs, the following steps are recommended. An evaluation of existing JPIs' FLA needs to be undertaken as a means for guiding follow-up action. It is important that EFFLA and GPC cooperate on enhancing and operationalising the use of FLA to address these functions, addressing in addition networking and infrastructure and defining procedures and scope. On an operational level, there is a need to include foresight in the GPC framework conditions group.

5. Connecting FLAs on the national and European level (keeping in mind that 'national' is in itself complex and not uniform) can take many forms, including national/national; national/regional; national/federal. Connection could take place through platforms and wikis. The challenge is to identify and connect a range of persons and institutions to engage in the wiki and this can lead to difficulties in differentiating between individual and institutional involvement. There is a concern that electronic platforms are faceless and there is a need to complement these with a more personal, face-to-face approach.

   Existing Platforms for Connecting

   Forwiki is an example of a national level (Romanian) wiki approach to promoting discussions among foresight experts worldwide.

   FUTURIUM is an example of a wiki approach to promoting European level foresight discussions. Contributions are invited by a moderator who is also responsible for managing and structuring the discussion.

   European Foresight Platform (EFP) provides news on FLAs underway or recently completed. It has also undertaken a mapping and analysis of foresight exercises which could be supplemented by government information on embedded FLAs.

   COST is an example of an intergovernmental platform at European level which supports bottom-up networking and cooperation between the public and private sectors and academia, in a range of scientific and related areas and themes which involve a forward-looking dimension.

   OMC , the open method of cooperation, is another possible platform for FLA cooperation between member states and associated states , promoting the harmonisation of policy and foresight approaches.

   Recommendation: There is a need to identify and approach the full range of these platforms with a view to enhancing the use of FLA in their activities. In order to facilitate this, guidelines need to be developed on how to operationalize the use of FLA in their context. It is important to ensure flexibility of membership of such platforms and support from the EC.

6. Other forms of connection which require possibly new frameworks and guidelines, include the launch of jointly conducted exercises between member states and involving EU institutions. These exercises could be undertaken by individuals on a personal level or an organizational level

and could be organised through a social networking/social media level. Key questions which need to be considered in developing this initiative include**:**

    a. Who is joining/connecting? There is an issue of variable geometry with some member states having strong competence and ongoing foresight activity, whilst others have fragmented activity. The areas of shared interest may also differ as a result with larger advanced countries using foresight to identify emerging areas of technology and catch-up countries focusing on smart specialisation.

    b. What are the levels of the actors to be involved? Activities could target young people, e.g. a foresight holiday based on EIT innovation holiday concept.

    c. What is relevant? The activity needs to be needs-based and linked to decision-makers. The cooperation could involve an exchange of experts to support the transfer of good practices to the less experienced, however there will be a challenge in addressing the imbalance of cost and benefit distributions. Pairing/mentoring exercises in variable geometry contexts, with learning on both sides are recommended.

    d. Who formulates the issues? Should the activity be linked to an ongoing/planned MS activity?

    e. Should the activity be top-down or bottom-up? should it be an open or closed activity? An open activity could take the form of a competition.

    f. Possible types of cooperation include joint horizon scanning , which could be undertaken through citizen science movement and bloggers and where results are made accessible to all countries.

    g. What type of metrics could be used? Metrics such as the ones used in Facebook – eg, flags and number of people interested could be used.

Recommendation: There is a need for further work on how best to develop joint FLA and operationalize it. This will require the development of 'how to' guidelines and pilots. This initiative can be developed and overseen by a joint strategic group made up of member states and relevant EU institutions. The DG RTD FLA hub can serve as a professional contact point for this group.

Section 2.2: Are there best practices from MS and other contexts which could be used at EU-level?

1. For foresight to achieve a high profile among policy-makers and at international level, it is recommended that efforts are invested in projecting foresight in major societal challenge events which attract media and public attention, such as for example the Security Conference in Munich and Davos. Alternatively efforts could focus on developing such a high profile event for foresight. The JRC conference on FTA/foresight in 2014 could offer such an opportunity.

2. In countries with limited capacity and resources for FLA, alternative ways of using foresight approaches have been explored, including use of certain approaches within an ongoing strategy development process. This has been the case in transition economies

where foresight has been used in an embedded way in the development of the smart specialisation strategy. The advantage of this is that the activity is both more directly streamlined and targeted to outcomes.

3. A foresight culture and foresight skills can be nurtured through university and school programmes. In Malta masters students following the European Masters in Creativity and Innovation, are encouraged to work on joint foresight pilots often linked to their work or area of interest.

4. There is a concern that at national level there is often limited incentive for a public authority to spot weak signals. In national governments there are departments who actually suppress weak signals (eg National Security). This both highlights the need for European level action and the possibility that European agencies experience similar behaviour.

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Chan, L., Daim, T, 2012. Exploring the impact of technology foresight studies on innovation: Case of BRIC countries. Futures, 44 (6): 618–630.

Cassingena Harper, J. (2013) Impact of Technology Foresight. Compendium on Evidence on the Effectiveness of Innovation Policy Intervention. http://www.innovation-policy.org.uk.

Georghiou, L., 2008. The Handbook of Technology Foresight, Prime Series on Research and Innovation Policy. Edward Elgar: Cheltenham.

Select EU Foresight Project websites

Agrifood ftp://ftp.cordis.europa.eu/pub/foresight/docs/kte_agri_rural.pdf
Europe in the world – AUGUR - http://www.augurproject.eu/
Blueprints http://cordis.europa.eu/foresight/regional-blueprints2004.htm
European Foresight Platform EFP www.foresight-platform.eu/
eFORESEE http://forlearn.jrc.ec.europa.eu/guide/7_cases/EforeseeMalta.htm
ESPAS http://europa.eu/espas/
Farhorizon http://farhorizon.portals.mbs.ac.uk/
FISTERA http://forlearn.jrc.ec.europa.eu/guide/7_cases/fistera.htm
FOREN http://forlearn.jrc.ec.europa.eu/guide/7_references/foren.htm
Freightvision 2050 http://www.freightvision.eu/
iKNOW www.community.iknowfutures.eu/
Key Technologies for Europe Expert Group http://ec.europa.eu/research/social-sciences/fwl-key-tech_en.html
MEDPRO- http://www.medpro-foresight.eu/
PASHMINA - http://www.pashmina-project.eu/
POLINARES - http://www.polinares.eu/
Regional Foresight http://cordis.europa.eu/foresight/regional.htm
SCAR Foresight http://ec.europa.eu/research/agriculture/scar/foresight_en.htm
SCOPE 2015 www.prest.mbs.ac.uk/prest/scope2015
The World in 2025 https://ec.europa.eu/research/social-sciences/pdf/the-world-in-2025-report_en.pdf

More details on these and other European foresight initiatives are available in

European Forward Looking Activities List of Activities 2007-2010
http://ec.europa.eu/research/social-sciences/pdf/eu-forward-looking-activities_en.pdf

EFFLA Expert Workshop

Engaging Member States (MS) in
Forward Looking Activities (FLA) at EU-level

25 October 2013,

Venue: Vinnova Office, Rue du Luxembourg 3, 4th floor, Brussels

Draft Agenda

Background

A core aspect of EFFLA's remit is to enhance collective forward looking intelligence in Europe, particularly as a means for tackling emerging societal challenges and designing more comprehensive and pro-active European policies. This study focuses on the development of an approach for the 'design of a European foresight process that contributes to a European challenge-driven R&I strategy process' and the proposal of setting up of a FLA-hub in DG Research and Innovation (RTD). The involvement of Member States (MS) in forward looking activities (FLA) at EU-level is in particular relevant ahead of the planning of the next framework programme Horizon 2020 and is to be undertaken at an early stage through e.g. the Council High Level Group on Joint Programming (GPC), the most appropriate MS-led group in this context.

Aims

This expert workshop is being convened to allow the sharing of experiences among invited experts on relevant national FLA activities and European level FLAs in particular linked to GPC.

The focus of the workshop is to:

- identify current/emerging challenges for use of FLA for policy-making and joint programming

- discuss examples of the use of FLAs in decision-making processes at governmental/agency level in MS (presented by the invited experts)

- explore joint use of FLA to address societal challenges at national and European level and corresponding impact.

The results will be used in preparation for the EFFLA-GPC workshop to be held at 6 December. This work relates to an EFFLA-sponsored action to develop a discussion paper on the use and impact of FLAs at national level on innovation policy and practice based experiences and lessons learned.

25 October 2013

Location: Skåne European Office, rue du Luxembourg 3, 1st floor, Brussels

The closest Metro-station is Trone.Brussels http://goo.gl/maps/zhLoQ

Opening

10:00-10:30   **Coffee /Tea Refreshments/ Experts to Submit Reimbursement Forms**

10:30-11:00   **Welcome and Briefing**

11:00-12:45   **National and Regional FLA Experiences - short presentations by experts followed by discussion on Current/emerging challenges for use of FLA for policy-making and joint programming**
  - **Kerstin Cuhls (German Foresight)**
  - **Luke Georghiou (UK /Manchester FLAs)**
  - **Adrian Curaj (FLA in Romania's National R&I Strategy)**
  - **Pirjo Kyläkoski (FLAs Tekes/Finland)**

12:45-13:45   **Lunch**

13:45-15:30   **European FLA Experiences (short presentations by experts followed by discussion on joint use of FLA to address societal challenges at national and European level and corresponding impact.**

- **Klaus Kubezcko (Role and Use of Foresight in JPIs)**
- **Matthias Weber (EU level FLA)**
- **Luke Georghiou (EU level FLA)**

15:30-16:00   **Coffee break**

16:00-17:00   **Wrap-up and preparation for December joint workshop with GPC**

EFFLA-GPC Workshop

Engaging Member States in
Forward Looking Activities at European level

6 December 2013, 10.00 – 16.00

VINNOVA

Rue Luxemburg 3, 1000 Brussels

Meeting room at 5th floor Skåne Office

Draft Agenda

A core aspect of EFFLA's remit is to enhance collective forward looking intelligence in Europe, particularly as a means for tackling emerging societal challenges and designing more comprehensive and pro-active European policies. This activity focuses on the development of an approach for the 'design of a European foresight process that contributes to a European challenge-driven R&I strategy process' and the setting up of a FLA-hub in DG Research and Innovation (RTD). The involvement of Member States (MS) in forward looking activities (FLA) at EU-level is in particular relevant ahead of the planning of the next framework programme Horizon 2020 and is to be undertaken at an early stage through the Council High Level Group on Joint Programming (GPC), the key MS-led group in this context.

Aims

This joint EFFLA-GPC workshop is being convened to allow the sharing of insights and experiences among the members of the two groups as well as invited experts on effective ways of engaging Member States in Forward-Looking Activities .

The focus of the workshop is to:

- identify and reflect on challenges for use of FLA for policy-making and joint programming

- discuss the overview of best practices in the use of FLAs in decision-making processes at governmental/agency level in MS

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This work relates to an EFFLA-sponsored initiative to develop a discussion paper on the use and impact of FLAs at national level on innovation policy and practice based experiences and lessons learned.

Day 1 : 6 December 2013

Location: Brussels

10:00-10:30   **Coffee /Tea Refreshments/ Experts to Submit Reimbursement Forms**

10:30-10.45   **Welcome by GPC Chair Rolf Annerberg and EFFLA representative Dan Andre**

10:45-11.00   **Introduction to the day's agenda and the group work by Jennifer Harper**

11:00-11:45   **Group Work 1: What are the challenges for FLA (relevant to policy)? Requirements and needs ahead of 'Horizon II'? Examples/Experience from JPIs and other initiatives and draw on EFFLA briefs**
Facilitators: Klaus Kubeczko and Philippe Destatte
Rapporteurs: Kim   Jansson   and   Jennifer   Cassingena   Harper

EFFLA Expert Workshop

Engaging Member States (MS) in

Forward Looking Activities (FLA) at EU-level

25 October 2013,

Venue: Vinnova Office, Rue du Luxembourg 3, 4th floor, Brussels

Draft Agenda

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This expert workshop is being convened to allow the sharing of experiences among invited experts on relevant national FLA activities and European level FLAs in particular linked to GPC.

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- identify current/emerging challenges for use of FLA for policy-making and joint programming

- discuss examples of the use of FLAs in decision-making processes at governmental/agency level in MS (presented by the invited experts)

- explore joint use of FLA to address societal challenges at national and European level and corresponding impact.

The results will be used in preparation for the EFFLA-GPC workshop to be held at 6 December. This work relates to an EFFLA-sponsored action to develop a discussion paper on the use and impact of FLAs at national level on innovation policy and practice based experiences and lessons learned.

25 October 2013

Location: Skåne European Office, rue du Luxembourg 3, 1st floor, Brussels

The closest Metro-station is Trone.Brussels http://goo.gl/maps/zhLoQ

Opening

10:00-10:30 **Coffee /Tea Refreshments/ Experts to Submit Reimbursement Forms**

10:30-11:00 **Welcome and Briefing**

11:00-12:45 **National and Regional FLA Experiences - short presentations by experts followed by discussion on Current/emerging challenges for use of FLA for policy-making and joint programming**
  - ▪ **Kerstin Cuhls (German Foresight)**
  - ▪ **Luke Georghiou (UK /Manchester FLAs)**
  - ▪ **Adrian Curaj (FLA in Romania's National R&I Strategy)**
  - ▪ **Pirjo Kyläkoski (FLAs Tekes/Finland)**

12:45-13:45 **Lunch**

13:45-15:30 **European FLA Experiences (short presentations by experts followed by discussion on joint use of FLA to address societal challenges at national and European level and corresponding impact.**
  - - **Klaus Kubezcko (Role and Use of Foresight in JPIs)**
  - - **Matthias Weber (EU level FLA)**
  - - **Luke Georghiou (EU level FLA)**

15:30-16:00 **Coffee break**

16:00-17:00 **Wrap-up and preparation for December joint workshop with GPC**

11:45: 12.10 **Plenary discussion on group work results**

12:10-12:30 **Presentation and roundtable on 'FLA Hub' in RTD by Jean-Claude Burgelmann, EFFLA**

12:30-13:30 **Lunch (group discussions continue over lunch)**

14:00-14:45 **Group Work 2: How to connect FLA at national level with FLA at European level. Are there best practice from MS which could be used at EU-level?**

Facilitators: Kerstin Cuhls and Luke Georghiou

Rapporteurs: Roumiana Gotseva and Anna Schaut

14:45-15:15 **Plenary discussion on group work results and summing up by the moderator**

15:15-15:40 **Presentation and Discussion on report on Best practice in MS presented by Jennifer Harper**

15:45-16:00 **Conclusions, recommendations and next steps by GPC Chair Rolf Annerberg and EFFLA representative Dan Andre**