



JRC CONFERENCE AND WORKSHOP REPORTS

For-Know Repository: How can global trends be used in foresight?

Expert workshop

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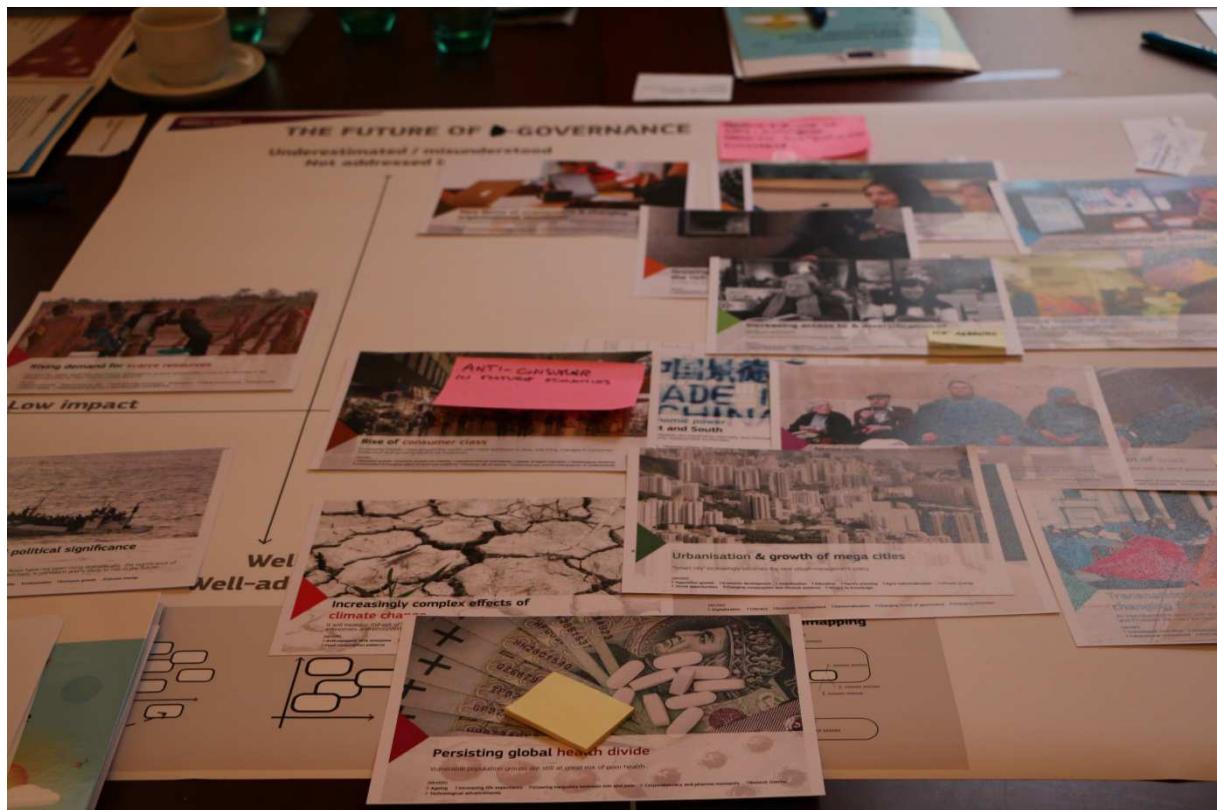
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1 Introduction

The EU Policy Lab at the Joint Research Centre (JRC) of the European Commission (EC) organised a one-day workshop to pilot a foresight policy-engagement tool based on a set of global megatrends. The workshop was also used to gather the experience and good practice of foresight practitioners in engaging policy-makers and other stakeholders in long-term and systems-thinking processes. The workshop was held on 18 November 2016, at the EC premises, Rue Science 29, Brussels, Belgium.

This report documents and illustrates the activities that took place during the workshop, taking stock of the results to support further development of the For-Know project, which aims to establish a repository of megatrends and a tool for using such trends in policy-making mainly at European level. As such, it does not describe all the insights captured during the workshop. Content gathered during the workshop will be further developed and ultimately feed the online format of the For-Know repository and other dissemination products of the project.

The first section provides information about the JRC, the project itself and its policy context. The second and third sections present the workshop purpose, participants and an illustrated guide to the workshop process including the participants' feedback before we conclude in section four.



2 Policy Context and Aims

2.1 Policy context

As the [EC's in-house science service](#) and the only Directorate-General executing direct research to provide science advice to EU policy, the role of the JRC is to provide EU policies with independent, evidence-based scientific and technical support throughout the whole policy cycle.

The [EC's Better Regulation Package](#) calls for an enhanced anticipatory capacity throughout the policy-making cycle and the [Toolbox](#) recognises that forward-looking tools bring a multidisciplinary dimension to policy-making allowing linkages across policies.

Foresight can play different functions in support to the policy-making cycle. Foresight tools and methods should enable: analysing the problem with a systems and systemic approach, facilitating inter-service collaboration; and considering emerging challenges and trends in technology and society, which could otherwise be overlooked.

There are four main functions and benefits of applying foresight to policy-making as illustrated in the table below.

Function	Outcome	Benefit for policy
Informing policy	Understanding of change Visions of change	Long term orientation Additional source of information Awareness of future challenges
Facilitating policy implementation	Networks, shared visions	Better receptivity of actors for policy objectives due to ownership of results therefore easier implementation
Embedding participation in policy-making	Transparency of policy making process	Better identification of citizens with policy (legitimacy)
Supporting policy definition	Generation of strategic options together with policy makers	Direct support in strategy development and implementation

Source: EC Better Regulation Package.

All these functions contribute to reconfiguring the policy system in a way that makes it more apt to address long-term challenges.

2.2 Aims, objective and purpose of the FOR-KNOW project

The For-Know repository project:

1. Aims to develop a systemic understanding and diversified interpretation of future trends and drivers shaping our society and explore their interaction and implications for European policy-making;
2. Its objective is to find new, quicker and effective ways of engaging policy-makers in future-thinking to strengthen the uptake of anticipatory knowledge in the entire policy-making cycle, so that policies are better adapted to potential future developments;
3. Its purpose is to feed the policy-making cycle with anticipatory knowledge; build capacity in futures literacy across the Commission and to serve as the knowledge base for the foresight work of the unit. The repository takes two forms:
 - a. Unit foresight knowledge management infrastructure (i.e. repository);
 - b. Policy – engagement tool.



3 Workshop purpose, participants and process

3.1 Purpose

The workshop was held at EC premises on Rue Science 29, Brussels, Belgium on 18 November 2016. The purpose of the workshop was twofold:

1. to pilot the policy – engagement tool (see section 3.1) based on global megatrends;
2. to gather experience and good practice of foresight practitioners in engaging policy-makers and other stakeholders in long-term and systems-thinking processes (see section 3.2).

3.2 Participants

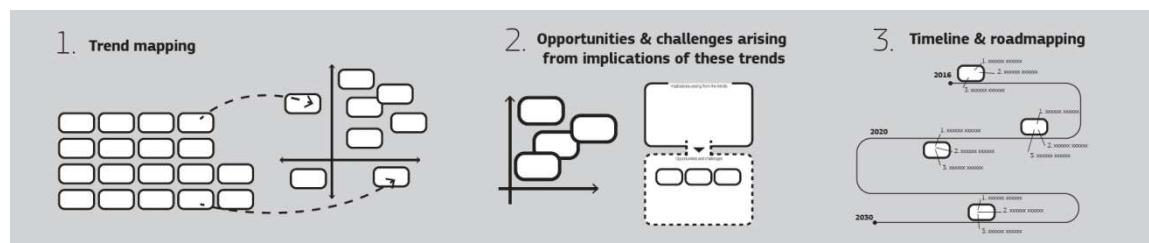
The For-Know project team was supported by a Steering Committee formed of Cornelia Daheim, Andrea Ricci and Matthias Weber. A design company (Namahn), assisting the JRC with the design of the trends cards and the engagement tool was also present. In addition, 17 foresight experts from 13 EU countries attended, representing academia, consultancies, international organisations, research institutes, national governments, private companies and EU institutions. Together with the colleagues from the JRC Foresight, Behavioural Insights and Design for Policy Unit, there were 31 participants in the workshop. (See the full participant list in Annex 1).

3.3 Process

The workshop was opened by Fabiana Scapolo who reflected on the mission of the JRC and the role of the EU Policy Lab. She explained the wider context of the FOR-KNOW project and the aims and objectives of the repository, and introduced the team and the Steering Committee members.

Monika Antal presented the structure of the day which was broadly divided into **two sections according to the two main purposes of the workshop**. She explained that for piloting the policy-engagement tool (3.3.1) the JRC team has developed a three-step process, consisting of:

1. Trend mapping;
2. Identifying opportunities and challenges arising from the trends;
3. Timeline and road mapping



In the second section (3.3.2), the participants shared their experience and best practices on engaging policy-makers with foresight and forward-looking exercises. For this, a world café format was used.



Through an ice-breaker exercise the participants were asked to introduce themselves and comment on a trend they find most intriguing for the future of Europe.

Icebreaker



1. Tell us who you are

2. Which is the most intriguing trend in your opinion & why?



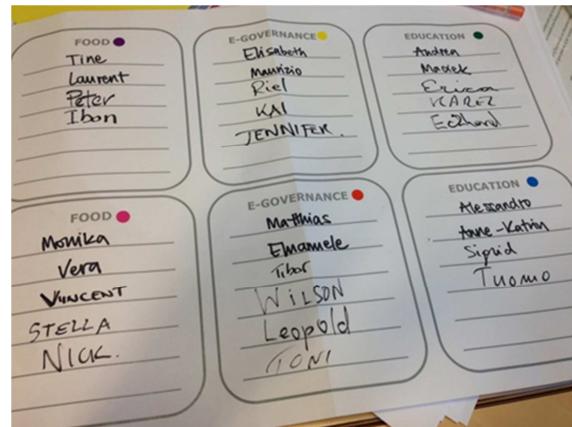
This exercise allowed everyone to learn who is in the room and gain insight into each other's thinking about the future.

3.3.1 Piloting the policy-engagement tool

The participants were asked to choose a group focusing on one of the three themes relevant to the work of the JRC I.2 Unit:

- **The future of the food system**
- **The future of education**
- **The future of governance.**

Each group was facilitated by a For-Know team member and a colleague working on the project.

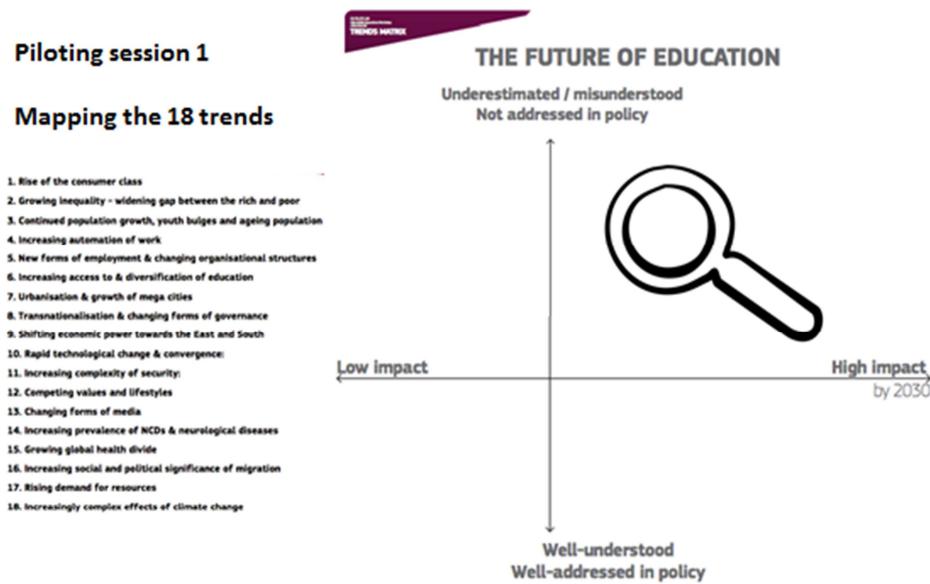


Step 1. Trend mapping

Participants were asked to read a situational description about their topic (see Annex 3 for all three descriptions) and then choose a specific task they wanted to focus on, and assume a policy-maker role related to that domain. The purpose was to contextualise the given theme, introduce the policy-makers as actors and to help decide possible areas to focus on without spending too much time on framing an otherwise really broad topic.

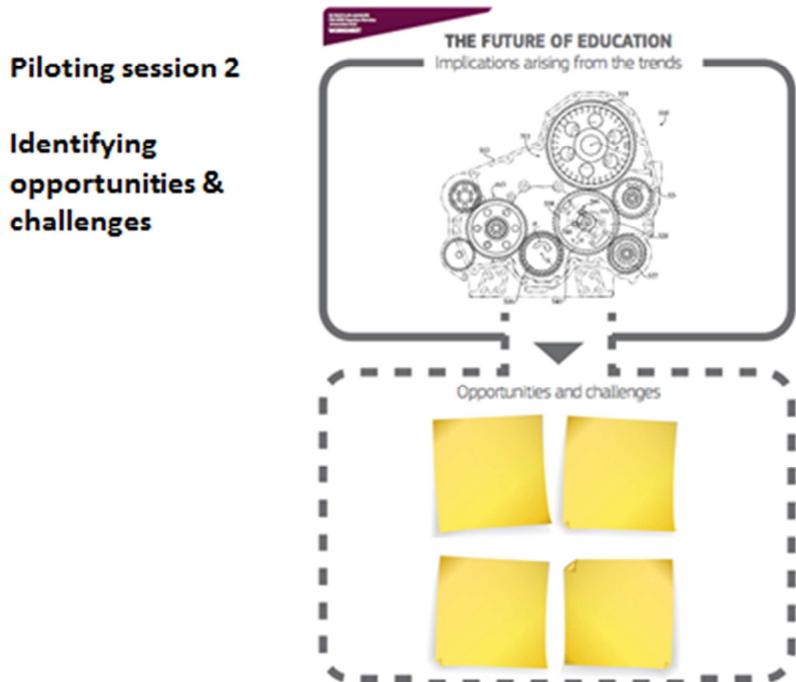
The participants discussed and mapped the 18 trend cards on a chart with the following axes:

- horizontal: low vs. high impact by 2030
- vertical: underestimated/misunderstood/not addressed in policy vs. well-understood/well-addressed in policy.



The purpose of this was to see which of the 18 were placed in the upper right hand quadrant of the high impact and misunderstood section.

Step 2. Identifying opportunities and challenges



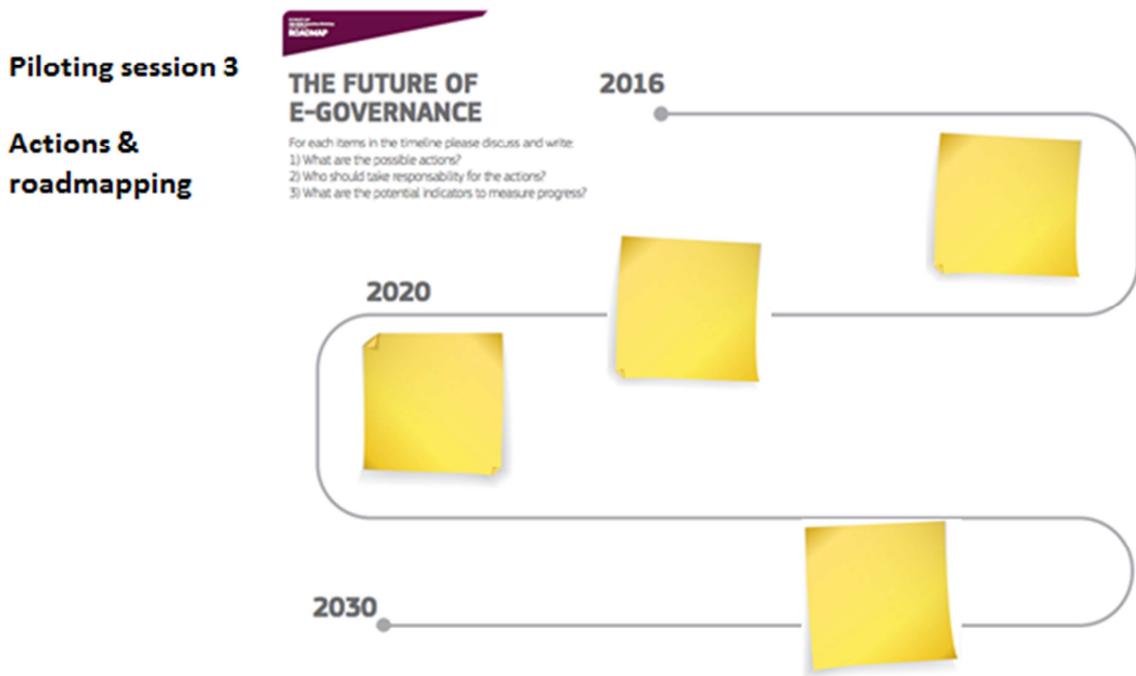
Participants were then asked to discuss what the trends in the upper right hand quadrant meant for the future of their chosen topic. Since in most cases a relatively large number of trends were placed in this quadrant, the debate continued until the number of cards was reduced to only that/those considered critical for the respective task. After discussing and understanding the trend(s), the participants were asked to identify 3-4 opportunities and challenges related to their task in view of the trend(s). (See an illustrative outcome of a group discussion on governance in Annex 4).



Step 3. Timeline and road mapping

As a final task, the groups placed their set of identified opportunities and challenges on the timeline 2016-2030, detailing for each:

1. What are the possible actions?
2. Who should take responsibility for the actions?
3. What are the potential indicators to measure progress?



Once the group exercises were finished, each group reported in plenary their key messages by pitching them in 60 seconds during an imaginary encounter with President Juncker in an elevator. (Refer to results from this session in Annex 5).



3.3.1.1 Feedback on the 3-step piloting process

Feedback on the process was gathered in the form of a short questionnaire where the participants were asked to write down what they liked and disliked about the process. Feedback on the process is meant to assist the team in improving the process for future sessions. The summarised results of the questionnaire and discussion are as follows:



Like

- Engaging;
- Effective;
- Well-organised;
- Attractive trend cards;
- Pitches;
- Insightful group,
- Open character of the meeting;
- Structured steps and process, templates to capture key results was an asset;
- Comprehensive list of drivers;
- Good elaborated megatrends;
- New things for my knowledge,
- Friendly network-building,
- Changing idea depending on expertise;
- Mapping of the trends;
- Good & fruitful & constructive discussions;
- Relevance of the approach, future literacy, good focus on the short format in trends & duration;
- Combining global trends and your issue is self-explanatory for people not used to this. Can be a big cleavage for some specialised topics;
- Interesting method, easy to follow, fast process brought lots of quite tangible outcomes;
- Visual and intuitive based on facts;
- Step 1+2 are quite efficient;
- Trends have good & wide coverage;
- Limited number of trends helps to focus;
- Road mapping activity works very well;
- Getting acquainted with different steps;
- Connection of the issue to a broader framework;
- Prompt inputs that challenge, add nuance and variety;
- Great for group work, fun, rapid generation of outputs, clarifies group assumptions;
- Accessible, reveal ignorance;
- Systemic process;
- Nice and beautiful materials;
- Enables discussion from multiple perspectives;
- Trends identification & description engaging for mapping & prioritization overall approach & structure (repetitions omitted).



Dislike

- Not explicit about "using the future", not explicit about limitations of trends;
- I didn't read the 18 trends, so policy people won't;
- Too many trends in upper right quadrant;
- Lack of consideration of cross-impacts & interlinkages between trends – could be formed by prior system thinking (conceptual mapping, system dynamics);
- Session 2+3: similar content, merge into one;

- Pre-select trends beforehand to reduce complexity;
- Not enough game-like;
- Discussion of consequences is difficult to separate from mapping (missing scenario step);
- Does not manage expectations about what can be achieved with the tool, scenario not explicit enough & process does not allow / enable generating details;
- Cards are carrying quite little information;
- Too many roles / hats/ questions / aspects to be kept in mind at the same time for policy-maker adds confusion on top of an already complex discussion;
- The axes is unclear, maybe separate awareness / action etc. as these are very different; The complexity of 18 major trends needs to be integrated to 1 focus (need to be more specific on the issue);
- Road mapping exercise was a bit unclear (too many dimensions for a roadmap i.e. challenges, actions, indicators, actors etc.);
- cards for megatrends too big for poster / or poster too small; Needs tight facilitation (results depend on facilitators);
- Aspatial (trends are not-comparable);
- Technical equipment, white board axis missing, presenting environment weak, short time for presentations;
- Room for suggesting extra trends would be good;
- Work in progress: engage policy-makers in "futures-thinking", direct & indirect;
- Not enough time to think about needed actions & impacts;
- We need to find a better way to capture detailed arguments, key aspects may disappear;
- Drivers / trends directions are predetermined and there's not enough counter-trends that can emerge / exist in regions of different form (repetitions omitted).

Constructive criticism

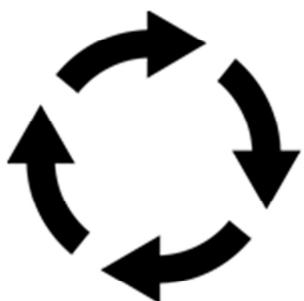
- The added-value of the EU policy Lab would be to develop as much know-how of foresight / design methodologies then knowledge of the EU policy and science context of the issue under investigation;
- Process needs sector specific research on megatrend aspects and facts;
- Targeted to clear (policy) objectives; Bigger font on the cards; Use icons instead of cards (cards could be available on the wall);
- Facilitation skills should be improved;
- Simplify (terminology, templates; goals);
- Agenda intro: do not explain the methodology but the main question & overall goals; Ice-breaker: make less 'formal';
- More categorical clarity e.g. challenges vs. actions; Geographical differentiation among trends;
- Online version;
- Not yet ready, use timeline (challenges & opportunities not events), focus on learning tool;
- Solution for interconnection of megatrends;
- Better preparation of working area, give more time to present, this is the main advantage of a workshop;
- The value of the outcome depends on the material prepared / available;
- The repository needs to be fitted with information – who is allowed / invited to feed it? (e.g. subgroups, religious groups, marginalised groups etc. how can they find their voice into it?);

- Include scenarios in the process;
- Include a step for creating a story for Juncker. Some did that because they were talents, but transform the picture into a story;
- Sometime the discarded trends would have been the most interesting;
- A computer aided process can help keep track of discussion and make the tool more systematic;
- Explain the aim in the beginning;
- Suggest that the trends be less 'normative' and allow for counterfactuals (if only as an experience);
- Needs more play, fun, open and imaginative spin. Make it more game-like, make it clear that the future is only imaginary and this is the way to play with our imagination;
- Could be interesting to pull the trends blindly out of a bag;
- A bit clearer rules in how different stages are required;
- Method requires quite a lot of experience in foresight practices at this point;
- The timeline is not straightforward to fill: challenges & opportunities are not events; low/high impact is ambiguous; direct / indirect would help (repetitions omitted).

3.3.2 World Cafes for the For-Know project development

Four stations were set up with a topic each, facilitated by a FOR-KNOW team member. The participants had the opportunity to visit all four stations to discuss the respective topics. Some of the insight generated can be found below.

Mutual learning session



- 1. Engaging policy-makers in forward looking exercises with Fabiana**
- 2. Community of practice with Tine**
- 3. Updating the repository with Monika**
- 4. The role of quantitative data and indicators with Elisabeta**

1. Engaging policy-makers in forward looking exercises:

During the discussion, the participants were asked to report on good practices to engage policy makers with the future and to suggest how to position foresight and/or forward looking activities to have their buy-in.

There was a general consensus that to get to the attention of policy makers, it is more important to emphasise the problem-solving aspects rather than trying to engage with them explaining what foresight is:

- frame foresight as something practical to help them in their complex job in the present and not only in the future
 - it structures complexity with condensed facts;
 - it helps to design the future into their current problems
 - it reduces fear of uncertainty
 - it mitigates the blind spots
- have good example to show to highlight what the benefits of an engagement process might bring
 - explain with examples how a long term trend is already visible today
 - use very concrete examples on what could happen due to a long-term trend
- stress that with the foresight tools existing needs are addressed
 - short adaptable formats are available to go to the main points

Another aspect that was discussed was on the relationship with policy-makers and some suggestions were brought forward including concrete tips:

- use policy makers language on topics of priority to them
- build individual relationships and gain their trust
- be honest and tell them what it cannot be done
- help them understanding whether they want to achieve a goal or just solve an issue
- explain what they gain (e.g. visibility on media as this is for many policy makers is their 'currency')
- find entry points based on their policy agenda
- talk with the gate keepers (i.e. not with Cabinets but with heads of division).

Finally, participants also identified some tensions that the foresight is facing when aiming at bringing an impact to policymaking. The first one is related to the fast need that policy makers have in getting evidence, this requires faster foresight processes that might clash with robust ones. The second tension is related to the capabilities of foresight teams that are increasingly requested to deal with a variety of topics, here the trade-off between managing content versus being able to be flexible in adapting processes and methods can become an issue.

2. Community of practice:

During this discussion, the participants decided that if such a community were to exist, it would be one focused on the use of foresight in policy-making more broadly, and not on the FOR-KNOW project as such.

Depending on the overarching objectives of the FOR-KNOW project, such a community could focus on:

- increasing futures literacy in the policy-making sphere:
 - integrating foresight into the policy-making process

- provide evidence of successful use of foresight in policy making
- build a scientific community (beyond foresight)
- developing collaborations on systems-thinking methodologies and practises:
 - on participatory group modelling
 - identifying trade-offs and competitive goals within and across systems
 - pooling resources to deal with complexity of systems-thinking
- sharing methods and approaches:
 - on knowledge on drivers at different levels
 - exchanging perspectives (between the regional and local levels)
 - sharing both successes and failures (lessons-learnt)
 - integrating work that has already been done on reporting on foresight practises
 - matching up initiatives and avoiding duplication
- organisational development exchanges:
 - by enshrining foresight into the organisational set-up
- communicating and upscaling:
 - particularly with regards to the media and journalists (a missing link in the foresight community)

Some of the questions raised regarding the launch and evolution of such a community include:

- How does the community evolve? - What is the role of existing communities? - What kind of incentives are there to keep such a community alive? - Do we have shared objectives? - How do we transmit knowledge? - What sort of deliverables? What form would such a community take?

i.e. networking events, links to other communities, EU projects, match-making platform, funding opportunities for joint projects, joint training activities. What resources would be needed?

Ultimately, participants noted that many such communities already exist, and therefore there is little demand for yet a new CoP on foresight, but rather, the FOR-KNOW project should envisage latching on to other pre-existing communities and perhaps looking further at where it could play a niche role.

3. Updating the repository:

During this discussion the participants were asked to think about best and not so good practices in updating such a repository/wiki.

In order to keep such an effort alive and keep contributions coming in the following aspects were commonly agreed upon as extremely important:

- to provide correct incentives;
- establishing a credible network of experts and ensuring reliability for sources and content;
- provide training for users who could later themselves act as radars (along the lines of horizon scanning);
- join efforts with existing initiatives;
- creating a stable framework (how much / when / what);
 - the goal and scope needs to be crystal clear;
 - regular intervals set for contributions;
- the criteria and quality control (editing and content checking) need to be well defined and properly manned;
 - this raises the question about governance, open vs. closely monitoring;

Other suggestions included:

- design a process where they tell you what matters, generate trends from the clients via crowdsourcing;
- rather than pulled, an effort like this should be pushed based on demand.

The general consensus was that there are a lot of similar efforts out there, and it is important to learn how to use them in order not to repeat them and avoid putting a lot of work into something that experience shows will not be successful.

4. The role of qualitative data and indicators:

During this discussion the participants tried to identify some quantitative indicators that could help:

- understand the potential trajectories of the individual megatrends
- recognise relationships among the megatrends and their drivers
- describe the potential behaviour of the system

It has been a wide agreement that any model should be developed by experts together with policymakers, and that the role of any such model is only to encourage and support discussions about potential future developments, but should not be interpreted as a prediction—not even a forecast—of the future.

Usefulness of quantitative indicators includes:

- Clarify potential trajectories
- Identify achievable goals
- Identify interdependencies that were not obvious
- Identify mismatches among different goals and potential developments
- Assess/diagnose a system and eventually identify points or factors of change
- Help sensitivity analysis of the system's potential behaviours
- Question assumptions
- Trigger curiosity about phenomena
- Inform a roadmap
- Help build models and simulations
- Generally, better understanding of a system

Indicators can be introduced in systems' analysis as a tool for helping more in depth discussions. If systems of indicators are used, they have to be homogeneous and reflect correlations in the system.

It has been mentioned that since the mind-set of politicians is important for useful discussions, increasing their foresight literacy is imperative. Indicators could help that.

Surprisingly, there has been a general reservation (even opposition sometimes) for the use of quantitative indicators and indexes as tools to illustrate potential trajectories of the system and the factors of change. Nevertheless, other successful exercises have shown that the use of indicators can help design and accelerate implementation of policies for improving potential future outcomes. Therefore, the moderators intend to continue the work for identifying indicators that could help measure change on the 18 megatrends and eventually build an index that could support assessing potential future trajectories for the EU.

4 Conclusion

The input gathered at the workshop, both from the piloting session and from the world café on best practises will assist the team in further developing and fine-tuning the process through which we hope to engage the policy-making community. The process is meant to undergo further iterations, and will be trialled and tested throughout 2017. Furthermore, the repository of trends is set to become public via the [EU Policy Lab blog](#) as well as exploration of an interactive online tool that could assist the user in further exploring the trends and their implications. The results of the first phase of this process will be further elaborated in a mid-term report to be released in early-2017, as well as presented and discussed at the 2018 FTA conference.

Annexes

Annex 1. List of participants:

	First name	Last name	Organisation	Country
1	Monika	Antal	JRC	Belgium
2	Anne-Katrin	Bock	JRC	Belgium
3	Kai	Böhme	Spatial Foresight	Luxembourg
4	Erica	Bol	Teach the Future	The Netherlands
5	Laurent	Bontoux	JRC	Belgium
6	Vera	Calenbuhr	JRC	Belgium
7	Jennifer	Cassingena Harper	Research Council Malta	Malta
8	Emanuele	Cuccillato	JRC	Belgium
9	Cornelia	Daheim	FOR-KNOW Steering Committee	Germany
10	Peter	De Smedt	Transitie Lab, Vlaamse Overheid	Belgium
11	Nick	Dunn	Lancaster University Chair of Urban Design Executive Director: ImaginationLancaster	United Kingdom
12	Elisabeth	Florescu	JRC	Belgium
13	Clementina	Gentile	Namahn	Belgium
14	Karel	Haegeman	JRC- Sevilla	Spain
15	Maciej	Krzysztofowicz	JRC	Belgium
16	Tuomo	Kuosa	Futures Platform Ltd	Finland

17	Stella	Martorana	Research Associate, CIPD	United Kingdom
18	Riel	Miller	UNESCO	France
19	Sigrid	Müller	University of Vienna	Austria
20	Alessandro	Rancati	JRC	Belgium
21	Andrea	Ricci	FOR-KNOW Steering Committee	Italy
22	Maurizio	Salvi	JRC	Belgium
23	Fabiana	Scapolo	JRC	Belgium
24	Leopold	Schmertzing	European Parliament	Belgium
25	Eckhard	Störmer	Z-punkt	Germany
26	Tibor	Szabo	NATO	United States
27	Tine	Van Criekinge	JRC	Belgium
28	Vincent	Viaud	EEA	Denmark
29	Matthias	Weber	FOR-KNOW Steering Committee	Austria
30	Wilson	Wong	Head of Insights and Futures at CIPD	United Kingdom
31	Ibon	Zugasti	PROSPEKTIKER / Millennium Project Node	Spain

Annex 2. Agenda of the workshop

Venue: Rue Science 29, Brussels, Belgium

Date: 18 November 2016

Timing: 10.00-17.15

- | | |
|-------|---|
| 9:45 | Welcome & registration |
| 10.00 | Introduction |
| 10.30 | Icebreaker |
| 10.50 | Piloting – phase 1:
Mapping the trends |
| 11.30 | Coffee break |
| 11.50 | Piloting – phase 2:
Identifying opportunities & challenges |
| 12.30 | Lunch |
| 13.15 | Piloting – phase 3:
Timeline & reporting back |
| 14.15 | Coffee break |
| 14.40 | Feedback & discussion about Piloting |
| 15.30 | Mutual learning session |
| 17.00 | Closing & next steps |
| 17.15 | End of workshop |

Annex 3: The situational descriptors

THE FUTURE OF THE FOOD SYSTEM

The EU is currently in the process of streamlining the UN Sustainable Development Goals (SDGs) across the various services in the European Commission, and into EU policy-making. In this process, the Commission has identified the need to better account for inter-sectorial aspects, synergies and trade-offs across Commission initiatives related to the SDGs; streamlining and avoiding duplication; the importance of outreach and partnership in light of the global dimension of the SDGs; and the need to ensure coherence between EU's political messages.

In light of this, the Directorate General for Development Cooperation (DG DEVCO), alongside the Secretariat General of the EC, has embarked on an engagement process with various Commission services on aligning policies towards sustainable food system(s) and with the SDGs framework. DG DEVCO wants to better understand the critical elements of the food system that are important to address for reaching sustainability, the kinds of trade-offs and synergies that exist between Commission policies related to food systems, and to define a coherent EU narrative and message on the EU's role in the future food system.

In this particular exercise, you are to assume the role of the policy-makers relevant in streamlining the SDGs framework throughout the Commission. Because the food system is complex, and because of the various dimensions of the sustainability framework, please choose one theme on which you would like to work. Some suggestions are:

- The environmental sustainability of future food production and consumption
- The effects of changing food consumption patterns on nutrition and health
- Agricultural commodity trading and the link between food and energy pricing
- The importance of culture and tradition in determining food production and consumption
- The future of the agro-food industry and the role of policy-regulation
- The challenge of urbanisation in the future food system
- Other topic of choice... (please specify)

NEW FORMS OF GOVERNANCE

General access to information, limitless dialogue, and increasing role of non-state actors are calling for adjustments to the governance system to better engage the citizenry (individual and private sector) in the process. The exploration of how a changing relationship between citizenry and the state - at individual and society level - is affected by new phenomena has to be holistic. It has to assess the changing systems of values and behaviour, as well as the role of new technologies in e-governance, public administration, and the social and economic impacts—including business aspects, the use of (Big) Data, and improving the quality of life of EU citizens.

Therefore, three main aspects should be assessed individually and in relation with each other: (1) the individual identity (personal and business); (2) the society— state and citizenry (private and business); (3) politics (representativeness and governance systems).

In this particular exercise, you are to assume the role of the policy-makers relevant to improving the EU governance system. Because this is a complex issue, please choose one theme on which you would like to work. Some suggestions are:

- Understanding the changes and possible transformation of the European governance system in the broader global context

- Role of identity and trust in shaping future governance systems
- "just-in-time" knowledge and changes in the political systems
- Understanding the digital generation values and implications for public engagement
- Responsible use of data mining (big data, and AI) and automated decisions for economic and political purposes;
- Emerging roles of unconventional global actors (e.g. Google, Facebook, Amazon, Uber) and implications for the European governance system.
- Other topic of choice... (please specify)

FUTURE OF EDUCATION

The EU is increasing efforts to meet the needs of the emerging innovative society. Rapid developments in technology, cultural values, social life, and skill demands are expanding the scope and spectrum of education and learning as never before. Advancements in cognitive science and the advent of the digital generation revolutionise the understanding of what learning elements and education tools are needed, and how the education system should be structured. Access to knowledge and to sharing ideas is creating a continuously updating collective intelligence. The education system has to adapt and be flexible, to allow motivation and self-fulfilment tailored for a lifelong learning. Since human capital became the most important asset of businesses and organisations, talent management and identifying which skills will be needed in the future is vital for being competitive and to assure speedy response to local and world challenges and market demands.

In the context of the Strategic Framework for European Cooperation in Education and Training ('ET 2020') the Commission and Member States collaborate with the aim to improve national education and training systems through the development of complementary EU-level tools, mutual learning and the exchange of good practice. To inform the development and discussions of the follow-up framework ('ET2030') the Commission wants to better understand what factors might influence education in the future and what implications can be envisioned in particular for inclusiveness and equity and appropriate skills development.

In this particular exercise, you are to assume the role of the policy-makers relevant in developing the follow-up Strategic Framework for Education and Training. As the education and training systems are complex, please choose one theme on which you would like to work with the perspective of inclusiveness and equity. Some suggestions:

- Changing perception of early childhood education and care
- Increasing prevalence of technology-enabled learning
- Diversification of education providers (formal, non-formal)
- Revision of assessment criteria & grading systems
- Rise of tailored learning to match talent or intellect capacity
- The changing role of educators
- Other topic of choice... (please specify)

Annex 4. Group discussion on the changes to governance

Moderators: Maurizio SALVI (JRC) and Elisabeta FLORESCU (JRC)

Panel participants: Kai BOEHME (Spatial Foresight, Luxembourg) Jennifer CASSINGENA HARPER (Futurist, Malta), and Riel MILLER (UNESCO, Paris)

The roles assignment/choice has been easy and done function of relevant experience of the Participant in real life.

- Kai BOEHME played the role of Director in the European Parliament dealing with e-Politics and Digital Single Market
- Jennifer CASSINGENA played the role of Head of Unit responsible with city/regional development, DG REGIO
- Riel MILLER played the role of Principal Advisor to President Juncker

Abstract: The aim of the exercise was to improve the EU governance system in view of the changing systems of values and expectations of citizens in an increasingly digitalised and mobile society. The panel focused on the theme: "Role of identity and trust in shaping future governance system". The Mega-trend identified of highest potential impact by 2030 and most underestimated/unaddressed in policy was "Evolving identity dynamics" (rewording of the mega-trend "Competing values and lifestyles"). In addition to acknowledging the mismatch between the present state of governance and citizens' expectations (which leads to an uninvolved and frustrated citizenry), the panel identified a range of opportunities, challenges, actions and actors that could help lead to a better governing system. These include: encouraging innovation, new economic model and strengthening entrepreneurship, adapt education from push to pull, use funding instruments to advance smart cities and improve local/regional governance, etc. While change is difficult, experimentation hubs could help identify potential opportunities and address the challenges before new systems would be expanded to larger (EU level) scale. The most interesting outcome might be Europe's potential to lead the process towards a post-nation world. The timeframe for most actions began in the present, increasing imperativeness of the change needed, while the actors varied from EU Parliament to local policymakers and volunteers, and to IT developers.

Detailed summary of the panel's discussions

Theme: In order to reduce the scope and spectrum of the subject to a manageable level, the panel chose to focus on the theme: "Role of identity and trust in shaping future governance system".

Leading mega-trends: Notwithstanding the importance of all the 18 megatrends to the theme, after several iterations based on the axes provided, the panel identified three mega-trends as having highest importance: Evolving identity dynamics (rewording of "Competing values and lifestyles"); Rise of consumer class; and Growing inequality—widening gap between the rich and poor.

Implications: in addressing the implications of the trends, the focus was on "Evolving identity dynamics". The implications identified were at several levels:

- Individual: disconnection of identity(ies)—regional, personal, national; empowerment of individuals; people should have the opportunity to find meaning;
- Regulatory: create openness and equality before the law; assure legitimacy of expressing opinions
- Education: openness and changing system of teaching, learning, and grading
- Role of media: monitoring of social media; reinvent the role of the traditional media; implications of growing power of media-giants like Google, Facebook, etc.;

- Structural: create feedback systems that identify why some actions turn out good or bad; branding weakening (replaced by what, if anything?); create experimenting labs
- EU identity: develop a European identity; potential federalism; Europe can lead the world towards a post-nation (nationless) world

Opportunities and challenges: Not surprisingly, the opportunities and challenges reflected the themes from the implications. In view of these opportunities and challenges, the actors and potential timeframes were discussed and placed on the roadmap, as indicated in the following lists. Note: for most of the opportunities, the "now" time was considered ripe; it is only a matter of willingness to act.

Opportunities: The most important opportunities identified with their potential timeframes:

- Europe to lead the process towards a post-nation world (2016-)
- Develop a decision-making process that empowers citizens for better participation—to cultivate responsible and responsive citizenry (2016-)
- Education system change from push to pull; e.g. open universities (2016-)
- Triple-loop learning; document, tele-advise innovation, make it interesting (2018-)
- Underlying principles of learning/experimentation change (2020-)
- Encourage experimentation before expanding to larger systems (2016-)
- Empower regions and local governments for experimentations (2016-)
- Create advisory hubs—transnational groups for special challenges (2016-)
- Independent Innovation/re-invent Units taken outside of existing systems (2020-)
- Smart-cities—include the principle of smart-cities in the funded initiatives (2016-)
- Funding instruments used to focus on spreading best practices (2016-)
- Look for creativity over blame (2016-)
- Include the neglected aspects (e.g. inequality of all types) (2016-)
- Create conditions for new business models (including new types of currency) (2020-)
- Identify new systemic conditions for improving the structure (2020-)

Challenges: The most important challenges identified:

- Problems of power and ego (personal, of those in power)
- Lack of responsible and responsive people in power (citizenry and choice issues)
- Empower citizens for participation
- Recognizing of what people know and are able to do
- Ownership of capital change (human capital becomes the most important) (2020-)
- Challenges to the status quo reduces experimentation possibilities
- Uncertainty of what change could bring
- Change the conditions of change: also look for new questions, not just solutions
- Uncertainty about the global power changes

Actors: The main actors identified were:

- Communities of volunteers
- Upper-level decision-makers who agree to look into change

- Parliament getting regions on board and identify who is ready to experiment
- Regional policymakers to allow experimentation and change to control system
- DG CONNECT to find place/domains that are ready to experiment
- IT professionals to design system(s) and experiment

Annex 5. 60 second pitches to President Juncker

On the future of food:

- Europe needs a vision with food at its centre; a good system will have distributed innovation initiatives; will recognise the interconnectedness and interdependency of the food-energy-water systems; will focus on transition toward renewables and more distributed energy systems; will recognise how special food is to people and that cultural and behavioural changes will need to be made with regards to the way we produce and consume food; but most importantly it will be sustainable;
- By 2020 the Food Action Programme should be launched, but first this requires the better understanding and better addressing of its multitude of components such as, the known unknowns being education, food distribution, nutrition but equally the unknown unknowns, the intangible and invisible things such as food banks, charities and social capital that we do not fully understand. This Programme necessitates a fully holistic model, where the sum is greater than its parts and each of these integral elements have a more coherent message within that programme.

On the future of education:

- Data security is a crucial issue to be addressed throughout education and teacher training, the hacker community could serve as an essential source of knowledge, experience and wisdom in this field;
- Re: the future labour market will require new skills: teacher training is a first step, but student training is the next: improving capacity for critical thinking, value-based and sense-oriented arguments and judgments will pertain to be extremely important; but equally so will be fostering interpersonal communication and team work;
- Re: early childhood education: policy needs to place the heart and the energy not just the brain into the focus.

On the future of governance:

- Artificial intelligence coupled with the widespread use of data use will present an immense opportunity for governance, automated decision-making, education and the long-term prosperity of Europe but the same could also pose a risk; exploring the full potential of these technologies with a wide range of stakeholder from community level, and building trust and understanding will be extremely important. This technology will go ahead regardless of the regulatory framework, responding to it positively from an institutional position and fully embracing it will bring benefits to society at large;
- The alternative and experimental laboratories (such as Skunkworks) could present a solution to the current crisis facing the world by creating democracy in new ways and empowering people to become the governance they want, the capacity of these people then could be used to govern the way they want to; a series of such experiments could shift the way power is distributed and get us over the crisis.

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