

Seminar on policy support to reforms of national research and innovation systems in Europe

Discussion paper

Horizon 2020 Policy Support Facility



Seminar on policy support to reforms of national research and innovation systems in Europe – Discussion Paper

European Commission
Directorate-General for Research and Innovation
Directorate A — Policy Development and Coordination
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Discussion Paper

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acknowledged

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INTRODUCTION

This discussion paper is the background document for participants in the European Commission seminar on country-specific activities under the Horizon 2020 Policy Support Facility, taking place in Brussels on 11 December 2017 (Agenda in Annex 1). This seminar aims to provide a platform to exchange experiences between national authorities, high-level experts working with the Horizon 2020 Policy Support Facility (PSF), representatives of European countries which have benefitted from PSF support, and international organisations involved in reviews of national research and innovation (R&I) systems. It will examine various methodological approaches with a view to maximising the success and impact of policy support activities. Its results will feed into future European Commission activities in support of R&I policy reforms.

Four broad topics have been identified as the pillars for discussion during the seminar (see Section 3 of this report including the set of issues for discussion):

1. **The organisation of policy support activities – the role of international organisations and the provision of a conceptual framework.** This will cover: analytical frameworks and operational models used for analysis of country peer reviews and systems; exploitation of the evidence base derived from country-specific work; cross-fertilisation between the activities of international institutions; synergies and sequencing of country-specific vs. thematic-focused work.
2. **Success factors for effective policy support: issues for the host country.** It will address: how to best ensure political commitment and ownership; how to secure the broad involvement of stakeholders; the challenge of defining the focus areas of the peer reviews; timing, logistics and resources.
3. **Success factors for effective policy support: the role of external contributions.** This part will focus on: the selection and management of experts and peers and other contributors; the most appropriate architecture and organisation of country visits; the transferability of experiences from country to country; methods to blend quantitative and qualitative inputs; and the tailoring of policy recommendations to the environment and needs of the host country.
4. **The follow-up and maximisation of impact from policy support activities.** Finally, the last set will address: methods and success factors for the most effective implementation of recommendations and continuous policy learning practice in recipient countries; diffusion of outcomes outside participating countries; how best to monitor the quality and impact of the support; and stimulating appetite vs. absorptive capacity, in relation to policy support exercises.

The European Commission, Directorate-General for Research and Innovation, has acquired in-depth experience in providing support to countries willing to implement reforms in view of improving the quality and impact of their national R&I systems. Such expertise builds on earlier peer reviews of countries' R&I systems which took place under the aegis of the EU advisory committees for scientific and technical research between 2004 and 2014¹. Such reviews identified challenges faced by national systems and proposed policy pointers, drawing on a blend of insights from peers and experts. Policy learning workshops were also organised under various formats.

Anchored in these previous exercises, the Horizon 2020 Policy Support Facility was launched in 2015 as a response to the Commission Communication 'Research and Innovation as Sources of Renewed Growth' (COM(2014)339)². With a sharpened and scaled-up policy angle, the PSF established a coherent and systematic framework as well as a large pool of expertise to respond quickly and efficiently to requests for national R&I policy reforms by Member States and countries associated to Horizon 2020. The PSF activities are challenge-driven, customer-oriented and geared towards policy practice.

Another European Commission initiative funded by the Research Framework programme, the Inco-Net programme, aims to support the advancement of the science, technology and innovation (STI) policy dialogue between the EU Member States/Associated Countries and third countries: peer reviews of STI policy mixes are carried out within this framework.

International organisations, in particular the Organisation for Economic Co-operation and Development (OECD), the World Bank and the United Nations Economic Commission for Europe (UNECE) have also been conducting exercises with broadly similar aims, but using different methods and acting under different frameworks. Several Member States and Associated Countries have participated in both EU and other international organisations' policy support activities and have gained significant experience in using and participating in the variety of policy services on offer.

The Commission's Directorate-General for Research and Innovation wants to take stock of the knowledge generated so far by the PSF by means of an open dialogue between representatives from all parties involved in policy support. Lessons from the long-standing experience of the OECD, World Bank and UNECE in carrying out country-focused analyses covering R&I policies will also be presented. A better understanding of the various approaches and the rise of new challenges for R&I systems will provide the building blocks for designing future exercises.

1 Former peer reviews under CREST and the European Research Area and Innovation Committee (ERAC), between 2004 and 2014.

2 <https://ec.europa.eu/research/innovation-union/pdf/state-of-the-union/2013/research-and-innovation-as-sourcesof-renewed-growth-com-2014-339-final.pdf>

The aim of this discussion paper is to prepare participants for the debates at the seminar:

- **Chapter 1** presents **a brief overview of the landscape.**
- **Chapter 2** provides **background information** as well as insights on the various approaches and methods used to support countries in improving the design of their R&I policies and in implementing reforms in view of reinforcing the impact of these systems.
- **Chapter 3** discusses **challenges to be addressed in order to raise the impact of such activities and proposes questions to be debated in the seminar.**
- **Chapter 4** concludes by **highlighting key issues for the future.**

1 A BRIEF OVERVIEW OF COUNTRY-SPECIFIC POLICY SUPPORT FOR RESEARCH AND INNOVATION (R&I)

1.1 European Commission peer reviews and specific support for R&I

1.1.1 CREST and ERAC reviews and policy learning activities

ERAC, the European Research Area and Innovation Committee (the successor of CREST in 2010), is a strategic policy advisory committee that advises the Council, the Commission and Member States on the full spectrum of R&I issues. This body acts as a forum for exchange and mutual learning between representatives of governmental authorities in charge of R&I.

CREST expert group reports on the design and implementation of national policy mixes were produced for 11 Member States³ between 2005 and 2008, in the framework of the Open Method of Coordination⁴ established in 2000. From 2010, ERAC peer reviews have followed. The CREST and ERAC reviews⁵ took the form of analyses of national R&I systems and policies, performed by teams including peers (policymakers from other Member States) and experts, implemented in a policy-oriented mode and geared towards the provision of recommendations for improving the system and policies in the reviewed country. In addition, specialist groups were formed to exchange experiences and identify good practices on various subjects of importance for R&I policy. Between 2010 and 2014, ERAC peer reviews were carried out for seven Member States⁶. The reviews came at different stages of the policy design: in Estonia, it was used to design the RDI Strategy 2014-2020, while in Spain, it supported the implementation of the existing Strategy for Science and Innovation 2013-2020.

1.1.2 The Horizon 2020 Policy Support Facility: Peer Reviews and Specific Support by the European Commission

Since 2015, the Horizon 2020 Policy Support Facility⁷ (PSF) has given Member States and countries associated to Horizon 2020 practical support to design, implement and evaluate reforms that enhance the quality of their R&I investments, policies and systems. The PSF is driven by its customer-oriented spirit and is geared towards policy practice, with three types of support activities being offered to countries:

³ Romania, Spain, Sweden, Belgium, Estonia, France, Lithuania, Netherlands, United Kingdom, Austria and Bulgaria.

⁴ The OMC is an intergovernmental mode of governance which relies on Member States' voluntary participation and on 'soft law', non-binding mechanisms such as guidelines and indicators, benchmarking and sharing best practice. Peer pressure is the main mechanism used within the OMC.

⁵ Former [peer reviews](#) under CREST and the [European Research Area and Innovation Committee](#) (ERAC), between 2004 and 2014.

⁶ Cyprus, Latvia, Estonia, Denmark, Belgium, Iceland and Spain.

⁷ <https://rio.jrc.ec.europa.eu/en/policy-support-facility>

1. Peer Reviews of national R&I systems are in-depth assessments of a country's R&I system carried out by a panel of experts and leading to concrete recommendations to the national authorities on the reforms necessary to strengthen their R&I system. The specificity of the PSF Peer Reviews is that they also address specific elements of the R&I system as agreed with the Member States (i.e. focus areas) – for example, reform of universities, knowledge-transfer system, etc. They include a possibility of pre-peer reviews (preparation stage) and post-peer reviews (follow-up stage). PSF Peer Reviews have been carried out for Bulgaria, Hungary (pre-peer review followed by a full peer review), Moldova, Ukraine and Poland.
2. Specific support to countries provides a set of concrete recommendations on how to tackle a specific R&I policy challenge and how to implement the accompanying reforms. PSF Specific Support has been (or is still) provided to countries such as Malta, Slovakia, Romania, Slovenia, Bulgaria, Lithuania, Latvia, Georgia and Tunisia (several others to follow).
3. Mutual Learning Exercises (MLEs) on specific topics, involving a set of countries (supported by external expertise) around a project targeting the exchange of practices for policy reform. MLEs have tackled issues such as R&D tax incentives, complex public-private partnerships in R&I, evaluation of business R&D grants, performance-based funding of public research, open science, innovation procurement and widening participation.

Since MLEs have their own methodology⁸, mobilising several Member States around a project-based exchange of good practice focusing on a specific R&I challenge, only the first two types of PSF policy support activities are covered in this paper and in the seminar.

With almost 25 activities (see Annex 2 for the full list of PSF activities) carried out since its launch in 2015, feedback from PSF work indicates that it is perceived as a useful tool to induce reforms of national R&I systems, drawing on tailor-made advice by leading experts and policy practitioners. Indicatively, but not exhaustively, the PSF has supported the reform of the national R&I systems of Bulgaria (influencing the new Bulgarian Science Code), Poland (advising on the new Polish 'Law 2.0' on science and higher education), Moldova (new Research Code) and Malta (creating a new monitoring system for the roll-out of the Maltese national R&I strategy).

The PSF country-specific activities are challenge-driven, and by no means limited to studies of the internal coherence of R&I systems. They examine the national systems in light of the socio-economic challenges and context faced by the country under review. The PSF is driven by its customer-oriented spirit and is geared towards policy practice. Their main audience includes national policy-makers who design, implement and evaluate policy reforms to improve the

⁸ <https://rio.jrc.ec.europa.eu/en/policy-support-facility/mutual-learning>

quality and impact of R&I investments. The PSF activities are evidence-based although they take into consideration the perceptions of national R&I stakeholders. Robust quantitative and qualitative evidence supports the PSF policy recommendations. Finally, the PSF activities are tailor-made and flexible, and adapt to the specific features of each country, including the political cycle.

1.1.3 The Inco-Nets Policy Mix Peer Reviews

The European Commission Directorate-General for Research and Innovation (International Cooperation division) manages the Inco-Net scheme, funded as a Coordination and Support Action (CSA) under the Seventh Framework Programme (FP7). Inco-Nets pursue the general goal of enhancing S&T cooperation between the EU and third countries. In this context, platforms for learning and exchange among policymakers involved in research, technology, development and innovation (RTDI) policy are established. Recently, among other activities, 'Policy Mix Peer Reviews' have been carried out in several regions. They are defined as systematic examinations and assessments of the national STI systems by peers and experts, aimed at improving the design and implementation of national S&T policy. In the Inco-Nets EaP, CA and EECA (targeting Eastern European and Central Asian countries) Policy Mix Peer Reviews covered Moldova and Kazakhstan in 2012, and Armenia, Georgia and Kyrgyzstan in 2015. During 2016-2017, Policy Mix Peer Reviews for Serbia and Bosnia and Herzegovina were carried out under the Danube Inco-Net.

Inco-Net Policy Mix Peer Reviews are characterised by a premium placed on peer learning over the analytical dimension, using a 'critical friends' approach. As stated in the terms of reference for one of these exercises: *"The S&T policy mix peer review provides a view on the national STI system from the outside. The view is that of informed experts from partner countries (mostly governmental level), who themselves are interested to learn and to engage in a dialogue with policymakers and S&T experts from the Eastern European or Central Asian host country. Thus, the ultimate goal of a S&T policy mix peer review is to increase mutual understanding and learning"*⁹.

In 2016, the Inco-Net scheme was followed by a Directorate-General for Research and Innovation service facility in support of R&I cooperation, focusing on reinforcing bilateral, multilateral and bi-regional policy dialogues with third countries and regions as well as identifying and addressing barriers to and opportunities for increased cooperation.

1.2 Country-specific support for R&I used in other international circles

*1.2.1 The OECD Reviews of Innovation Policy*¹⁰

The OECD had already carried out science policy reviews in the 1960s, using the peer-review method – a method that lies at the heart of the organisation's mission – namely: *"a systematic examination and assessment of the*

⁹ <http://www.inco-eap.net>

¹⁰ <http://www.oecd.org/sti/inno/oecdreviewsofinnovationpolicy.htm>

performance of a State by other States, with the ultimate goal of helping the reviewed State improve its policymaking, adopt best practices, and comply with established standards and principles". Until the mid-90s, over 60 OECD country reviews were carried out focusing on S&T systems and policy. In 2005, moving towards a more systemic view of innovation, the OECD launched its Innovation Policy Reviews. These are managed by the STI Directorate and are implemented under the auspices of the Committee for Scientific and Technological Policy (CSTP). The reviews build on the wide OECD knowledge base, specific fieldwork in the reviewed country, and contributions from the policymaker community.

The OECD Innovation Policy Reviews are well known and in high demand: between 2006 and September 2017, 30 Country Innovation Policy Reviews were completed (as well as one regional review for South-East Asia including profiles for six countries). Seven OECD Innovation Policy Reviews at sub-national (regional) level were also carried out between 2008 and 2014.

1.2.2 The World Bank Public Expenditure Reviews

The World Bank (International Bank for Reconstruction and Development) carries out Public Expenditure Reviews (PERs), which are diagnostic studies prepared to help countries establish effective and transparent mechanisms to allocate and use available public resources in a way that promotes economic growth and helps reduce poverty. PERs are conducted in all sectors, particularly in science, technology and innovation. This is an integral evaluation that includes an analysis of the quality of the policy mix (is it adequate for the needs for public support?), a thorough evaluation of the quality of design and implementation, an analysis of efficiency in public spending and an analysis of effectiveness (what is the evidence on impact of these instruments?). In line with the Bank's mission, developing countries are the target group of such reviews. An important focus is placed on the role of STI for solving specific challenges such as food scarcity through R&I in the agricultural sector, the ultimate goal being to reduce poverty through economic development. The reviews carry out analyses of public budgets and look at the quality of the STI policy mix. Importance is given to the capacity of recipient countries to carry out such processes in future exercises. These reviews have been carried out recently in Chile, Colombia and Ukraine.

1.2.3 The UNECE Innovation Performance Reviews

The United Nations Economic Commission for Europe (UNECE) carries out 'Innovation Performance Reviews' now renamed as 'National Innovation for Sustainable Development Reviews'. The target group comprises European countries in transition. The reviews started in 2011, drawing on accumulated lessons in the field of knowledge-based development by various types of UNECE work. They provide an assessment of the existing national R&I system as well guidance and recommendations on how to improve the system and increase innovation performance. Belarus, Kazakhstan, Ukraine, Armenia and Tajikistan have been subject to these performance reviews, and the review of Kyrgyzstan is ongoing.

2 OVERVIEW AND COMPARISON OF CONCEPTS AND METHODS USED FOR COUNTRY-SPECIFIC POLICY SUPPORT FOR R&I

The methods used for policy support activities by the international organisations covered in this review share three common characteristics:

- **A systemic approach:** the focus is on the improvement of a R&I (policy) system rather than on the effectiveness of individual programmes or institutions. Frameworks are (explicitly or implicitly) inspired by the National Innovation System concept;
- **A policy-oriented approach:** the aim is to go beyond descriptive analyses of R&I systems and policies, and to provide policy recommendations to authorities in charge of the R&I domain;
- **An approach combining country-specific features and international good practices:** while the starting point is the host country system, assessments and recommendations draw on knowledge gained in other countries with respect to features of effective innovation systems and policy instruments for knowledge-based development.

Section 2.1 presents the analytical framework used by international organisations for providing the different types of country-specific support to R&I. Section 2.2 describes the processes followed to implement these exercises in practice. Section 2.3 provides a synoptic view, highlighting differences and similarities between the various approaches at play.

2.1 The analytical framework for country-specific policy support for R&I

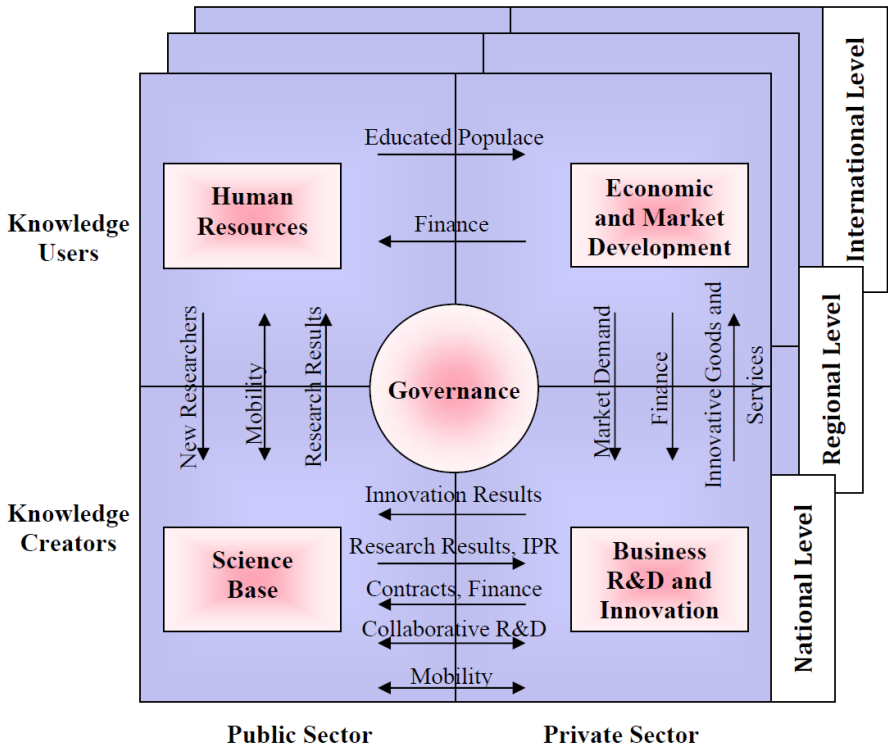
2.1.1 The EC Policy Support Facility Peer Reviews and Specific Support

The CREST and ERAC peer-review exercises relied on a framework that originates from thematic work on policy mixes carried out under the CREST OMC working groups. Within the framework of a national innovation system, policy mixes are conceived as the aggregate of policies affecting four major domains: human resources; the science base; business R&D and innovation; and economic and market development. The governance system linking policies in all these domains is also of central interest, as are the linkages between national and regional, and national and international R&I systems. Figure 1 depicts all these domains and important links and flows between them.

More concretely, peer-review work under the ERAC was based on the 2010 EU self-assessment tool (SAT), which included features of well-functioning R&I systems (Box 1). The SAT tool provided a systematic list of elements to be investigated and confronted with existing good practices. The use of the framework in ERAC reviews was seen as positive as it addressed important elements of the R&I systems and provided a common structure for peer-review practices (Halme 2012). However, it became evident that there was a need to develop the international dimension of the analysis. The SAT framework has

been further elaborated under the PSF, which is structured around a tailor-made selection of issues.

Figure 1: Conceptual framework for OMC peer reviews



Source: Guy and Nauwelaers 2003

Box 1: Innovation Union Self-Assessment Tool for STI peer reviews

The Innovation Union Self-Assessment Tool (SAT) aims to capture the systemic dimension of the 'knowledge triangle'. It includes the following features of well-performing national and regional R&I systems:

1. Promoting R&I is considered as a key policy instrument to enhance competitiveness and job creation, address major societal challenges and improve the quality of life, and is communicated as such to the public.
2. Design and implementation of R&I policies is steered at the highest political level and based on a multi-annual strategy. Policies and instruments are targeted at exploiting current or emerging national/regional strengths within an EU context ('smart specialisation').
3. Innovation policy is pursued in a broad sense, going beyond technological research and its applications.
4. There is adequate and predictable public investment in R&I focused in particular on stimulating private investment.

5. Excellence is a key criterion for research and education policy.
6. Education and training systems provide the right mix of skills.
7. Partnerships between higher education institutes, research centres and businesses, at regional, national and international level, are actively promoted.
8. Framework conditions promote business investment in R&D, entrepreneurship and innovation.
9. Public support to R&I in businesses is simple, easy to access, and high quality.
10. The public sector itself is a driver of innovation.

Source: http://ec.europa.eu/research/innovation-union/pdf/innovation-union-communication_en.pdf COM(2010) 546

The PSF reports do not follow a standardised approach. This is because they are customised and structured in line with the focus areas proposed by the host country, paying particular attention to the contextualisation and the rationale for the recommendations. When requesting PSF support, each country proposes the activity focus areas and informs on the policy context of the review. Thus, each report is positioned within ongoing discussions on the reforms envisaged by the government (context setting). The importance of the framework conditions and context in the host country, which is also a key feature of the innovation systems concept, is the subject of the first chapter in each of the PSF Peer Reviews.

Compared to previous EC reviews, the PSF Peer Review and Specific Support reports deepen the evidence-based analysis of the country's R&I system, while focusing on diagnosing the blocking factors or challenges within the country's current R&I system (based on the focus areas). Since many countries face the same bottlenecks when developing their R&I systems, recurring topics in the PSF reports' analytical chapters include: the public R&D system, funding and governance, the gap between research and business, fostering private-sector innovation and entrepreneurship, human resources development in/for the research sector, and the internationalisation of the STI system.

Subsequently, this analysis leads logically to concrete, specific, operational and detailed recommendations. Each report provides a rationale and adequate evidence for a number of key policy messages highlighted upfront. The detailed recommendations, which are inserted in analytical chapters, result from the panel analysis and its intense interaction with national policymakers and R&I stakeholders over the course of the review.

The content of PSF Specific Support reports is even more variable as they are structured according to more specific question(s) from the target country: e.g. the development of a monitoring system for the R&I policy in Malta; cooperation between the public science base and business, and attracting innovation-oriented foreign direct investment in Lithuania; and the development of an entrepreneurial ecosystems in Slovakia (see Annex 2 for a detailed list of

topics covered in both types of PSF activities). Therefore, the structure of PSF reports can be summarised as follows (Box 2).

Box 2: Typical contents of PSF reports

- Policy messages
- Executive summary
- Analytical chapters tailored to the PSF focus areas, including recommendations and learning models

Box 3: Two recent examples of PSF country-specific reports

Peer Review Poland 2017

- Key policy messages
- Executive summary
- Chapter 1: introduction, aim and methodology
- Chapter 2: context
- Chapter 3: reform of the Polish higher education and science landscape
- Chapter 4: key framework conditions
- Chapter 5: third mission and links between higher education and industry and society
- Chapter 6: internationalisation

Specific Support to Lithuania 2017

- Policy messages
- The PSF Specific Support to Lithuania
- Chapter 1: An open and effective innovation system: the challenges facing Lithuania
- Chapter 2: Strengthening the foundations of the Policy Support System
- Chapter 3: Fostering cooperation between the science base and business
- Chapter 4: Innovation-oriented FDI

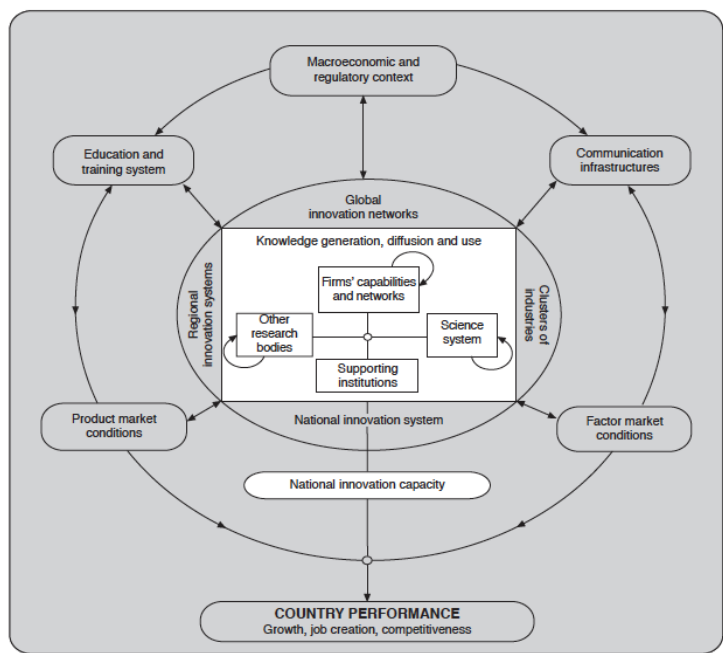
The PSF experience (since 2015) shows an increasing interest in focused policy advice through Specific Support, while interest in full evaluations of national R&I systems now appears to be more moderate. The Bulgarian request for Specific Support to develop a performance-based funding system, as a follow-up to the Peer Review, illustrates how the PSF can provide continuity of learning and policy support throughout the policy cycle.

2.1.2 *The OECD Reviews of Innovation Policy*

The OECD Reviews of Innovation Policy are conducted under a framework inspired by the National Innovation System concept (Figure 2), adapted to account for international openness / globalisation and changes in the modes of research and innovation. This framework has been expanded into a policy-oriented

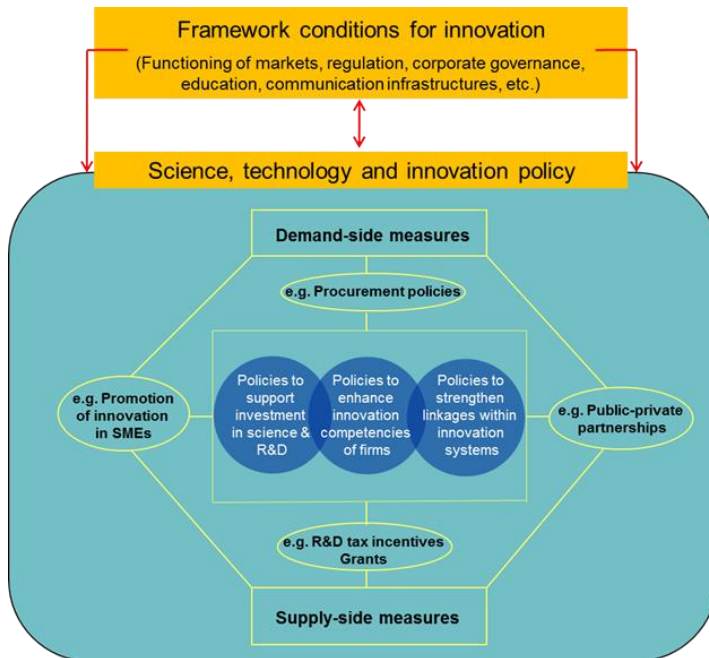
framework (Figure 3). The science base, on the one hand, and the business sector, on the other hand, are core policy analysis targets. Likewise, the issue of interlinkages between the system's actors and pillars is a central issue. The policy analysis covers both demand-side and supply-side measures. The broader framework for innovation, including regulation, education, infrastructures, corporate governance, etc., also falls under the scope of the analytical framework.

Figure 2: Analytical framework of OECD Reviews of Innovation Policy



Source: OECD 1999

Figure 3: Policy-oriented framework of OECD Reviews of Innovation Policy



Source: OECD 2014

The OECD Reviews have frequently been customised by examining key policy issues (reform of the public research system; new industrial policy etc.) in a systems context. In some cases, the OECD Reviews focus on specific subjects which are seen as important by the requesting country and hence do not cover the whole system in full detail. This happened mainly in the case of countries which have undergone reviews and are already advanced in this field.

Recently, OECD Reviews have paid more attention to two issues, which address the capacity of the R&I systems to contribute to economic development¹¹:

1. Achieving relevance and excellence in research:
 - Strategic focus and orientation of research at universities;
 - Funding models and incentive structures.
2. Diversification and structural change through research, higher education and innovation:
 - Nurturing the evolution of new economic activities;
 - Facilitating and promoting structural change and diversification.

¹¹ These issues were on the agenda of the recent OECD TIP workshop devoted to Innovation Policy Reviews (December 2016).

Two models can be distinguished in the recent OECD reports (Box 4). In both cases, there is an important analytical section on economic and innovation performance. Governance of the system is given special attention in a separate chapter. In the second model, a specific chapter is dedicated to 'Tackling societal challenges through research and innovation and public sector innovation', which represents an addition to the traditional structures of the reviews.

Box 4: Typical content of OECD Reviews of Innovation Policy reports

Model 1 (Kazakhstan 2017, Lithuania 2016, Netherlands 2014, Sweden 2012)

- Executive summary
- Overall assessment and recommendations
- Economic performance and framework conditions for innovation
- Innovation performance
- Innovation actors
- The role of government in the system of innovation

Model 2 (Norway 2017, Finland 2016, Sweden 2016, France 2014)

- Executive summary
- Overall assessment and recommendations
- Macroeconomic and innovation performance
- Strengthening university research / The role of public research institutions / training researchers (France) / Transfers between public research and businesses (France)
- Enhancing competitiveness and innovation / Business sector innovation challenges / Innovative entrepreneurship
- Tackling societal challenges through research and innovation and public sector innovation (specific for Norway and Sweden)
- Improving science, technology and innovation system governance

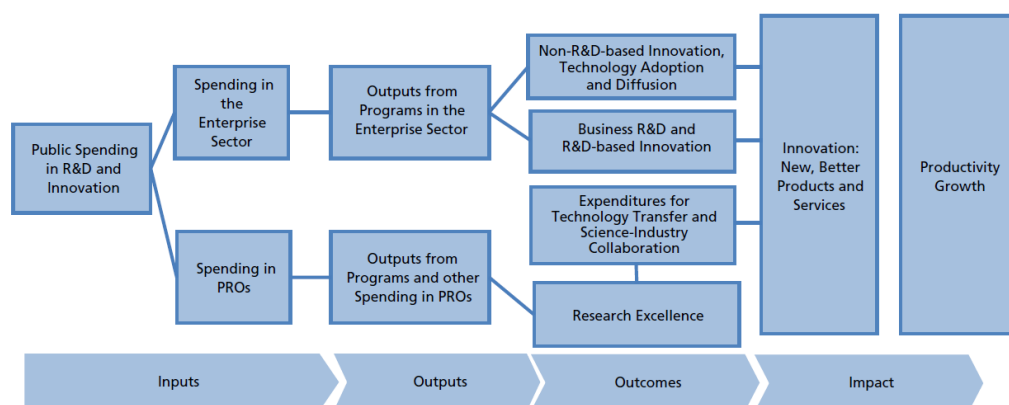
2.1.3 The World Bank Public Expenditure Reviews

The World Bank Public Expenditure Reviews are oriented towards the central question of how to maximise the social and economic returns of public expenditure on STI. They use a broad concept of innovation: including "off the frontier innovation", namely non-technological innovation (which is an important issue, particularly in developing countries).

The reviews are based on a framework which highlights the intervention logic of investing in STI (Figure 4), linking: inputs (public STI funding); outputs (immediate results of STI funding); outcomes (1. research excellence; 2. collaboration science-industry and research commercialisation; 3. business R&D-based innovation; and 4. STI adoption and diffusion and non-R&D-based innovation) and impacts (innovation and productivity). It is acknowledged that this ultimate impact depends on other conditions not affected by public funding per se. The analysis in World Bank Public Expenditure Reviews focuses on

conditions required to achieve the four outcomes. The framework includes assessment checklists for each of them with a long list of questions¹².

Figure 4: Logic of intervention used in World Bank Public Expenditure Reviews



Source: Correa 2014

The analysis and recommendations in the World Bank Public Expenditure Reviews proceed through four stages, which provide the structure for the reports (Box 4):

5. Country context and quality of the policy mix: the focus is on: i) the composition of public expenditure in relation to objectives; and ii) the alignment of resources (policy mix) with objectives, overlaps and redundancies or gaps;
6. Functional analysis: quality of design, implementation and coordination of public expenditure on R&I. This includes an assessment of practices in processes along 31 dimensions, which are confronted with available good practices;
7. Efficiency analysis: efficiency in the use of resources and quality of services provided;
8. Effectiveness analysis: relying on existing evidence of impact.

World Bank reviews are carried out in modules corresponding to the above stages: a single exercise would typically cover a subset rather than the full range of stages.

¹² For a full list, see Correa 2014, pp. 69-81.

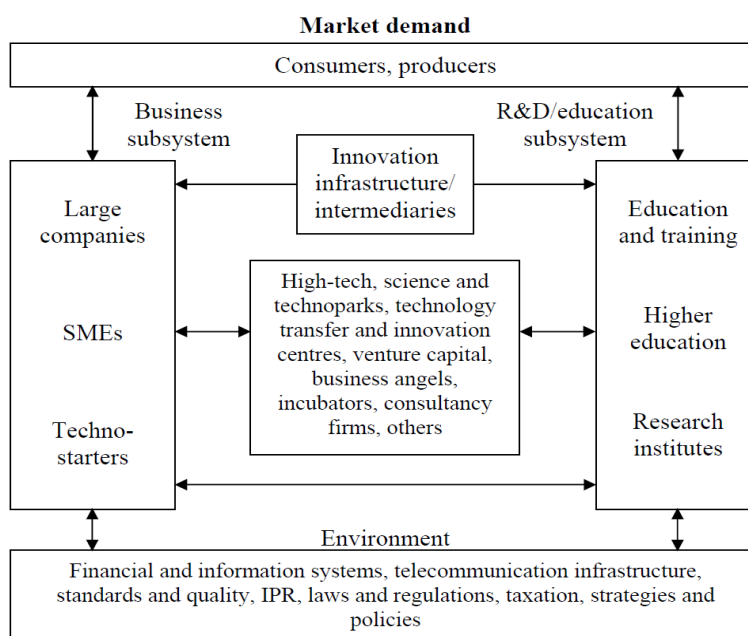
- Chapter 1: Country's needs
- Chapter 2: Functional review (review of public spending on STI)
- Chapter 3: Operational efficiency of programmes and activities funded by the government
- Chapter 4: Economic effectiveness of public spending
- Chapter 5: Policy mix and governance analysis
- Chapter 6: Conclusions and main recommendations

Source: Correa 2014

2.1.4 The UNECE Innovation Performance reviews

The UNECE Innovation Performance Reviews are explicitly based on the original National Innovation System framework borrowed from the original concept developed by (Freeman, 1987) (Figure 5).

Figure 5: Analytical framework of UNECE Innovation Performance Reviews



Source: Freeman 1987

Following this framework, the reviews are structured around three elements:

1. The NIS agents, which include knowledge institutions (universities, research institutes, technology-providing firms), firms and government bodies but also consumers, which are increasingly seen as a source of innovation;
2. The interactions and linkages between the various elements of the NIS;
3. The flow of ideas and knowledge, as well as the ability to learn.

All UNECE reports follow the same standardised format (Box 6).

Box 6: Standard content of UNECE reports

- Executive summary
- Chapter 1: Recent economic and innovation performance
- Chapter 2: National innovation system and innovation governance
- Chapter 3: Framework conditions, innovation policies and instruments
- Chapter 4: Knowledge generation and absorption
- Chapter 5: Industry-science linkages and collaboration in the innovation process
- Chapter 6: Financing innovative entrepreneurs
- Chapter 7: The role of innovation in international economic integration

2.1.5 *The Inco-Nets Policy Mix Peer Reviews*

The methodology of the Inco-Nets Policy Mix Peer Reviews is based on the same NIS model and borrows the general template as used in most of the CREST OMC Policy Mix Reports. Coverage includes the science base, human resources, economic and market development, business research, technology development and innovation (RTDI) and governance, as well as interlinkages at various levels.

Since the reviews are carried out through different initiatives and by different partnerships, the reports do not follow a standard format (Box 7) although they all cover the above-mentioned elements.

Box 7: Content of Inco-Nets Policy Mix Peer Review reports

Inco-Net Georgia 2016 and Inco-Net Kazakhstan 2012 (Inco-Net Eastern European and Central Asian Countries)

- The STI system
- Investment in and funding of RTDI
- Universities and research centres
- Innovation and business sector
- Science-business cooperation (Kazakhstan)
- Human resources in STI
- International cooperation
- Summary of comments and recommendations (Kazakhstan)

Inco-Net Serbia 2017, Bosnia and Herzegovina 2017 (Inco-Net Danube)

- Executive summary
- Economic context and framework conditions for innovation
- Innovation actors
- Resources (inputs) available for innovation and research
- Innovation and research performance
- The role of government
- Overall assessment
- Recommendations

Inco-Net Armenia 2015 (Inco-Net Eastern European and Central Asian Countries)

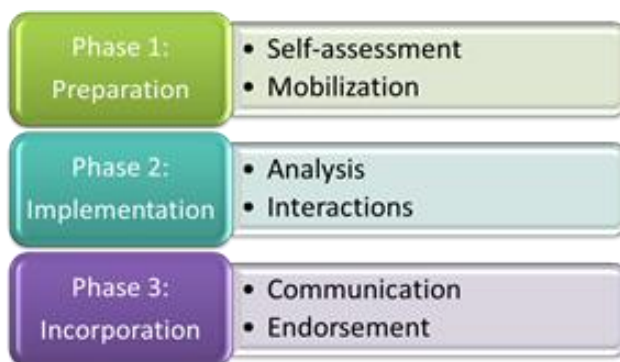
- Overall environment for RDTI
- Structural, strategic and legal framework for RDTI
- Financing for RDTI
- Human resources
- International cooperation

2.2 The process for country-specific policy support for R&I

Moving on to the implementation of country reviews, the above initiatives for conducting policy support activities in R&I share common features, the most important of which are:

1. a **three-step approach** comprising a preparation phase, an implementation phase and an incorporation phase (Figure 6);
2. the use of **panels of experts and peers** to foster learning from both conceptual and practical expertise. The latter is an important (but not the only) vehicle to learn from good practices from other countries;
3. the combined use of both **quantitative/codified and qualitative/embodied evidence**. The latter is acquired through field visits in the host country and meetings with stakeholders;
4. a focus on **stakeholder involvement**: actors in the reviewed national innovation system are mobilised, not only for information gathering but also in view of facilitating the implementation of the reviews' conclusions and recommendations into actual practice.

Figure 6: The three-step approach to country-specific support for R&I



Source: Nauwelaers 2015

Beyond these similarities, there are differences in the way the process is deployed in practice across the different initiatives. In particular, these concern: the content and organisation of the three phases; the use of different types of expertise and the balance of weight between the contributions of experts and

peers; the types of inputs introduced into the exercises; the underlying knowledge base; the degree of stakeholder mobilisation, as well as the cost and duration of the exercises. This diversity is depicted in the following sections, and synthesised in section 2.3.

2.2.1 The EC Policy Support Facility Peer Reviews and Specific Support

The Horizon 2020 Policy Support Facility (PSF) is a demand-driven policy tool that responds to requests made by Member States and Associated Countries¹³. The PSF is continuously open to countries' spontaneous requests for support. However, to facilitate the planning of PSF engagements, the Commission issues an annual call for expressions of interest to the ERAC for PSF services (Figure 7). Member States and Associated Countries express an interest for PSF support, which must be translated into an official demand from high-level national authorities to the Commission.

Figure 7: General structure of PSF activities



Requests for PSF support come from ministers (or state secretaries) in charge of R&I, since high-level political commitment is crucial to the success of the exercise, as demonstrated by earlier EC peer reviews. Depending on demand, requests may need to be prioritised, including: addressing European Semester country-specific recommendations for support to specific reforms; EU added value for mutual learning (e.g. if five countries want to assess the effectiveness of their R&D tax credit schemes, it would make sense to do so jointly using the PSF Mutual Learning Exercises); etc.

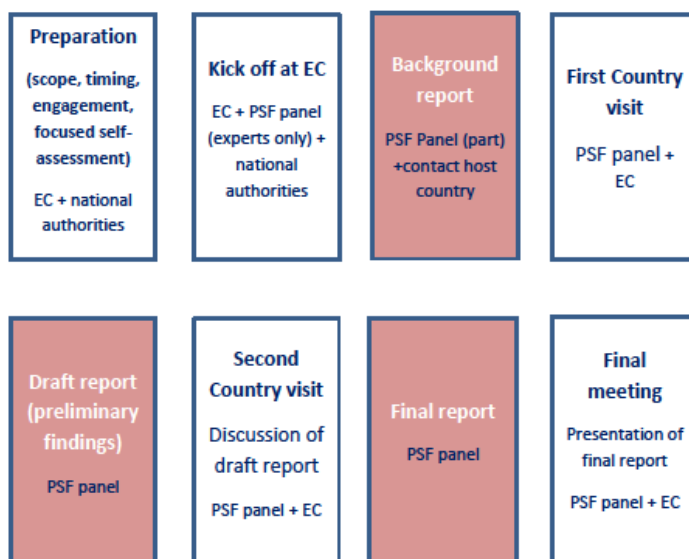
¹³ Member States and Associated Countries participate in the PSF services on an equal basis.

The specificities of the PSF approach to the three steps are as follows (Figure 8):

- The preparatory stage is important: it involves assessing the demand and ensuring commitment (high-level request); extensive discussions on the design and scope of the process (defining the focus areas and policy timelines of the activity, etc.); selection of the PSF panel; collection of background data and reports; and the engagement of all relevant stakeholders in the country;
- The PSF panel is made up of a balanced mix of experts and peers for the peer reviews (and sometimes experts only for Specific Support services). The EC decides on the final composition of the panel with the agreement of the host country, and is open for countries' proposals for experts within the framework of the ERAC. A combination of experts from the private and public sectors and from diverse backgrounds (including academic institutions, industry and government experts) ensures a comprehensive coverage of the skills and geographical expertise needed for the PSF. The selection always takes into account the need for a sufficient diversity of professional backgrounds, sector, and geographical representation and specialisation. A key asset of the PSF is that it counts on high-level expertise from individuals who have been responsible for R&I policy or performing organisations at the highest level in the Member States, and have the experience and credibility to advise governments on major R&I reforms;
- The EC services act as observers and facilitators, ensuring contacts with the national authorities and the policy relevance of the activity. The Commission's role is crucial to assess the demand and match it with the most relevant expertise from both the public and private sectors. The Commission is solely responsible for the policy aspects of the PSF and its activities, including their communication and follow-up;
- A pre-peer review is possible in order to define more precisely the focus of the peer review, while a post-peer review can support the implementation of changes;
- A kick-off meeting involving the panel, the EC and the national authorities is organised to create a common understanding of issues for the review and to agree on its organisation;
- A background report is prepared by an expert, who can be on the panel. Local experts are involved in preparing the background report and an extensive dialogue with the host country is ensured. Although there is no self-assessment report per se by the reviewed country, the national authorities work on assessing the challenges linked to the focus areas, including the main features of their system, and on identifying core issues for the review; this takes usually the form of a PowerPoint presentation (for the kick-off) which often translates into a self-standing report;

- Two site visits are included which aim to gather information and mobilise the stakeholders. In some cases, questionnaires are given to stakeholders to gather information. The second visit takes place after a 'digestion phase' of the preliminary findings, the aim of which is to discuss these findings with all country stakeholders in view of fine-tuning the recommendations. All visits are organised by the national counterparts, interacting with the EC and the PSF panel;
- The PSF panel prepares a draft report with preliminary assessment and recommendations, which is discussed with the national authorities in the host country;
- The PSF panel prepares the final report with recommendations (discussed with the host country, including EC comments);
- A dissemination event, with high-level attendance and involvement of the media, is scheduled with national authorities and stakeholders to ensure good dissemination and endorsement of the recommendations. Press coverage is usually ensured;
- The EC stands ready to support the country in the follow-up of the PSF: Specific Support, post-peer review, etc. However, implementation of the recommendations is the responsibility of the host country.

Figure 8: The three-step approach in the EC Policy Support Facility



Inputs in the PSF exercises comprise, on the one hand, quantitative data and codified information, gathered in the background report and during the fieldwork and, on the other hand, tacit knowledge and expertise based on experts' and peers' knowledge and host-country stakeholders' views. The role of

peers, in particular, is to bring good practice from their own experience to the review.

The PSF Knowledge Centre, launched in 2016 in the framework of the joint website of the Research and Innovation Observatory and the Policy Support Facility¹⁴, includes country-based information on Member State R&I policies and performance (including monitoring and analysis performed in the European Semester), covering good practice, relevant statistics, infographics and dedicated reports broken down by country and policy topics. The background report makes use of all other country-specific sources produced by international organisations and in the actual country.

The analyses developed in the context of the European Semester, in particular identifying bottlenecks to the contribution of R&I to growth and job creation, constitute the basis for the PSF activities. The PSF helps to overcome the 'implementation gap' often encountered between the overall analyses and policy recommendations provided for the Member States in the context of the European Semester and the actual policy reforms. The output of the Semester analyses carried out by DG RTD also feeds directly into PSF activities, enriching their evidence base in relation to policy performance and development, and for the identification of country challenges and opportunities. The PSF findings also feed into the Semester analysis while the monitoring of R&I reforms is carried out by relevant country desks in the context of the EU Semester.

There is no systematic follow-up of the activities, apart from the above-mentioned possibility of post-peer reviews which take place on a voluntary basis (this is being carried out for the Bulgarian Peer Review).

The costs of PSF activities are borne mainly by the EC, while the host country assures only the cost of coordination and meeting arrangements. The PSF exercises last for approximately seven to nine months (the duration tends to be shorter for Specific Support activities than for full Peer Reviews).

2.2.2 The OECD Reviews of Innovation Policy

The OECD Reviews of Innovation Policy are launched following an official request from the national authorities to the OECD. Prior to the official request, the OECD Secretariat and the country to be reviewed have already agreed on the Terms of Reference of the Review. The three-step process is then deployed, as shown in Figure 9.

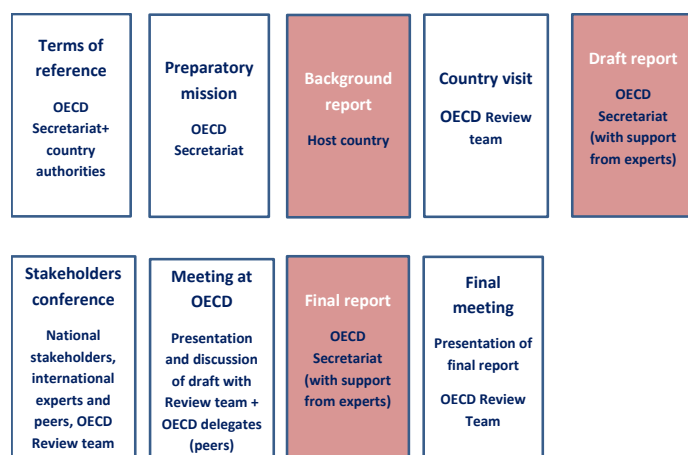
The main elements of the OECD three-step process are:

- The OECD Secretariat plays a key role throughout the review, taking the lead. The core of the work is done by the Secretariat with the help of external experts. . Together they form the OECD Review team, which is also open to the participation of peers;

¹⁴ <https://rio.jrc.ec.europa.eu/en/policy-support-facility>

- A preparatory mission in the country, involving the OECD Secretariat, takes place at the start to further define the review's scope and schedule;
- A background report is prepared by the country being reviewed, following instructions from the OECD Secretariat reflecting the Terms of Reference. This often represents a significant effort in documenting the country's own national R&I system. It is also considered key in the process to fine-tune the recommendations in line with the country's specificities;
- A country visit takes place (sometimes followed by a second shorter visit) of the OECD Review team. The visits are organised and facilitated by the reviewed country's counterpart;
- The OECD Secretariat, with the support of the external experts, prepares a draft report with a preliminary assessment and recommendations, which is communicated to the host country for comments. In some cases, an interim conference helps to fine-tune the final report; this type of stakeholder conference with the participation of national stakeholders, international experts and peers has become a regular feature of recent reviews.
- A regular peer review, typically at a meeting of the Working Party of Technology and Innovation Policy of the CSTP is devoted to discussing the report in the presence of the OECD review team, where some delegates of other OECD countries act as peer reviewers;
- The final report is prepared by the OECD Secretariat, with the support of the other members of the Review team;
- A public event is organised in the country under review with high-level attendance and involvement of media, in order to diffuse the results, ensure public scrutiny and support the involvement of key stakeholders in further discussing implementation of the recommendations.

Figure 9: The three-step approach in the OECD Reviews of Innovation Policy



Inputs into the OECD reviews include the background report (which is sometimes quite detailed) and analytical work conducted by the OECD review team both in-house and during the field visit. Some OECD reviews use questionnaires to programme beneficiaries, or focus groups to fuel the information base. The OECD makes an effort to develop strong linkages between the innovation reviews and its cross-cutting analytical work. The latter provides cases of good practices and benchmarking elements to be integrated into the country-specific reviews. The presence of dedicated experts in the OECD Secretariat helps to exploit the knowledge created in earlier country reviews and thematic exercises.

The knowledge base for the reviews consists of relevant in-house OECD work, much of which can be found on the joint OECD-World Bank Innovation Policy platform¹⁵. This platform provides systematic access to a wealth of relevant information, both from a thematic and a country perspective. It also increasingly incorporates material from outside sources.

The follow-up of reviews provide a focus point, but no systematic process is established with this aim. In some cases, repeated reviews are carried out (on a voluntary basis), such as in the case of Sweden which was reviewed in 2012 and again in 2016, with the latter focusing on several points that emerged as conclusions in the first review.

The cost of the OECD Reviews of Innovation Policy are borne by the requesting countries although they are sometimes co-funded by other bodies. Their duration extends typically to one year.

2.2.3 The World Bank Public Expenditure Reviews

The World Bank (WB) Public Expenditure Reviews are led by WB staff, with the help of external experts (international experts as well as local consultants). These reviews are conceived as continuous exercises, whereby the first review is done mainly by the WB experts, and subsequent reviews are expected to be carried out by the countries concerned. Hence, the reviews focus in particular on information management and capacity building in order to strengthen institutional memory. The review process is organised as follows (Figure 10):

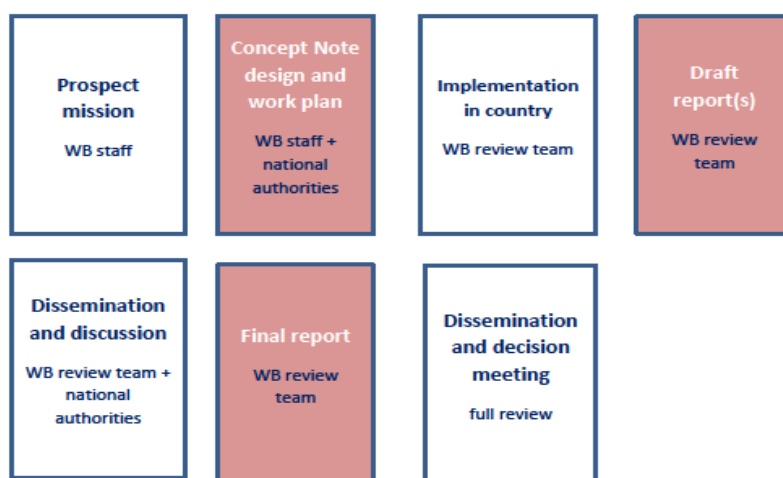
- A preliminary step before the actual start of the review concerns the creation of an inter-agency coordinating group representing the government agencies involved in the host country. The role of this counterpart in the country is to help with data collection, arrange meetings, discuss methodology, etc.;
- The review starts with a prospect mission by WB staff and discussion with national authorities;

¹⁵ www.innovationpolicyplatform.org

- A concept note and work plan for the review are designed by WB staff interacting with national authorities. It is subsequently peer reviewed and approved;
- The WB team undertakes the work in the country following the methodology described above. This involves analysis of desk-based data and documents as well as fieldwork in the country. The WB mobilises all government stakeholders as well as the private sector and academia, notably using focus groups to achieve this. The methodology and results are discussed with these coordinating groups. As mentioned, typically not all issues are covered in one exercise which focuses on one 'module'¹⁶ rather than on all of them;
- A draft report (or reports) is produced and subsequently disseminated in view of getting feedback from the reviewed country;
- A final report is produced;
- A dissemination and decision meeting is organised including a full review of the final product.

All WB products are peer reviewed at both the concept note stage and the final product stage. Reviewers are internal, although external reviewers are often invited, too.

Figure 10: The three-step approach in World Bank Public Expenditure Reviews



¹⁶ The 'modules' or stages of the WB peer reviews are: 1. Country context and quality of the policy mix; 2. Functional analysis: quality of design, implementation and coordination of public expenditure on R&I; 3. Efficiency analysis; and 4. Effectiveness analysis.

Since the focus of the WB reviews is placed on the analysis of public expenditure, a main source of information is national budgetary data on R&I. The methodology recognises the difficulty in identifying innovation expenditure which is often buried in other budgetary lines (economic policies, competitiveness). In addition, the WB uses three instruments to collect information: policy questionnaires, a PRO questionnaire, and a survey of beneficiaries.

Good practices from other countries are introduced into both the analyses and the recommendations, based mainly on in-house knowledge and earlier WB work.

The WB contributes to and benefits from the joint OECD-World Bank Innovation Policy Platform, cited above. The World Bank STI database¹⁷ is a one-stop shop for STI indicators aggregating 15 data sources covering 180 countries.

The costs of initial reviews are borne by the WB but the review is funded by the government with some contribution from the WB. The duration of the reviews is variable as it depends on the number of modules covered – typically, each lasts for 6 to 12 months.

2.2.4 The UNECE Innovation Performance Reviews

The UNECE Innovation Performance Reviews are launched at the request of the beneficiary country's governmental authorities. This is followed up by a process which includes various activities, as depicted in Figure 11:

- Initially, a preparatory mission is organised for the representatives of the UNECE Secretariat with the aim of establish contacts and discussing the structure and content of the review with the national authorities and other stakeholders;
- The review team is assembled, including a team of national and international experts and the UNECE Secretariat;
- The review team carries out a mission in the country and prepares a first draft report on this basis, which is communicated to the host country for comments;
- An original feature of the UNECE reviews is the intervention of independent external experts, not involved in the review, with the mission to provide comments on this first draft in parallel with the national authorities;
- The review team prepares a second draft on the basis of the comments received from both sources;
- The second draft is discussed in a UNECE session during which delegates from UNECE member states comment on this draft. National authorities, the

¹⁷ <https://data.worldbank.org/topic/science-and-technology>

review team as well as the independent external experts also participate in the discussions;

- Based on this, the final report is published by the UNECE Secretariat. It includes chapters authored by the different experts involved in the review;
- The costs of the UNECE Innovation Performance Reviews are borne mainly by the UNECE. Their duration is typically nine months.

Figure 11: The three-step approach in the UNECE Innovation Performance reviews



2.2.5 The Inco-Nets Policy Mix Peer Reviews

The Inco-Nets Policy Mix Peer Reviews are ad hoc exercises, organised in the frame of Inco-Nets projects with a limited duration and targeting a certain geographical area.

The process of Inco-Nets Policy Mix Peer Reviews starts with a demand from national authorities. In the Danube Inco-Net, a preliminary baseline study was carried out in order to identify previous analyses and needs for the potential candidate countries for peer reviews.

The three-step process is deployed as follows (Figure 12):

- A self-assessment report is being prepared by the host country. This is usually done by a national expert.
- A review team is assembled, consisting mostly of governmental experts from partner countries.
- The review team and the national authorities attend a kick-off meeting where the scope and the method for the review are agreed upon.

- The core part of the review is carried out during a field visit: this includes interviews with a large variety of key stakeholders in the country. Desk research and document study is undertaken to verify and complement the information gathered during interviews. In some cases, an additional meeting is planned when the need arises;
- After the site visit, the team members jointly work on a draft report, which is then submitted to the national authorities for comments.
- The final report is produced, which expresses the views of the review team on the structure and governance of the whole STI system.
- The final report is presented in the country in presence of authorities and stakeholders.
- In some cases, the implementation of a few of the recommendations is supported within the life-time of the Inco-Net project through (intellectual/financial) means of the Inco-Net NET project itself.

Figure 12: The three-steps approach in the Inco-Nets Policy Mix Peer Reviews



The knowledge base used for the Inco-Nets reviews consists of country reports produced in the frame of the project and other available documentation. The Western Balkan countries' Inco-Net has produced a collection of good practices in innovation policy. However, as mentioned above, those sources are project-specific and it is a challenge to maintain and update them at the end of the Inco-Net projects.

In several cases, it has been possible to organise, some 1.5 years after the presentation of the review results, a meeting on the progress of the implementation of the recommendations.

The costs of Inco-Nets Policy Mix Peer Reviews are supported mainly by the Inco-Net project budget. Their duration is typically 6 to 9 months.

2.3 Conclusion: A synoptic view of the different approaches for country-specific support in research and innovation

2.3.1 Similarities in conceptual frameworks

As a basis for their policy support exercises in the field of research and innovation (R&I), international organisations use similar conceptual frameworks, inspired by the innovation systems literature¹⁸. These frameworks provide a broad picture on the components of an innovation system, and highlight the importance of both linkages between actors and context conditions. As a result, there is strong similarity in the structure of the final reports of these exercises.

It should be noted that these frameworks are not well suited to depict and analyse system functions, though this is essential to reach the goal of these exercises: understanding how the RDI systems and policies contribute (or not) to knowledge-based development. System functions have been identified as follows (Hekkert et al., 2007): Entrepreneurial activities; Knowledge development; Knowledge diffusion through networks; Guidance of the search; Market formation. Despite efforts in the form of menus of questions such as the ones produced by the EC PSF or the WB, there is no 'authoritative' checklist or 'best practice' picture that can be used in doing system studies and in assessing such system functions. In practice, therefore, such exercises rely heavily on the expertise and experience of those who lead them – experts and peers in various configurations – something which is done (in different ways) in all models considered in this paper.

2.3.2 Differences in implementation

Differences across the policy support exercises are thus mainly found in the processes of implementing them. While all adopt the three-step approach, they differ mainly in terms of the relative weight of the different steps; the time perspective (some conducted in expanded time frames, while others being more time constrained); the balance between internal versus external sources of expertise (some conducted mostly in-house, while others relying strongly on external expertise); and the focus and data sources (some based on more macroeconomic data, while other focus more on policy instrumentation).

Table 1 provides a comparative overview of the various approaches adopted by international organisations in providing this country-specific support.

The World Bank and OECD reviews are essentially in-depth analytical exercises, which place a strong emphasis on analytical work, using in-house expertise and own policy-oriented knowledge sources. The EC PSF is a more political exercise,

¹⁸ The original NIS framework from (Freeman 1987) as adopted in the UNECE reviews (section 2.1.4) has been modified and upgraded several times, such as in (Kuhlmann & Arnold, 2001), without however changing the model fundamentally.

based on the evidence-based analysis of the country's R&I system (tailored to the focus areas), with a stronger accent on peer learning. The latter focus on mutual learning is even the overarching goal of the Inco-Nets peer reviews. The UNECE reviews stand in between these two poles: they appear as more analytical exercises but they do not possess an in-house knowledge bank with a similar scope as OECD or EC and rely more heavily on external expertise. The relative weight of analysis-based and peer learning-based sources for the exercises is one of the most visible difference across the reviewed models. This also impacts on other features, as follows.

The OECD peer reviews stand out as taking longer and being costlier for the reviewed countries than the EC PSF reviews and other exercises. The homework for the reviewed country in the first step is also heavier in the OECD reviews, where the host country has first to prepare a substantive background report (while in the other cases this is done by an expert).

The balance is importance in: 1) field visits versus desk-based documentary analysis; and 2) peers versus experts' contribution, is also directly correlated with the above-mentioned tension. While all models foresee an important activity in the form of field visits with intense interactions with stakeholders, the role of these field visits is more central in PSF, Inco-Nets and UNECE reviews than it is in the WB and OECD reviews. Review teams are rather experts-dominated in the OECD, WB and also UNECE exercises, and more peers-dominated in Inco-Nets. The EC PSF model stands in between: in practice the peer reviews rely on the work of experts but they also incorporate peers' contributions to a large extent (the Specific Support reviews are expert-dominated).

None of the models offer systematic continuous policy support formally to the countries, since all exercises are bounded by time limits. However, there are differences too in this respect. Due to its large range of activities with governmental authorities in the field of RDI, the OECD accumulates knowledge on the reviewed countries and this offers possibilities for informal follow-up of the reviews. This possibility exists for the EC PSF exercises, which foresee in principle the possibility of formal post-peer-review exercises. In addition, the EC maintains close contact with the countries, e.g. in the framework of the European semester when progress towards the reforms is discussed; for associated countries there are other Association Committee meetings where the EC follows their evolution. In contrast, the Inco-Nets reviews are one-shot exercises with little follow-up possibility in the long term (although this does happen in the medium term, 1.5 years after the exercises). The WB has launched its Public Expenditures Review with an embedded idea of continuity, whereby the first review is carried out mostly by the WB, while the subsequent ones are carried out by the country itself. This explains the strong interest of the WB in the provision of methodological guidance for recipient countries.

Table 1: Synoptic view on various approaches for country-specific support for R&I

	Policy Support Facility Peer Reviews and Specific Support	OECD Reviews of Innovation Policy	World Bank Public Expenditure Reviews	UNECE Innovation Performance reviews	Inco-nets Policy Mix Peer Reviews
Target group	EU Member States and countries associated to Horizon 2020	Advanced and emerging countries	Developing countries	Countries in transition	Countries in transition
Key players	EC: observer and facilitator role Panel: mix of peers and experts	OECD secretariat: leading role Panel: OECD staff and external experts Peer review: national delegates (peers) to OECD Committee/Working Party	World Bank staff: leading role Panel: Experts-dominated Additional WB experts for reports review process	Panel: UNECE staff + national and international experts Additional external experts for comments on draft	Panel: mix of peers and experts, peers-dominated
Main orientation	In-depth tailor-made analysis of research and innovation system and policies leading to policy recommendations Mutual peer learning	In-depth analysis of broad research and innovation system and policies leading to evidence-based policy recommendations	Quality of public spending on research, development and innovation Capacity building in reviewed country (continuous reviews, modular set up)	Analysis of research and innovation system and policies leading to policy recommendations	Mutual learning between peers for improvement of S&T policies
Key themes in report	Variable, tailor-made according to focus of request (i.e. country-	1) Macroeconomic and innovation performance	1) Research excellence 2) Collaboration science-industry	1) Economic and innovation performance	1) The STI system 2) Investment in and funding of RTDI

	<p>specific contents of reports). Often covering the following:</p> <ol style="list-style-type: none"> 1) Economic and STI context, overview of RDI system 2) Public R&D system, funding and governance 3) Gap between research and business, fostering private sector innovation and entrepreneurship 4) Human resources development in/for the research sector 5) Internationalisation of the STI system 	<ol style="list-style-type: none"> 2) Strengthening university research / role of public research institutions / training of researchers (/ Transfers between public research and businesses 3) Enhancing competitiveness and innovation/Business innovation challenges/Innovative entrepreneurship 4) (Tackling societal challenges through research and innovation/public sector innovation) 5) Improving STI system governance 	<p>and research commercialisation</p> <ol style="list-style-type: none"> 3) Business innovation and R&D-based innovation 4) Non-R&D based innovation 	<ol style="list-style-type: none"> 2) National innovation system and innovation governance 3) Framework conditions, innovation policies and instruments 4) Knowledge generation and absorption 5) Industry-science linkages and collaboration in the innovation process 6) Financing innovative entrepreneurs 7) The role of innovation in international economic integration 	<ol style="list-style-type: none"> 3) Universities and Research centres 4) Innovation and business sector 5) Science-business cooperation 6) Human resources in STI 7) International cooperation
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3 KEY ISSUES FOR COUNTRY-SPECIFIC SUPPORT FOR POLICY REFORMS IN RESEARCH AND INNOVATION

3.1 Introduction

Four broad topics have been identified as key issues to be debated in the seminar. These are discussed in more detail in the following sections.

1. **Organising policy support activities: the role of international organisations and the methodological framework** (section 3.2). This topic includes discussions on the analytical framework and tools used for peer reviews and systems analyses; the creation and use of general knowledge bases from country-specific activities; and the possibilities for cross-fertilisation between international institutions' activities as well as between country-specific and thematic work.
2. **Success factors for effective policy support: issues for the host country** (section 3.3). This topic includes discussions on the critical issue of ensuring political commitment and ownership of the exercises; the involvement of stakeholders; the challenge of definition of the scope of activities; and the role and capacity of host countries in contributing to the exercises.
3. **Success factors for effective policy support: the role of external contributions** (section 3.4). This topic includes discussions on important issues with respect to selection and management of experts and peers and various contributors as well as with the organisation of country visits, and the critical problem of transferability of experience from country to country.
4. **Follow up and maximising impact of policy support activities** (section 3.5). This topic includes discussions on methods to ensure that policy recommendations are tailored to the needs of the host country, focusing on success factors for implementation of recommendations; the issue of follow-up of impacts of policy support; and the ways and means to raise absorptive capacity and establish continuous policy-learning practices in recipient countries.

3.2 Organising policy support activities: the role of international organisations and the methodological framework

The focus of this paper and of the seminar is on policy support activities run at the level of international organisations. The goal of the seminar is to reflect on the way forward for the PSF activities. The effectiveness of these activities hangs on the quality and appropriateness of the models and *modus operandi* chosen by these organisations to deliver the services. The various methodological approaches have been developed according to specific organisational contexts, based on the mandate of the organisations, as well as their internal organisational features. The observed variation is the fruit of cumulative experience within those organisations. Today the different methods offer tested models for conducting rather sophisticated and specialised reviews.

The diversity in existing models raises a number of issues on what are the most effective practices and on which synergies can be gained by learning from each other, also at that level.

- **The validity of “national innovation system”-inspired frameworks in view of the increasing need to integrate new dimensions in the exercises: sustainable innovation, social innovation, inclusive innovation, digitalisation, public sector innovation...**

There is currently a growing interest in both academic and practitioners’ circles on concepts such as “transformative innovation” (Chataway et al. 2017), which address the issue of transitions between socio-technical systems implied by the need to meet societal challenges related to climate change, inequality, ageing societies, employment and future growth. Proponents of so-called “Frame 3” models of transformative change claim that these will interplay and combine with previous framings of innovation policy – Frame 1 (linear view on R&D) and Frame 2 (National Systems of Innovation), and provide alternative policy mixes and initiatives which place socio-technical change, human flourishing, welfare and environmental advancements at the fore. “Frame 3” specificities include: the involvement of a broad set of non-research, less traditional stakeholders (grassroots innovators, informal economy actors, civil society, cities and municipalities) and an accent on experimental approaches. The latter in particular stands in contrast with a “good practice” approach.

Such attempts to develop “post-NIS” models start from a “needs” failure rather than market or system failures: what is important is to understand the ultimate goals of RDI systems and policies in the context of the country’s big challenges, responding to the “innovation for what” question (rather than looking primarily at the “how much” question). This puts a premium on assessing and advising on directionality, not only on the magnitude of innovation and change.

The above considerations have several implications on models for policy support activities. First, methodologies could be designed in a way to help stakeholders identifying real problems in their society and economy, and to examine the extent to which research and innovation policy initiatives are in fact able to address those problems. Second, there is a need to extend our understanding of who the relevant stakeholders are beyond groups normally considered in research and innovation policy. Third, there are several new types of policy that do not really come from economics and which therefore are not well embedded in innovation systems thinking. These include responsible research and innovation, sustainable innovation, social innovation, inclusive innovation, and so on. To the extent that these need to be considered, they need to be flagged in methodological guidance for policy support activities. Fourth, there is a need to address the current silo thinking in many countries’ policy areas, as well as the lack of connection between research and innovation initiatives to real-world needs for solutions. At the same time, there is also a need to be adequately critical in tackling these areas, which to a considerable extent are policy or politically driven and whose relevance may vary according to circumstances.

This raises the issue of the possibility for single national reviews to tackle those additional complexities. Thinking about well-articulated series of exercises tackling the various aspects of these issues might be a good way forward.

- **Acquiring, screening and further refining requests for policy support**

All the models investigated work on a voluntary basis, i.e. they start with an explicit demand from high-level authorities for the support service. In line with the above, there is a need to clarify whether “increase in productivity” and “jobs and growth” are indeed the ultimate impacts expected by these authorities from research and innovation systems and policies, or whether social and environmental considerations, for example, are also at the centre. This will of course impact on new targets that need to be included in the review exercises such as CO₂ reduction, lowering poverty rates, enhancing social innovation practices, etc. It would also modify the remit of the reviews, which would be tasked with the question of improving research and innovation policies not only on the basis of what they do, but also of what they do not do.

How should the acquisition phase be modified to incorporate possible new questions, located outside of the strict RDI sphere? Should there be room for a more pro-active preliminary step consisting in a redefinition of key issues by the international organisations (in a rather top-down manner)? An open question here is whether the international organisations would benefit from expert support at an exploratory stage, rather than waiting till the formal scoping meeting, by which time the requirements specification is more or less frozen. Or would it be better to establish a preliminary sounding platform in the country for identifying broad economic and social problems, and what can research and innovation do about them?

This question links to the “policy commitment” and “stakeholders’ engagement” issues covered in section 3.3, emphasising the importance of efforts paid by national stakeholders in the preparatory phase to enhance the likelihood that those new questions are well incorporated into the exercise.

More practically, should the acquisition of demands for policy support services work on the basis of calls for expression of interest or be based on spontaneous requests (the PSF works on both modes)? What are the advantages and disadvantages of both approaches?

- **Working with relevant data**

The availability and quality of data about the reviewed country, both in terms of macro and micro economic data and of policy related data (including programme evaluations), is of paramount importance for the quality of the policy support. The choice of data is very important, especially in terms of the balance between quantitative and qualitative sources (notably coming from stakeholders’ interviews), and between macro- and micro-level sources. Too much emphasis on one of these sources might render the analysis somehow uneven. The data sources should be able to provide a broad and balanced approach, in order to grasp successfully the complexity of the innovation

system and of the policy system. New indicators beyond the narrowly defined R&D sphere are also increasingly relevant when reviews are placed in a broader frame (e.g. the WB acknowledges that budgetary data on innovation are difficult to disentangle but are needed to conduct the reviews). Data sources can be rather problematic in some cases, particularly if the country has limited (if any) tradition of collecting data on relevant innovation indicators and/or of evaluating individual policy initiatives or programs (not to mention evaluation of policy mixes). A tricky problem occurs often in practice: what to do in the absence of policy evaluations?

Another issue is that of information overload: problems may occur when too much detailed information is available, complicating the work of review teams to see the bigger picture, in particular for reviews which are conducted in a short timeframe. This is an issue both for the international organisations (what role should they play in filtering this information?) and for the host country (how to best organise their role in information provision, see section 3.3).

- **Improving analytical tools for assessing national research and innovation systems**

Conducting a diagnosis of the problems and opportunities in an innovation system requires a solid standpoint about what are the features that characterise well-functioning innovation systems. This has to do with the theoretical and analytical models on innovation system and innovation policy, which are oftentimes underdeveloped in the reviews. It is worth noting that this is not a theoretical exercise for its own sake, but an exercise to make explicit to the civil servants, experts, and stakeholders involved in the review process the analytical model against which the review is conducted. The innovation system framework is adopted but it does not offer clear guidance on how to understand policy impacts. This raises the issue of how to make the bridge between assessing policy performance and system performance more solid and more explicit.

On a more practical level, there is room to explore the potential of tools used in some models in others, such as, e.g. the detailed WB budgetary analysis (including for example the matrix linking programmes and policy goals). Methods to evaluate effectiveness of policy mixes are also in high demand and are not well developed to date.

- **Cross-fertilisation between country-specific and thematic work in international organisations**

Most international organisations, and in particular the OECD, the World Bank and the EC, conduct cross-thematic country-specific work as well as cross-country thematic work in the field of RDI. The OECD recognises the importance of strengthening ties between its country reviews and thematic work, so as to achieve better synergies: such synergies should work both ways, with reviews benefitting from, but also nurturing, OECD thematic work. The same is valid for the WB and EC, so the question is what methods can be used to realise this cross-fertilisation. This is likely, in principle, to be more easily done in reviews

that are conducted with a key role of staff from the international organisations, who have easier access to the internal relevant material than when the external experts play the key role. One option is to better capitalise on country reviews' results in a knowledge base, so that these do not appear merely as a collection of reports (with limited interest beyond the recipient country). This could be done according to two approaches: a similar country transversal themes' approach, and/or a similar societal problems themes' approach. The end product could be a cross-theme oriented or cross-societal-problem oriented synthesis report that builds up from the collective findings of individual country reports, but brings additional data, analysis and insights on particular topics.

In practice, the question is: how to foster easier access to the knowledge base built upon the review exercises? Are the public knowledge bases such as the PSF Knowledge Centre database and the OECD-WB Innovation Policy Platform responding to the needs?

A broadening of the goals of the support work, as discussed above, would call on those analytical capacities beyond the research and innovation policy area, in policy areas like health, energy, transport, etc. These would need to be mobilised within international organisations such as the OECD, European Union and World Bank. This is essential in order to grasp the specific nature of problems in sectoral areas that might be tackled with research and innovation initiatives. This multiple exploitation of specific expertise would call for the development of more sophisticated, more systematic and broader collaborative frameworks between research and innovation country reviews, and sectoral expertise within international organisations.

- **Cross-fertilisation between international institutions' activities**

Many countries, and in particular the countries in transition, have been clients of exercises successively offered by various international organisations. A few recent examples are: the 2016 OECD Review of Lithuanian Innovation Policy, and the 2017 PSF Specific Support; the 2013 UNECE Innovation Performance Review of Ukraine, and a 2016 PSF Peer Review; the Inco-Net Policy Mix Peer Review of Moldova in 2012 and the PSF Peer Review in 2016; the Inco-Net Policy Mix Peer Review of Georgia in 2015 and PSF Specific Support in 2017/2018; the Inco-Net in Kazakhstan in 2015 and OECD Innovation Policy Review in 2017. This raises the question of the complementarity between the various exercises, and on the possibility of a subsequent exercise acting as a follow-up of the preceding one. Is this taking place and who should then care for the complementarity? How is the flow of information organised between the international organisations in order to maximise the chances for complementarity?

Beyond these ex post occurrences (based on voluntary moves by recipient countries), would it be relevant and possible to organise such complementarities ex ante, i.e. planning the succession of reviews in a strategic way, and involving a dialogue between international organisations? Or designing joint reviews, as currently explored by OECD and PSF?

Another option could be to develop the above mentioned synthesis reports and initiatives, drawing on country-specific activities, on an inter-organisational basis (across international organisations).

Linking the different national representative committees in those international organisations together might generate a concrete policy-makers demand-driven approach to the exploitation of that substantive body of knowledge and expertise.

Key questions for debate in the seminar

Q1 Is the current NIS-inspired framework used for the policy support activities still relevant when countries show an increased interest on solving societal challenges through RDI? How to introduce new timely issues such as social innovation, inclusive innovation, sustainable innovation, digital innovation? And how to match these issues with relevant data and analytical framework?

Q2 What are the most effective ways for international organisations to acquire well-defined policy support demands? How should the preparatory phase be run to best clarify the ultimate goals of the exercises?

Q3 What benefits could closer cooperation between international organisations conducting national reviews achieve? What are the good features and tools that can be shared? What are the possibilities to link exercises on same countries across organisations?

Q4 How to maximise synergies between country-specific and thematic work within international organisations? How to involve knowledge from sectors other than RDI into the exercises? How to capitalise on work done?

Q5 What is the experience of each organisation with respect to the content of the three-steps approach, the balance and length of the different activities?

3.3 Success factors for effective policy support from the point of view of the host country

By asking for the support, the beneficiary country has the first move in the game of policy advice for research and innovation. Critical questions arise already at that preliminary stage, but also during and after the implementation of the exercise, in view of ensuring maximum benefits for the host country. These concern the public authorities in charge but they also extend to the whole R&I ecosystem.

- **Managing expectations in host country and ensuring policy commitment**

Expectations management is important when launching policy support activities: ensuring a clear and shared view about what to expect from the process is essential for the success of the exercise. The nature and scope of expected policy recommendations depend on the absorptive capacity in the host country, both in terms of policy understanding and in terms of having the needed implementation and operational skills and experience. Some countries

will expect very long and detailed policy recommendations that address most of the implementation issues, while others expect a focus on the big questions and ideas and need less detail.

There are different circumstances when host country authorities might decide to ask for broad-based policy support covering large parts of their research and innovation system and policies:

- When a policy milestone is set and requires action from authorities, e.g. to review or design or implement a holistic strategy. These exercises work when they take place during a relevant window of policy opportunity, so that other actors pick up the recommendations and work further on them;
- When a cross-sectoral challenge is identified (not falling into traditional policy sectors or ministry-boundaries), which is not too broad, not too narrow;
- When there is insufficient progress or a lock-in situation, and an external view can facilitate progress / joint decision. National experts possess superior knowledge of the national context and system but they are likely to face over-caution and lock-in to existing routines: the intervention of external experts can help address these problems;
- When there are identified benchmarks / good experiences in other countries to build upon.

Not all stakeholders and civil servants will be equally supportive of assessment exercises that might put in question some of their well-established practices, or even their sources of particular funding instruments. Mechanisms of defensive attitudes against possible reforms and policy changes might be visible, and more or less explicitly formulated. In that regard, it is worth considering that the country reviews are only specific aspects into long and complex processes of policy change and adaptation. The ability of international organisations to exercise influence on that should not be overstated, as complex cultural set ups of political administrative and social systems might be very resilient to change. But they should not be underestimated either, in the sense that clear-cut country reviews reports from outside might enjoy legitimacy and respect if they are seen as high-quality and highly relevant processes and outputs.

This brings back the issue of the methodology discussed earlier, as well as the importance to guarantee not only the quality of the report but also the engagement of relevant key policy makers in the country. The issue of who are the relevant policy-makers acting as host of the exercise is a crucial one: the position of policy actors in their hierarchy, the types of institutions they represent and their degree of influence over the whole system, are all key to ensure that they are well-positioned to push the recommendations from the reviews forward. Ensuring appropriate internal publicity for the exercise is also necessary to maintain policy commitment, but also the engagement of stakeholders, the point discussed below.

- **Identifying and engaging relevant stakeholders**

All policy support activities rely on stakeholder involvement in the reviewed country, in order to both gather relevant but often tacit or hidden information, and facilitate endorsement of recommendations by key actors.

The policy support activities need to keep a balance between the generic components of a common methodology that has been tested and used in other contexts, and the specific and tailor-made components targeting specific needs of the country in question. In order to achieve the latter, the process needs to include relevant, informed, and competent stakeholders and civil servants in the country, who guide the process of identifying those tailor-made components. In addition, the engagement of stakeholders, as well as their ability to engage other actors in the system is the crucial element that 'transforms' their competences into a fruitful input.

The above discussion on the need to broaden the analytical approach to incorporate issues beyond the strictly defined R&D sphere militates for an opening up to stakeholders from these other relevant domains. Increasingly, policy changes are seen as involving stakeholders beyond the state and the range of people concerned should therefore be understood not only in relation to government but also to a broader and more inclusive concept of governance (Peters, 2002). This raises however the question whether such a broad set of stakeholders can effectively be integrated in a single review exercise.

More fundamentally, it is worth referring to the literature to understand how policy change may take place. A starting point is the idea that the relationship between policy support and policy development is non-linear. The political science literature contains a number of overlapping approaches, which aim to describe various aspects of how policy changes happen (Arnold and Barker, 2018). Notable among these are:

- The idea of policy change happening as a result of the interaction of three 'streams' in governance – problems, politics and policy – at times when 'windows of opportunity' for policy change arise (Kingdon, [1984] 1995);
- The idea of policy entrepreneurship (Kingdon, [1984] 1995);
- Policy learning through transfers of policies or instruments (Padilla, 2016);
- The influence of a policy cycle (Jenkins-Smith & Sabatier, 1994);
- The influence of 'advocacy coalitions' (Sabatier, 1988).

In practice, the idea that policy changes in response to a policy cycle is largely discredited: the policy cycle is a didactic tool about how things perhaps ought to be, but a weak description of how things actually happen. Support activities need to be interested in the three 'streams', identifying policy entrepreneurs or advocacy coalitions (who on their own do not effect policy change but who can be important if a window of opportunity presents itself). They are well adapted to learning through policy transfer. This has important consequences for the

identification and approach to the stakeholders who are going to be influential to obtain the policy changes recommended in the policy support exercise.

- **The scoping of the policy support activity**

The scoping issue for the policy support is the first issue to be decided by the host country. Should the focus be broad, in the form of e.g. a full Peer Review (all encompassing, systemic) or articulated around more (a) fine-grained question(s)? Is it possible to combine both in a single exercise? This raises a practical question for the PSF model: is there a need for two different exercises (Peer Review and Specific Support) or could the PSF be framed into only one scheme?

One element that is worth considering with respect to the scoping issue is the background report, which is part of the first preparatory step of the exercises: having this report prepared by the host country before the actual start of the review may be seen as a relevant way to help the recipient country to clarify the ultimate goal and the more precise issues to be dealt with by the exercise. And it would also contribute to identification and (pre-)engagement of the relevant stakeholders.

Another scoping issue is that of the integration of the regional dimension: in those countries with a federal or decentralised institutional structure, it would make much sense to carry out the analysis both at national and regional levels, looking also at the vertical interactions and synergies between those two levels.

- **The role of host country in information provision and in analysis**

All models require an identified and dedicated host organisation, with commitment and sufficient resources to support the review process. One interesting procedure is used in the WB where help is provided for the identification or set up of this counterpart in the host country. One critical issue for the success of the exercise is the ability of the organisers to clarify in advance how much and what kind of effort is needed from the host.

The models differ with respect to the work assigned to the host country (and this host organisation) in a first phase of the three-step approach. At one end of the spectrum, there are the OECD reviews in which the host country produces a detailed background report. This is a heavy task but besides its value, as mentioned above, in terms of preparing the ground in the host country in terms of scope definition and engagement, it also contributes to building capacity for strategic analysis. At the other end of the spectrum are those exercises like the PSF where a lighter approach is followed: the host country works on self-assessment but is not obliged to produce a long report. It is the PSF team who produces a background report. The latter is a valuable solution where countries lack resources and capacity to produce a solid and informative background document but it misses the above positive effects on the host country. Preparing meaningful, unbiased and relevant information while avoiding the information overload syndrome mentioned earlier, is key and falls within the remit of the host country.

- **The issue of capacity in host country**

During the implementation phase of the review, the host country is expected to provide documentation and information: here is a paradox, since those countries which are in highest need for support are generally also the ones that are less-well equipped with people, skills, data and information needed to ensure the quality of the exercises.

In less innovation intensive countries (and/or small countries), the country reviews can also act as a significant source of capacity building. This capacity building has to do with the fact that civil servants in the country are requested to work together into providing information, data, and views about what works well and less well in the country, and in so doing they are exposed to a self-reflection process. This preliminary exercise is conducted in such a way that it cuts across the different organisational boundaries in different parts of the administration and civil service. Active engagement might also bring forward unexpected results in terms of developing a preliminary collective understanding of the problems and bottlenecks that afflict the innovation system and innovation policy of the country. The proactive role of civil servants is fundamental because it makes them active participants, rather than passive recipients of the review exercise. In other words, the learning effects of taking part in the review exercise supports capacity building. For that reason, it is paramount that the early phase of the review process is not considered to be secondary, but an important and integral part of the overall process. As mentioned above, the self-assessment part of the preparation phase is particularly relevant to achieve that.

Key questions for debate in the seminar

Q1 Design: when and why (and when not) to use external policy support services? What are the best ways to define the scope/focus of such an exercise?

Q2 Preparation: What are the pre-requisites for an effective advice process? How to make sure that the relevant and influential actors in the host country are motivated and committed to the exercise?

Q3 Implementation: What are the most critical issues when managing the support process? How to design a process that secures a wide and stable level of stakeholder engagement and political commitment?

Q4 Capacity issue: How to ensure that relevant capacities, skills and resources are available in the host country throughout the whole exercise? How to address situations of "information poverty" and "information overload"?

Q5 The three-step process: what should an ideal balance be between the three steps of a policy advice process: preparation, implementation, incorporation?

3.4 Success factors for effective policy support and role of external contributions

Beyond the use of appropriate conceptual frameworks, effectiveness in the provision of dedicated policy support for R&I relies on the skills and modes of operation of key actors in charge of delivering the policy recommendations. While this type of activity may be thought of as art rather than science, there

are nevertheless a number of issues that should be dealt with to increase its chances of success. Most of them deal with the human resources on the advisers' side: how to choose and engineer them to get the best results?

- **Selecting a Review panel of experts and peers**

Given the extent to which relevant policy advice must partly be based on expertise and experience – and not just on the analysis of data – this inevitably speaks for a focus on senior people for composing a “Review Panel”. So, too, does the need for legitimacy in order to make policy recommendations credible. But this does pose a problem of renewal of expertise, which could perhaps be addressed by using mixed-experience teams, where more senior and more junior experts work in an overlapping way, so as to provide both training and quality assurance.

The team of experts is to be assembled in view of ensuring that, as a whole, it has a collective expertise in four types of issues: 1) in the specific subjects of the policy support; 2) at least to some degree in understanding the specific context of the country; 3) in the ability to take a ‘big picture’, policymaking view and 4) experience with the issues of implementing policies (even if the latter is mostly brought by peers, the goal is to avoid experts that are “flying too high” above and do not grasp concrete implementation issues sufficiently).

The peers are in principle practicing policymakers, so the time they can devote to the project is inherently more limited than that of the professional experts. It is helpful if they can provide experience partly from comparable countries but also from advanced practices, where relevant. They may be better placed than the experts to consider the political dimensions of policy recommendations and how to ‘sell’ them in such a way that they have a good chance of being adopted (see section 3.5).

Both experts and peers need to possess “de-contextualisation” skills to nurture the reviews with relevant good practices.

One condition to ensure a good selection of peers and experts, with the right experience and expertise, is that the focus of the review is well defined in a preliminary stage by the host country (see above).

- **Assigning roles to panel members**

A few lessons can be learned from existing experience with running review panels in the different types of models considered in this paper.

The authority and overall direction provided by the panel chair is important, so that the project is seen as having the needed legitimacy to be worth respecting. Chairs have different styles: some want to work intensively in the project; others feel it is their job to ensure that others do the work. In either case, the relationship between the chair and the rapporteur (when there is an expert taking that role – in the OECD model, the leadership and rapporteur roles are both taken by OECD Secretariat) is critical. There must be trust, some degree

of personal chemistry and mutual respect (which in turn means that both have to be sufficiently expert so that respect is deserved). The role of rapporteur is itself expertise-based, both in terms of the domains studied and in terms of seeing the big picture and being able to assemble it from the elements provided by the other experts.

Obviously the normal principles of teamwork apply, including a clear division of labour but with a degree of overlapping expertise. It is the duty of the chair to make sure that the existing expertise in the team is fully exploited, even when those relate to domains or issues that do not fall into the chair's own expertise. Panel members must be involved and (if necessary) the chair has to compensate for failing members.

- **Organising the country visits**

Country visits are typically organised by the host country corresponding organisation (often a Ministry), which in principle knows who the relevant stakeholders are. In this perspective, the WB practice to create an interagency coordination team is an interesting approach, avoiding monopolisation of the exercise by a single ministry. In PSF exercises, there is also a push to open up the dialogue beyond the ministry in charge of the exercise. In practice, ministries' proposed programmes tend to over-focus on officials, at the expense of other important stakeholders, especially industry. Within a perspective of broadening the stakeholder range, as discussed above, this might become an even more severe problem for exercises that take a broad perspective.

Normally, country visits are too short to see everyone who should be seen. The expectation that it is possible to do one short country visit and then produce policy proposals for discussion on a second and final visit may not be wholly realistic. Usually, the demands of the context are such that the team obtains only a partial understanding on the first visit and then needs to deepen its understanding on a second visit before having confidence in its policy proposals. In many cases, there is a need for additional interactions with the host country before being able to finalise a report with solid recommendations.

The size of the visiting team can easily become too large. Breaking the team up into smaller interviewing groups might be a good practice to avoid the problem while also capturing more information from the field. However, this increases the importance of someone taking detailed notes to ensure cohesion and full information of the panel members. It can be the case that the host ministry wants its own people to sit in on the interviews. This is problematic because it makes it hard for others to be critical or to depart from the 'official line' so it should be discouraged.

- **Transnational learning from good practice**

All policy support activities blend different kinds of evidence and experience: concrete examples are provided together with more abstract principles, and the mix of the two is thought to reinforce the message. Hence reports and recommendations in the policy advice incorporate an element of learning from

good practices at play in other countries. Since context is extremely important for each practice considered, there is a need for de-contextualisation of practice, to understand how it links to its context conditions and how it could work in another context. De-contextualisation can only be done by people who already understand multiple contexts and who therefore have some understanding of where the border goes between a policy or an instrument and its context. A degree of de-contextualisation is possible but depends on a proper understanding of the problems and policy mechanisms involved not only in the country under study but also elsewhere.

A key problem with the “good practices” as inputs in policy support is that it is often not easy to ensure that a practice at play in one environment is really a good practice, namely that it has contributed to the goal that is assigned to it. The issues of lack of evaluation, as well as the attribution problem in complex innovation systems, mean that often the alleged “good practices” are simply practices at play in a more advanced environment, rather than genuinely effective practices.

Key questions for debate in the seminar

Q1 What are the good rules and pitfalls in selecting the human resources (team of experts and peers) in charge of the policy support exercise? How to blend expertise and experience while avoiding conservatism?

Q2 What are the good rules and pitfalls in managing the various functions in the team in charge of the policy support exercise? How to achieve trust and cooperation?

Q3 What are the lessons from experiences in organising country visits? How many and how long should these visits be?

Q4 Given the importance of context in the success or failure of policy, what is a sensible level of ambition in terms of producing ‘portable’ solutions to policy problems? How to de-contextualise good practices? How to ensure that a proposed practice is really a “good practice” in its own context?

3.5 Follow up and maximising impact of policy support activities

The critical question of the value-added of the policy support activities is, after all, the most important one for recipients, advisers and organisers of these activities. This raises issues on the WHAT (understanding the types of impacts that the services are seeking to achieve) and the HOW to maximise this value-added or the impacts of the services.

- **Different types of impacts of policy support services**

Three types of benefits can be expected from policy support activities for research and innovation:

1. Improvements and reforms in national R&D systems and policies: this is the most explicit and obvious expectation from the policy advice which

translates into recommendations for system and policies improvement. However, it is dangerous to take an overly linear perspective on the 'impact' of the policy support activities. These are rarely the single cause of a policy change and may often be needed as inputs to, or stimuli for, debate;

2. Mobilisation and dialogue of actors across the whole innovation ecosystem towards improvements: this is a more indirect but also very important side-effect of the policy advice, and actually a success condition for the above first type of impact;
3. Increased openness and capacity to learn from other experiences, and the injection of more strategic thinking in policy circles: this "learning benefit" is another indirect effect of the provision of policy support, which ensures lasting benefits through increased strategic capacity in the host country.

- **A critical look at the nature of policy impacts**

The nature of policy impacts to be expected from policy advice (the first type of benefit listed above) is not necessarily straightforward. Indeed, policy support is requested from international organisations for a number of different reasons. These may include:

- A genuine desire to obtain guidance on how to develop policy, in light of international policy understanding and experience;
- A search for national legitimacy within international networks;
- An attempt to support the internal legitimacy of national policy by getting a 'stamp of approval' from a high-status international organisation;
- An attempt to use the status of an international organisation to legitimise national policy change;
- An attempt to change the balance of power among national actors.

In most cases, this means that there is not a simple, linear relationship between providing support and policy development. Equally, it means that the support provider needs to understand and judge the associated risks, whether these are associated with the status quo in terms of policies and actors or of being seen to have a bias in favour of supporting certain stakeholders.

- **Tailoring recommendations to maximise impacts**

Different avenues are available to ensure that policy recommendations achieve high impact.

First, as already discussed above, the overall goal and focus of the exercise should be clarified as much as possible at a preliminary stage, to make sure that the work matches expectations.

Second, ensuring a high level of interaction with the host country, with sufficient time devoted to dissemination and discussion, is a way to maximise the chances that the policy recommendations will receive due consideration. The idea of using a National Sounding Board at several points of the exercise, as has been tested in some of the PSF exercises, might be explored further in this perspective.

Third, the content of the recommendations and the way these are presented are of course essential. The right balance should be struck between:

- diagnosis (which is needed as a foundation for recommendations but are in most cases not very new for the host country) and recommendations for the future;
- the novelty and radical character of the recommendations (which creates the value-added of the exercises) and their feasibility (which is needed too to avoid too strong negative reactions which might block the diffusion of the whole exercise).

Fourth, legitimisation mechanisms can play a role in reinforcing the credibility of the report and recommendations. Such a role can be played by formal bodies such as CSTP for OECD or ERAC for EC, where an overview by peers from these committees may enhance the legitimacy of the report.

Fifth, strong visibility of the report, including through national media, supports the mobilisation of actors and favours endorsement of the conclusions by a wide constituency.

Sixth, the process could be extended by adding a new step with the requirement of an action plan to be produced by the host country, including the identification of actors of change, and also possibly an agreement for a post-review after a relevant period of time (see below).

- **Contributing to an increase in strategic capacity in host country**

It is difficult to provide learning and capacity-building benefits in a situation where time is very tight: a balance should be struck between the need to provide a report that is relevant for the short-term horizon of the political cycle, and the need to provide mechanisms for learning and capacity-building processes, which are generally more time-consuming. Resources in terms of human capital and monetary framework are also important. Here there are important differences between the way in which international organisations approach that, as some of the exercises are financed directly and entirely by the Member States, whereas others are financed by the international organisation and only indirectly by the host countries. In any case, the report and the processes are equally important to achieving an output and outcome that makes a difference in the re-design and improvement of innovation policies.

- **Ensuring follow-up of policy support activities**

The current design of the policy support models includes, in the third step of the three-step approach, the official presentation and dissemination of the report, once it has been finalised. Wide stakeholder involvement and media coverage aim at ensuring that the results of the report are discussed in different circles. This is expected to pave the way for implementing the recommendations in the report. This last phase of the process is highly relevant.

However, it might be worth considering whether the scheduling of a dissemination plan in those terms is enough. In fact, more decided mechanisms of monitoring and follow up (not just dissemination) could provide better insights about the real impact of the report. Such monitoring could indicate the extent to which and how the findings and implications of the report were actually taken up by national authorities and stakeholders. Such monitoring activities might not necessarily be carried out at the international organisation level. Better, they could be carried out by national authorities if provided with sufficient monetary and personal expertise resources. Those 'national anchorages' could secure that the learning accumulated during the process of the country report exercise remains in-house in the relevant places within the national administrative structure. This will in turn reinforce the capacity building effect mentioned above, and secure a continuous dialogue about the recommendations and implications of the report.

The idea of post-peer-reviews as follow-up sessions exists within the PSF model, and early experiences could be investigated to understand the possibilities offered by such a mechanism.

Key questions for debate in the seminar

Q1 What kind of impact should be anticipated / sought from policy support exercises? How to elucidate the (hidden) agenda in host countries concerning the role of the exercises?

Q2 What is the ideal overall duration for a policy support exercise?

Q3 How to design the follow-up of the support exercises? Should the idea of post-peer reviews be pursued? As voluntary or compulsory elements of the exercises?

Q4 How to make policy changes happen? What are the key success conditions for incorporation of policy recommendations into the actual policy-making of the host country?

4 CONCLUSIONS AND KEY ISSUES FOR DEBATE

The numerous policy support initiatives reviewed in this discussion paper build up a rich and diverse collection of experiences from which lessons can be learned and shared, with a view to raising their impact. Many countries have participated in several exercises and it is important to ensure synergies, rather than duplication, between them by organising a dialogue between the international organisations in charge. They are all pursuing the same ultimate goal – raising the contribution of STI to knowledge-based development of the target countries – hence learning from each other is a feature to be developed at the level of international organisations as well as on a cross-country basis.

Initiatives deployed by international organisations to provide policy support to countries in the field of R&I share a number of features. For each of those there are different *modus operandi* and experience gained, which could be capitalised upon to raise their effectiveness.

First, the services given to the requesting countries are challenge-driven: they are not limited to studies of internal coherence of research and innovation systems as they aim at reviewing these systems in the light of socio-economic challenges faced by the country. There is also a growing demand to see such activities becoming more “societal-challenge oriented”. This raises the issue of adapting both the underlying analytical model and the implementation of the exercise (in particular concerning the role of country’s stakeholders) to this goal.

Second, they adopt a user-driven and customer-oriented approach: they are geared towards policy practice as their main audience consists of policy-makers at national level, who are in charge of shaping and implementing policies to improve their system. Their ultimate goal is to provide well-substantiated and feasible recommendations for the improvement of these systems. Many discussion points developed in this paper target methods, approaches and tools to implement exercises which better meet users’ needs. How to conduct the important first step of scoping the exercises is notably a question that all exercises share.

Third, they are evidence-based and participatory exercises: they do take into consideration the perceptions and agendas of players in the system while also introducing robust quantitative and qualitative evidence to support policy recommendations. They blend tacit and codified knowledge in a single exercise. How to acquire and incorporate these types of knowledge in the most efficient way is also a key area for learning between models of the international organisations. The associated issue of creating, maintaining and using knowledge bases for the purpose of fuelling the exercises is another joint subject of interest.

Fourth, they are tailor-made and sufficiently flexible to adapt to the specific features of each country. Here the difference of target groups between the different models is a good starting point to discuss the validity of approaches in different cases, in particular since beneficiary countries’ capacities are uneven.

Fifth, they combine country-specific conditions and external good practices thanks to the intervention of peers and experts in various configurations. The transferability of good practices is a common question across models, and the possibility of broadening and fine-tuning the pool of good practices through inter-institutional collaboration is one avenue to explore.

Sixth, they all pursue the goal of reaching impacts in terms of improvements in research and innovation systems and policies in the reviewed countries. Keeping in mind the non-linear relationship between these exercises and actual policy changes in the reviewed country, several success conditions for reaching these impacts are discussed in the paper, including the strong and lasting commitment of policy-makers, the adequate involvement of stakeholders and many other issues. It is important to note that information on these impacts is currently lacking: investigating them in a systematic way across all exercises would provide a rich ground for improving this type of expertise, based on a reality check. This needs to be done while keeping in mind that such policy support exercises are only one element amongst many inputs to policy change.

And finally, there are also second-order impacts to be expected from these initiatives, in the form of enhancement of policy-learning capabilities. The policy-learning effects, and their sustainability beyond the production of a report, are key benefits in terms of ensuring the efforts are not deployed on a one-off basis with the risk of only short-lasting impacts after the end of the exercises. The whole issue of sustainability and “post review” knowledge is one common area in which international organisations are currently struggling and where exchanges of ideas might pave the way towards future practices incorporating such longer-term and capacity-building dimensions.

The conditions for success of these policy support initiatives are manifold, but it is clear that the quality of both process and outcomes are of paramount importance to guarantee the leverage of these exercises. In a nutshell, the overall effectiveness of these exercises depends primarily on:

- The quality of policy intelligence and capacity of recipients present in the host country, as well as the openness to criticisms and to change;
- The appropriateness of the underlying framework, method and inputs used for the exercise;
- The quality and relevance of the team in charge (experts, peers, facilitators);
- The engagement of the host country, in the form of leadership at top level and stakeholder engagement.

The seminar will address all these features, issues and success conditions. The concrete experiences from actors in all positions in the policy advice exercises will nurture reflections and proposals for the future.

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WEB LINKS

European Commission Policy Support Facility:

<https://rio.jrc.ec.europa.eu/en/policy-support-facility>

OECD Innovation Policy Reviews:

<http://www.oecd.org/sti/inno/oecdreviewsofinnovationpolicy.htm>

OECD Reviews of Regional Innovation Policy: http://www.oecd-ilibrary.org/urban-rural-and-regional-development/oecd-reviews-of-regional-innovation_19976585

UNECE Innovation Performance Reviews:

<http://www.unece.org/innovationperformancereviews.html>

INCO-NETS:

Policy Mix Peer review Serbia: <https://danube-inco.net/object/document/18795>

Policy Mix Peer review Bosnia and Herzegovina:

<https://danube-inco.net/object/document/18798>

Policy Mix Peer reviews Armenia and Georgia

<http://www.inco-eap.net/en/390.php>

Policy Mix Peer reviews Kazakhstan

http://www.increast.eu/_media/SnT_Policy_Mix_Peer_Review_for_Kazakhstan_Final_Report.pdf

Policy Mix Peer reviews Kyrgyzstan: <http://www.increast.eu/en/1949.php>

Joint OECD-World Bank Innovation Policy platform:

<https://www.innovationpolicyplatform.org>

World Bank STI database:

<https://data.worldbank.org/topic/science-and-technology>

ANNEX 1: SEMINAR AGENDA



EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR RESEARCH & INNOVATION

Directorate A - Policy Development and Coordination
A.4 - 'Analysis and monitoring of national research and innovation policies

**SEMINAR: Policy support to reforms
of national research and innovation systems in Europe
Brussels, 11 December 2017**

Venue: ERCEA ROOM COV2 00/SDR2 AUDITORIUM

09.00-09.30 Opening session	
9.00-9.10 Welcome and introduction	<ul style="list-style-type: none"> Robert-Jan Smits, Director-General, DG Research & Innovation, European Commission - <i>Aim of the seminar and strategic importance of policy learning activities for improving research and innovation systems</i>
9.10-9.30 Presentation of key issues	<p>Claire Nauwelaers (PSF Expert MT, UA, Rapporteur ERAC ES), rapporteur of the seminar</p>
09.30-12.00 Plenary session: Models for policy support	
9.30-10.40 The European Commission's Horizon 2020 Policy Support Facility (PSF)	<ul style="list-style-type: none"> Keynote: Kurt Vandenberghe (Director 'Policy development and coordination', DG Research & Innovation, European Commission) - <i>Lessons learned from PSF: success and impact factors (10')</i> Open discussion with panelists moderated by Luc Soete (Chair PSF BG), pre-defined questions shared with panelists and intervention of the audience (60') <ul style="list-style-type: none"> Panelist 1: Hans Chang (Chair PSF UA) Panelist 2: Krzysztof Gulda (Chair, PSF MD) Panelist 3: Luke Georghiou (Chair ERAC ES) Panelist 4: Paulo Andrez (Chair PSF SK, RO)
10.40-11.40 Plenary session 2: OECD, World Bank, IBD and Inco-Net approaches	<p>Panel (no slides - 30 minutes in total) - Open discussion with audience (20 minutes) moderated by Ward Ziarko (Peer PSF PL and ERAC ES, delegate to OECD)</p> <ul style="list-style-type: none"> Panelist 1: OECD Gernot Hutschenreiter Panelist 2: World Bank –Paulo Correa and Xavier Cirera Panelist 3: IBD –Juan Carlos Navarro Panelist 4: Inco-Nets: Klaus Schuch (rapporteur, PSF UA)
11.40-12.00: <i>Coffee break and split into parallel sessions</i>	

12.00-13.00 Breakout sessions 1 ERCEA ROOM 00 SDR3; ERCEA ROOM 00 SDR4	
12.00-13.00 Topic 1 - Organising policy support: the role of international organisations and the conceptual framework	<p>Presentation by expert-moderator Terttu Luukkonen (expert PSF MLEs and BG) (5') debate --rapporteur, Susana Borrás (Expert, PSF LV)</p>
12.00-13.00 Topic 2 - Success factors for effective policy support: issues for the host country	<ul style="list-style-type: none"> Presentation by expert-moderator Santiago Rodriguez-Uriel (Host ERAC review ES, Expert PSF MT, Peer BG) (5') debate-rapporteur, Kimmo Halme (ERAC reviews)
13.00.14.00: <i>Lunch Break</i>	
14.00-15.00 Breakout sessions 2 ERCEA ROOM 00 SDR3; ERCEA ROOM 00 SDR4	
14.00-15.00 Topic 3: Success factors for effective policy support: role of external contributions	<p>Presentation by expert-moderator Mart Laatsit (ERAC review EE) (5') debate - rapporteur Erik Arnold (PSF rapporteur LV)</p>
14.00-15.00 Topic 4: Follow up and maximizing the impact of policy support activities	<p>Presentation by expert-moderator Jana Kolar (expert PSF MLEs) (5') debate - rapporteur Alasdair Reid (PSF rapporteur LT)</p>
15.00-15.30: <i>Coffee Break</i>	
15.30-17.00 Plenary session: conclusion and way forward	
15.30-16.00 Key statements from breakout sessions (5' each) and debate with the audience (10') moderated by Christian Naczinsky (Peer PSF PL)	
16.00-17.00 Conclusions and perspectives for the future moderated by Keith Sequeira (Senior Adviser at the Cabinet of Carlos Moedas, European Commissioner for Research, Science and Innovation)	
<p>Statements from:</p> <ul style="list-style-type: none"> Expert 1: Karina Angelieva (Host, PSF BG) (5') Expert 2: Agrita Kiopa (Host PSF LV and Peer PSF UA) (5') Expert 3: Aurelia Hanganu (Host PSF MD) (5') Expert 4: Mateusz Gaczyński (Host PSF PL) (5') Román Arjona, Head of Unit responsible for PSF (5') <p>Contribution from the seminar participants (20') and conclusion by Claire Nauwelaers (PSF Expert MT, UA, Rapporteur ERAC ES), rapporteur of seminar (5')</p>	

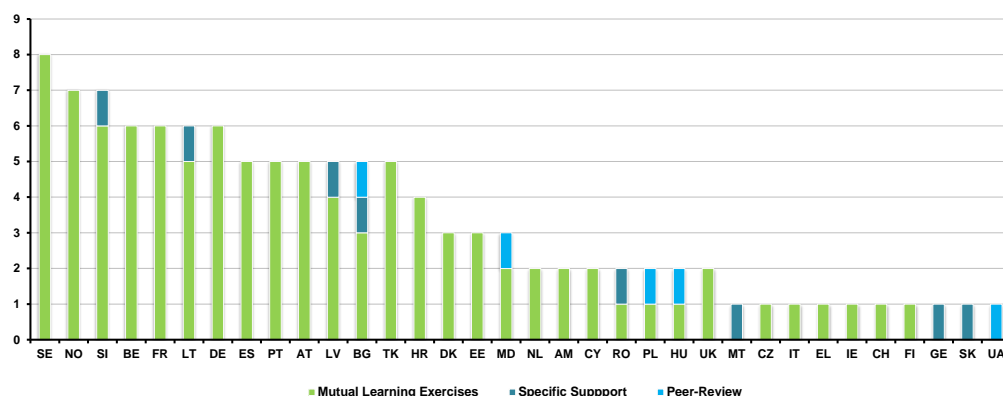
ANNEX 2: LIST OF PSF ACTIVITIES

Horizon 2020 Policy Support Facility (PSF)

Summary list of the concluded, ongoing and planned PSF activities

Find below a summary of the concluded, on-going and planned activities of the PSF. Those foreseen for launch in 2018 follow up from the outcome of the fourth call for expression of interest in the services of the Horizon 2020 Policy Support Facility (circulated to ERAC on 13 June 2017).

Figure 2. Statistics on PSF participation by country



I. PSF Peer Reviews of national R&I systems

PSF Peer Reviews of national R&I systems are in-depth assessments of a country's R&I system carried out by a panel of experts and leading to concrete recommendations to the national authorities on reforms necessary to strengthen their R&I system.

- **Bulgaria** (final report published in October 2015)
- **Moldova** (final report published in July 2016)
- **Hungary** ([pre-Peer Review](#) published in October 2015; [Peer Review](#) in September 2016)
- **Ukraine** (final report published in December 2016)
- **Poland** (final report published in September 2017);
- **Malta** (*planned for 2018*)

II. PSF Specific Support to countries

PSF Specific Support to countries aims at providing a set of concrete recommendations on how to tackle a specific R&I policy challenge and how to implement the accompanying reforms.

- **Malta** on tools to monitor the national R&I Strategy (final report published in July 2016)
- **Slovakia** on framework conditions for start-ups/ high growth innovative enterprises (final report published in February 2017)
- **Romania** on innovative entrepreneurship (under finalisation)
- **Slovenia** on the internationalisation of science and higher education policies, and on the cooperation between the science base and businesses (under finalisation).
- **Bulgaria** on performance-based funding of public research and on evaluation of research institutions (under finalisation)
- **Lithuania** on attraction of innovation-oriented FDI and on science-business cooperation (final report published in October 2017)
- **Latvia** on the funding system for public research, notably its governance and organisational aspects (under finalisation)
- **Georgia** on identification of promising research fields, science-business links and
- performance-based evaluation of research entities (launched in October 2017).
- **Tunisia** on private sector participation in R&I and methodology for defining research priorities (starting soon).
- **Cyprus** *on the use of publicly funded infrastructures by the business sector (planned for 2018, tbc)*
- **Montenegro** *on the development of the start-up ecosystem (planned for 2018)*
- **Estonia** *-topic to be confirmed (planned for 2018, possible joint project with OECD)*
- **Malta** *on open access (planned for 2019)*
- **Latvia** *on human resources for R&D (planned for 2019)*
- **Armenia** *(planned for 2019)*

III. PSF Mutual Learning Exercises

PSF Mutual Learning Exercises (MLEs) focus on specific/ operational R&I challenges of interest to several volunteering countries, and draw on a hands-on project-based exchange of good practice.

- **Pilot Mutual Learning Exercise on measures to stimulate business R&I**, during which the new MLE methodology was proposed (concluded in June 2015);
- **Evaluation of business R&D grant schemes (phase 2)** - launched in June 2017; with participation of **AT, BE, DE, HR, ES, FR, LT, SE, SI, NO, TR, UK;**

- **Administration and monitoring of R&D tax incentives** with participation of LV, PT, BE, FR, NO, NL, UK (concluded in October 2016);
- **Evaluation of business R&D grant schemes** with participation of NO, DK, ES, SE, DE, TR, RO (concluded in November 2016);
- **Evaluation of complex public private partnerships** with participation of BE, NO, BG, SE (concluded in October 2016);
- **Alignment and Interoperability of research programmes** (national coordination) –with participation of FR, LT, DK, TK, NO, AT, PT, EE, SI, SE and RO (DE as observer), dissemination workshop on 28 June 2017 in Brussels ;
- **Performance-based funding of public research organisations** – ongoing, with participation of AT, CZ, CY, EE, ES, NO, SI, SE, PT, AM, IT, TK, HR, MD;
- **Innovation procurement** - ongoing, with participation of AT, EL, EE, LV, ES, PT, DE, SI, FR, IE, NO, TR, BE, LT, SE, NL
- **Open science** - ongoing; with participation of LT, SI, FR, BE, LV, CH, PT, HR, MD, AT, AM, SE, BG;
- **National practice in widening Participation to the EU Framework Programmes and strengthening synergies between H2020 and European Structural Investment Funds** - launched in May 2017, with participation of FR, DK, CY, FI, TK, SE, BE, HR, DE (as observer), ES, SI, PL, LV, BG and HU;
- **Alignment and Interoperability of research programmes** (Second sequence tbc); participation tbc;
- ***Research Integrity*** (planned for 2018)
- ***Digitalisation of science and innovation policies (jointly with OECD)*** (planned for 2018)

IV PSF Knowledge Centre

The **PSF Knowledge Centre** <https://ec.europa.eu/h2020-policy-support-facility>) makes available all information stemming from the PSF work as well as R&I policy monitoring and analysis performed in the European Semester. It also includes communication material and the latest news about the PSF.

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This discussion paper is the background document for participants in the European Commission seminar on country-specific activities under the Horizon 2020 Policy Support Facility, taking place in Brussels on 11 December 2017 . This Seminar aims to provide a platform to exchange experiences between national authorities, high-level experts working with the Horizon 2020 Policy Support Facility (PSF), representatives of European countries that benefitted from PSF support, and international organisations involved in reviews of national research and innovation (R&I) systems. It will examine various methodological approaches with a view to maximising the success and impact of policy support activities. Its results will feed into future European Commission activities in support of R&I policy reforms.

Studies and reports

