

# Mutual learning exercise (MLE) on national practices in widening participation and strengthening synergies

Topic Report:

Improving networking through  
participation in EU-level initiatives

(Topic 3 Widening)

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**Mutual learning exercise (MLE) on national practices in widening participation and strengthening synergies - Topic Report: Improving networking through participation in EU-level initiatives (Topic 3 Widening)**

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## **FOREWORD**

This document has been prepared under the auspices of the Policy Support Facility (PSF) set up by DG Research and Innovation under H2020 to support countries in reforming their research and innovation (R&I) systems. It is one of a series of reports drafted as part of a Mutual Learning Exercise (MLE) on 'Widening Participation and Strengthening Synergies' (WPSS).

*Widening participation in the Framework Programme (FP) can help countries tap into their unexploited R&I potential and improve overall R&I system performance.*

*Ensuring and strengthening synergies between activities supported by the FP and those supported by European Structural and Investment Funds (ESIF) can improve the overall efficiency and effectiveness of public funding for R&I and enhance the performance of R&I activities.*

Thirteen countries (Belgium, Bulgaria, Cyprus, Croatia, Germany, Hungary, Latvia, Poland, Portugal, Slovenia, Sweden, Spain and Turkey) are participating in the MLE, with Germany participating as an Observer.

The schedule for the MLE called for Challenge Papers covering different aspects of 'Widening' and 'Synergies' to feed into discussions at a series of four workshops, prior to the production of Topic Reports based on these discussions and relevant material contributed by participating countries.

The aspect of 'Widening' covered by this Topic Report is Topic 3: 'Improving networking through participation in EU-level initiatives'.

## 1 INTRODUCTION

A pre-condition for achieving wider participation in the EU Framework programme is that public and private research performers in all countries are well networked with partners in other Member States or Associated Countries. Many research performers (HEIs, PROs, companies) which do not have a history of FP participation are facing a 'closed club' problem, namely a barrier to entry into those networks that are relevant for their activities but from which they feel excluded due to their low visibility and lack of experience in working within EU partnerships.

As mentioned under other Widening Topics of this MLE, the most important route to take at national level to achieve widespread FP participation is to improve the effectiveness of research and innovation systems, introduce the needed reforms, and raise resources for R&D and innovation activities through appropriate delivery mechanisms. The general opinion of stakeholders consulted in the mid-term review of H2020 is indeed that "widening participation is crucial but should not come at expense of excellence".<sup>1</sup> Complementing these fundamental policy moves aimed at raising excellence, action can also be taken to address the 'closed club' problem by increasing the networking of domestic actors on a European scale. Exploiting the benefits from a wide range of networks and partnerships that are at play throughout Europe is likely to provide a good stepping stone for participation in FP. These networks and partnerships provide different entry points, and some of them might be easier to access than the very competitive FP partnerships. Hence it is worth looking at what can be done to support domestic research actors to take advantage of the wide variety of networks that may act as 'door-openers' to the EU Framework programme.

**The focus of this report is on ways and means to raise the EU networking of national (and regional) research actors with a view to reinforcing their participation in the EU FP.**

The report is the result of a workshop held in Dublin on 22-23 March 2018 as part of the H2020 Policy Support Facility (PSF) Mutual Learning Exercise (MLE) devoted to widening participation in the EU Framework Programme (FP) and enhancing synergies between the FP and the European Structural and investment Funds (ESIF). The focus of this report was identified as a priority issue when the MLE was designed by the participating countries. A background 'Challenge Paper' was prepared before the workshop as a basis for discussion. During the workshop, representatives from Member States (MS) and Associated Countries (AC) presented and shared good practices that attempted to improve networking through participation in EU-level initiatives.

The scope of the 'Improving networking through participation in EU-level initiatives' Topic is detailed in section 2. An overview of the landscape of relevant EU networks and partnerships is presented in section 3. Lessons learned from exchanges at the workshop and from evidence on existing practice are exposed in section 4. The final fifth section concludes with the main policy findings from the MLE and suggests ways forward in terms of improving networking through participation in EU-level initiatives.

Contributions from participants from MS and AC, as well as contributions on Ireland from Irish delegates in the Dublin meeting, arranged by Helena Acheson, an expert in this MLE,

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<sup>1</sup> European Commission (2017), *Commission Staff working document interim evaluation of Horizon2020-Annex 1*, SWD(2017) 220 final.

are gratefully acknowledged, as are the helpful comments provided by the other experts involved in the MLE process. All workshop presentations as well as additional information on the cases referred to in this report can be found on the PSF website: <https://rio.jrc.ec.europa.eu/en/policy-support-facility/mle-widening-participation-and-synergies-between-horizon-2020-and-esif>

## 2 SCOPE

### 2.1 Definition of the topic

This Topic of the MLE on national practices in Widening Participation and Strengthening Synergies focuses on **strategies, innovative mechanisms and schemes developed at national or regional level that aim to improve networking through participation in a wide variety of EU-level initiatives, with a view to reinforcing capacities to participate in the EU FP.**

The immediate question when trying to further define this Topic is: which EU networks are relevant to the goal of increasing participation and success rate in FP? This issue of linkages between participation in EU-level networks, on the one hand, and participation in the (rest of) the FP programme, on the other hand, is an exploratory one: there is no robust evidence that demonstrates a direct relationship between participation in EU-level networks and the rate of participation and/or success in FP. Hence the list of potentially relevant EU programmes and initiatives providing networking opportunities is very long. The landscape of EU networks has grown tremendously in the recent years and the picture has become complex. In the scoping and kick-off workshops, as well as during the implementation of the MLE, participating countries mentioned networks and programmes that they want to consider under this topic. As a result, a (non-exhaustive) list of programmes and fora that are relevant to this Topic includes the following:

- Public-public partnerships (P2Ps), including three types of programmes:
  - ERA-NETs and ERA-NET Cofunds;
  - Article 185 initiatives;
  - Joint Programming Initiatives (JPIs);
- Public-Private Partnerships (PPPs), including three types of programmes:
  - European Technology Platforms (ETPs);
  - Joint Technology Initiatives (JTIs);
  - Contractual Public Private Partnerships (cPPPs);
- European Cooperation in Science and Technology (COST);
- The Knowledge and Innovation Communities (KICs) of the European Institute of Technology (EIT);
- Macro-regional strategies and Interreg programmes;
- The Vanguard initiative and the Smart Specialisation (S3) Thematic partnerships.

The above list includes a large variety of programmes/initiatives, within which a very high number of concrete networks have been created. Some, such as the Vanguard initiative and S3 Thematic partnerships are bottom-up, while others such as the JPIs are more top-down. Some have their own EU-level budget, such as the Article 185 initiatives, JTIs, KICs or Interreg; some do not offer any funding, such as the ETPs, macro-regional strategies or the S3 Thematic partnerships. For many, the EU budget comes from H2020 but the budget for Interreg comes from the European Structural and Investment Funds. The amounts of money involved, and the nature of activities supported, also differ markedly across all those networks. What they have in common is that they may offer opportunities for



research performers in all MS and AC to develop partnerships and joint research and innovation activities on a transnational basis. The aim of the MLE discussion is to assess if and how they might act as a stepping stones to enhance their participation in the FP.

## **2.2 Complementarity with other topics covered by this MLE**

The challenge of enhancing participation in the FP will not be met solely by activities aimed at fostering wider participation and exploiting opportunities that are offered by a whole range of EU-level networks. Other significant routes are addressed in some of the other 'widening' Topics covered in this MLE, specifically:

- **Topic 2: Improving science – industry relationships and cooperation:** improving cooperation between research actors in the public and private spheres is a precondition for accessing most H2020 programmes, and also for participation in other EU networks covered in this theme, e.g. the KICs. In particular, effective models of public-private partnerships require that these attract money from foreign sources: this raises interest in participating in EU-level networks. Hence national strategies, actions and incentives to develop public-private research cooperation are crucial if the benefits of EU networks are to be realised and the goal of widening FP participation reached.
- **Topic 1: Attracting qualified R&D staff in the public and private sectors:** participation in the large variety of European-wide projects and partnerships covered under the present Topic is a good way for researchers to get acquainted with other research actors in other countries, and this can act as an incentive for physical mobility decisions.
- **Topic 4: Skills development, information, communication and training:** while this Topic focuses mostly on information and skills to be developed around H2020 programmes, it is clear that extending the role of NCPs and other information structures to cover other relevant partnerships should be, and already is in some cases, integrated into their mission. Also, improving research managers' skills to access and participate in international programmes and develop relevant multinational partnerships helps develop a competence that benefits participation in a large variety of EU-level networks.

Discussions relevant to the theme of **synergies** between the use of European Structural and Investment Funds (ESIF) and FP funds (Topics 5, 6 and 7 of this MLE), at both strategic and operational levels, are also complementary to the present Topic. The use of ESIF can help reinforce the capacity of national actors to access a large variety of programmes. It can also fund activities that are complementary to those covered by these programmes.

Finally, this Topic is also complementary to another MLE exercise, the **MLE on 'Alignment and interoperability of national research programmes'**,<sup>2</sup> which ended in 2017 and proposed a range of ways to improve alignment and interoperability between national research programmes. That MLE exercise focused on the role that national preconditions play in the Joint Programming Process (JPP), including Joint Programming Initiatives (JPIs) and other public-to-public partnerships (P2Ps). It produced good practice examples and

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<sup>2</sup> <https://rio.jrc.ec.europa.eu/en/policy-support-facility/mle-alignment-and-interoperability-research-programmes-national-coordination>

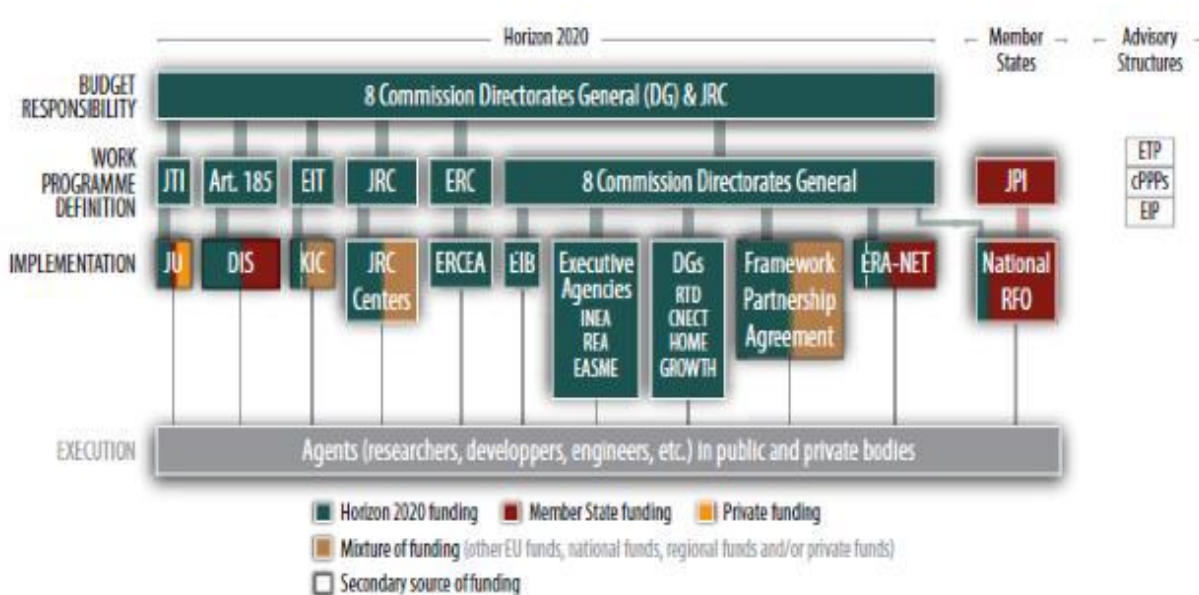
case studies, as well as a self-assessment tool that can be used by any country to identify potential improvements. Reference is made to those lessons in section 4 of this report.

### 3 LANDSCAPE

The share of H2020 funds allocated to P2Ps, PPPs and projects initiated by these partnerships is expected to reach 25% (Boekholt et al. 2017):<sup>3</sup> this is to say that P2Ps and PPPs have become **significant instruments for the conduct of ambitious research activities at European level.**

The position of several programmes and initiatives listed in section 2 above (P2Ps, PPPs, KICs and EIT) with respect to H2020 has been summarised in a recent study by the European Parliament.<sup>4</sup> Figure 1 highlights the different combinations of EU, national and private funding for those programmes. Joint programming initiatives (JPI) stand out in that they fall under the responsibility of MS. Figure 2 provides the key characteristics as well as budgetary figures for each types of EU-level partnership initiatives.

Figure 1. Implementation structures for H2020

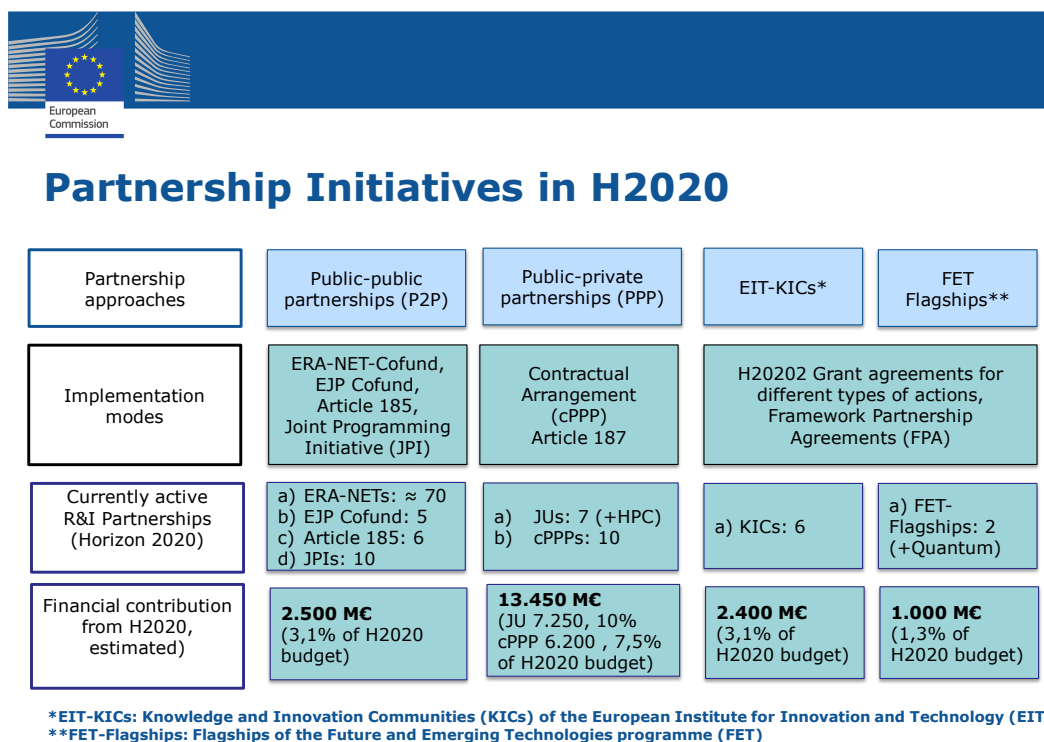


Source: EPRS, based on European Commission data.

<sup>3</sup> Boekholt P., Romanainen, J., Madubuko T. (2017), *Increased coherence and openness of European Union research and innovation partnerships. Final report.* technopolis [group] June, 2017. Government Office, Republic of Estonia. <http://www.technopolis-group.com/report/increased-coherence-openness-european-union-research-innovation-partnerships/>

<sup>4</sup> European Parliamentary Research Service (2015), *Horizon 2020 budget and implementation: A guide to the structure of the programme.* [http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/571312/EPRS\\_IDA%282015%29571312\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/571312/EPRS_IDA%282015%29571312_EN.pdf)

Figure 2. Partnership initiatives in H2020



1

Source: European Commission

### 3.1 Public-public partnerships (P2Ps)

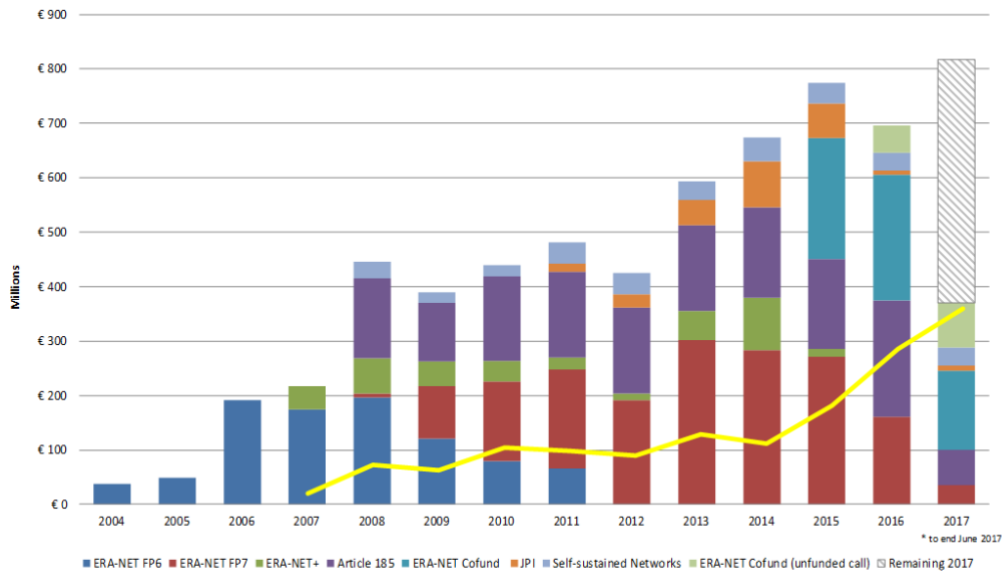
Public-public partnerships (P2Ps) for research are networks of national authorities joining forces around R&D programme and activities, based on a shared vision and a strategic research agenda. The general aim of these partnerships is to avoid fragmentation of public research activities and funding and create synergies and critical masses to better address important issues for knowledge-based EU. The main pre-requisite for any Member state to participate in P2Ps is that they have a functional national programme structure, which can collaborate with other national programmes. While this may be obvious, missing or poor national programme structures can act as a barrier or at least a hindrance to accessing P2Ps. Different types of partnerships are in place and the amount of national and EU money devoted to these research activities has been increasing over time (Figure 3).<sup>5</sup>

**Existing P2Ps have created a significant playground for developing EU-level research partnerships**, hence their relevance to this Topic: many opportunities are created by the P2Ps that can be taken by national actors wishing to enter into R&D partnerships at EU level. Between 2004 and 2017, 576 calls and more than 6400 projects, worth €6.3 billion, were funded under the various P2Ps. On average, 20% of competitive national R&D funding is invested in these P2Ps (this share is smaller for the larger Member States)<sup>6</sup>. Between 2012 and 2014, the growth rate of the financial participation of Member States in P2Ps was tremendous. In particular, several EU13 Member States strongly increased their contribution to P2Ps (Figure 4).

<sup>5</sup> In addition to the three types of PPP listed in this section, there are also self-supported networks, which are not (anymore) funded by EU funds

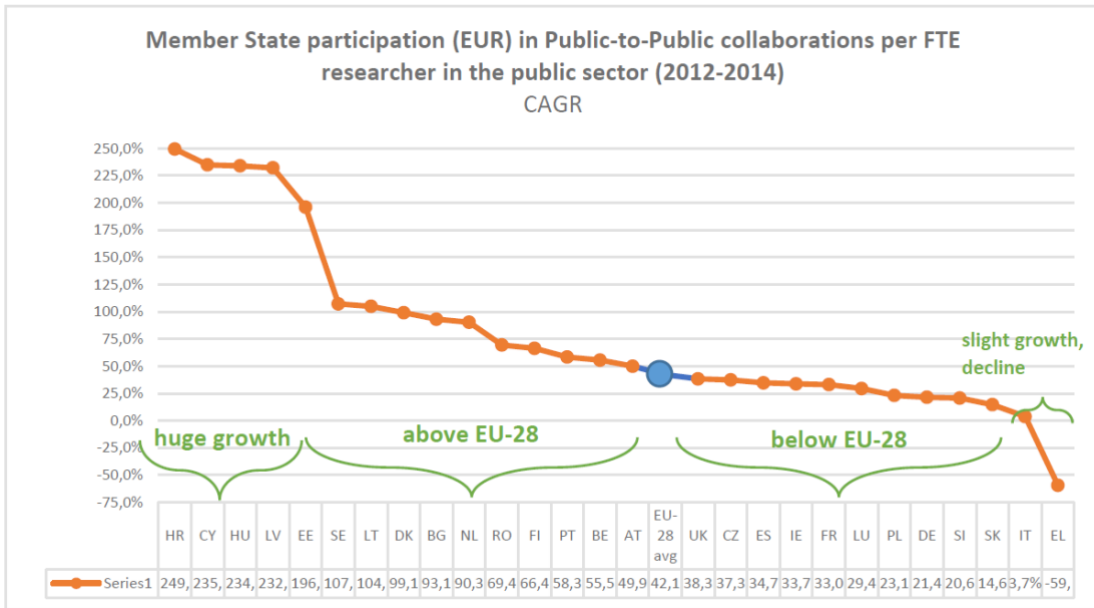
<sup>6</sup> Data from ERA-LEARN 2020 (2017), *15 years of European Public-public partnerships in research and innovation*. <https://www.era-learn.eu/publications/other-publications/15-years-of-european-public-public-partnerships-in-research-innovation>

Figure 3. National joint call commitment (with EU contribution for cofunding of calls overlaid) for all calls closed 2004-2017, by network type



Source: ERA-LEARN 2020 (2017) Third Annual Report on Public-Public Partnerships.<sup>7</sup>

Figure 4. Compound Annual growth rates of MS financial participation in P2Ps per FTE researcher in the public sector



Source: ERAC-GPC (2018), Working paper: final report of the task force – Priority 2a, WK 432/2018 INIT.

<sup>7</sup> <https://www.era-learn.eu/publications/other-publications/3rd-annual-report-on-p2p-partnerships>

## **ERA-NETs and ERA-NET Cofunds<sup>8,9</sup>**

The most numerous P2P partnerships are those of the ERA-NET family (in terms of number of programmes and number of calls – and also money invested - see Figure 2). ERA-NET Cofund under Horizon 2020 is designed to support public-public partnerships, including joint programming initiatives between Member States, in the preparation and establishment of networking structures and the design, implementation and coordination of joint activities. Key actors in ERA-NETs are national (or regional) research funding agencies. The scheme also includes EU topping-up for trans-national calls for proposals. ERA-NET Cofund is based on the merger of the former ERA-NET and ERA-NET Plus actions and is implemented by using 'programme co-fund actions'. It allows for programme collaboration in any part of the entire research-innovation cycle. The main and compulsory activity of the ERA-NET Cofund under Horizon 2020 is the implementation of a co-funded joint call for proposals that leads to the funding of trans-national research and/or innovation projects (one co-funded call per Grant Agreement). In addition, research funding organisations may launch additional joint calls using national resources. In 2017, there were 8 ERA-NETs and 11 ERA-NETs plus from FP7, and 46 ERA-NET Cofunds.

## **Article 185 initiatives<sup>10</sup>**

Article 185 initiatives (A185s) are long term public-public partnerships established on a voluntary basis by EU Member States that are also eligible for a substantial financial contribution from the EU Research Framework Programmes. They are established through the EU ordinary legislative procedure<sup>11</sup> and require a Dedicated Implementation Structure (DIS). They aim to address common challenges in specific research areas by creating economies of scale and synergies between national and EU research programmes and investments. Their ambition is to achieve scientific, managerial and financial integration amongst national research programmes in a given field. Six A185s are ongoing at the time of writing this report: they feature a high degree of diversity in terms of scope, participation, management and funding modes.

## **Joint Programming Initiatives (JPI)<sup>12</sup>**

The JPI initiatives aim at the development of a long-term strategy for joint programming tackling key common European challenges. They are funded and implemented by the Member States. The Commission provides support for their management through Horizon 2020 Coordinated and Support Actions, but no additional funding is provided to fund research projects. Member States participating in a JPI define a shared vision of the area through a Strategic Research Agenda (SRA) and define implementation mechanisms, including joint calls and other activities (capacity building, dissemination, evaluation, etc.). In 2017 there were 10 active JPis (as mentioned above, part of the ERA-NET Cofunds are

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<sup>8</sup> [http://ec.europa.eu/research/era/era-net\\_en.htm](http://ec.europa.eu/research/era/era-net_en.htm)

<sup>9</sup> For a more detailed description and analysis of instruments in sections 3.1, 3.2 and 3.4 see Boekholt et al. (2017), op.cit.

<sup>10</sup> [http://ec.europa.eu/research/era/art-185\\_en.htm](http://ec.europa.eu/research/era/art-185_en.htm)

<sup>11</sup> "This procedure is the standard decision-making procedure used in the European Union, unless the treaties specifically state one of the special legislative procedures is to be applied to a particular subject. The essential characteristic of this procedure is that both the Council of Ministers as the European Parliament have a deciding vote in the legislative process, and both institutions may amend a proposal."...Extract from: <https://www.eumonitor.eu/9353000/1/j9vvik7m1c3gyxp/vga3bya9max9>.

<sup>12</sup> [http://ec.europa.eu/research/era/joint-programming\\_en.htm](http://ec.europa.eu/research/era/joint-programming_en.htm)

actually initiated by JPIs). They have a longer-term horizon and higher political commitment than ERA-NETs.

### **3.2 Public-Private Partnerships (PPPs)**

#### **European Technology Platforms (ETP)<sup>13</sup>**

ETPs are industry-led stakeholder forums recognised by the European Commission as key actors in driving innovation, knowledge transfer and European competitiveness. The 41 existing ETPs develop research and innovation agendas and roadmaps for action at EU and national level to be supported by both private and public funding. They do not have earmarked funding. They mobilise stakeholders to deliver on agreed priorities and share information across the EU. They also act as facilitators for the preparation of collaborative projects.

#### **Joint Technology Initiatives (JTIs)<sup>14</sup>**

The majority of JTIs emanate from European Technology Platforms (ETPs): they are established with a view to implementing their Strategic Research Agendas. JTIs are long-term strategic agreements that combine private and public (EU and national) funding sources, including ESIF. The EU Council adopts provisions for the establishment of JTIs after consulting the European Parliament. The seven existing Joint Undertakings (JUs) implement actions and launch open calls under the strategic agendas defined by the JTIs.

#### **Contractual Public Private Partnerships (cPPP)<sup>15</sup>**

The nine existing cPPP carry out breakthrough research in broad cross-sectoral and societally-relevant themes. They are more flexible and lighter structures than the JTIs and are based on a memorandum of understanding and a contractual arrangement between the Commission and an association representing the interests of the private sector. cPPP can influence the thematic selections of H2020, and the Commission allocates funds for these selected thematic areas. However, participants of cPPP must apply for funding from normal H2020 calls just like anyone else (non-participants). From a perspective of a university, PRO or company, cPPPs operate much in the same way as ETPs, i.e. they provide a platform for identifying and allowing access to potential partners and existing networks.

### **3.3 COST<sup>16</sup>**

Founded in 1971, COST is an intergovernmental framework for European co-operation in the field of Scientific and Technical Research. Its aim is to foster the co-ordination of nationally funded research on the European level. COST actions promote basic and pre-competitive research as well as cooperation between enterprises and R&D institutions. COST actions are used to finance cooperation between researchers and the coordination of this cooperation, but not the research itself. Once approved, the COST Actions receive funding of €130 000 per year for four years. Thirty-Five European countries are members of COST. Funding from COST comes principally from the European Commission (DG RTD)

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<sup>13</sup> <http://ec.europa.eu/research/innovation-union/index.cfm?pg=etp>

<sup>14</sup> <https://www.era-learn.eu/public-to-public-partnerships/other-instruments-and-other-initiatives/joint-technology-initiatives-jti>

<sup>15</sup> [http://ec.europa.eu/research/industrial\\_technologies/ppp-in-research\\_en.html](http://ec.europa.eu/research/industrial_technologies/ppp-in-research_en.html)

<sup>16</sup> <http://www.cost.eu>

through a grant agreement, and the annual €300m budget comes from two H2020 programmes ('Societal Challenge 6' and 'Spreading Excellence and Widening Participation').

### **3.4 EIT and KICs<sup>17</sup>**

The European Institute of Technology (EIT)'s Knowledge and Innovation Communities (KICs) are strategic partnerships that bring together businesses, research centres and universities under the broad theme of societal relevance. Contrary to the programmes discussed so far, national authorities are not formal participants in the KICs. KICs aim at strengthening cooperation between the participating actors by forming structural pan-European partnerships and creating favourable environments for innovation in their domain. The activities of the six KICs are driven by the desire to find solutions to major societal challenges which have high innovation potential. The KICs activities include: training and education programmes, research commercialisation, innovation projects, as well as business incubators and accelerators. The EIT and KICs have been integrated into the FP since H2020 (as indicated in Figure 1 above). The KICs are established as separate and autonomous entities that receive annual funding from the EIT, limited to 25% of KICs' overall funding sources during its lifetime. KICs find their other funding from governmental funds, the private sector, H2020, Structural Funds, with the aim of becoming self-sustainable (i.e. not dependent on EIT funding) in the long run.

### **3.5 Macro-regional strategies<sup>18</sup> and Interreg programmes<sup>19</sup>**

Europe has adopted four Macro-regional strategies. These are integrated frameworks endorsed by the European Council to address common challenges faced by a defined geographical area that would benefit from strengthened cooperation across Member States in various domains and contribute to the achievement of economic, social and territorial cohesion. Those strategies are intergovernmental initiatives and their implementation relies heavily on the commitment of the participating countries. Each strategy involves a broad range of actors at various levels (international, national, regional, local), sectors (public, private, civil society), and fields of expertise, thereby providing a platform for coherent multi-country, multi-sectorial and multi-level governance. Macro-regional strategies do not have associated budgets but may be supported by the European Structural and Investment Funds, in particular Interreg programmes that overlap with the areas of these strategies.

The Interreg programmes aim at achieving one of the two goals of the EU Cohesion Policy – promoting European Territorial Cooperation – and are funded by the European Regional Development Fund (ERDF). The three<sup>20</sup> types of Interreg programme fund cross-border, trans-regional and inter-regional cooperation, with a total budget of €10.1 billion for the 2014-2020 period. This money is invested through Operational Programmes in the defined zones, covering 11 investment priorities (thematic objectives, including research and innovation), and fall under the responsibility of Managing Authorities. The value-added of Interreg programmes takes different forms: building critical masses that transcend

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<sup>17</sup> <https://eit.europa.eu/activities/innovation-communities>

<sup>18</sup> [http://ec.europa.eu/regional\\_policy/en/policy/cooperation/macro-regional-strategies/](http://ec.europa.eu/regional_policy/en/policy/cooperation/macro-regional-strategies/)

<sup>19</sup> <https://interreg.eu/about-interreg/>

<sup>20</sup> In addition, Interreg IPA CBC supports cross-border co-operation between candidate countries, potential candidate countries and EU Member States, to contribute in their accession preparations with a territorial and cross-border focus.



borders; combining the diverse assets, skills and resources that characterise European economies; and learning from each other through joint projects, experimentation and exchanges of experience.

### **3.6 The Vanguard Initiative<sup>21</sup> and Smart Specialisation Thematic Platforms<sup>22</sup>**

The Vanguard Initiative and the Smart Specialisation Thematic Platforms are networks aimed at facilitating the development of innovative projects that exploit the benefits of trans-regional collaboration along value chains that have been made more visible by the adoption of Smart Specialisation Strategies (S3) in European regions. They have some characteristics that differentiate them from the networks and schemes discussed earlier. Contrary to P2Ps and PPPs, they are not organised around calls for research projects; they rely fully on bottom-up initiatives; and they place regions at the forefront. Neither the Vanguard initiative nor the S3 Thematic Platforms have associated budgets for the implementation of the concrete projects developed by their partnerships.

The Vanguard Initiative was initiated by several European regions. By joining forces, they aimed to exploit the potential of their smart specialisation strategies and boost growth through bottom-up entrepreneurial innovation and industrial renewal in European priority areas. The initiative is industry-led and relies on the political commitment of regional authorities in each of the (currently 30) participating regions. The partnerships, working on a variable geometry basis, first carry out detailed examinations of capability, competence and capacity in a number of targeted fields within the regions. Secondly, they work with industry stakeholders to develop joint demonstration projects. Interregional cooperation is developed to enable investment in EU value chains. The Vanguard initiative aims to provide a more bottom-up approach than large-scale P2Ps or JTIs, with a stronger focus on SME participation.

The European Commission has taken on board the experience of the Vanguard Initiative and has launched three S3 Thematic Platforms with a methodology inspired by the Vanguard experience. The aim of the Thematic Platforms is to create an investment pipeline of mature projects in new growth areas across the EU. The Platforms, managed by the European Commission's Joint Research Centre, provide expertise, advice and networking opportunities through workshops and seminars.

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<sup>21</sup> <http://www.s3vanguardinitiative.eu/>

<sup>22</sup> <http://s3platform.jrc.ec.europa.eu/s3-thematic-platforms>

## 4 LESSONS

### 4.1 General lessons related to getting more benefits from EU networking opportunities

#### 4.1.1 Reinforcing national research and innovation capacity and supporting a vibrant ecosystem

The first bold lesson learned in this MLE is that **reinforcing national research and innovation capacity and supporting a vibrant ecosystem** is a necessary (but insufficient) precondition for benefitting from EU networking opportunities. Investing in research, technology development, innovation and skills in a consistent and long-term perspective, being able to adapt to changing features of this ecosystem as well as being outward-looking, are clear requirements to ensure national actors' visibility and their capacity to harvest fruits from EU-level opportunities (FP and beyond). Participation in FP is based on excellence, so it makes perfect sense for countries to improve national capabilities if they want to enhance FP participation prospects.

- The story of **Ireland**<sup>23</sup> is a good case of a country that has been successful in evolving towards a knowledge-driven economy thanks to sustained governmental support to STI. Ireland has successfully improved its national innovation system and its participation in EU networks. The story below points to the following critical drivers of Ireland's success, which can be considered by countries wishing to engage in a similar path: long-term policy strategies taking STI seriously as a development factor; consistent and persistent use of ERDF for STI; early focus on science-business relationships with instruments modelled along EU FP topics; strong national investments at a point in time; and recently prioritisation of research investments. To these factors directly linked to STI policy should be added a few environmental factors: 1) the good conditions set in the country for attracting FDI; 2) a highly skilled workforce and 3) the use of English.

A serious long-term approach to science and technology was first proposed in Ireland a century and a half ago<sup>24</sup> and it was not until much later, as a response to the OECD<sup>25</sup> Science and Irish Economic Development (SIED) report,<sup>26</sup> that the first formal policy-making and advisory structure, the National Science Council, was established in 1967; replaced in 1978 by the National Board for Science and Technology.

Up to the present day, the Irish system has not lacked analysis and (external) policy advice. The challenge was and remains, in a competitive global environment, to commit to a continuous investment in research infrastructure, to identify the optimal balance between basic and applied research funding and, to ensure appropriate programme design and implementation. The key is to build on small initial successes within the context of long-term policy strategies that recognise the critical importance of R&I in modern economic development.

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<sup>23</sup> See several presentations on Ireland at the MLE Dublin meeting on the RIO PSF website.

<sup>24</sup> a) Hodges & Smith, Dublin June 1844 b) Prose Writings, Davis, Walter Scott, London 1889 c) Faber 1939

<sup>25</sup> The 1963-1966 Research and Technology Survey was one of five established in the early to mid-60s in OECD member states to see how R&D and other science and technology-related activities were linked to and could be more oriented towards economic and social needs. The other four pilot countries were Italy, Spain, Greece and Turkey.

<sup>26</sup> Government Stationery Office, Sept/Oct 1966 (Volumes 1 & 2).

The financial resources available to Ireland from the ERDF from the late 1980s considerably enabled the implementation of R&D policies, developed in the wake of the Telesis Report (1982). In consecutive programming periods the funds were used to build the research capacity in the Universities through the Programs in Advanced Technologies (PATs), to provide support for business R&D and, through a network of Technology Transfer Offices, to build the research and innovation links between companies and universities.

Notwithstanding this ERDF investment, the public funding for research was very low in comparison to other similarly-sized OECD economies. As a consequence, the EU Framework Programs, up to and including FP4 (1994-1998), were effectively the main source of funds for Irish researchers. *"FP4 funding was additional to Government expenditure on R&D and in scale approximated to three quarters of all State funding of R&D in the business sector and almost half of State contributions to tertiary level institutions. There is little doubt therefore that FP4 played a vital part in maintaining and expanding the Irish research base."*<sup>27</sup> As the aforementioned PATs strongly mirrored the research themes supported by FPs (e.g. advanced manufacturing, materials, biotechnology), this enabled the Irish research community to compete successfully. It also had the effect that Irish research strengths developed in line with EU priorities – a complex synergistic relationship. For Irish industry, involvement in FPs was also rewarding. In FP4, over 450 firms took part, 90% of them of Irish origin.

The success in FP partnerships, the developing research capacities and associated pent-up demand all fortuitously coincided with the decision, taken in 1999, to make a radical change in the level of public funding of research. Stimulated by a €178 million grant from Atlantic Philanthropies which leveraged a five-fold matching fund from the Irish Government, the Programme for Research (infrastructure) in Third Level Institutes (PRTLII) was launched. In response to the 1999 Technology Foresight Report, the Government announced a Foresight Fund in 2000 of €500 million and the establishment of Science Foundation Ireland to administer that fund.

A pivot point was achieved in Ireland with the Technology Foresight process in 1998/99. This exercise was critical as its results indicated what would happen if RTDI was NOT placed at the heart of economic development: it showed the economic (and political) consequences of non-action and triggered governmental action on this front.

The developments in the 1990s and early 2000s can be seen as a logical follow-on to the early commitment in the 1960s to the formulation and implementation of a coherent approach to developing a national system of innovation in line with best practice in other small, developed countries although they were marked by a lack of attention to the need and opportunity for the kind of applied research and technical development that would have favoured indigenous industry. The latter point was again reinforced by the 2015 OECD Economic Survey of Ireland.

There exists an acknowledgement that a country of Ireland's size can only excel in a limited number of fields of research: currently the majority of competitive funding is guided by prioritization exercises and is spent, on areas most likely to generate economic and societal impact. In addition, Ireland has established a range of structures and programmes (the network of Research and Technology Centres and the Knowledge Transfer Ireland and Innovation Partnerships programmes) aiming at maximising innovation from State-funded research. Lastly, a strong focus is placed on the development of the right skills for the

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<sup>27</sup> The 4th Framework Programme in Ireland. Forfás (2001)

knowledge economy through close partnerships between employers and the education sector: the current National Skills Strategy 2025, relying on strong cooperation between employers and the education system, aims at ensuring that the range of skills needed for the development of Irish future-oriented sectors are delivered by the whole education system, including at regional level with the establishment of 9 Regional Skills Fora.

Capitalising on all those efforts - and despite the 2008 crisis that severely affected the country - Ireland has been able to successfully build up its research and innovation capacity, to acquire a significant reputation for research excellence and a growing base of enterprises engaged in R&D and innovation. Ireland is amongst the group of EU 'Strong Innovators' and is one of the countries that are the most successful in acquiring EU-level funding from the FP. At the end of 2016, Ireland was at the sixth position among EU Member States, both in terms of funding from H2020 per inhabitant and per FTE researcher. The government has set an ambitious target of drawing down €1.25 billion from Horizon 2020.

#### *4.1.2 Developing national strategies for participating in EU networks and programmes*

In order to benefit from opportunities offered by the large variety of EU-level programmes listed in Section 3, it is important to develop **national strategies** to create synergies between these programmes and the national systems, and to facilitate access to EU networks and programmes. The goal of internationalisation/Europeanisation of research should be well integrated into national strategies. Being outward looking and open to the world is an important feature of successful research and innovation systems. This also includes efforts geared towards increasing the visibility of these networking opportunities (better national information, mapping exercises etc.).

Several evaluations and reports (e.g. Boekholt et al. 2017)<sup>28</sup> have highlighted the huge **complexity of the landscape** faced by potential participants given the large number of programmes and networks active at European scale, often addressing the same activity domains, albeit with different goals and approaches. The lack of synergies between the two P2P and PPP families of instruments has also been criticised by Boekholt et al. (2017) and adds to the overall confusion in the landscape. Small and less research-intensive Member States in particular cannot afford to be present in all initiatives. Hence there is a need for them to obtain a clear overview of existing networks and programmes and to use effective prioritisation mechanisms to decide where they should direct efforts and invest public money.

These questions have been covered by the **MLE on "Alignment and interoperability of national research programmes"**.<sup>29</sup> That MLE identified the conditions needed to raise participation and get more benefits from Joint Programming processes (as well as some good examples of how to reinforce these conditions). These conditions include:

- Adopting a national research and innovation policy that includes a well-articulated international/ERA dimension;
- Engaging various Ministries beyond the Research Ministry, at both a high political level (to increase political commitment) and at a more operational level;

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<sup>28</sup> Op.cit.

<sup>29</sup> See detailed recommendations and good practices on <https://rio.jrc.ec.europa.eu/en/policy-support-facility/mle-alignment-and-interoperability-research-programmes-national-coordination>

- Implementing effective criteria and processes to prioritise national participation in the various EU networks/programmes;
- Ensuring appropriate budgetary sources to participate in EU-level programmes and developing rules for interoperability;
- Using suitable mechanisms to bring in stakeholders (including those outside of the research community) at the implementation stage;
- Monitoring and evaluating participation in EU networks/programmes.

To get an overview of the scope of such strategic activities deployed at national level, one option is to look at Member States' and Associated Countries' National Action Plans (NAPs) for the ERA. These NAPs have been adopted with a view to translating EU priorities in the ERA Roadmap 2015-20 into national contexts. The ERA Priority 2a – jointly addressing grand challenges – states that *“improved cross border collaboration between national research actors should reduce fragmentation and duplication of effort, make best use of resources and help provide the benefits of scale required to tackle issues which require large concerted efforts.”* The sections of the ERA NAPs dealing with this priority are thus closely linked to the Topic of the present MLE. The ERAC-GPC (High Level Group for Joint programming) carried out an analysis of NAPs <sup>30</sup> while reviewing the ERA progress report 2016.<sup>31</sup> The conclusions of the analysis are that countries are implementing actions on four fronts:

- Governance: establishing national structures to coordinate participation in P2Ps; engaging in strategic networking; working towards alignment between national and EU programmes;
- Communication and uptake: improving communication between policy-makers, research stakeholders and society in general about participation in EU networks; promoting the visibility of research and innovation networks and the benefits of networking (via mapping, websites, events, dissemination of information, etc.); ensuring involvement of stakeholders and end-users;
- Funding at programme level: ensuring budgetary commitments to the use of ESIF by EU networks/programmes; funding schemes to support transnational cooperation; harmonisation of funding rules to facilitate national participation in EU networks/programmes JPIs;
- Monitoring: mapping and assessing the state of EU networking.

These conclusions are well in line with the above findings of the MLE on 'Alignment and interoperability of national research programmes'. Illustrations of strategic approaches to participation in EU networks by EU Member States are provided below.

- The national strategy of **Estonia**<sup>32</sup> determines the principles of state participation in EU partnerships, describes the decision-making process for making the selection, and outlines the tasks of the various stakeholders. The framework encompasses

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<sup>30</sup> ERAC-GPC (2018), Working paper: final report of the task force – Priority 2a, WK 432/2018 INIT.

<sup>31</sup> [http://ec.europa.eu/research/era/eraprogress\\_en.htm](http://ec.europa.eu/research/era/eraprogress_en.htm)

<sup>32</sup> <http://www.etag.ee/en/cooperation/eu-partnerships/>. See also presentation at the Dublin MLE workshop on the PSF RIO website.

joint programmes based on Article 185 of the Treaty on the Functioning of the European Union; Joint Programming Initiatives (JPI); Joint Technology Initiatives (JTI); the Knowledge and Innovation Communities (KIC) of the European Institute of Innovation and Technology; FET (Future and Emerging Technologies) partnerships; infrastructure initiatives, including those specified by the European Research Infrastructure Consortia (ERIC) in the roadmap of the European Strategy Forum on Research Infrastructures (ESFRI); and ERA-NET joint calls. Estonia has a permanent inventory of all participations in all EU networks, which helps identify research strengths. The framework takes into account Estonia's smart specialisation strategy and prioritises research targeting socio-economic problems for which Estonia's own resources are insufficient and which require international cooperation. The national Estonian strategy for participation in research and innovation partnerships in the EU is seen as one of the success factors underpinning the enhanced participation of Estonian actors in the FP.<sup>33</sup>

Good practice in terms of cross-government involvement in the strategy was highlighted in the MLE debate: the Estonian Research Council (ETAg) supports science advisors in Sectoral Ministries, which are regularly trained and supervised by ETAg in H2020 and ERA activities to increase the capacity of the ministries to participate in these activities or fund them, notably the ERA-NET Cofunds. The participation of Ministries in ERA-NET Cofunds acts as a stepping stone for international research cooperation and helps the Ministries to set longer-term research priorities. Other factors highlighted in the MLE discussions were: the shift to English as the 'common language' for research activities, which facilitates external evaluations and enables researchers to apply in English; and the tenacity of the research community in its struggle to survive in an environment characterised by scarce national resources.

- **Ireland** has adopted a strategy<sup>34</sup> for participation in ERA-NETs, infrastructures and other large-scale EU initiatives. Using data available on the ERA-LEARN2020<sup>35</sup> platform, Irish participation in ERA-NETs Cofunds is analysed by Pillar, Priority Area, Instrument, and Budget. Specific criteria covering network quality and outputs are then used to assess the portfolio of ERA-NETs in which Ireland is engaged. Based on these qualitative reviews, plans are drawn for future participation on an annual or multi-annual basis. As a result, participation in such endeavours is more selective than hitherto. Detailed analyses in domains of specific interest to Ireland are also used: e.g. in the ERA-NET COFUND BiodivERsA,<sup>36</sup> a comprehensive map of the current state of research on biodiversity and associated ecosystem services in Europe in terms of projects, programmes and funding was produced. This aimed to identify existing gaps and future needs for new research programmes and new facilities, as well as to detect potential barriers and opportunities for successful cooperation.

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<sup>33</sup> Estonia ranks third amongst EU13 Member States, both in terms of attracting H2020 funding per inhabitant (after Cyprus and Slovenia) and in terms of H2020 funds per FTE researcher (after Cyprus and Malta). At the end of 2016, Estonia had attracted €66m from H2020 (e-corda data, cut-off date 1 January 2017).

<sup>34</sup> See presentation at the Dublin MLE workshop on the PSF RIO website.

<sup>35</sup> <https://www.era-learn.eu/>

<sup>36</sup> <http://www.biodiversa.org>

- **Malta**<sup>37</sup> has a good record in FP participation<sup>38</sup>. The country has developed a specific approach to participation in European strategic initiatives, in particular the Joint Undertakings and Joint Programming Initiatives. This approach takes into account the small size of the country's research community and national public R&D budgets. As indicated in its National Action Plan (NAP), its strategy is based on *"the need to align closely with the priorities of the National R&I Strategy and to support the smart specialisation areas (RIS 3). Initially, participation in the Joint Programming Initiatives was to focus on JPND and JPI Oceans, since these initiatives are clearly in line with the National R&I Strategy and the smart specialisation priorities. However, due to resource constraints and the timing of the calls, a decision was taken to focus on strengthening participation in JPI Oceans. This is also due to the higher level of interest on the part of local stakeholders in this initiative. Strengthening participation in JPI Oceans will be undertaken by mapping the full range of local stakeholders with an interest in this initiative in the public and private sectors and securing resources for effective participation. The aim is to define a more strategic approach to participation."* Another action is the development of *"the online web-based portal PlumTri (Platform for Maltese Research and Innovation) plumtri.org to ensure more effective and targeted dissemination of information on the Joint Undertakings, Joint Programming Initiatives, COST and H2020 to the relevant stakeholders. The aim is to progress towards the setting up of online communities for each of the initiatives Malta is active in and thereby provide easier and faster access for local stakeholders to relevant information and contacts."*
- **Sweden**, through a decision in the 2012 research bill, has set up a common, cross-ministerial body with the six major research funding agencies for participation in EU networks P2Ps and PPPs. The aim of this body is to ensure coordination and prioritisation of participation of Swedish research community actors in EU-level initiatives.

#### 4.1.3 Financial support for participation in international networks

Along with national strategic initiatives and the ring-fencing of national budgets for funding country participation in EU-level programmes and networks, financial incentives are developed at national or regional level to facilitate the participation of domestic actors in such networks.

- The Agency of Innovation and Development of **Andalusia** (IDEA) manages a programme to foster International R&D&I<sup>39</sup> that provides several types of grants to Andalusian SMEs in order to stimulate their participation in international networks:<sup>40</sup>
  - Grants to support SMEs when submitting project proposals in response to international calls, covering external technical assistance for tasks related to partner search and proposal drafting (max. €10k and 75% of costs);

<sup>37</sup> [https://era.gv.at/object/document/2763/attach/MT\\_National ERA Roadmap 2020.pdf](https://era.gv.at/object/document/2763/attach/MT_National ERA Roadmap 2020.pdf)

<sup>38</sup> Malta ranks fourth amongst EU13 Member States (after Cyprus, Slovenia and Estonia), in terms of attracting H2020 funding per inhabitant; and second after Cyprus in terms of H2020 funds per FTE researcher.

<sup>39</sup> See presentation at the Madrid workshop of this MLE: <https://rio.jrc.ec.europa.eu/en/policy-support-facility/mle-widening-participation-and-synergies-between-horizon-2020-and-esif>

<sup>40</sup> In addition, Seal of Excellence grants are available for SMEs applying to the H2020 SME instrument, which have been scored 12 or more but haven't been funded by H2020.

- Grants to support SMEs involved in international partnership projects (ERA-NETs, Joint Programming Initiatives, Joint Technology Initiatives), or international agreements (Eureka, Iberoeka), that had not obtained funds despite positive project evaluations;<sup>41</sup>
- Grants to support SMEs (possibly in collaboration with Technology or Technology and Innovation Centres) that are involved in projects approved by the JTI Cleansky. These grants fund complementary R&D projects approved by the Cleansky evaluation committee that are additional to those funded by EU money. The projects may run in parallel or after the EU-funded projects. A complementary action may also involve Andalusian SMEs that did not participate in the initial project, provided that this is approved by the Cleansky evaluation committee.
  - In **Estonia**, the programme Mobilitas Pluss<sup>42</sup> of the Estonian Research Council provides grants to Estonian researchers for participation in international research networks and projects:
    - Horizon 2020 ERA-NET support: these grants enable Estonian research and development institutions to cover the research costs of participating in Horizon 2020 ERA-NET projects (€150k/project);
    - Horizon 2020 EIT support: these grants cover the travel and staff costs of the participation of Estonian research and development institutions in the work of Knowledge and Innovation Communities (KICs) (€30k per year for up to two years). The Estonian Genome Centre of the University of Tartu is a partner of EIT Health. The Centre has received 10 times more funding from the KIC than they have paid as co-financing.<sup>43</sup>

#### 4.1.4 Organisation-level initiatives to facilitate entry into competitive EU networks

The above considerations regarding national strategies for positioning into EU networks relate to a top-down approach, i.e. defining and aligning national priorities with EU networks. However, it is also important to foster the bottom-up approach, i.e. individual researchers, research groups and companies should be encouraged to identify and access networks that are relevant for them regardless of whether they fall into the national priorities. While national (or ERDF) funding will undoubtedly be allocated along the top-down approach, mechanisms and initiatives also to support bottom-up can and should be considered. Some Research Performing Organisations have developed strategies to facilitate the participation of their own researchers in a variety of EU networks. The first example below also incorporates an initiative aimed at lowering barriers to H2020 participation by actors from less-research intensive countries.

- **CELSA**<sup>44</sup> (Central Europe Leuven Strategic Alliance) was founded in 2016 at the initiative of the Belgian University of Leuven, together with 7 old and famous

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<sup>41</sup> One difficulty when funding national actors involved in partnerships with actors in other countries is that the latter would also need to get funded, if the actions envisaged by partnership are to be implemented without EU funds.

<sup>42</sup> <http://www.etag.ee/en/funding/partnership-funding/mobilitas-pluss-partnership-and-co-operation/>.

In addition the Horizon 2020 ERA chair support covers the research costs of Horizon 2020 ERA chairs in public research institutions. See also presentation at the MLE Dublin workshop on the RIO PSF website.

<sup>43</sup> From presentation at JRC workshop "Pilot training for national/regional authorities with low H2020 participation on optimising the use of H2020 in implementing RIS3", Brussels, 15 February 2018. <http://s3platform.jrc.ec.europa.eu/-/pilot-training-for-national-regional-authorities-with-low-h2020-participation-on-optimising-the-use-of-h2020-in-implementing-ris3>

<sup>44</sup> <http://celsalliance.eu/about.html>



universities in 4 cities in EU13 countries: Budapest (Hungary), Ljubljana (Slovenia), Tartu (Estonia), Prague (Czech Republic). CELSA organises training courses, exchanges of practice in common issues such as peer-reviewing, education evaluation, research assessment, open science, knowledge transfer, and in particular the setting-up of collaborative projects for research programmes like Horizon2020 and education programmes like Erasmus+. The CELSA Research Fund supports collaborative research projects. The Fund's purpose is to set up new scientific collaborations between the CELSA partners. Projects are funded for two years and help leverage competitive funding from European Commission programmes such as Horizon 2020.

- The **Universidad Politécnica de Madrid** has developed a strategy to participate in KICs, which is based on its strengths in some domains corresponding to KICs areas: EIT Digital, EIT Health, EIT Raw Materials and EIT Climate. This strategy has been successful: by participating in 4 KICs it generated a high return from the annual entry tickets paid for being member of the KIC (€1.5m average return in project money versus €225k in participation fees, on an annual basis).

## **4.2 Lessons related to specific programmes and networks**

### **ERA-NETs**

A mapping exercise of country participation in ERA-NETs<sup>45</sup> indicates a strong correlation between the R&D intensity of countries and the frequency of their participation in ERA-NET programmes (Figure 5).<sup>46</sup> Those countries that invest most heavily in the ERA-NET programmes are, unsurprisingly, those countries that are large beneficiaries of H2020 funding.<sup>47</sup> However, there are also a number of less R&D-intensive countries that have a higher involvement in ERA-NETs than their R&D intensity would suggest, namely Greece, Hungary, Poland, Romania and Turkey (FP7 data).

Under the ERA-NET Cofund scheme, the EU13 Member States that have the highest committed budget (for EU co-funded calls) are: Poland, Romania, Latvia, Cyprus and Slovenia.<sup>48</sup>

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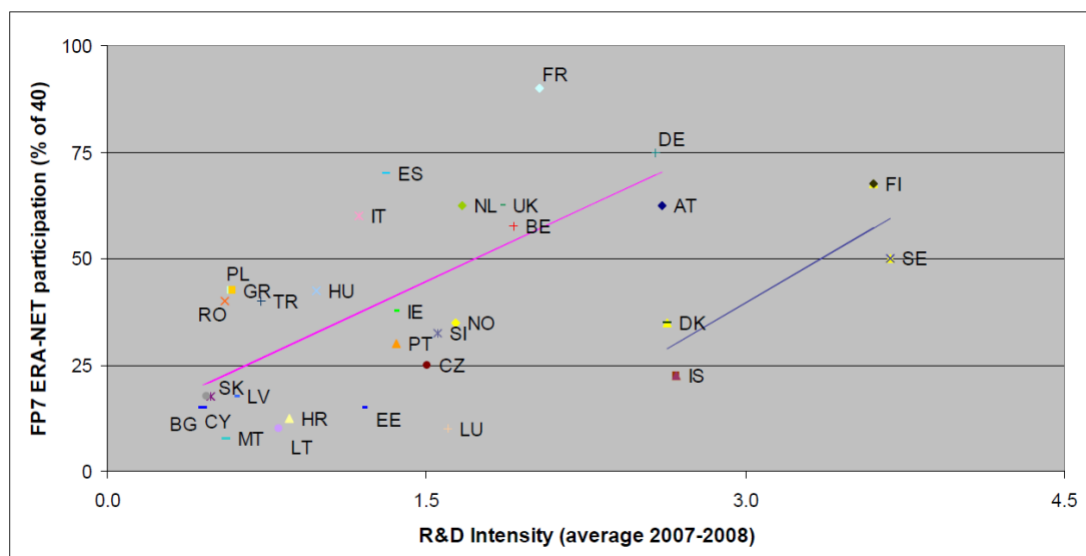
<sup>45</sup> S. Elena Pérez (2010), *Mapping ERA-NETs across Europe: overview of the ERA-NET scheme and its results*, JRC Scientific and Technical reports, Luxembourg: Publications Office of the European Union.

<sup>46</sup> The picture is similar for FP6.

<sup>47</sup> See annex for an overview of funding from H2020 for all MS, and EU15 and EU13 countries.

<sup>48</sup> Data from ERA-LEARN 2020 (2017), *15 years of European Public-public partnerships in research and innovation*. <https://www.era-learn.eu/publications/other-publications/15-years-of-european-public-public-partnerships-in-research-innovation>

Figure 5. Country participation in ERA-NETs in FP7 and R&D intensity



Source: S. Elena Pérez (2010)

The evaluation of ERA-NET schemes points towards **networking benefits** brought by these programmes, which act as **intermediary layers between national programmes and FP participation:**

- The evaluation of the FP6 ERA-NETs states that *"the most tangible impact of the FP6 ERA-NET scheme on national programmes related to the creation of new opportunities for research beneficiaries who would otherwise be excluded from the regular FP to engage in transnational research. It filled a gap between national research policies and the transnational research agenda generated at European level through the FPs";*<sup>49</sup>
- The analysis of the ERA-NET Cofunds under H2020 reports that *"the vast majority of national representatives state that their countries will retain their current level of participation in ERA-NET Cofund, while the majority of EU-13 national representatives are planning to increase their involvement by a moderate amount."*<sup>50</sup>

The latter analysis includes a list of barriers to participation in ERA-NET Cofunds by EU13 countries. Most of them resonate well with the lessons mentioned in section 4.1 concerning the importance of developing national strategies for participating in EU networks and programmes:<sup>51</sup>

- *"Missing strategies at national level for encouraging public-public partnerships;*
- *Unclear/not defined national priorities for participation in ERA-NETs for almost all EU-13 countries;*

<sup>49</sup> Matrix Insight, Rambøll (2009), *FP6 ERA-NET Evaluation-Summary*, European Commission [https://ec.europa.eu/research/evaluations/pdf/archive/other\\_reports\\_studies\\_and\\_documents/fp6\\_era-net\\_evaluation\\_-\\_final\\_report\\_-\\_volume\\_1.pdf](https://ec.europa.eu/research/evaluations/pdf/archive/other_reports_studies_and_documents/fp6_era-net_evaluation_-_final_report_-_volume_1.pdf)

<sup>50</sup> Götke N., Amanatidou E., Ispas I., Julkowska D., Serrano J. 2016 *Analysis of ERA-NET Cofund actions under Horizon 2020. Final report of the expert group*. European Commission <https://www.era-learn.eu/publications/ec-publications/analysis-of-era-netcofund-actions-under-horizon-2020>

<sup>51</sup> Op.cit.

- *The Cofund instrument is still not seen at national level as a framework under which multilateral cooperation with all EU countries could take place;*
- *Lack of available budget for investment;*
- *Shortage of administrative resources;*
- *Lack of awareness of the Cofund instrument;*
- *Lack of experience with the tasks at hand or WP leadership;*
- *Complicated national administrative procedures.”*

Many (15 out of 27) ERA-NET Cofunds have developed new features aiming at the **establishment of specific measures to encourage the participation of Widening countries.**<sup>52</sup> These include:

1. Offering brokerage support and partner search tools (for all participants, but of particular benefit to EU13 actors);
  - The **M-ERA.NET**<sup>53</sup> has implemented a mapping activity that aims to support the transnational networking of clusters and competence centres in the thematic areas of M-ERA.NET by providing national/regional companies and research groups with a database to find matching partners for their business and research.
2. Including work packages dedicated to capacity building for new members (e.g. the development of competences for WP / task leadership roles);
  - The **BiodivERsA ERA-NET Cofund**<sup>54</sup> has a WP dedicated to ‘Strengthening and expanding the network: integrating new partners and providing processes’. In this framework, a Staff Exchange programme was carried out to strengthen and enlarge the relationships between new member agencies, to better integrate partners to the consortium and contribute to the information flow within the organisation. The vision for a Staff exchange scheme is one that connects and integrates the new member agencies and introduces them to the network of the consortium, while setting up a particular topic to focus on during each staff exchange visit.
3. Increasing the maximum number of partners in a Cofund proposal if EU13 participants are added;
4. Launching targeted calls for EU13 participants, taking into account S3 and topics of specific interests;
5. Allowing EU13 partners to join research consortia at a later stage (i.e. after the pre-proposal stage).

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<sup>52</sup> Op.cit.

<sup>53</sup> <https://m-era.net/other-joint-activities/clusters-and-competence-centers>

<sup>54</sup> <http://www.biodiversa.org/501>

## Article 185 initiatives

The recent meta-evaluation<sup>55</sup> of Article 185 initiatives finds that those programmes display **high entry barriers for low R&D-performing countries**. One of its conclusions is that *“there are significant barriers to participation for the less R&D intensive countries including how the underexploited synergies with the Structural Funds can be realised in practice”*. The evaluation adds that *“additional financial resources from EU co-funding are the most important value-added feature for the less R&D intensive countries. At the same time, competitive funds in these countries are even more ‘scarce’ than in the R&D intensive countries, making it even more challenging for them to co-fund national participants at a comparable level of the more research-intensive countries. This is made even worse if the only activity of an Article 185 initiative is to implement multiple joint calls for collaborative R&D projects that have a high level of scientific intensity. This is, for example, one of the conclusions from the final evaluation of the BONUS Article 185. Also, the less research-intensive countries do not seem to be very influential in setting the strategic agenda for the Article 185s.”*

Article 185 initiatives feature relatively high **success rate of proposals**, which varies from 23% in AAL2 to 33% or 34% in EDCTP2 and EUROSTARS2 respectively. These success rates are significantly higher than the average success rate for Horizon 2020 applications (11.6%) or those of FP7 (18.5%).<sup>56</sup> This is probably a reflection of the perceived ‘closed club’ feature, where competition is *de facto* restricted, and projects are concentrated with actors in high R&D-intensive countries. Existing networks are strong and can basically dictate the strategic agenda, thus making them highly competitive especially against potential new entrants.

## European Technology Platforms (ETPs)

An enquiry<sup>57</sup> was carried out in **Denmark** in 2009 to understand the practices developed by individual R&I organisations to better position themselves in the EU FP and influence its annual work programmes. While the most common strategy used was ‘participation in conferences, workshops and other network activities’, one third of the participants also mentioned ‘Participation in European Technology Platforms and / or input to Strategic Research Agendas’. Of all the mechanisms used, the latter was rated as the most effective mechanism to influence FP work programmes. Interviewees also highlighted the fact that European Technology Platforms *“are becoming more important in shaping the EU research agendas, so it is vital that Denmark plays as full a role as possible”*.

Enquiries such as the one conducted by the Danes, on organisations experienced in EU networks, provide the justification to underpin the formulation of appropriate, context-dependent strategies designed to increase participation in FPs and shape their direction in the national interest. However, such strategies are much more likely to be a realistic option for strong and large actors from R&D intensive countries than for smaller players.

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<sup>55</sup> Meyer-Krahmer F., Hunter, A., Nauwelaers C., Galetta D-U., Santos F. (2017), *Meta-Evaluation of Article 185 Initiatives Report of the Expert Group*. European Commission - ISBN 978-92-79-71486-3. [https://ec.europa.eu/research/evaluations/pdf/a185\\_meta\\_evaluation\\_expert\\_group\\_report.pdf](https://ec.europa.eu/research/evaluations/pdf/a185_meta_evaluation_expert_group_report.pdf)

<sup>56</sup> Data from ERA-LEARN 2020 (2017), . <https://www.era-learn.eu/publications/other-publications/15-years-of-european-public-public-partnerships-in-research-innovation>

<sup>57</sup> Danish Agency for Science, Technology and Innovation (2010), *Evaluation of Danish Participation in the 6th and 7th Framework Programmes*, Research: Analysis and Evaluation 2/2010.

## Joint Technology Initiatives (JTIs)

While the overall view of industry partners and researchers about the benefits of JTIs is positive, one review expressed some concerns that JTIs are perceived by some to be 'closed clubs' that "*don't seem eager to attract new partners*" without providing clear evidence to support this claim (Boekholt *et al.* 2017). The review notes that JUs do not publish data on the allocation of funds by type of participant or by country, even if the inclusion of such data in their publicly available annual activity reports is compulsory.

The experience of MLE participants points towards a distinction between **different types of 'clubs'**: 1) actual closed clubs (those with formal rules limiting membership); 2) de facto closed clubs (networks that do not have any formal rules limiting membership but which are strongly influenced by high-performers and their existing networks, thus making it very difficult for any newcomers to access); 3) perceived closed clubs (those with no rules limiting membership and little evidence to suggest they are closed clubs, but which some people still think are closed clubs); and 4) open clubs (open in theory, practice and perception).

While all JUs formally work under an open access policy, there is an 'entry ticket'<sup>58</sup> for membership. This involves considerable sums of money and may constitute a barrier to entry for smaller participants. While becoming a member is not compulsory, as JTI calls are open to non-members, it is often the case that members are in a better position as they are typically high-performing and strongly networked (only 1 or 2 JTIs allocate most of their funding to members or use members-only calls).

- From a **Turkish** perspective,<sup>59</sup> JUs appear to constitute a closed club. The share of funds acquired by Turkish actors in JTI calls is 0.06%, much lower than Turkey's share in non-JTI Calls, which is 0.45%. The analysis of the Turkish authorities is that some companies dominate pre-call processes and that existing networks are, in effect, closed to newcomers. In the case of aviation calls there is a clear dominance of a few large actors, all of which are members of EREA (Association of European Research Establishments in Aeronautics). Since this association is only open to MS, this creates a *de facto* barrier for would-be Turkish participants. Turkey also faces a transparency problem. Unlike H2020, where the Commission shares Evaluation Summary Reports (ESRs) with national coordination offices, there is no way for JTI calls to get ESRs for national coordination offices. Without having this document, it is not possible to analyse the quality of proposals from the home country. Unlike Program Committee structure in H2020, the State Representatives Groups of Joint Undertakings (SRG) do not have voice on call text formulation. In some cases the Call Texts are shared on the opening date of call with SRGs. As a result of this, it is not possible to share national comments on documents.

Good examples of more open JTIs exist: analyses of the calls on 5G and Green Vehicle networks reveal that these provide room for second tier participants beyond the dominant ones. These networks are excellence-based and at the same time open to promising newcomers. While Turkey counts itself as one of the peripheral countries in H2020 as a whole, there are situations where Turkish actors are closer

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<sup>58</sup> Cited in European Commission (2017), *Commission Staff working document Interim evaluation of Horizon2020, Annex 1*, SWD (2017), 221 final:

[https://ec.europa.eu/research/evaluations/pdf/archive/h2020\\_evaluations/swd\(2017\)221-interim\\_evaluation-h2020.pdf](https://ec.europa.eu/research/evaluations/pdf/archive/h2020_evaluations/swd(2017)221-interim_evaluation-h2020.pdf)

<sup>59</sup> See presentation at the Dublin meeting of this MLE on the RIO PSF website.

to the inner circle. This is notably the case for Eureka networks, where the barriers to entry for SMEs are lower.

In contrast to the above example of the perceived 'closed club' nature of some JTIs, interesting cases of openness are provided by two JUs:

- The **Clean Sky Joint Undertaking** (CSJU)<sup>60</sup> is a Joint Undertaking of the European Commission and the European aeronautics industry. The JTI develops innovative, cutting-edge technologies aimed at reducing CO<sub>2</sub>, gas emissions, and noise produced by aircrafts. The Clean Sky 2 Programme is resourced with a total budget of €4 billion. CSJU encourages synergies with ESIF by allowing complementary activities to be proposed by applicants to CSJU Calls and by broadening the scope, adding parallel activities or continuing CSJU co-funded project/activities through ESIF in synergy with the Clean Sky 2 Programme and its technology roadmap. The CSJU also encourages the use of ESIF to build and enhance local capabilities and skills in fields related to the Programme, in order to enhance the level of European competitiveness of stakeholders in this area.

At a strategic level, the CSJU has developed a coherent and comprehensive policy strategy and an action plan on synergies for Member States and regions that are interested in investing ESIF within the aeronautics area and other related technology domains. In this regard, the CSJU is developing closer interaction with interested Member States and Regions in Europe by discussing strategies and possible cooperation via a tailor-made approach, which includes the signing of a Memorandum of Understanding (MoU). While keeping the funding processes and rules of each competent authority separate, the purpose is to identify and apply mechanisms for ensuring synergies through ESIF in research and innovation projects from a specific Member State or region. So far, CSJU has signed twelve MoUs at a national or regional level. The approach is based on the complementarity of projects, rather than on the co-funding of a single project.

- The **Bio-Based Industries Joint Undertaking**<sup>61</sup> has signed MoUs with several Polish regions in order to establish a close collaboration aimed at strengthening their potential, creating synergies, sharing experiences and achieving mutual benefits in joint actions. These regions have selected bioeconomy in their smart specialisation strategies (RIS3) and have dedicated significant amounts from ESIF to them. This is in line with the objectives of the Bio-Based Industries Joint Undertaking and Bio-based Industry Consortium, which aim at the development of sustainable and competitive bio-based industries in Europe and at bridging research and innovation gaps within EU by promoting synergies with ESIF.

Successful stories of participation in JTIs highlight the importance of getting appropriate support from national authorities at different stages. The following illustration was given at the MLE meeting.

- The **Irish** company Glanbia Ingredients<sup>62</sup> coordinates a €30m EU project, AgriChemWhey, within the Bio-based Industries Joint Technology Initiative (BBI-

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<sup>60</sup> Source: [www.cleansky.eu/structural-funds-and-regions](http://www.cleansky.eu/structural-funds-and-regions)

<sup>61</sup> <https://www.bbi-europe.eu/news/bbi-ju-signs-letter-intent-develop-bioeconomy-partnerships-central-and-eastern-regions-0>

<sup>62</sup> See presentation at the Dublin meeting of this MLE on the RIO PSF website.

JTI). This followed on from an initial 2014 Innovation Partnership Project, a collaborative research project between the company and Trinity College Dublin that received €138K from Enterprise Ireland. The subsequent JTI project, involving partners from research and industry from Ireland, Belgium, UK, Germany and Austria, will investigate the techno-economic viability of the innovative technology developed in the Irish project. The JTI project will build a first-of-a-kind, industrial-scale integrated biorefinery for the conversion of dairy side streams into high-value bio-based chemicals. The plant will be located in a rural region of Ireland, bringing new economic development and job creation in the region. AgriChemWhey will also develop a blueprint of an economic sustainability concept and replication plans for other regions across Europe. In addition, the project will be supported in Ireland by Enterprise Ireland's new competitive Regional Enterprise Development Fund (this is a national funding programme).

### **Contractual Public Private Partnerships (cPPP)**

Data from the implementation of cPPPs in 2014, 2015 and 2016 indicate a huge concentration of funding in the same Member States that dominate H2020 funding profiles. This does not come as a surprise as cPPPs get funded from normal H2020 calls, i.e. are part of the H2020 profile. Hence cPPPs are **unlikely to provide 'easy entry points' for low research intensity Member States** seeking to use such networking opportunities to improve their participation in FP. Achieving better engagement of New Member States has also been pointed out as a challenge for cPPPs in the review of R&I partnerships by Boekholt et al. (2017).<sup>63</sup>

### **COST**

COST has several features antithetical to 'closed clubs' that could be adopted more widely:

1. COST has a strategic goal of 'inclusiveness',<sup>64</sup> which includes the three dimensions of geographical spread; career stage (involving early career investigators)<sup>65</sup> and gender balance. Under the 'geographical spread' element, the goal is to favour inclusion of less research-intensive COST Member States, the '**COST Inclusiveness Target Countries (ITCs)**'.<sup>66</sup> The objectives are: 1) identifying excellence in science and technology across Europe; 2) increasing research communities' access to funding and infrastructures and 3) triggering structural changes in COST Member States' national research systems. Half of the COST budget is to be dedicated to activities for the benefit of ITC countries, with a focus on engaging researchers from ITCs.
2. COST was formerly structured into nine science and technology domains. This has been replaced by a new organisation aimed at guaranteeing a **fully open and bottom-up approach** through the establishment of a single Scientific Committee.

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<sup>63</sup> Op. cit.

<sup>64</sup> [http://www.cost.eu/about\\_cost/strategy/excellence-inclusiveness](http://www.cost.eu/about_cost/strategy/excellence-inclusiveness)

<sup>65</sup> A system of anonymous proposals is established to act against a bias favouring older and well-known researchers.

<sup>66</sup> Bosnia-Herzegovina, Bulgaria, Cyprus, Czech Republic, Estonia, Croatia, Hungary, Lithuania, Latvia, Luxembourg, Malta, Montenegro, Poland, Portugal, Romania, Slovenia, Slovakia, the former Yugoslav Republic of Macedonia, Republic of Serbia and Turkey.

This guarantees that all researchers have equal access to COST, independent of their domain of activity, since this has not been predetermined from above.

3. Special support that **targets research administrators from the EU-13** is given via the BESTPRAC project.<sup>67</sup> BESTPRAC is a targeted network (not a regular COST Action) to support administrative, financial and legal services in universities, research organisations and related entities supporting researchers involved in the lifecycle of transnational external competition-based (in particular European funded) projects in order to exchange experiences and share and develop best practices, encourage knowledge sharing, knowledge transfer and increased efficiency.

Concerning the first feature, the Key Performance Indicators for inclusiveness policy presented in the 2016 COST report<sup>68</sup> indicated that the **inclusiveness goal had only partially been met**: the share of the COST Actions budget benefitting ITC reached 32%, below the 50% target; the share of reimbursed researchers from ITS reached 32%, slightly below the target of 35-50%; and the average share of ITC by Action was 43%, within the 40-50% target. Following these results, a new package of measures was adopted, starting in 2017. These involve: 1) inclusion of ITCs already at proposal stage (based on a fixed ratio); 2) an obligation for an ITC representative to fill at least one key position in the management committee (chair, vice chair, working group leaders); 3) a new conference grant for young researchers; 4) the development of a mentoring scheme to improve payment modalities.<sup>69</sup>

### KICs from the EIT

The work of EIT with the KICs demonstrates an extremely high concentration of funds in a small number of more advanced countries. This feature was criticised in a recent report of the European Court of Auditors<sup>70</sup>: *"The EIT financial contribution is highly concentrated in five countries (73 %) while only two countries<sup>72</sup> of the EU 12 have received an EIT financial support (6 %). A two-speed Europe risks being further engrained, with EIT expenditure concentrated in countries with developed research infrastructure."*

In reaction to this situation, the EIT has created an **easy access mechanism** for participants from 'outside of the core':

- The **EIT Regional Innovation Scheme** (EIT RIS)<sup>73</sup> aims to share good practices and experiences emerging from EIT Community activities and to widen participation in KICs' activities across Europe. The scheme opens up KICs' activities to 'modest and moderate' innovators that are not partners (from MS and some AC) by

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<sup>67</sup> This was cited in the Topic 4 report as a good example of incentive to upgrade skills for research managers.

<sup>68</sup> Cited in European Commission (2017), *Commission Staff working document Interim evaluation of Horizon2020*, Annex 1, SWD (2017), 221 final:

[https://ec.europa.eu/research/evaluations/pdf/archive/h2020\\_evaluations/swd\(2017\)221-interim\\_evaluation-h2020.pdf](https://ec.europa.eu/research/evaluations/pdf/archive/h2020_evaluations/swd(2017)221-interim_evaluation-h2020.pdf)

<sup>69</sup> Id.

<sup>70</sup> ECA (2016), *Special report: The European Institute of Innovation and Technology must modify its delivery mechanisms and elements of its design to achieve the expected impact*. [https://www.eca.europa.eu/Lists/ECADocuments/SR16\\_04/SR\\_EIT\\_EN.pdf](https://www.eca.europa.eu/Lists/ECADocuments/SR16_04/SR_EIT_EN.pdf)

<sup>71</sup> Netherlands (24 %), Germany (15 %), France (13 %), Sweden (12 %) and United Kingdom (9 %).

<sup>72</sup> Poland (4 %) and Hungary (2 %).

<sup>73</sup> <https://eit.europa.eu/activities/outreac/eit-regional-innovation-scheme-ris>



providing targeted support to individuals and organisations to take part in and benefit from KICs' innovation activities, services and programmes. Every year, the EIT grants funds to the Innovation Communities for EIT RIS implementation: a separate fund allows each KIC to apply for between EUR 1.5 - 4 million annually for EIT RIS activities. Starting in 2016, 10% of the annual competitive EIT contribution to the KICs is to be allocated to support and mainstream the regional innovation scheme.

## Macro-regional strategies and Interreg programmes

As argued in a report on the added value of **macro-regional strategies**,<sup>74</sup> these strategies can be instrumental in **helping individual actors to develop new partnerships, which can then lead to FP projects**. There is no comprehensive analysis to substantiate this claim, but illustrations of this link are given through examples:

- The development of the FP7 project 'Development of a Next-generation European Inland Waterway Ship and logistics system (**NEWS**)'<sup>75</sup> has greatly benefited from the macro-regional strategy of the Danube region (EUSDR): *"The EUSDR was crucial in the development of the project idea as it provided both a connecting point and argument for the need of the project. The EUSDR supported the project in all phases and opened up opportunities to meet relevant actors which, otherwise, might have been more difficult to approach. Concretely, the EUSDR provided the project with a Letter of Support to the FP7 programme, helped establish contact with existing networks in the Danube region and relevant actors."*<sup>76</sup>
- The project developed under the EU Baltic Sea macro regional strategy (EUSBSR) and funded by the Baltic Sea programme **EfficienSea**<sup>77</sup> (Making the Baltic Sea region pilot region for e-navigation, making maritime traffic efficient, safe and sustainable traffic) continued as a Horizon2020 project. *"Macro-regional cooperation offers better access to funding, as there are already established partnerships or, at least, the knowledge of relevant partners. The broad network and collaboration between the partners and with other projects was seen as a result of having a link to the EUSBSR. The H2020 funding source fitted better when the project became more mature. Where INTERREG supports projects that involve experiments and testing, Horizon 2020 offers the possibility to continue funding and developing products and services, in this case to bring e-navigation tools to the market. During its follow-up project, the partnership as well as the scope of the project have been expanded. Most of the partners are still based in the Baltic Sea region but with the inclusion of more shipping companies the focus has become more European/global."*<sup>78</sup>

Macro-regions can tap into a **large variety of funding sources** to support RDTI projects of relevance to the development of the R&I system of the macro-region as a whole (Figure 6). Beyond EU-level programmes in the field of R&D policy and ESIF that are the focus of

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<sup>74</sup> Interact (2017), *Added value of macro-regional strategies – programme and project perspective*. [http://ec.europa.eu/regional\\_policy/en/newsroom/news/2017/03/17-03-2017-macro-regional-strategies-what-s-the-added-value-for-projects-and-programmes](http://ec.europa.eu/regional_policy/en/newsroom/news/2017/03/17-03-2017-macro-regional-strategies-what-s-the-added-value-for-projects-and-programmes)

<sup>75</sup> <https://trimis.ec.europa.eu/project/development-next-generation-european-inland-waterway-ship-and-logistics-system#tab-results>

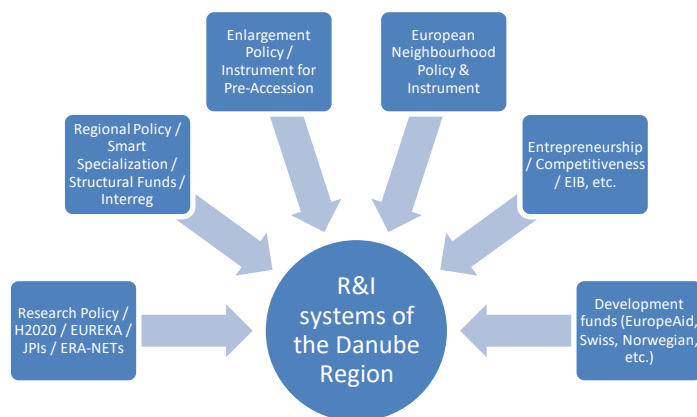
<sup>76</sup> Op.cit.

<sup>77</sup> <http://www.efficientsea.org>

<sup>78</sup> Op.cit.

this MLE, it is important to note that some programmes target: 1) broader geographic areas, e.g. Accession countries or countries in the neighbourhood of the macro-region; and 2) adjacent domains such as competitiveness, entrepreneurship and development. To be successful, macro-regional strategies capable of improving regional R&I systems need to ensure that their clearly articulated priorities for the macro-region as a whole inform the development of projects conceived and supported by different funding sources.

Figure 6. Articulation of a variety of funding sources for the EU Danube region



Source: Elke Dall, presentation of the MLE Dublin workshop.<sup>79</sup>

Using **Interreg programmes** as a stepping stone to FP entry is one possible option, based on the following two arguments:

- Interreg programmes are less competitive than H2020, hence access to this type of funding source is easier;
- Partnerships are formed in limited neighbourhoods (especially cross-border collaboration programmes), which is easier to achieve and more sustainable than the development of partnerships on a wider EU scale.

However, the evaluation of Interreg for the period 2007-2013<sup>80</sup> does not really support this latter claim. Although the evaluation found that “*one of the key benefits of the Interreg programmes is their contribution to enhanced cooperation among a wide range of stakeholders (such as research centres and universities, SMEs, public authorities in charge of environment), through formal and informal networks, institutionalised links and more ad hoc connections (such as partnerships for joint research and sharing of practices)*”, it was more critical concerning “*the depth of cross-border cooperation actually achieved through programme implementation, and more importantly, concerning the sustainability of cooperation*”. Hence those partnerships seem to be often driven by the availability of money, on a project basis, rather than by genuine efforts to develop partnerships which will last beyond the project funding period. The lack of exit strategies for such projects and partnerships may be pointed as a reason for this lack of sustainability.

In fact, the analysis of sustainability of projects shows a rather negative picture: “due to the barriers faced by national/regional funding sources to provide funding on a cross-

<sup>79</sup> See presentation at the Dublin meeting of this MLE on the RIO PSF Website.

<sup>80</sup> ADE (2016), *European Territorial Cooperation: Work Package 11 - Ex-post evaluation of Cohesion Policy programmes 2007-2013, focusing on the European Regional Development Fund (ERDF) and the Cohesion Fund (CF)*, Brussels. [http://ec.europa.eu/regional\\_policy/en/policy/evaluations/ec/2007-2013/#11](http://ec.europa.eu/regional_policy/en/policy/evaluations/ec/2007-2013/#11)

border basis, the Interreg-funded projects depend on this funding source to continue. A frequent situation is that of repeated applications to successive generations of the same programme: this is an indication of the difficulty for organisations and project partnerships to secure funding through other sources. Also, the absence of private actors as direct beneficiaries of Interreg projects, and the low level of private co-financing of projects act as a **barrier for the constitution of FP-oriented public-private partnerships**".

Even in cases where mention was made of Interreg projects being potentially continued through FP projects, barriers do exist:

- **Interreg IV North**<sup>81</sup> (cross-border programme between Norway, Sweden and Finland): "a very limited number of projects have reached the stage where they can envisage an application to FP7 or Horizon 2020. Interreg projects may act as a first step towards accessing the European Framework Programme (FP): while a few projects reported attempts in this direction, this is likely to be insufficient to ensure the continuation of the learning supported by Interreg North (9 applications have been recorded by the programme). **The goal of the EU FP is quite different and for many the step is too high to take.**"

For Member States with limited funding from mainstream ESIF, and with numerous internal EU borders, Interreg programmes may represent an important source of public funding that can be used to develop trans-border R&D partnerships. This potential was largely unexploited during the period 2007-2013 due to a situation where "*there was little ownership of the programmes by national and regional authorities, so that **potential complementarities with mainstream programmes were rarely explored.***" Moving in a new direction that exploits such synergies is a potential way forward for Interreg programmes to act as a stepping stone to entry into wider R&D partnerships. Some frontrunner programmes exist:

- In the **Interreg IV Flanders-Netherlands**, the value-added of cross-border cooperation is firmly acknowledged in the field of R&D and innovation. The establishment of specialised infrastructure is a major outcome of the programme. This can take the form of knowledge infrastructure with a clear complementary character, including provisions for shared use by actors on the two sides of the border. Successful projects support cross-border applied research involving public and private actors, leading to innovation based on complementary assets; or the creation of 'virtual research labs' that allow universities and PROs in the area to work together.

### **The Vanguard Initiative and Smart Specialisation Thematic Platforms**

There are **no formal barriers to entry** into the Vanguard Initiative<sup>82</sup> and Smart Specialisation partnerships. The only condition to become an active participant in such networks is to have the capacity to develop industry-led joint pilots and demonstrators based on high skills and appropriate infrastructure. This open situation is related to the fact that no direct funding is accessible to participants in the partnerships, which provides a convenient frame for 'open club' situations. However, these partnerships are likely to suffer from the same problems as many partnerships mentioned above, namely that those countries that host these strong industrial actors willing to engage in and lead pilots and

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<sup>81</sup> [http://ec.europa.eu/regional\\_policy/sources/docgener/evaluation/pdf/expost2013/wp11\\_interereg\\_4a\\_north.pdf](http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/expost2013/wp11_interereg_4a_north.pdf)

<sup>82</sup> See presentation in the Dublin meeting at this MLE on the PSF RIO website.

demonstrators, appropriate infrastructure, high skills, and available funding would eventually be the biggest beneficiaries. The main difficulty faced by these industry-led partnerships is gaining access to appropriate funding sources at the various stages of the process, i.e. 1) connecting existing facilities; 2) connecting and upgrading existing facilities; and, more importantly and also more difficult because of the size of investments involved, 3) building new demonstration facilities. Work is being done by the Vanguard Initiative partners to explore different options with a view to elaborating solutions for those funding needs, which today represent the biggest barrier for further development of these industry-led cross-regional demonstration projects.

The JRC Smart Specialisation Platform, recognising how difficult it is for less research-intensive Member States to participate fully in S3 and innovation-oriented partnerships, has developed the '**Stairway to Excellence**' (S2E) project.<sup>83</sup> This provides tailored assistance to the EU13 Member States and focuses on the attainment of synergies between ESIF and FP.

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<sup>83</sup> <http://s3platform.jrc.ec.europa.eu/stairway-to-excellence>

## 5 CONCLUSIONS AND WAY FORWARD

Participation in EU-Level PPPs and P2Ps can play an important role in the upgrading of national and regional R&I capabilities and provide networking experiences and opportunities that are relevant to enhanced participation in FPs in the future. The comparative openness of these networks is thus a critical issue for EU13 countries and participants from these countries. This is especially so since 25% of the H2020 budget is now allocated to partnerships and projects initiated by the partnerships. The evidence and lessons presented in section 4 concerning the various opportunities offered by the wide web of EU-level research and innovation networks deliver a mixed picture:

1. Many of these networks (in particular Article 185 initiatives, cPPPs, JTIs, KICs) are perceived to be '**closed clubs**' with barriers to entry similar to those faced by new candidates for H2020 partnerships. Many networks are de facto closed to newcomers, which indicates that those barriers are real and not only perceived barriers. It is hard to see how these networks can play a facilitating role and act as a stepping stone to FP participation for those smaller players at the periphery of the 'H2020 core'. In addition, the complexity of the landscape of networking programmes presents another difficulty;
2. However, some networks (COST, ERA-NETs and even some that are perceived to be '**closed clubs**', e.g. KICs and JTIs) have launched a number of promising initiatives that aim to foster openness to new participants. If further developed, these 'openness mechanisms' could help new participants, in particular those from less-research intensive countries, to enter into H2020;
3. Some networks (typically Interreg-funded networks and bottom-up partnerships around S3, such as the Vanguard Initiative and the S3 Thematic Platforms) are not characterised by 'closed club' features. As such, there is an unexploited potential for them to act as stepping stones to more ambitious FP partnerships.

The debates in the MLE workshop generated several conclusions on ways and means to 'Improve networking through participation in EU-level initiatives', which in turn can enhance the prospects for participation in H2020.

### **Conclusion 1: Efforts to strengthen national capabilities have to be sufficient to ensure entry into EU-level networks**

The networking experience gained from participation in EU-level networks can enhance the visibility and reputation of innovation actors and act as a stepping-stone to subsequent participation in FP projects. For many of the EU13 countries, however, the limited national R&I capacities that act as a barrier to FP participation also constrain entry into other EU-level initiatives. Focused efforts to improve national capabilities are a necessary precursor to enhanced entry prospects for all types of networks.

National thematic programmes or initiatives form a basis on which P2Ps and PPPs can be built on: P2Ps and PPPs are often based on joint efforts between national programmes and without an appropriate national programme it may be difficult to build the relationship to the P2P or PPP. Furthermore, poor programme management and administrative capacities may cause problems for organising and implementing joint calls, which may act as a barrier for accessing these types of networks and partnerships.

## **Conclusion 2: Long-term national R&I strategies are needed that can build on small initial successes**

Just as improved national capabilities can enhance participation in international networks, success in the latter can stimulate the demand for even better national capabilities and stimulate a 'success breeds success' virtuous circle. In Ireland, success in early FPs catalysed policy efforts to improve the national innovation system, which led to further and deeper involvement in international networks etc. etc. The key is to build on small initial successes within the context of long-term policy strategies that recognise the critical importance of R&I in modern economic development.

## **Conclusion 3: Prioritisation is needed at a national level to benefit fully from EU-level networking opportunities**

Accessing every EU-level research and innovation network is out of scope for all but the largest and most research-intensive Member States, and even these may face a shortage of available resources to contribute to EU programmes if they invest in too many of them. Consequently, a third strong message from the MLE debates was that governments need to prioritise amongst these initiatives and programmes and chose those that are most relevant to their own country. Examples were given of small countries, such as Estonia and Malta, which undertook pro-active prioritisation exercises and ended up with a clear focus on a small number of programmes, in line with their smart specialisation strategies. As the experiences of Estonia and Ireland have demonstrated, policy-oriented mapping exercises and analyses of national participation in various networks can usefully support prioritisation exercises.

Prioritising participation in EU-level research and innovation networks also requires the constitution of broad national platforms to identify the best opportunities: gathering the actors involved in ERA-NETs, KICs, H2020 etc. around the same table is a good way to look for synergies and concentrate efforts. Permanent bodies in charge of such coordination, as is the case in Sweden, also help to provide a good basis for prioritisation.

## **Conclusion 4: Further opportunities exist to combine excellence with openness**

The MLE debates did not conclude that excellence necessarily means 'closed clubs'. Various ways of combining excellence and openness were highlighted:

1. ERA-NETs have many features of open platforms. For example, half of the ERA-NET Cofunds include 'inclusiveness features', such as dedicated work programmes for newcomers, or specific rules that allow new EU13 partners to be added, etc. These represent opportunities that smaller or newer players could exploit;
2. JTIs, despite being commonly perceived as 'closed clubs', could offer room for participation to those actors that are outside the 'inner circle' when they launch projects at higher TRL levels, or when they conclude Memoranda of Understanding with regions. As pointed out by Turkey, this would facilitate the participation of actors not yet at the frontier of research activities but still capable of providing good environments for the demonstration, application and use of innovative technological developments;
3. COST, with its 'inclusiveness strategy', and the KICs, with the 'EIT Regional Innovation Scheme', have incorporated voluntary mechanisms to open participation

to newcomers. Mechanisms such as these represent opportunities to address the 'closed club' syndrome faced by actors that are peripheral to H2020.

**Conclusion 5: Ensuring better information on EU networking opportunities is a prerequisite for improved participation**

Information and promotion tools established by national and regional authorities and dedicated to H2020 (and covered under Topic 4 of this MLE)<sup>84</sup> need to cover the wide variety of initiatives beyond the core of H2020 partnerships. This is a demanding task, which should be conducted in synergy and complementarity with the prioritisation exercises mentioned under Conclusion 3.

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<sup>84</sup><https://rio.jrc.ec.europa.eu/en/library/mle-national-practices-widening-participation-and-strengthening-synergies-topic-report>

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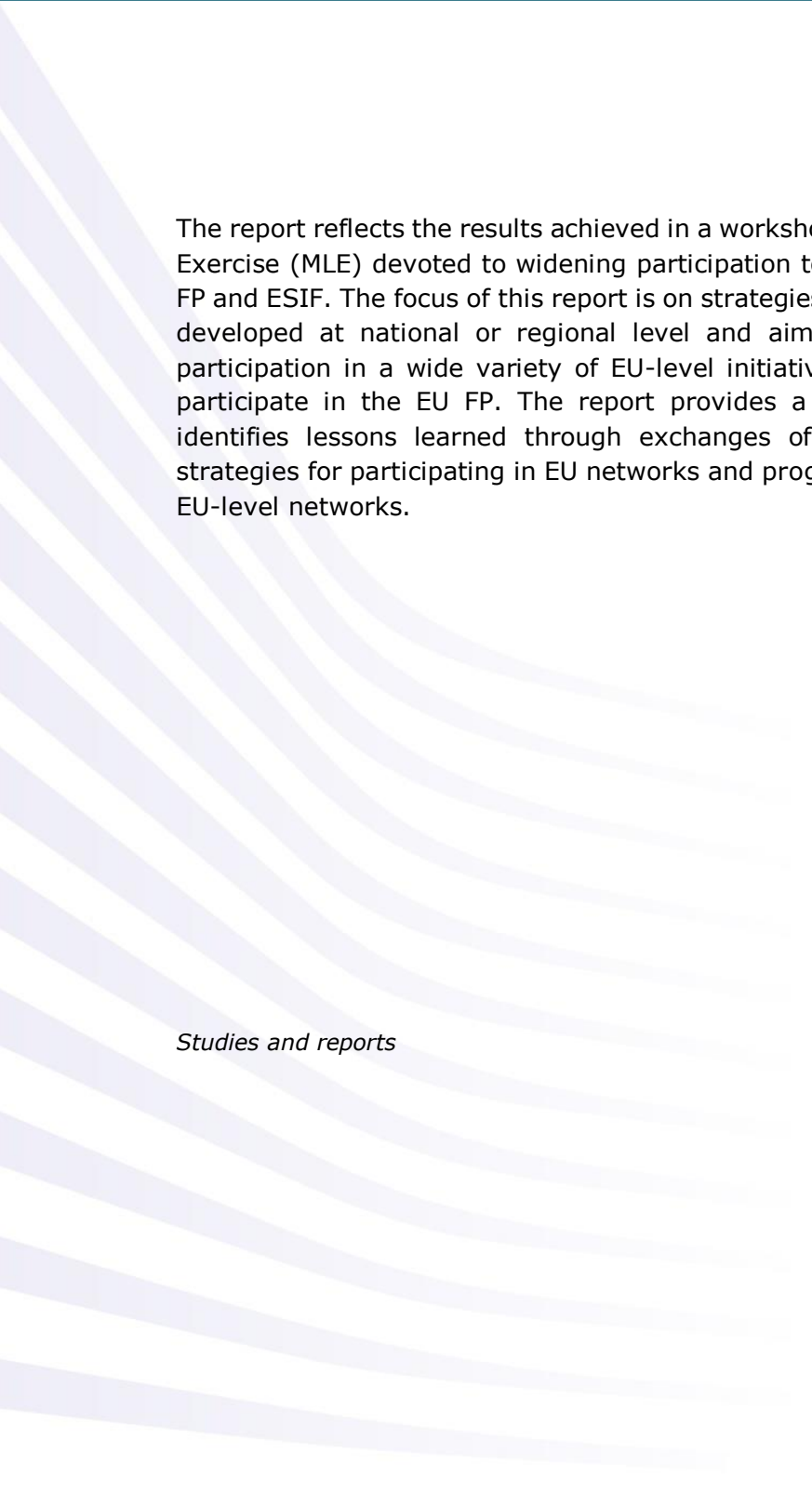

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The report reflects the results achieved in a workshop organised under the Mutual Learning Exercise (MLE) devoted to widening participation to FP and enhancing synergies between FP and ESIF. The focus of this report is on strategies, innovative mechanisms and schemes developed at national or regional level and aiming at improving networking through participation in a wide variety of EU-level initiatives, in order to reinforce capacities to participate in the EU FP. The report provides a landscape of existing initiatives, and identifies lessons learned through exchanges of experience with respect to national strategies for participating in EU networks and programmes, as well as lessons for specific EU-level networks.

*Studies and reports*