



## Evaluating foresight in transnational research programming



Karel Haegeman<sup>a,\*</sup>, Manfred Spiesberger<sup>b</sup>, Totti Könnölä<sup>c,d</sup>

<sup>a</sup> European Commission, Joint Research Centre, C/Inca Garcilaso 3, 41092 Seville, Spain

<sup>b</sup> Centre for Social Innovation (ZSI), Linke Wienzeile 246, 1150 Vienna, Austria

<sup>c</sup> Insight Foresight Institute (IFI), Avda Concha Espina 8-1, Dcha28036 Madrid, Spain

<sup>d</sup> eGauss Business Holding I+T, Calle Paseo de la Castellana 182, 6ª Planta 28046 Madrid – Spain

### ARTICLE INFO

#### Article history:

Received 13 October 2015

Received in revised form 4 July 2016

Accepted 8 July 2016

Available online 4 August 2016

#### Keywords:

Transnational research programming

Foresight evaluation

Coordination of innovation policy

### ABSTRACT

Global societal challenges require global efforts to address them. Research and innovation are increasingly expected to support such efforts, with limited resources. In this context of high expectations towards R&I, collaboration across borders, both in performing and in programming, is commonly seen as a way to get more results with the same or even less resources. Such collaboration across borders at a European or even global scale faces many challenges. The role of foresight as a supporting tool for transnational research programming has been analysed in a number of cases, but evaluation of its added value has to date largely been unexplored. Building on earlier work how to embed foresight in transnational research programming (TRP), this paper therefore aims to look at how the use of foresight in TRP can be evaluated, and what lessons can be drawn for its future use in support of TRP. Starting from the existing knowledge base on foresight evaluation, an evaluation framework for foresight in TRP is proposed, and tested against the foresight exercise that supported EU Russia S&T collaboration under the FP7 project ERA.Net RUS. The findings have implications for the role foresight can play in tackling societal challenges and increasing competitiveness at European and global level.

© 2016 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

### 1. Introduction

In the context of recent years in which research is increasingly seen as a way to address (global) societal challenges, transnational cooperation in research programming is high on the agenda. In the EU, as part of the Europe2020 growth strategy, research and innovation are expected to support economic growth, increase competitiveness and job creation and to address societal challenges (EC, 2010). In a context where resources for R&I are scattered among many public and private actors (Member States, the European Commission, regions, universities and public research centres, private companies and private research centres, etc.), such expectations are not obvious to fulfill. Collaboration across borders in setting priorities for R&I is commonly seen as a way to get more results with the same or even less resources.

Such transnational collaboration also has a clear cost in the form of the need of overcoming a wide set of barriers. Typically, barriers to transnational research programming (TRP) exist in relation to five dimensions of coordination: systemic, horizontal, vertical, temporal and multilateral co-ordination (Haegeman et al., 2015; Könnölä and

Haegeman, 2012). Such barriers may be alleviated through the use of foresight. Foresight also holds the promise of facilitating the implementation of different functions of transnational research programming way beyond the identification of emerging issues, priority areas and relevant stakeholders. In particular, the role of a supporting tool like foresight for engaging and mobilising the innovation communities can be crucial for understanding (and enhancing) the capacities and capabilities of different countries to participate in joint research and innovation (R&I) programmes. Foresight can offer a structured and responsive process that efficiently mobilises stakeholders and informs decision-making. It orients efforts towards understanding diverse interests and shared visions on future developments, thus contributing to better decision-making in a cost-effective way (Könnölä and Haegeman, 2012).

Another argument for engaging in foresight for TRP is the long-term nature of societal challenges which programme collaboration aims to address. Longer-term collaborations may need different foresight rounds or ongoing foresight. In such multi-faceted context foresight evaluation can offer reflective learning opportunities for improving foresight engagements, if the evaluation results are used as input for new foresight design (Georghiou, 2003). Finally, as with foresight studies in other contexts, also the need for effectiveness and efficiency are clear arguments for evaluating foresight efforts in programme collaboration.

However, the use of foresight in research programme cooperation is still rather limited. Analysis of European Research Area Networks (ERA-NETs) under the EU's Framework Programmes for Research

\* Corresponding author.

E-mail addresses: [karel-herman.haegeman@ec.europa.eu](mailto:karel-herman.haegeman@ec.europa.eu) (K. Haegeman), [spiesberger@zsi.at](mailto:spiesberger@zsi.at) (M. Spiesberger), [totti.konnola@if-institute.org](mailto:totti.konnola@if-institute.org) (T. Könnölä).

<sup>1</sup> The views expressed are purely those of the author and may not in any circumstances be regarded as stating an official position of the European Commission.

(FP6 2002-06, FP7 2007-13, and Horizon 2020 2014-20) suggests that cooperation networks which continue over a long period of time (such as Woodwisdom, evolving from an FP6 ERA-NET over an FP7 ERA-NET to an FP7 ERA-NET+ lasting until 2017) tend to use foresight more often than networks that do not continue. Evaluating foresight in such collaborative settings can shed better light on the advantages of its use and thus increase the understanding of the added value of foresight among stakeholders involved in such collaborations.

This paper therefore aims to look at how the use of foresight in TRP can be evaluated, and what lessons can be drawn for its future use in support of TRP. The paper can be considered as an empirically-based theory building. We start from the existing knowledge base on foresight evaluation, which we relate to our experiences attained in a foresight exercise in order to develop an evaluation framework for foresight in transnational research programming (Section 2). We test the framework<sup>2</sup> against the foresight exercise that supported EU Russia S&T collaboration under the FP7 project ERA.Net RUS (Section 3). We draw wider lessons from the case for evaluating foresight in TRP in general (Section 4), and finally conclude with key messages for research and policy (Section 5). The paper follows up on earlier work on 'Embedding foresight in transnational research programming', published in *Science and Public Policy* (Könnölä and Haegeman, 2012). It is also recommended to read this paper together with the complementary paper 'FTA supporting effective priority setting in multi-lateral research programme cooperation: the case of EU-Russia S&T cooperation' in *Technological Forecasting and Social Change* (Haegeman et al., 2015).

## 2. Evaluating foresight in transnational research programming

### 2.1. Introduction

With an evaluation we assess a project, programme or policy against its objectives and implementation. The evaluation serves to determine the (short term) outcome and (longer term) impact of an intervention. Indicators are usually specified and applied to measure achievement and effects of the intervention (OECD, 2002). Evaluation has become over the years ever more important in the field of research and innovation. At national level substantial efforts have been made to better understand characteristics, quality, usefulness, consequences and dimensions of evaluations regarding R&I policies in a systematic way (see e.g. Edler et al., 2012). Particular attention has been paid to the notion of behavioural additionality in innovation, i.e. how innovation policy can change behaviour of actors in order to improve innovation capabilities and outcomes (Gök and Edler, 2012; OECD, 2006). Regarding transnational R&I cooperation the EU framework programmes for research and technology development (FPs) are an example of a multinational research programme that undergoes regularly evaluations to check its impact. Ex-ante impact assessments, monitoring of programme implementation and ex-post evaluation of impact are being applied. A portfolio of methods, including quantitative and qualitative analysis, case studies, interviews, bibliometrics, etc. is used to this end.<sup>3</sup> In our case the ERA.Net RUS foresight study, implemented in the years 2010-2014, has finished relatively recently. While we will try to also identify longer term impacts, it should be considered that most effects are short and medium term outcomes.

To develop a framework for evaluating foresight in transnational programming we address first the programming context that creates the preconditions for the foresight and where the impacts of foresight are also observed. Then we consider how the preconditions form the

rationales for foresight that are articulated subsequently in the foresight objectives, design and implementation. Subsequently, we explore earlier work on foresight evaluation and - in particular - on foresight evaluation within the context of TRP. Thereafter we propose an overall framework for foresight evaluation in TRP.

### 2.2. Transnational research programming (TRP) in society

When considering societal issues at stake, the first thing that comes to the mind are the wide sets of interlinked societal challenges to be addressed through programming, such as climate change, demographic and healthcare challenges along with the challenge of economic development and competitiveness. When considering reasons for using foresight in support of TRP the most obvious one is probably if and how foresight enhances the TRP and its impact in society.

More specifically, the different types of foresight contributions include outcomes, policy impacts and societal impacts.

- Outcomes are understood as the short and medium term effects of the foresight outputs
- Policy impact is considered as any (medium and longer-term) impact the foresight activities have on policy decisions made in relation to the topic of the TRP (See e.g. Da Costa et al., 2008)
- Societal impact is understood as a change in society which can (partially) be related back to the foresight activities, or to the policy decisions on which foresight had a policy-impact. This is obviously a more long-term impact (see e.g. Amanatidou, 2011).

In our analysis these impacts relate specifically to the use of foresight in TRP and how this has impacted on TRP, policies and on society. However, in this paper we do not mean to evaluate the impact of TRP as a whole.

### 2.3. Use of foresight in TRP

We look at practices of the use of foresight in TRP both in Europe, and in the rest of the world. Subsequently we consider roles and objectives of foresight in a TRP context, and challenges related to large scale transnational foresight exercises.

#### 2.3.1. Experiences in Europe

Collaboration between European countries on research programming takes place through various instruments and processes. ERA-NETs introduced with the FP6 in 2002, have a tradition in applying foresight in support of programme collaboration. Uses range from the identification of trends to joint priority setting and the networking of research and innovation communities across borders. However there seems to be a gap between those ERA-NETs that have 'discovered' the added value of foresight and those that have not. Analysis of programme collaborations reveals that longstanding ERA-NETs apply more often foresight of any form (be it before the start of the network or while the network is ongoing) than networks that last only for three years, suggesting a correlation between the duration of the network collaboration and the use of foresight (Sources: NETWATCH and own analysis).<sup>4</sup> In practice this foresight can for instance take the shape of a dedicated foresight and programming unit to support a long-term structural foresight to develop, maintain and update a strategic research agenda (see EMIDA ERA-NET<sup>5</sup>/ANIHWA ERA-NET<sup>6</sup>). But the networks applying foresight still represent a minority of the total number of ERA-NETs.

<sup>2</sup> The framework can be used both for self-evaluation and for external evaluation. In our case it is used for self-evaluation, considering that each author was somehow involved in the foresight design or implementation.

<sup>3</sup> See for example E. Arnold et al. (2011), Understanding the Long Term Impact of the Framework Programme.

<sup>4</sup> NETWATCH has been integrated in the ERA-LEARN platform in 2015, see: <https://www.era-learn.eu/>.

<sup>5</sup> Coordination of European Research on Emerging and Major Infectious Diseases of Livestock ([www.emida-era.net](http://www.emida-era.net)).

<sup>6</sup> Animal Health and Welfare ERA-NET ([www.anihwa.eu](http://www.anihwa.eu)).

Download English Version:

<https://daneshyari.com/en/article/5037136>

Download Persian Version:

<https://daneshyari.com/article/5037136>

[Daneshyari.com](https://daneshyari.com)