



Analysis of ERA-NET Cofund actions under Horizon 2020

Final report of the expert group

EUROPEAN COMMISSION

Directorate-General for Research and Innovation
Directorate B — Open Innovation and Open Science
Unit B.2 — Open Science and ERA Policy

Contact: Emmanuel Gayraud, Joerg Niehoff

E-mail: Emmanuel.Gayraud@ec.europa.eu, Joerg.Niehoff@ec.europa.eu
RTD-PUBLICATIONS@ec.europa.eu

*European Commission
B-1049 Brussels*

Analysis of ERA-NET Cofund actions under Horizon 2020

Final report of the expert group

Prepared by:

Niels Gøtke (Chairperson)

Effie Amanatidou (Rapporteur)

Ioana Ispas

Daria Julkowska

Joaquín Serrano

***EUROPE DIRECT is a service to help you find answers
to your questions about the European Union***

Freephone number (*):
00 800 6 7 8 9 10 11

(*) The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you)

LEGAL NOTICE

This document has been prepared for the European Commission. It reflects the views only of the authors. The Commission cannot be held responsible for any use which may be made of the information contained herein.

More information on the European Union is available on the internet (<http://europa.eu>).

Luxembourg: Publications Office of the European Union, 2016.

PDF

ISBN 978-92-79-63358-4

doi:10.2777/905118 KI-01-16-995-EN-N

© European Union, 2016. Reproduction is authorised provided the source is acknowledged.

Contents

FOREWORD FROM THE CHAIR.....	6
EXECUTIVE SUMMARY.....	7
1. INTRODUCTION	15
1.1. Mandate of the Expert Group	15
1.2. Objectives and evolution of the ERA-NET instrument in FP6 and FP7	15
1.3. The ERA-NET Cofund instrument in Horizon 2020	16
1.4. The Intervention Logic of the ERA-NET Cofund	18
2. MAIN FEATURES OF ERA-NET COFUND	21
2.1 Positioning ERA-NET Cofund in the ERA-related instruments landscape.....	21
2.2 The ERA-NET Cofund in figures.....	22
2.3 Most important activities in ERA-NET Cofund actions	25
3. MOTIVATIONS AND IMPACTS	27
3.1. Motivations for participation	27
3.2. Perceived impacts	27
4. EFFICIENCY	31
4.1. Evaluation of ERA-NET Cofund actions.....	31
4.2. Proposal and grant agreement preparation	33
4.3. Implementation of ERA-NET Cofund actions	35
4.4. Optimising the use of EU and Member State contributions	36
4.5. Resource intensiveness, costs coverage and key factors for managing ERA-NET Cofund actions	38
4.6. Comparison of ERA-NET Cofund with FP7 ERA-NET and overall cost-benefit ratio	38
5. RELEVANCE AND COHERENCE TO EU POLICIES	40
5.1. European Commission thematic Directorates & selection of Cofund topics	41
5.2. Coherence and complementarity among ERA instruments/initiatives	44
5.3. Relevance and integration at the national level.....	46
6. EFFECTIVENESS OF ACHIEVING EU POLICY OBJECTIVES	47
6.1. Contribution to ERA objectives	47
6.1.1. Transnational cooperation.....	47
6.1.2. International cooperation (beyond the EU).....	48
6.1.3. Knowledge transfer, mobility and gender aspects.....	49
6.2. Contribution to Horizon 2020 objectives	50
6.3. The widening dimension and EU-13 participation	51
6.4. Potential contribution of ERA-NET Cofund to the 3 'O' policies	55
7. EU ADDED VALUE OF ERA-NET COFUND	56
8. RECOMMENDATIONS.....	59
9. REFERENCES.....	62
10. ANNEXES.....	64
10.1. Acknowledgements	64
10.2. Analytical methodology	64
10.3. Glossary	66

FOREWORD FROM THE CHAIR

Europe is currently facing large societal and economic challenges — probably the greatest in the history of the European Union. Strong new knowledge economies are growing rapidly, while climate change, depletion of resources, food security, diseases, poverty, conflicts and migration are affecting societal development at a global level.

Research and innovation (R&I) plays a crucial role in tackling these societal challenges in a rapidly changing world, where Europe is still facing modest economic growth. Although Horizon 2020 is of huge importance — maybe the biggest R&I programme in the world — most R&I in Europe is still in the hands of the Member States and performed in many different ways. In order to address major societal challenges and strengthen Europe's competitive position, the R&I cycle needs to be made more efficient and national R&I strategies need to be better coordinated. This is the goal of the European Research Area and partnering between European and national level public players in public-public partnerships (P2Ps) is one of the building blocks.

P2Ps are about creating European added value, critical mass and efficiency. R&I must be relevant and have a strong focus on excellence. At the same time, given that we invest so much in R&I, we also need activities which are cost-effective.

One of the important P2Ps is the ERA-NET scheme, launched in FP6 and subsequently adapted twice. First in FP7 ERA-NET Plus which allows the 'topping-up' of joint transnational funding with EU funding was introduced. Next in Horizon 2020 ERA-NET and ERA-NET Plus were merged into ERA-NET Cofund as a simplification measure. But the ERA-NET Cofund instrument is not the only approach to P2Ps. In FP7 and in Horizon 2020 a number of new P2P partnering initiatives have been launched. Today we have Joint Programming Initiatives (JPIs), Article 185 initiatives, European Innovation Partnerships and, most recently, the European Joint Programme Cofund actions. That means a range of different instruments and initiatives, all with different ambitions, yet they are all initiatives which need understanding and commitment at a European and national level.

The joint programming process was launched in 2008 and the 10 JPIs which were the result of that process have recently been evaluated. Now the time has come to assess the ERA-NET Cofund instrument on the basis of the experience with the first actions launched under Horizon 2020.

In December 2015, I had the honour to chair a group of experts with a mandate to assess the first ERA-NET Cofund actions under Horizon 2020. We carried out a broad consultation involving all main stakeholders. The results of this evaluation will make it possible to optimise implementation under Horizon 2020, provide input to the Horizon 2020 interim evaluation, and contribute to addressing P2Ps and ERA-NETs in the context of preparations for the next Framework Programme.

Niels Gøtke

On behalf of:

Effie Amanatidou

Ioana Ispas

Daria Julkowska

Joaquín Serrano

EXECUTIVE SUMMARY

This document is the report of the expert group set up by the European Commission to analyse the experience of the first ERA-NET Cofund actions under Horizon 2020. ERA-NET Cofund actions support programme level collaboration between Member States. They fund the implementation of a single joint call for proposals for transnational research and / or innovation projects and additional joint activities related to the coordination of national / regional research and innovation programmes.

The purpose of the analysis was:

- to take stock of the experiences in preparing and implementing ERA-NET Cofund,
- to identify critical issues that need to be addressed and if necessary propose adjustments, and
- to assess how the instrument can best contribute to policy developments.

The evaluation issues examined were those of efficiency, relevance, effectiveness and EU added value.

The methodology used consisted of desk research (review of ERA-NET proposals, policy / strategy documents, other relevant analysis and previous assessment reports), an online survey addressed to around 450 ERA-NET partners, a separate online survey of national government representatives addressing EU-28 as well as associated countries, and over 70 interviews involving all key stakeholders (ERA-NET coordinators, national representatives, evaluators, Commission services in charge of the ERA-NETs and other relevant stakeholders like JPI chairs).

Facts

The Horizon 2020 Work Programme 2014 / 2015 included calls for proposals for ERA-NET Cofund actions, resulting in a total of 27 proposals selected for funding by the European Commission. In addition, over 30 topics are included in the 2016 / 2017 Horizon 2020 Work Programmes. The 27 networks from 2014 / 15 bring together **a total of EUR 728.5 million¹ including contributions from EU Member States (57.8 %), associated countries (6.9 %), third countries (5.1 %) and the European Commission (30.2 %)**². The leverage effect is 2.31, i.e. for each euro invested by the EU, the participating countries invest an additional amount of EUR 2.31. The largest earmarked national contributions come from Germany, the United Kingdom, France, Spain, the Netherlands and Sweden. The **average budget per co-funded call is around EUR 21.6 million while the average number of countries participating in each co-funded call is 16**. However, there are significant **variations in the size** of individual networks. Some have fewer than 10 partners while others exceed 40. The thematic distribution of the H2020 budget for ERA-NET Cofund actions focuses on **three main challenges**: secure, clean and efficient energy (Societal Challenge 3 - 30.28 %); climate action, environment, resource efficiency and raw materials (Societal Challenge 5 - 21.66 %); and food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy (Societal Challenge 2 - 16.97 %). Then follows health, demographic change and wellbeing (Societal Challenge 1 - 9.5 %).

Beyond the minimum obligation to launch and implement a co-funded joint call, ERA-NET Cofund actions engage in a variety of additional activities. These include implementing additional calls without EU co-funding, dissemination activities, strategy building, networking and expansion, or monitoring and evaluation activities. **Both newcomers and experienced networks (successors of previous ERA-NETs) go beyond the co-funded joint call and implement a variety of additional activities.**

¹ The figures are based on amounts planned for the co-funded calls at the proposal stage.

² The share of the EU contribution drops to 30 % despite the funding rate of 33 % because a number of consortia mobilise substantially higher national contributions than necessary to justify the EU contribution.

Motivations and perceived benefits

A primary motivation to take part in the ERA-NET Cofund instrument is the **recognition that certain challenges can be dealt with better through joint transnational efforts**. These can create the necessary critical mass in both resources and research capacity. Other motivations reflect the participating countries' interests in **strengthening the international profile of their research communities, improving their own experiences** through transnational collaboration with other agencies, and **accessing additional funds** to support nationally relevant research themes.

In spite of the instrument being in its early days, the ERA-NET Cofund community clearly perceive certain benefits. The main benefit of the ERA-NET scheme is the **lasting collaboration between funding agencies**. **Capacity building benefits** are also perceived as very important, addressing not only research capacities, but also research approaches and improved research quality at national level. Structural benefits and conceptual benefits are relatively less important so far. ERA-NET Cofund actions are relatively **less perceived as strategic instruments that can influence national strategies** and lead to alignment of national policies among participating states and/or EU R&D policies. ERA-NET Cofund is regarded as an instrument with a very specific purpose: to facilitate collaboration and coordination of programme owners and managers across Europe to jointly support research of common interest. Although cross-national alignment is a general objective, this does not translate into a strong impact on a higher policy level beyond the existing institutions' current strategies and mandates.

Efficiency³

A number of **simplification measures** have been introduced under H2020 that are **appreciated by the ERA-NET Cofund community** (reduced reporting obligations, simplified single financial reporting and electronic system). Yet, there are still **several areas with scope for improvement**. Among the main concerns, the lack of clear understanding of the financial aspects of the ERA-NET Cofund instrument was highlighted. There is a strong and immediate **need for better guidance and communication** for both the ERA-NET Cofund community as well as EC Project Officers on how to apply the financial rules. This concerns in particular the flexibility for the internal allocation of the EU contribution (the so-called 'black box' approach). Another recurring issue is the optimal use of EC and Member State budgets when implementing the joint calls. The flexibility allowed by the Commission for the financial management of the Cofund actions has already produced several different options and solutions for tackling these challenges. These **good practices need to be communicated** to the users of the ERA-NET Cofund instrument.

Relevance and coherence

ERA-NET Cofund actions are implemented in areas with clear European added value and the instrument is embedded in a long-term EU strategy for transnational collaboration in research and innovation. While the relevance of the ERA-NET Cofund instrument has been confirmed, coherence among ERA-NETs but also between the ERA-NETs and other joint initiatives is clearly underdeveloped. Consequently, **coordination needs to be improved among different ERA-NET Cofund actions in similar areas, and between ERA-NET Cofund actions and other instruments and initiatives** supporting public-public or public-private partnerships in research and innovation (such as Joint Programming Initiatives, Art. 185 initiatives, Public-Private Partnerships, Knowledge and Innovation Communities). Furthermore, different European Commission Directorates have different strategies and expectations towards the ERA-NET Cofund instrument. Some consider it as an instrument to implement a joint call, while others have higher expectations in aligning national strategies and programmes. **ERA-NET Cofund actions are not**

³ The evaluation issues of efficiency, relevance and coherence, effectiveness and EU added value are defined at the beginning of the respective sections of the report.

deeply embedded in national policy portfolios and/or national strategies possibly reflecting Member States' lack of ambition to fully realise the instrument's potential.

These remarks point to the urgent need to **define a strategy for the ERA-NET instrument** that is shared both by the different EC Directorates and among Member States for realising Cofund's full potential in coordinating and aligning national strategies and programmes.

Effectiveness

ERA-NET Cofund **contributes significantly to strengthening transnational cooperation by establishing lasting cooperation among countries and creating a critical mass of resources to tackle EU societal challenges. It has contributed to the coordination of national programmes and to a lesser extent to the alignment of national policies.** The instrument has **facilitated widening participation of lower performing countries although more can be done in this area.** There are still a number of barriers to a more inclusive participation of lower performing countries, most of which relate to the national level rather than the specific features of the ERA-NET Cofund. Encouragingly, there are good practice cases here from which lessons can be learnt. ERA-NET Cofund actions are also **gradually increasing the participation of third countries** (thus supporting the DG RTD 'Open to the World' policy). However, there are still some barriers to the involvement of third countries. These mostly relate to clearly understanding and applying the respective rules and regulations of the instrument. Dissemination of results and knowledge transfer is facilitated through dedicated work packages in the Cofund actions. Gender issues have been addressed in relevant research areas although there is still room for improvement.

EU added value

The added value of ERA-NET Cofund primarily lies in **strengthening transnational collaboration and building long-lasting relationships across countries, as well as achieving a critical mass of resources to address common challenges** (in some cases the number of projects that the networks have been able to support has doubled because of the EC top-up funding). The ERA-NET scheme also contributes to increasing the quality of research activities (increased competition in research leading to higher quality and excellence). It allows countries to access complementary knowledge and/or research capacity from other countries to address specific societal challenges. It also contributes to increasing Europe's visibility and attractiveness as an R&D location. These elements are appreciated by partners and national representatives alike and underline their participation even in the cases where ERA-NET Cofund actions perform worse than national programmes in terms of administrative burden or success rates. Thus, **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 state that they plan to increase their involvement by a moderate amount.**

Recommendations

In line with the above findings and based on consultations with the stakeholders we suggest a number of short-term recommendations. These are underpinned by a key recommendation presented as the first and lead to concrete suggestions about the future format of the ERA-NET instrument under the next Framework Programme.

Key recommendation

ERA-NET Cofund actions need to be underpinned by a comprehensive strategy in the challenge/thematic area addressed and synergies with other instruments and initiatives should be explored in order to achieve ERA objectives more efficiently.
--

We strongly believe that more efforts need to be devoted to embedding ERA-NETs in a coordinated and coherent strategy across thematic areas and in synergy with other instruments and initiatives. This will fully exploit their potential in achieving ERA objectives. **Decisions to support ERA-NETs should be based on a coherent strategy underpinning their development in the area concerned.**

Strategies for challenges/thematic areas should be supported by an exercise — to be carried out by the interested Member States and Associated Countries assisted by the Commission — to determine **complementarity and synergies with other existing P2Ps and PPPs as well as the Framework Programme Work Programmes**. This also needs to address the request expressed by Member States for a balance of investments between P2P / PPP initiatives and instruments and the 'regular' Horizon 2020 research and innovation actions.

In practical terms **synergy building** can be facilitated by **thematic workshops** bringing together representatives of all relevant instruments and initiatives in a challenge/thematic area. This would help to **establish regular contacts and closer links among the stakeholders from Member States and the European Commission** involved in the programming process and the implementation of activities. This can include **carrying out joint foresight exercises or other joint activities, such as launching calls together** taking into account the whole EU landscape and exploiting synergies with national programmes and strategic themes and topics prioritised by Programme Committees of the Framework Programme.

Short-term recommendations (in the context of the Horizon 2020 WP 2018-2020)

At the planning/programming level

1. More focus on the strategic potential for ERA-NET Cofund actions in the process of designing the Horizon 2020 Work Programmes and at national level

- Commission services should develop and implement **clear long-term strategies for the use of the ERA-NET Cofund instrument** for the relevant challenges and priorities. They should involve Member States and Associated Countries and the relevant bodies and configurations. This work should be reflected in the drafting of the Work Programme topics as well as in the evaluation criteria applied for Cofund proposals.
- The **strategies should also address the relevant horizontal policies and issues**, e.g. the international dimension, innovation, sustainable development and climate change as well as gender equality.
- ERA-NET Cofund actions should be dependent on clear criteria and conditions being fulfilled, including **strong financial upfront commitments from participating states**.
- Member States need to **integrate the ERA-NET Cofund instrument in their national strategy portfolios, with a strong and longer-term financial and political commitment** to public-public partnerships.
- Commission services should increase the take-up of policy-related results and knowledge produced in the different public-public partnerships — in particular ERA-NETs — **when drafting the Horizon 2020 Work Programmes**.

At the implementation level

2. Change the design of the instrument to better reflect participants' level of ambition in terms of collaboration and commitment

- In line with the first recommendation, and in order to better exploit the potential of ERA-NET Cofund actions, some changes could be made to how the instrument is used. The **flexibility of the definition in the General Annexes and the drafting of topics should be used to better reflect the level of ambition**. In addition to the minimum obligation to implement a co-funded joint call, additional requirements could be added e.g. by making additional activities and additional joint calls compulsory.

3. Improve efficiency of implementation by stepping-up the learning curve and sharing knowledge, experience and good practices

- DG RTD should **continue the communication and training activities** addressing the relevant Commission services with a particular focus on the policy objectives and the use of ERA-NETs in the context of thematic strategies. At the same time, they should ensure the coherent implementation of actions across services including executive agencies. Particular attention should be paid to the **financial issues** consortia have to take into account.
- **Guidance on preparing and implementing ERA-NET Cofund actions** should be further improved, notably within the ERA-LEARN 2020 context, serving both the needs of newcomers and those of more experienced ERA-NET partners. This should cover the entire cycle from proposal preparation, grant agreement preparation, organisation and implementation of the co-funded call and other activities, monitoring and impact assessment.
- Particular attention should be paid to **exploiting synergies with European Structural and Investment Funds (ESIF)** with a view to better aligning operational practicalities in the next programming cycle.
- **ERA-LEARN 2020**, the common support platform for public-public partnerships, should play a **central role in organising the knowledge sharing process and documenting good practices** in close collaboration with users. The aim should be to establish standard practices that can be implemented across all ERA-NETs. The visibility of ERA-LEARN 2020 and the important services it provides needs to be improved. ERA-LEARN could also expand its role to that of a supplier of professional services on demand by ERA-NETs, especially in tasks related to managing calls and disseminating results.

4. Ensure efficient management of the EU contribution and national contributions

- Participants should ensure that calls' financial management aim at **maximising the number of proposals evaluated above threshold that can be funded**. This requires sufficient and balanced national financial commitments and a relationship of trust between the participants as well as dissemination of good practices.
- Complete absorption of the financial commitment from the EU to the ERA-NET Cofund actions is a major concern for Commission services and requires participating states to make national commitments to the co-funded calls in excess of the minimum amounts necessary to justify the requested EU contribution. **Any funded actions should include a minimum of 25 % reserve in order to reduce the risk of not fully using the EU contribution**.
- Participating states and their funding agencies should consider **standard practices that can be implemented across all ERA-NETs to simplify implementation and minimise wasteful use of resources**, e.g. common funding rules with the possibility to centralise grant management, common reporting procedures, common starting dates of projects, etc., abiding by Framework Programme standards.

5. Better exploit the potential of ERA-NET Cofund actions in supporting the widening strategy

- Participating states and the Commission services should promote **a proactive approach engaging low-performing countries at the topic selection stage for ERA-NET Cofund actions**, i.e. in the joint vision development and strategic agenda setting to promote a stronger role for low-performing countries.
- Participants should make use of the flexibility of the ERA-NET instrument and further develop and **implement good practices to boost participation of beneficiaries from low-performing countries** in selected proposals (adaptation of evaluation sub-criteria, flexibility to add beneficiaries between phase 1 and 2 of the evaluation process of the project proposals; transfer of the knowledge and results produced in the co-funded projects to scientists from low-performing countries through dedicated additional activities, post call researchers' grants).
- The Commission should regularly **monitor participation of low-performing countries, inform the ERA-NET Cofund community and disseminate good practices** through ERA-LEARN 2020.

At the exploitation, monitoring and evaluation level

6. Improve knowledge and valorise impacts of ERA-NET Cofund actions and funded projects

- A ***common procedure should be built up for monitoring and assessing impacts of ERA-NET Cofund actions and their resulting projects*** including SMART key performance indicators. This task can build on the work that is currently done under the ERA-LEARN 2020 project for establishing a central framework for monitoring and evaluating P2Ps.
- The ***dissemination and exploitation of results from projects funded by ERA-NETs should be systematically improved at both national and transnational level***, building on current good practice but also expanding towards a broader portfolio of activities. This should include better valorisation in the context of national and European policy making e.g. through dedicated 'policy briefs'.
- Participating states and Commission services should more proactively ***promote the label of ERA-NET as a brand for transnational research collaboration*** within the EU as well as beyond.

The future of ERA-NETs

The experts agree that the future Framework Programme needs to ***continue supporting programme level collaboration of Member States and Associated Countries via ERA-NETs***.

The future form of support to public-public partnerships should be an adaptable scheme reflecting:

- the level of ambition and commitment of participating states,
- the scale and scope of the area addressed, and
- the relevance to the objectives of the Framework Programme.

It should allow

- ***a 'softer' approach*** in areas where participating states are committed to collaborate and objectives can be achieved mainly by providing longer-term financial support to management and coordination, including costs of implementing joint calls. In these cases funding of the networks should be ensured via the standard coordination and support actions.
- ***a strong 'co-funding' approach*** for mature networks with strong long-term financial commitment from participating states and high relevance for Framework Programme objectives. In these cases the future instrument should allow full flexibility concerning the range of activities (including multiple co-funded calls), the variety of stakeholders involved (research funders as well as governmental research performing organisations) and the level of EU contribution in order to ensure the achievement of a critical mass of resources and actors.

The Commission services should develop the approach under the next Framework Programme by involving the relevant stakeholders from Member States and Associated Countries. The Commission services should also consider further simplifying the toolbox by ***designing one comprehensive Cofund instrument***. It is also suggested to ***re-consider eligibility of costs of national financial instruments*** in the context of Cofund actions and to ***revise the Financial Regulation*** accordingly.

The First ERA-NET Cofund Actions in H2020 (Work programmes 2014/2015)

Project Acronym	Project Title	Total Budget (€)	No. of partners	Start Year
SC1 – Health, demographic change and wellbeing				
ERACoSysMed	ERACoSysMed – Collaboration on systems medicine funding to promote the implementation of systems biology approaches in clinical research and medical practice	14 778 271	15	2014
ERA-CVD	ERA-NET on cardiovascular diseases to implement joint transnational research projects and set up international cooperations	19 103 750	22	2015
E-Rare-3	ERA-NET rare disease research implementing IRDiRC objectives	23 290 000	25	2014
JPco-fuND	ERA-NET for establishing synergies between the Joint Programming on Neurodegenerative Diseases Research and Horizon 2020	30 953 030	25	2014
JPI-EC-AMR	ERA-NET for establishing synergies between the Joint Programming Initiative on Antimicrobial Resistance Research and Horizon 2020	23 812 500	20	2015
NEURON Cofund	ERA-NET NEURON in the area of brain-related diseases and disorders of the nervous system	20 882 250	23	2015
TRANSCAN-2	ERA-NET: Aligning national/regional transnational cancer research programmes and activities	22 568 750	28	2014
SC2 – Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the bioeconomy				
ERA-GAS	ERA-NET for monitoring and mitigation of greenhouse gases from agriculture and forestry	15 151 516	21	2015
ERA-HDHL	ERA-NET on biomarkers for nutrition and health implementing the JPI HDHL objectives	15 592 250	19	2015
FACCE SURPLUS	Sustainable and resilient agriculture for food and non-food systems	15 151 515	23	2014
SusAn	ERA on sustainable animal production systems	15 983 750	36	2015
SC3 – Secure, clean and efficient energy				
ACT	Accelerating CCS technologies as a new low-carbon energy vector	42 831 250	10	2015
BESTF 3	Bioenergy sustaining the future (BESTF) 3	22 863 655	12	2015
DemoWind	DemoWind ERA-NET Cofund action – delivering cost reduction in offshore wind	31 641 786	6	2014
DemoWind 2	DemoWind 2 ERA-NET Cofund action – delivering cost reduction in offshore wind	25 932 924	9	2015
ENSCC	ERA-NET smart cities and communities	29 871 593.5	18	2014

ERA-NET SmartGridPlus	ERA-Net smart grids plus: support deep knowledge sharing between regional and European smart grids initiatives	44 563 055	23	2014
SOLAR-ERA.NET Cofund	SOLAR-ERA-NET Cofund	19 670 150	16	2015
SC5 – Climate action, environment, resource efficiency and raw materials				
BiodivERsA3	Consolidating the ERA on biodiversity and ecosystem services	38 003 677	31	2014
ERA 4CS	ERA for climate services	78 284 239	41	2015
ERA-PLANET	The European network for observing our changing planet	52 361 416	41	2015
WaterWorks2014	Water Works 2014-2019 in support of the water JPI	18 667 631	17	2014
WaterWorks2015	Water Works 2016-2020 in support of the water JPI (WaterWorks2015) – sustainable water use in agriculture, to increase water use efficiency and reduce soil and water pollution	30 398 222	31	2015
SC6 – Europe in a changing world - inclusive, innovative and reflective societies				
ENSUF	ERA-NET Cofund on smart urban futures	15 151 515	25	2015
HERA JRP UP	HERA Joint Research Programme on uses of the past	20 572 084	25	2014
Industrial Leadership – ICT				
PhotonicSensing	Photonics based sensing	18 664 921	10	2015
Industrial Leadership – Nanotechnologies, advanced materials and advanced manufacturing and processing				
M-ERA.NET 2	ERA-NET for materials research and innovation	49 687 953.5	45	2015

1. INTRODUCTION

1.1. Mandate of the Expert Group

The expert group for the analysis of ERA-NET Cofund actions under Horizon 2020 consisted of five members from five different countries with complementary experience of ERA initiatives, including ERA-NETs, JPIs and other P2P (public-to-public) networks, at both the operational and policy level.

The expert group was asked by the Commission to perform an assessment of the first ERA-NET Cofund actions with the purpose:

- to take stock of the experiences in preparing and implementing ERA-NET Cofund,
- to identify critical issues that need to be addressed and if necessary propose adjustments, and
- to assess how the instrument can best contribute to the policy developments.

The results of this assessment will provide important input to the Horizon 2020 interim evaluation.

The assessment covers the 27 ERA-NET Cofund actions approved for funding under the 2014 /2015 work programme of Horizon 2020. As experts we have been asked to:

- Assess the efficiency (including aspects such as preparation, implementation and supervision) of ERA-NET Cofund actions in the context of Horizon 2020;
- Assess the relevance and appropriateness of the instrument in the context of Horizon 2020;
- Assess the coherence with other instruments that are aimed at supporting programme level collaboration between Member States;
- Assess the effectiveness of the ERA-NET Cofund instrument and its contribution to Horizon 2020 objectives;
- Assess the EU added value of the ERA-NET Cofund instrument;
- Provide recommendations on the ERA-NET Cofund instrument and its use in the context of Horizon 2020 as well as recommendations aiming to adapt the instrument in the context of preparations for the next framework programme.

The methodology used consisted of desk research (review of ERA-NET proposals, policy/strategy documents, other relevant analysis and previous assessment reports), an online survey addressed to around 450 ERA-NET partners, a separate online survey of national government representatives addressing EU28 as well as Associated Countries, and over 70 interviews involving all key stakeholders (ERA-NET coordinators, national representatives, evaluators, Commission services in charge of the ERA-NETs and other relevant stakeholders like JPI chairs).⁴

1.2. Objectives and evolution of the ERA-NET instrument in FP6 and FP7

In March 2000 the EU endorsed the objective of creating the European Research Area (ERA) fostering better coordination of public research systems and free circulation of researchers, knowledge and technology. It established necessary European research policy to make national research systems more open, inter-operable and inter-connected.

Since the creation of ERA the Commission has developed and implemented a set of activities and instruments supporting the achievement of the ERA objectives. Among those, European Research Area Networks (ERA-NETs) take an important place as they provide the framework for coordinating and aligning national or regional research and innovation programmes.

Several successful pilot actions, launched in 2002, led to the introduction of the first ERA-NET Coordination and Support Actions. Initially the instrument was created to provide support for the

⁴ The methodology applied is described in detail in Annex 2.

transnational networking and coordination of research programmes and to encourage the creation of close, long-term links between national research programmes with shared goals. At that time, the purpose of the instrument was to support the establishment of networks. The instrument aimed at facilitating the exchange of good practices, the strategic planning and design of joint research programmes as well as the implementation of joint activities, in particular joint calls.

To this end, the tool was designed to bring together national ministries, funding agencies or research councils as partners in the ERA-NET projects that contained a set of evolving activities combining strategic planning and joint research funding actions with the ultimate goal of launching joint transnational calls. In total 71 ERA-NET actions have been funded under FP6, of which almost all succeeded in implementing joint calls for transnational research projects.

Under the 7th Framework Programme the Commission decided to go one step further and introduced ERA-NET Plus actions. Indeed, in FP6 the ERA-NETs were mainly of a bottom-up nature where participants decided on the area of interest and the EU funding was limited to the financing of networking activities. Even though most of them succeeded in launching a common joint call, initially most of them focused on identifying and analysing shared strategic issues and exchanging information and good practices. The harmonisation of national programmes and prevention of duplication of efforts were not sufficiently tackled.

In contrast, the FP7 strategy promoted clear alignment to the priorities of the EU Framework Programme and the ERA-NET Plus was the ultimate tool for this top-down strategy. The focus shifted from funding networks to funding transnational research projects resulting from joint calls. The objective was to provide a specific EU financial contribution to the joint call for proposals and thus to encourage the pooling of resources of national funding bodies. By co-funding the joint call the Commission became a funding partner within the network with the right to have a say on the thematic content of the joint call, eligibility criteria and management procedures. For national/regional funding bodies, the participation in an ERA-NET Plus represented important additional funding resources but at the condition of compliance with the rules established by the Commission.

However, the ERA-NET Plus focused only on implementation of a joint call and did not provide any resources for strategic networking activities. Therefore, such a tool seemed much more relevant for the effective multinational consortia that have already established clear strategic agendas.

1.3. The ERA-NET Cofund instrument in Horizon 2020

Based on the analysis of the previous experience (cf. Table 1 below), the Horizon 2020 programme proposed a new public-public support tool — ERA-NET Cofund. The ERA-NET Cofund instrument is a merger of the former ERA-NET and ERA-NET Plus instruments. ERA-NET Cofund actions should follow the principle of simplification in Horizon 2020 and build lasting collaboration among Member States and their research funding organisations, also drawing on existing, long-standing partnerships that have been enabled in the ERA-NET scheme in the past ten years. The central and compulsory element of ERA-NET Cofund is still the implementation of one joint call with top-up funding from the Commission. However, in addition to the co-funded call, the consortia may (but are not obliged to) implement other joint activities (as in the classical ERA-NET) including other joint calls without EU co-funding.

Table 1: Main stakeholder recommendations on the ERA-NET scheme under FP7 and the way they were reflected in the ERA-NET Cofund actions under Horizon 2020

User recommendations	Modification of the ERA-NET actions under Horizon 2020 (ERA-NET Cofund)
Call implementation is the core activity and important linking element for consortia, ERA-NET Plus is clearly an incentive, but with a highly complex contractual implementation	Emphasis on co-funding of calls, simplification of grant agreement and reporting obligations towards the Commission
Other activities are equally important, it is necessary to keep networks alive and provide a networking budget for all partners	ERA-NET consortia have autonomy and flexibility in deciding which additional activities are implemented
Need for more flexible type of ERA-NETs, allowing users to adapt it according to their needs and evolve without constantly amending the grant agreement	Consortia have the flexibility to define any activities they see fit beyond the co-funded call
Partners/associated partners should be able to join for specific activities/periods of time	Variable geometry for activities over the five year duration, participation in activities outside the co-funded call does not require participation in the grant agreement
Strong preference for costs reimbursement: Output based for the call and unit costs for other activities	ERA-NET Cofund reimburses 33 % of the total public funding paid to the projects resulting from the co-funded call and a fixed amount per ERA-NET partner per year without financial reporting for the other activities
Importance of continuous funding for networking at reduced level to give long-term perspective, in particular for smaller organisations	The unit cost for additional activities provides for continuous funding for networking during the five year duration of the ERA-NET Cofund action
Simplify and limit reporting requirements	Reporting is limited (normally two reporting periods), single financial reporting at the end of the action, two numbers per beneficiary (total public funding for the co-funded call, number of years an organisation took part in other activities)

Source: The ERA-NET scheme from FP6 to Horizon 2020, Joerg Niehoff, DG RTD, 2014, <https://www.era-learn.eu/publications/ec-publications/the-era-net-scheme-from-fp6-to-horizon-2020>.

The ERA-NET Cofund features are set out in Art 26 defining the ERA-NET instrument in Horizon 2020: *'Public-public partnerships may be supported either within, or across, the priorities set out in Article 5(2), in particular through: (a) an ERA-NET instrument using grants to support public-public partnerships in their preparation, establishment of networking structures, design, implementation and coordination of joint activities as well as Union topping-up of no more than one joint call a year and of actions of a transnational nature; For the purposes of point (a), top-up funding shall be conditional on the demonstration of added value of the action at Union level and on prior indicative financial commitments in cash or in kind of the participating entities to the joint calls and actions. The ERA-NET instrument may include, where possible, an objective to harmonise rules and implementation modalities of the joint calls and actions. It may also be used in order to prepare for an initiative pursuant to Article 185 TFEU.'*

The type of action used in ERA-NET Cofund is the so called Programme Cofund as defined in the Rules for participation, Article 2 (16): *'programme co-fund action' means an action funded through a grant the main purpose of which is supplementing individual calls or programmes funded by entities, other than Union funding bodies, managing research and innovation programmes. A*

programme co-fund action may also include complementary activities of networking and coordination between programmes in different countries.'

The EU contribution is limited to a maximum of 33 % of the total eligible costs of the action (i.e. costs for support to or implementation of transnational projects) and the duration of the actions is 5 years, with the possibility for extension if necessary – e.g. when the implementation of resulting projects is delayed. The EU contribution is limited to one call per grant agreement.⁵ The EU funding may be used for financing transnational research projects (as in ERA-NET Plus) but also as a means to cover (partially) the preparation and management of additional joint activities to be performed by the consortium (as in the classic ERA-NET). The additional activities should contribute to the coordination of national programmes. The EU can provide additional funding for these activities on the basis of unit costs (fixed amount per partner per year). For the co-funded calls the proposal evaluation and selection need to follow the Horizon 2020 standards (international peer review on the basis of the Horizon 2020 criteria, selection of proposals follows the ranking list).

In addition, when justified by the research area addressed and the underlying national programmes, ERA-NET Cofund makes it possible to target research performing organisations (RPOs) with the co-funded call for proposals being based on in-kind contributions from their institutional funding. This is accommodated within the so called in-kind based ERA-NET Cofund. The in-kind contributions are the resources allocated as direct funding in the selected transnational projects that are not reimbursed by the EU contribution. In this case the beneficiaries carry out the transnational projects resulting from their call for proposals themselves and the Cofund grant reimburses the costs of transnational projects, implemented by the beneficiaries, on the basis of Horizon 2020 rules for eligible direct and indirect costs.

In-kind based ERA-NET Cofund actions also require the participation of research funding organisations (RFOs) because they have to mandate the respective RPOs in their countries that will be invited to participate in the call(s). This might require a national pre-selection and prioritisation of RPOs which in the case of large countries with complex research systems may become rather challenging.

This approach can only be used if clearly indicated in the call text for the ERA-NET Cofund actions in the Horizon 2020 work programme. One in-kind ERA-NET Cofund action is currently implemented under Horizon 2020 Societal Challenge 5 'Climate action, environment, resource efficiency and raw materials': the European Research Area for Climate Services (ERA 4CS). Another is a cross-challenge action under Horizon 2020 Societal Challenge 3 'Secure, clean and efficient energy' and Societal Challenge 5 'Climate action, environment, resource efficiency and raw materials': the European network for observing our changing planet (ERA-PLANET). ERA 4CS has designed an approach combining two sub-calls, one based on cash and one based on in-kind contributions, bringing together RPOs and RFOs.

1.4. The Intervention Logic of the ERA-NET Cofund

The ERA-NET Cofund scheme is designed to support public-public partnerships (P2Ps), including Joint Programming Initiatives between Member States. It shall contribute to the achievement and functioning of the European Research Area (ERA), in particular priority 2 'Optimal transnational cooperation and competition'. Under priority 2 the Commission pursues, stimulates and participates in P2Ps to address common challenges.

⁵ A detailed description of the instrument and eligibility of costs is provided in the General Annexes of H2020 WP 2016/17, http://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016_2017/annexes/h2020-wp1617-annex-d-eranet-cofund_en.pdf or at http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/era-net_en.htm.

ERA-NET Cofund also contributes to the implementation of the other ERA priorities: more effective national research systems, researcher mobility, gender equality, open access and international cooperation.

The implementation of transnational activities of national research programmes based on an international peer review evaluation process should contribute to increasing the quality of research, to increasing the level of funding for challenges which no Member States can tackle alone and to avoiding the duplication of research funding.

Mobility is promoted through the transnational research projects resulting from the joint calls. In addition, many Cofund actions have designed mobility and staff exchange schemes as part of their additional activities.

Gender equality and open access are part of the legal obligations that apply to the EU funded projects in Horizon 2020, including ERA-NET Cofund actions (in ERA-NET Cofund actions they apply to the partners on the consortium, not to the final beneficiaries that are funded according to national funding rules).

ERA-NET Cofund is a policy instrument which is used to implement the EU research and innovation strategies in specific thematic areas. Under Horizon 2020, ERA-NET is used to achieving the goals of the three main pillars of the Framework Programme: excellent science, industrial leadership and societal challenges.

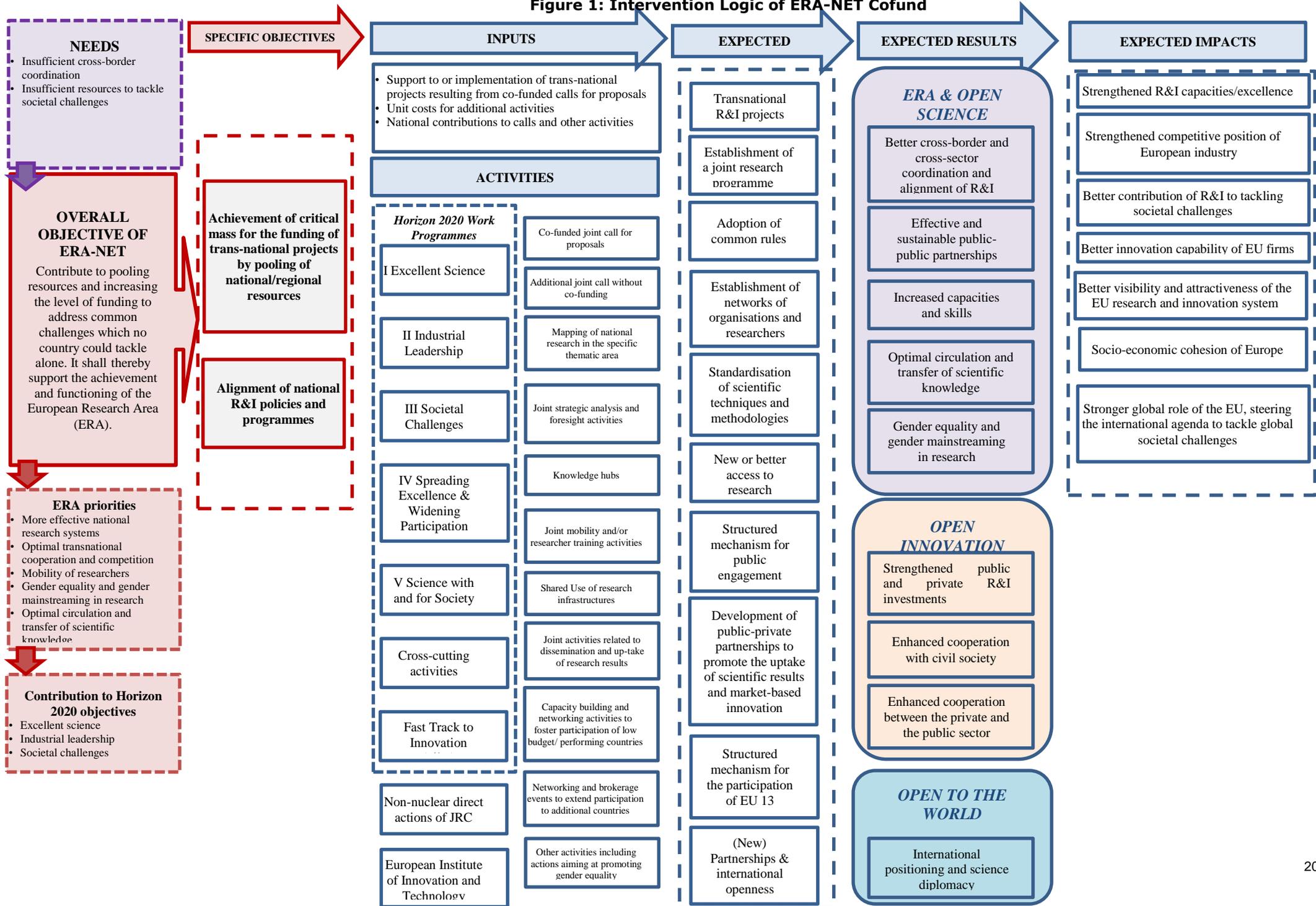
In addition, Horizon 2020 aims at addressing cross-cutting issues that underpin the different thematic programmes. The main cross-cutting issues that Horizon 2020 aims at addressing are:

- Innovation — Under Horizon 2020, substantial support is provided for innovation through activities such as prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.
- Spreading excellence and widening participation — specific measures are taken to promote the participation of EU Member States that have previously demonstrated low participation in projects.
- Gender issues — Horizon 2020 aims at rectifying imbalances between men and women, and at integrating a gender dimension in its research and innovation programmes.
- International cooperation — Horizon 2020 sees great importance in international cooperation, aiming at three goals which are:
 - Making the EU an attractive partner in research and innovation by strengthening excellence;
 - Raising societal challenges;
 - Supporting EU foreign policies.

ERA-NET Cofund also has a potential role to play in addressing the cross-cutting objectives of Horizon 2020. The intervention logic⁶ of ERA-NET Cofund is graphically illustrated as follows.

⁶ The intervention logic is a series of assumptions according to which the specific policy intervention is expected to deliver the anticipated impacts and achieve the set objectives. The intervention logic is usually illustrated by a logic model i.e. a graphical depiction of the logical relationships between the resources, activities, outputs, outcomes and impacts of a programme.

Figure 1: Intervention Logic of ERA-NET Cofund



2. MAIN FEATURES OF ERA-NET COFUND

2.1 Positioning ERA-NET Cofund in the ERA-related instruments landscape

The variety of P2P networks and their proliferation in recent years have been a major issue for the P2P community. Positioning the different instruments in the ERA landscape has not been an easy task. The current P2P instruments and initiatives (including for instance Joint Programming Initiatives — JPIs, Art 185 initiatives, ERA-NET Cofund actions, European Joint Programme (EJP) Cofund actions) offer a multiplicity of actions like funding of transnational research and innovation projects (via cash or in kind contributions), implementation of joint agendas and plans, mobility activities, support of infrastructures or joint procurement. Most of the P2Ps combine several of these actions and therefore it becomes complicated to understand which instrument serves the best the set objectives. In addition, the different instruments are not always clearly connected, which means that it is not possible to take full advantage of their possible complementarity.

To give an example three instruments are compared below: ERA-NET Cofund, EJP Cofund — which is rather less well-known at the moment — and Art 185. In similar lines to the ERA-NET Cofund, the EJP Cofund aims at attracting and pooling a critical mass of national resources on objectives and challenges of Horizon 2020 and at achieving significant economies of scales by adding related Horizon 2020 resources to a joint effort. Like the ERA-NET Cofund, this instrument involves the implementation of a joint programme of activities, ranging from research and innovation to coordination and networking activities, including training activities, demonstration and dissemination activities. However, in contrast to ERA-NET Cofund, and although it is possible to launch calls for proposals within an EJP Cofund action, the focus is direct research and innovation activities of the participating programmes, normally governmental research organisations participating on the basis of their institutional funding. An annual work plan needs to be submitted with the proposal and as a deliverable prior to each successive reporting period (subject to Commission approval). Another major difference among the two schemes is the funding rate: 33 % for the ERA-NET Cofund and up to 70 % for the EJP. Despite the differences between the two schemes the rationale for keeping separate the in-kind based ERA-NET Cofund and the EJP Cofund instrument is not sound.

On the other hand, Article 185 TFEU initiatives are driven by the participating Member States without having to follow a standard model of cooperation (like ERA-NETs). The research area addressed has to be of major interest for the EU and the appropriateness of Article 185 TFEU has to be clearly demonstrated to allow the European Commission to contribute to the coordination and cooperation between national R&D programmes to achieve the foreseen goals. Preparation of Art. 185 initiatives implies one complex feature: it requires a co-decision (or 'ordinary legislative') procedure which means that the decision has to be adopted by the European Parliament and the Council. Following approval, participating Member States commit to integrate their research through a jointly defined programme that is validated by the Commission. The Commission provides financial support which can ensure financial stability in the longer term (contractual relationship for a duration of around 10 years with 25-50 % co-funding by the European Commission).

Horizon 2020 foresees the possibility of implementation of new Art.185 TFEU initiatives under specific conditions that take into account previous partnering initiatives and expressed commitment of participating countries. Any future proposal for Art.185 TFEU initiatives must demonstrate full engagement and high level of integration of Member States at scientific, management and financial levels. This means achievement of critical mass in terms of participation (number of involved countries) and budgetary commitments (long-term, mostly cash commitment) as well as alignment of rules, procedures and strategic priorities.

In summary, the main differences between the ERA-NET Cofund, EJP Cofund and Art 185 TFEU refer to the level of collaboration that is linked to the size and readiness of participating programmes and institutions/agencies. In addition, the different levels of interest by the participating states may be partly attributed also to the different funding rates of the three instruments. Therefore, as the P2P community has repeatedly highlighted, establishing synergies between the various ERA instruments and initiatives and clear entry conditions would be highly relevant.

Figure 2: Main features of ERA-NET Cofund, EJP Cofund and Art 185

	ERA-NET Cofund	EJP Cofund	Art.185
Main activities	Single transnational call for proposals with Union cofunding	Direct research, demonstration and coordination activities	Multiple transnational calls for proposals
Other activities	Possibility to include additional activities incl. additional joint calls in a variable geometry	Possibility to include a limited number of calls for proposals, e.g. by including RFOs	To be defined in the basic act, if justified by the nature of the initiative
Beneficiaries / recipients of EU contribution	Typically RFOs RPOs in exceptional cases Mandated by PS	Typically RPOs RFOs in addition Mandated by PS	Designated Implementation Structure (indirect management)
Participating States (PS) contribution	Normally cash, possibility to allow for in-kind ERA-NETs with RPOs	Normally in-kind, but possibility to include cash contributions from RFOs	Defined in the basic act, normally cash, in-kind contributions if justified by the nature of the initiative
Union contribution	Reimbursement rate set at 33%	Reimbursement rate set in the WP, maximum 70%	Defined in the basic act, in most cases matching the contributions of PS
Duration	5 years	5 years	Typically 10 or more years, with Union contribution over up to 7 years
Establishment	WP H2020	WP H2020	COM Proposal incl. ex-ante Impact Assessment, Decision of Council and EP
Other issues	Can be used to prepare for Art.185 (examples: EMRP/EMPIR, BONUS)	Could be used to prepare for Art.185	Conditional to a dedicated implementation structure Commitment for strong financial, management and scientific integration

Source: ERA tools for public-public partnerships. Plenary presentation by Joerg Niehoff, DG Research & Innovation, European Commission. https://www.era-learn.eu/events/annual-joint-programming-2015-new-date-2016/ERALEARN_2020_D5.22015_FINAL.pdf

2.2 The ERA-NET Cofund in figures

During the 2014/2015 calls for proposals, a total of 27 ERA-NET Cofund actions were approved for funding by the European Commission. In addition, a total of 35 proposals are expected from the 2016/2017 calls. The total EU budget for ERA-NET Cofund earmarked for the years 2014-2017 in Horizon 2020 reaches EUR 495 million and is spread almost equally between 2014/2015 and 2016/17 calls as shown in Figure 3 below.

The thematic distribution of the H2020 budget for ERA-NET Cofund Actions presents a focus on three main challenges: Secure, clean and efficient energy (Societal Challenge 3 - 30.28 %); Climate action, environment, resource efficiency and raw materials (Societal Challenge 5 - 21.66 %); and Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the Bioeconomy (Societal Challenge 2 - 16.97 %). Then follows Health, demographic change and wellbeing (Societal Challenge 1 - 9.5 %).

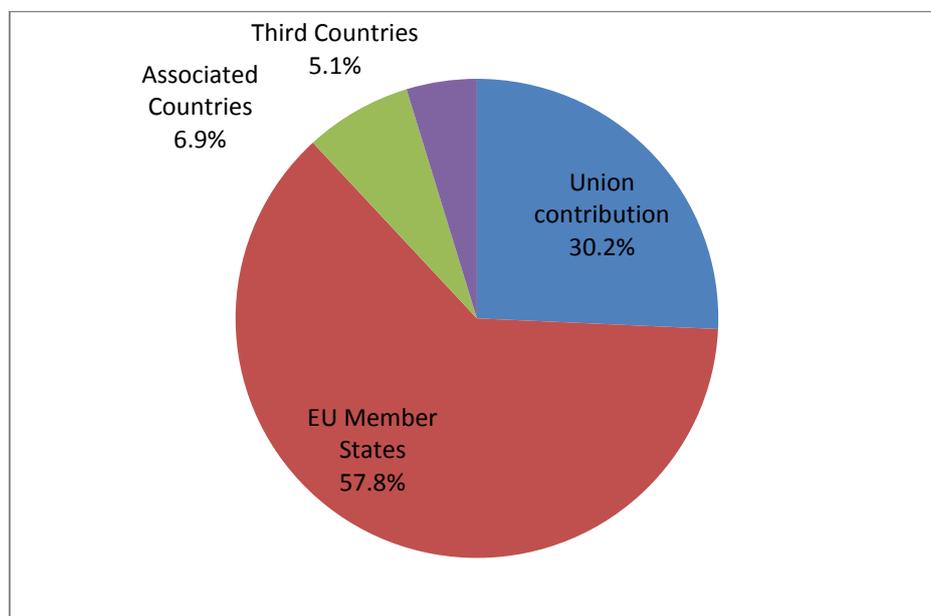
Figure 3: ERA-NET Cofund budget in Horizon 2020 and number of proposals (2014-2017)

	2014		2015		2016		2017	
	€M	no	€M	no	€M	no	€M	no
Excellent Science								
Future and Emerging Technologies					18,0	2	5,0	1
Industrial Leadership								
ICT			6,0	1				
Nano, Materials, Biotech and Manufacturing			12,5	1	30,0	3		
Societal challenges								
Health, demographic change and wellbeing	27,4	4	15,0	3			5,0	1
Food security, agriculture, marine, bioeconomy	5,0	1	15,0	3	35,0	5	29,0	5
Secure, clean and efficient energy	36,8	3	36,3	4	45,8	5	31,0	4
Smart, green and integrated transport					10,0	1		
Climate action, environment, resource efficiency and raw materials	18,2	2	51,0	3	13,0	3	25,0	3
Europe in a changing world – inclusive, innovative and reflective Societies	5,0	1	5,0	1	5,0	1	5,0	1
Science with and for society					5,0	1		
Total	92,4	11	140,8	16	161,8	21	100,0	15

Source: Joerg Niehoff, DG Research & Innovation, European Commission. https://www.era-learn.eu/events/annual-joint-programming-2015-new-date-2016/10_Niehoff.pdf

The 27 networks that have been selected for funding bring together a total of EUR 728.5 million⁷ including contributions from EU Member States (57.8 %), associated countries (6.9 %), third countries (5.1 %) and the European Commission (30.2 %)⁸. The leverage effect is 2.31, i.e. for each euro invested by the EU, the participating countries invest an additional amount of EUR 2.31. The largest earmarked national contributions come from Germany, France, Sweden, the United Kingdom, the Netherlands and Spain.

Figure 4: Budget for the first 27 ERA-NET Cofund actions by country type (only co-funded calls)



⁷ The figures are based on amounts planned for the co-funded calls at the proposal stage.

⁸ The share of the EU contribution drops to 30 % despite the funding rate of 33 % because a number of consortia mobilise substantially higher national contributions than necessary to justify the EU contribution.

The analysis of the actual budget allocations to the calls organised by the Cofund actions approved under the 2014 Horizon 2020 calls shows that there are no major discrepancies between the national contributions planned by countries at the proposal stage and those that were eventually signed off at the grant agreement. The only notable difference appears in the case of JPco-fuND where the total call budget is decreased by 50% in the grant agreement. This is the case because in the proposal the call budget was substantially larger than necessary to justify the Union contribution to the cofunded call resulting in significant reserve amounts. During the co-funded call, JPco-fuND partners spent 34% more than the amount agreed in the grant agreement.

Regarding the execution of the call budget, while some Cofund actions overspent by 11 %, 20 % and over 30 % (HERA JRP UP, FACCE SURPLUS, JPco-fuND) their planned call budgets, there were others that underspent by more than 20 % (DemoWind, ERA-NET SmartGridPlus, ERA-NET Smart Cities). This lack of execution is one of the most critical issues that was already identified in FP7 ERA-NETs.⁹

Table 2: Planned v executed call budgets in the first co-funded calls under the 2014 approved Cofund actions

ERA-NET Cofund action	Total call budget in grant agreement (€)	Total public funding budget after project selection (€)	Degree of absorption of planned call budget
BiodivERSa3	34 559 927	33 730 000	97.60 %
DemoWind	31 641 786	24 323 036	76.87 %
ERA-NET SmartGridPlus	40 575 555	30 924 935	76.22 %
ERA-NET Smart Cities	26 609 093	18 662 520	70.14 %
ERACoSysMed	12 059 521	12 955 000	107.43 %
E-Rare-3	19 665 000	19 780 199	100.59 %
FACCE SURPLUS	12 142 765	14 581 000	120.08 %
HERA JRP UP	17 563 334	19 624 522	111.74 %
JPco-fuND	26 784 280	35 852 215	133.86 %
TRANSCAN-2	17 675 000	17 247 037	97.58 %
WaterWorks2014	15 223 881	14 749 573	96.88 %

The analysis of the contributions made by each of the countries taking part in the 2014 Cofund actions shows that for almost all EU-15 countries the amounts actually spent approach the planned contributions by more than 65 % (except in the case of Luxembourg where it is around 50 %). In some cases the level of absorption exceeds 100 % such as in Ireland (127 %), Germany (152 %) and Denmark (132 %). At the same time most of the EU-13 countries are underspending presenting shares of absorption lower than 50 % except in the case of Poland, Estonia and Croatia. However these results need to be treated with caution as they only refer to the first calls of 11 actions in the total of 62 actions provided for in Horizon 2020.

In terms of participating organisations and represented countries, the total of 27 ERA-NET Cofund networks presents a variety of sizes. For instance, DemoWind, ACT or ERACoSysMed do not have more than 10 partners, whereas ERA-CVD, ERA-NET SmartGridPlus or HERA JRP UP have between 22 and 25 partners. The JPI-linked networks have between 17 and 25 partners. Networks that are

⁹ The experience from ERA-NET Plus under FP7 was that on average around 18 % of the call budget was not spent.

successors of previous ERA-NETs span across all size categories. Of those it is actually M-ERA.NET 2 together with SusAn and BiodivERsA3 that stand out with 45, 36 and 31 partners respectively. The two in-kind based ERA-NET Cofunds, i.e. ERA-PLANET and ERA 4CS are exceptional cases as they also include research performing organisations, thus they present the highest numbers of partners.

Based on the commitments stated in the proposals, country participations per co-funded call are dominated by Member States (369 participations) with the Netherlands, Spain, Belgium and Germany leading the ranking, each country presenting more than 20 participations. Associated Countries have 74 participations with Norway and Turkey leading the ranking. Third countries have 21 with Canada being the most active country. The average budget per Co-funded call is around EUR 21.6 million while the average number of countries participating in each Co-funded call is 16.

2.3 Most important activities in ERA-NET Cofund actions

As shown in Table 3, besides the main and compulsory activity of the ERA-NET Cofund which is the implementation of a co-funded joint call, the majority of ERA-NET Cofund actions (18 out of 27) is also planning to implement additional joint calls.

Table 3: Number of additional calls per ERA-NET Cofund action

ERA-NET Cofund actions	Additional joint calls
ACT	2
BESTF 3	3
BiodivERsA3	2
DemoWind	-
DemoWind 2	-
ENSCC (Smart Cities and Communities)	1
ENSUF	-
ERA 4CS	-
ERACoSysMed	2
ERA-CVD	3
ERA-GAS	1
ERA-HDHL	3
ERA-NET SmartGridPlus	3
ERA-PLANET	-
E-Rare-3	3
FACCE SURPLUS	2
HERA JRP UP	n.a.
JPco-fuND	5
JPI-EC-AMR	3
M-ERA.NET 2	2
NEURON Cofund	4
PhotonicSensing	-
SOLAR-ERA.NET 2	-
SusAn	1
TRANSCAN-2	3
WaterWorks 2014	-
WaterWorks 2015	-

The organisation and implementation of joint calls is a concrete proof of pooling national/regional resources to achieve critical mass for the funding of transnational projects. This type of activity is serving the main objective of the instrument.

Beyond the joint calls, there are other additional activities planned by the Cofund actions.¹⁰ In particular, there is a set of activities that are more strategic in nature, including for instance, vision building, developing a strategic research agenda or carrying out joint foresight exercises as well as activities to expand the networks. These activities are serving the second major objective of the instrument, i.e. the alignment of national research and innovation policies and programmes.

It is interesting to note that in the new scheme activities that were usually met in the FP7 ERA-NETs became less common. This is the case, for example, of mapping exercises in relation to national programmes and projects. This possibly reflects the fact that many (13 out of 27) of the Cofund actions are continuations of previous ERA-NETs that have already completed such activities.

Other additional activities such as training and mobility schemes, capacity building activities or activities related to research infrastructures are less implemented in ERA-NET Cofund actions. This may be due to the fact that they do not correspond to the main objective of the instrument. Yet, training, mobility and capacity building activities are necessary for improving the situation especially in less performing countries in order to increase their participation and thus contribute to the widening strategy underlying the ERA-NET Cofund instrument. Acknowledging this, many ERA-NET Cofund coordinators that were interviewed mentioned the need to exploit and better connect the Cofund instrument with other instruments targeting mobility and training activities like Marie Skłodowska-Curie Cofund actions.

Table 4: Most common additional activities of ERA-NET Cofund actions

List of activities	% of responses
a. Launching and implementing additional call for proposals	52.4
b. Implementing joint activities related to dissemination and up-take of research results	47.2
c. Developing a common vision in the thematic area	42.9
d. Developing/updating a strategic research (and innovation) agenda in the thematic area	39.2
e. Networking and brokerage events to extend participation to additional countries	38.2
f. Implementing joint foresight activities to explore the future in the given thematic area	35.8
g. Mapping of national research in the specific thematic area	34.4
h. Capacity building and networking activities to foster participation of low budget/ performing countries	26.4
i. Organising joint mobility and/or researcher training activities	23.1
j. Creating a database of funded national projects in the specific thematic area	22.2
k. Shared use of existing infrastructures	21.7
l. Joint development of (new) infrastructures	9.0
m. Implementing joint activities related to pre-commercial public procurement or procurement of innovative solutions	5.7

¹⁰ To examine the most common additional activities undertaken by ERA-NET Cofund actions a relevant question was included in the online survey that targeted the ERA-NET Cofund community (both coordinators and partners). The results are shown in Table 4 starting from the most selected to the least selected ones.

Finally, there are also other activities that are not included in the list presented above. These included for instance mapping and strategy building for research infrastructures, activities to promote interactions with end-users and various types of stakeholders, monitoring and evaluation/assessment activities both in relation to the network itself or the co-funded projects, activities with other initiatives in the same thematic area (e.g. joint calls with other ERA-NETs) and activities promoting early career scientists and young researchers.

In conclusion, beyond the minimum obligation to launch and implement a co-funded joint call, Cofund actions engage in a variety of additional activities such as implementation of additional calls without Union co-funding, dissemination activities, strategy building, networking and expansion, or monitoring and evaluation activities. Mobility and capacity building activities are also planned although to a lesser extent. Thus, both the two major objectives of the instruments are served. The ERA-NET Cofund instrument has been successful in encouraging both newcomers and experienced networks to go beyond the co-funded joint call and implement a variety of additional activities.

3. MOTIVATIONS AND IMPACTS

3.1. Motivations for participation

A primary motivation to take part in the ERA-NET Cofund instrument is the recognition that certain challenges can better be dealt at the international rather than the national level. Associated to this is the opportunity to access complementary research expertise to achieve critical mass¹¹ in certain areas. Other motivations reflect interests such as the opportunity to improve and strengthen the international profile and experience of the national research community as well as to increase the experience of agencies in managing international research programmes through collaboration with other funding agencies. Certain motivations also reflect conditions set at the national level for participating in international networks. For instance, the compatibility of research theme/topic addressed by the ERA-NET Cofund with the national/regional research priorities is clearly important. This is directly associated with the opportunity to access to complementary sources for funding nationally relevant research activities.¹²

In addition, national representatives made it clear that even in the cases where ERA-NET Cofund performs worse than national programmes in terms of administrative burden and success rates there is still motivation to participate. This can be explained by the EC top-up funding alongside the international nature of the topics addressed.

3.2. Perceived impacts

Relevant literature reports a variety of perceived benefits from participating in research and innovation networks. Adopting a framework of impact articulated by Meagher (2013)¹³ and adapted by Cox, Rigby and Barker (2014),¹⁴ six main types of impact can be considered in the case of ERA-NET Cofund: *Capacity building*, *(Enduring) Connectivity*, *Attitude/Cultural Change*, *Instrumental and Conceptual* impacts, as well as *structural impacts* given that public-to-public networks such as

¹¹ Definition of critical mass: the size, number, or amount of something that is needed to cause a particular result.

¹² Based on the results in the online survey that targeted the ERA-NET Cofund community.

¹³ Meagher, L. R. (2013). Research impact on practice. Case Study Analysis Report to the ESRC.

¹⁴ Rigby, J., Cox, D., Barker, K. (2014) Case studies of Impact from the ESRC Genomics Forum.

JPIs or ERA-NETs may influence institutional and structural settings in the national research and innovation systems in order to achieve improved coordination at the national level.¹⁵

Based on the specific impact framework, the category of *enduring connectivity* relates to the ongoing communication and collaboration between the relevant actors and to the follow on collaborations that continue after the initial activity has been completed. Connectivity in ERA-NETs may occur both at the level of research agencies as well as within and across research communities.

Capacity building refers to the development of capabilities and skills in the relevant scientific areas, but also in relation to strategic thinking, and international research programme/project management. Capacity building related impacts may also address new approaches in research linked to inter-disciplinarity and increased quality of research at the national level resulting from advancement of knowledge that is accomplished at the international level.

Attitudinal/cultural change relates to knowledge exchange and includes elements such as improved reciprocal understanding and willingness to work together. The multi-disciplinary approaches adopted in the case of ERA-NETs, bringing together diverse types of stakeholders, are relevant in this regard.

Conceptual impact refers to the impact on the knowledge, understanding and attitudes of policy makers. In this category of impact we identify examples of changed thinking among policy makers, influences on policy issues and increased awareness in the policy world. Increase visibility of a research area in the policy community is relevant in this case along with influencing and/or developing new agendas at the national or international levels.

Structural impacts relate to changes in institutions and structures in the national or European research landscape due to changed thinking among policy makers and influences on policy issues stemming from the acquired knowledge and deployed common practice. Structural impact in the form of changes to government organisation across the Member States is relevant, but especially increased coordination across agencies within the same country or across different countries.

Instrumental impact refers to the direct impact on policy (changes to policy, strengthening the ERA) and practice decisions in areas of environmental improvement, risk mitigation, service improvement, societal benefits and productivity improvements. This is the ultimate impact sought by P2Ps, i.e. to contribute to solving the societal challenge addressed. Important elements in this regard are increased investments being made in the area at stake enabling targeted research and innovation and thus increasing chances of finding possible solutions. It is here that scientific impacts are included in relation to the area addressed (contribution to academic field(s)).

As shown in the following table (Table 5 – highest shares highlighted in bold fonts) participants in the ERA-NET Cofund instrument perceived at least one significant impact from each impact category described above (enduring connectivity, capacity building, attitudinal/cultural change, conceptual, instrumental impacts) except in the case of structural impacts.

The most selected perceived benefit is related to connectivity at international level i.e. recognition of the international context of the specific challenge area and of the benefits resulting from transnational collaboration in research. This type of impacts was highlighted also by national government representatives as well as EC officials. Most (19) of the 27 ERA-NET Cofund networks are either successors of previous ERA-NETs (FP7 ERA-NET or ERA-NET Plus) or are directly linked to JPIs. This means that there is a core of partners in each of these networks that have established long-standing collaboration over the years. Thus, the ERA-NET scheme has indeed achieved enduring connectivity at the level of funding agencies.

¹⁵ Deliverable D 3.2. Policy Brief on impact assessment of networks 2015, available at <https://www.era-learn.eu/publications/other-publications>.

The participants in ERA-NETs also highlighted the perceived benefits in relation to capacity building, i.e. increased capacities and skills, adoption of interdisciplinary approaches in research and increase quality of research at national level. In relation to attitudinal/cultural change, the ERA-NET Cofund community mentions the adoption of transdisciplinary approaches in research and in relation to instrumental impact the access to additional European funding for certain areas.

Table 5: Perceived benefits from participation to ERA-NET Cofund actions (*)

Perceived Benefits	% (**)
<i>(Enduring) connectivity impacts</i>	
• Design of new means of collaboration through joint activities (e.g. shared use of infrastructure, joint strategic analysis and foresight, knowledge hubs, etc.)	59.4
• Increased international collaboration of the national / regional research communities	85.2
<i>Capacity building impacts</i>	
• Adoption of interdisciplinary approaches in research (collaboration between multiple academic disciplines)	63.6
• Increased capacities and skills (in relation to scientific areas, strategic thinking, international project management)	73.2
• Increased quality of research projects at national / regional level	67.5
<i>Instrumental impacts</i>	
• Increased investments in certain research areas at national / regional level	53.2
• Access to additional European funding for certain areas	64.2
• Increased chances of finding effective solutions to societal challenges	60.8
<i>Structural impacts</i>	
• Increased coordination within the national level (at ministerial/funding agency level)	33.1
• Increased coordination at cross-national level in relation to research funding and strategies	57.0
• Increased coordination across different agencies in relation to funding, monitoring and evaluation procedures	52.7
• Increased connectivity across different agencies (at national level)	45.9
<i>Conceptual impacts</i>	
• Increased awareness of specific research topics at cross-national level	65.2
• Increased visibility of certain research issues at national / regional level	56.9
• Influencing the shaping of national research agendas and programmes	40.1
• Development of strategies in new areas at national level	40.0
• Influencing the shaping of research agendas of European / international organisations	54.9
• Development of strategies in new areas at European / international level	51.3
<i>Attitudinal / cultural impacts</i>	
• Adoption of transdisciplinary approaches in research (collaboration between multiple partners, both academic and non-academic)	66.2

(*) Based on the online survey addressed to both ERA-NET Cofund coordinators and partners

(**) Share of those who perceived the specific benefit to a large or very large degree

Two types of impacts, i.e. the *structural and conceptual impacts are much less perceived by the ERA-NET Cofund community* except the increased awareness of certain themes at cross-national level. The structural impacts reflect changes in policy structures and procedures towards internal and cross-national coordination. Although such impacts were not perceived by the ERA-NET Cofund community in the survey, they were highlighted during the interviews with the national government representatives.

France has taken a strategic, coordinated approach to involvement in ERA-NETs and JPIs. A National Working Group brings together all stakeholders such as representatives from Research Alliances, NCPs, JPIs and ERA-NETs in Societal Challenge 2 to discuss on national priorities, how the initiatives from the JPIs and ERA-NETs link with the national work programme, and which new ERA-NETs to support.

In similar lines, Spain has recently established a new committee in order to assure coordination of the Spanish participation in Joint Programming. This committee will take funding and management decisions on a collegiate basis with senior officials of the main Spanish funding organisations in charge of P2Ps, both from the innovation and research sector.

The conceptual impacts reflect an ambition to jointly develop strategies in the areas addressed and influence agendas both at the national and international levels. Combined together with the structural impacts, they imply an orientation towards strategic alignment and an ambition to play a strategic role in the area being addressed world-wide. The lower degree of perception of such impacts in the ERA-NET Cofund community may indicate that the ERA-NET scheme is considered less of a strategic instrument towards alignment and influencing national and international policy making than JPI initiatives, for instance, that are situated at the highest policy levels with relatively more pronounced conceptual impacts.¹⁶ Even though cross-national alignment is aimed at, this does not upgrade to a higher policy level beyond the already set strategies and mandates of existing institutions. This view was largely confirmed in the interviews with ERA-NET Cofund coordinators who agreed that ERA-NETs are not considered an instrument that has the capacity to fully coordinate and align national programmes as the Cofund actions are not managed at the highest policy level (ministries) and overarching strategies are formulated within other settings such as JPIs. Similar views were also expressed by the national government representatives via their responses in the respective online survey as well as in the follow-up interviews without major differences among EU15 and EU13 countries.

In conclusion, motivations to take part in the ERA-NET Cofund instrument include recognising that certain challenges can better be dealt with through joint transnational efforts that can create the necessary critical mass in both resources and research capacity. In addition, other motivations reflect own interests in strengthening the international profile of the local research community, improve own experiences through transnational collaboration with other agencies, and accessing additional funds for supporting nationally relevant research themes. Despite the early days of the instrument, the ERA-NET Cofund community have perceived benefits in line with the identified motivations. The ERA-NET scheme has achieved enduring connectivity at the level of funding agencies. Capacity building impacts are also highly perceived addressing not only research capacities, but also research approaches and increased quality of research at national level. Structural impacts and conceptual impacts are relatively less perceived. Although these take time to materialise, the ERA-NET Cofund is regarded as an instrument with a very specific purpose, i.e. facilitating collaboration and coordination of programme owners and managers across Europe to jointly support research of common interest. Although cross-national alignment is aimed at, this does not upgrade to a higher policy level beyond the already set strategies and mandates of existing institutions.

¹⁶ Deliverable D 3.2. Policy Brief on impact assessment of networks – 2015, available at <https://www.era-learn.eu/publications/other-publications>.

4. EFFICIENCY

Efficiency considers the relationship between the resources used by an intervention and the changes generated by the intervention in the form of cost-benefit relation. In this regard, efficiency analysis includes analysis of administrative and regulatory burden and looks at aspects of simplification.

Following the guidelines from the European Commission Smart Regulation tool¹⁷ the issues examined include an assessment of the evaluation process of the Cofund actions, the main problems and obstacles encountered in the preparation as well as management, monitoring and implementation of ERA-NET Cofund actions, the quality of support provided by the EC throughout all the phases of the instrument, the resource intensiveness and means of covering the costs of ERA-NET Cofund activities as well as the overall cost effectiveness of implementing an ERA-NET Cofund action.

4.1. Evaluation of ERA-NET Cofund actions

The evaluation of ERA-NET Cofund proposals follows the procedures set for Horizon 2020. After the closure of the call, admissibility of proposals is checked by the Commission services responsible for the evaluation (DG RTD or executive agencies). This check refers to readability, accessibility and printability of the proposal as well as its completeness and the presence of all requested forms. Then proposals are checked in terms of eligibility, i.e. the minimum number of partners as set out in the call conditions and other criteria that may apply on a call-by-call basis as set out in the call conditions. The eligibility check is also performed by the Commission or the Agency involved. The Joint Programming sector in DG RTD also checks all proposals to ensure that they comply with the ERA-NET Cofund requirements.

The next step is to assign evaluators to prepare Individual Evaluation Reports for the retained proposals, i.e. those that are admissible and eligible. This is done remotely. The evaluation criteria include the three main criteria that are common in all Horizon 2020 proposals, i.e. a) Excellence (relevant to the description of the call or topic), b) Impact, and c) Quality and efficiency of the implementation. However, the criteria are adapted to each type of action, as specified in the respective work programme.¹⁸

Evaluators are also asked to check whether proposals are 'out of scope' i.e. the content of a proposal corresponds, wholly or in part, to the description of the call or topic. They also have to evaluate requests for exceptional funding from third country participants and assess the operational capacity of each applicant, i.e. if they have the necessary basic operational capacity to carry out their proposed activity/activities based on the information provided.

Each proposal is assigned between 3 to 5 evaluators depending on the area addressed and combining thematic experts as well as experts in the ERA-NET Cofund instrument. One of the evaluators is assigned the role of the rapporteur, i.e. has to prepare the consensus report for the specific proposal. After the remote evaluation of individual proposals is complete then the evaluators are called to take part in central evaluation briefings and meetings (held in Brussels) that are moderated by Commission officers that will then become the project officers of the approved proposals. The aim of the central evaluation meetings is to finalise a consensus report for each proposal and the panel report for the total proposals received under a specific call.

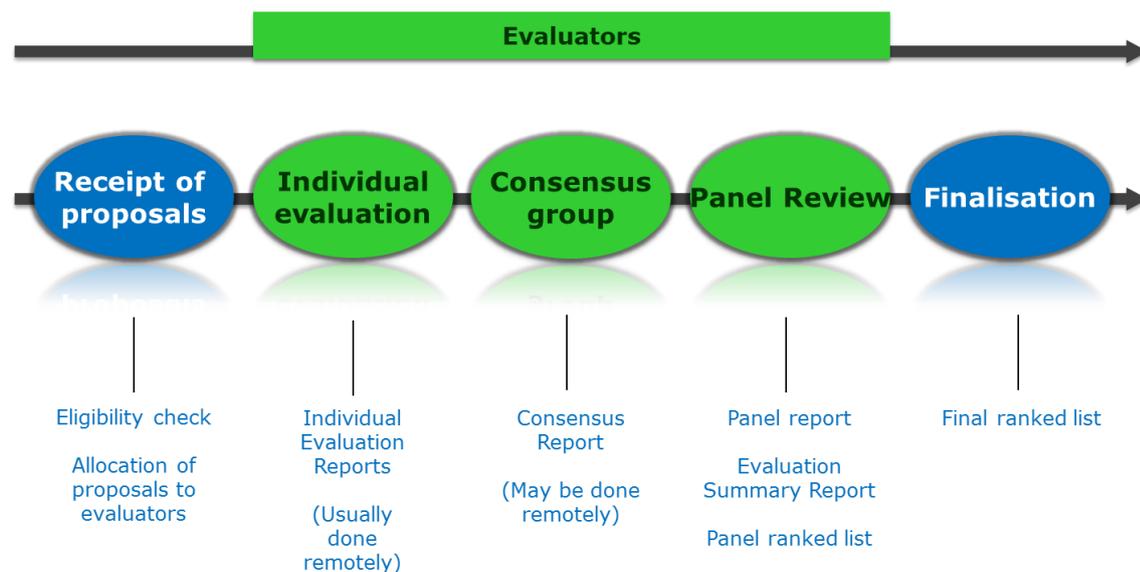
The ERA-NET Cofund proposals are not competitive, i.e. there is usually one proposal per call or there is enough budget foreseen to cover more than one proposals responding to the needs of the calls. The evaluation procedure is supported by an electronic system that operates through the

¹⁷ http://ec.europa.eu/smart-regulation/guidelines/tool_42_en.htm.

¹⁸ For the evaluation criteria applied in ERA-NET Cofund actions see http://ec.europa.eu/research/participants/data/ref/h2020/call_ptef/ef/2016-2017/h2020-call-ef-eranet-2016-17_en.pdf.

ECAS participants' portal. An independent observer is also assigned with the task to follow the whole process of Horizon 2020 proposal evaluation and write a respective report.

Figure 5: The ERA-NET Cofund evaluation procedure in Horizon 2020



European Commission project officers noted that the evaluation of ERA-NET Cofund actions faces a number of challenges:

- It is particularly difficult to find evaluators with sufficient knowledge about the instrument since most of experts from the public agencies might represent their institutions in the ERA-NET Cofund proposals.
- The ethical review seems to mismatch the content of the ERA-NET Cofund proposals as they are not themselves research proposals. Yet, ethics experts request a confirmation that Horizon 2020 ethics rules are applied to the research projects to be funded by the co-funded calls. This, however, causes problems to European Commission officers and coordinators of the ERA-NETs as proposals marked as ethically sensitive have to go through additional review procedures.

During the interviews with the evaluators the incompatibility of some evaluation elements in the case of ERA-NET Cofund proposals was also pointed out. In particular,

- The level of ambition may be perceived in a variety of different ways (i.e. level of national contributions, size of consortium, progress beyond the state-of-the-art). In addition the difference between the level of ambition and the achievement of critical mass is not clear enough. Thus, there is a need to further fine-tune the evaluation criteria.
- The ERA-NET Cofund proposal template does not include a table where the resources are distributed per work package. This limits the capacity of the evaluators to assess whether the resources are adequate and appropriately allocated. Importantly, the absence of such a table appears also problematic to the applicants, who reported that it hinders not only the division of labour but also the future monitoring of the work allocated to partners.

On a positive note, evaluators highly appreciated the appointment of both 'thematic' and 'instrument' experts as well as the user-friendliness of the supporting IT system. They also noted that the quality of some ERA-NET Cofund proposals is not very high. This may partly be a consequence of lack of competitive proposals. Thus they suggested spreading good practice cases in terms of proposal writing as well as providing relevant training. Recommendations were also made to adjust the proposal template to capture the gained experience and knowledge from past relevant activities. For instance, a background section could be added addressing lessons learnt and past achievements from predecessor projects. In the case where the proposed networks are linked to other overarching ERA instruments and initiatives such as JPIS, this background section could also be used to position the new network in relation to these instruments and initiatives. It is also important to give more emphasis to the outputs and results of the actions in the evaluation

process. Therefore, based on past experience, key performance indicators may be suggested by the proposers.

4.2. Proposal and grant agreement preparation

The support provided by the Joint Programming team of DG RTD was largely appreciated by the ERA-NET Cofund coordinators. They were also satisfied with the support provided by the thematic Commission services although to a lesser extent. In particular, Cofund coordinators appreciated the advice provided in relation to the technical content, the operational and financial aspects of proposals, and the availability of templates and guiding documents. In relation to the grant agreement preparation, the Model Grant Agreement and the explanations provided in the annotated document were welcomed along with the flexibility in relation to inclusion / replacement of partners and the simplification of the negotiation phase.¹⁹

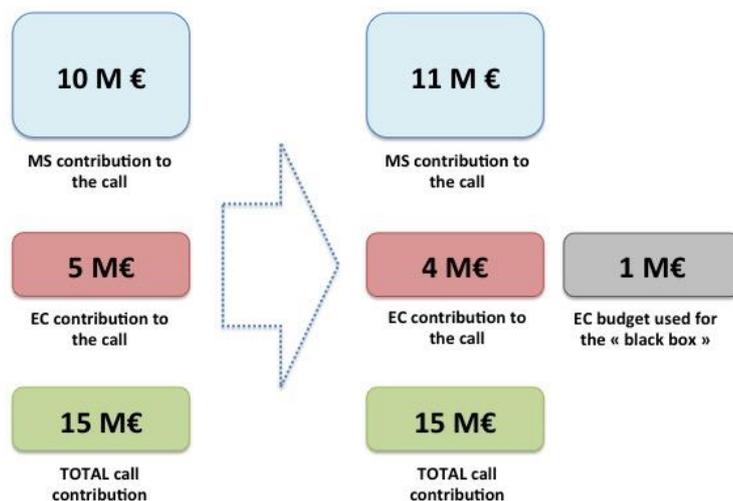
The support provided by the ERA-LEARN 2020 project was also acknowledged, although there was a plea during discussions with ERA-NET Cofund community and European Commission project officers that the ERA-LEARN 2020 project increases its visibility and becomes more widely known. Notably, 70 % of all respondents to the online survey (coordinators as well as partners) stated that they did not know of the ERA-LEARN 2020 support.

The most dissatisfactory element was the 'unfriendliness' of the SygMa system whose readiness level was problematic at first but then improved with time as explained by both coordinators and European Commission project officers. At the same time difficulties emerged in understanding the cost categories, calculating the EU contribution, and understanding the requirements / regulations. Respondents to the survey provided numerous and extensive comments about this issue. As one respondent characteristically noted *'In particular, the use of the so called 'black box' approach functionally implies the establishment and survey of two different budgets and is hardly acceptable by some partners. In addition, the Cofund action model induces funding and thus budget uncertainty until the results of the Cofund call. While this is acceptable when a Cofund action is mainly devoted to implement one joint call without much additional activity, this becomes very tricky when the partners want to implement a broad range of other activities, representing a substantial budget. Besides certain rules were not that easy to understand (i.e. the possibility to use unit costs but also concrete black box approach to fund additional activities) and it was not always completely clear how the costs related to these other activities had to be reported to the European Commission.'* To better understand the reported viewpoints a summary description of the concept of the 'black box' is introduced below.

¹⁹ Based on the results of the online survey.

Black Box

The 'black box' is a synonym for what is described in the Annex to the Work Programme: '*Although no costs for activities related to the preparation, implementation and follow-up of the co-funded call are eligible, the consortium may decide to use part of the Union contribution to support their activities as long as the corresponding costs are not declared as eligible and the Union contribution does not exceed 33 % of partners' funding of transnational projects and unit costs for additional activities. This means in practice that they have to replace any Union contribution that is used to support their activities with additional national contributions to the funding of transnational projects.*' The scheme below illustrates the replacement mechanism:



If the consortium decides to use part of the EU contribution originally dedicated to the call to cover other costs (for example costs of the management of the co-funded call) then the Member State contribution to the call must be increased so the total call contribution remains unchanged.

Most of the ERA-NET Cofund consortia decide to take the advantage of the 'black box' option. The budget is used to cover a multitude of costs such as the management of the co-funded call or to supplement the budgets necessary to run different additional activities envisaged by the consortium. For many agencies it is much easier to increase their commitment to the research projects rather than cover management costs or coordination and support type of expenditure. The flexibility proposed by the 'black box' scheme was, in general, appreciated and led to many additional activities being introduced in ERA-NETs Cofund projects (like researchers mobility schemes, personnel training, organisation of scientific congresses) that would be difficult or impossible to implement if based on the direct contributions from the participating agencies.

On the other hand, understanding the 'black box' model has been considered highly complex causing hours of discussion among partners. The major problem of this system is that it is fully dependent on the final EU contribution that will be received by the consortium only after the results of the co-funded call are confirmed and which may vary from the initially earmarked amount. This means that the implementation of any activities whose financial coverage is dependent on the 'black box' is also subject to the final EU contribution and is thus uncertain. This instability was described as a major obstacle by ERA-NET Cofund consortia during our interviews. It seems that the flexibility allowed in using the EU contribution created confusion in several consortia. These difficulties were exacerbated in the case of newcomers, where explaining the concept of the 'black box' approach was among the most challenging tasks.

A consensus was also spread among the ERA-NET Cofund coordinators about the need to make network management costs eligible and to increase the unit cost as it was not considered sufficient to implement additional activities. The coordinators argued that the Commission contribution should be redistributed according to the tasks assigned to the partners or at least provided as centralised budget (e.g. 20 % of EC contribution not split in separate unit costs). The concept of the unit cost and its use is explained in the following box.

Unit Cost

As stated in the Annotated Model Grant Agreement the unit costs cover the costs for additional activities related to the coordination of national/regional research and innovation programmes. Based on the costs reported to previous ERA-NETs the Commission has defined an average coordination cost per beneficiary per year of EUR 29 000. The indirect costs of 25 % are added to this before applying the 33 % reimbursement rate. This results in a maximum reimbursement per beneficiary per year of EUR 11 962.50.

In practice, the declaration of costs for additional activities is very simple and almost completely automatised. The beneficiary only has to indicate the number of years (during which such activities were implemented) and the costs are then automatically calculated by the IT system. There is no financial reporting required for the unit costs. The payment of the unit cost is not conditional on a certain level of expenditure but is conditional on participation in the other activities as planned in the proposal.

The ERA-NET Cofund consortium can decide on the redistribution of budget corresponding to the unit costs among partners. Two different approaches are observed. In some consortia each partner receives the amount of unit costs as stated in the description of activities. This ensures equal distribution among partners but also means that some partners receive budget that is lower than their actual spending (based on the additional activities envisaged) while others receive more money than the actual costs they will incur during their participation in the additional activities. The other adopted approach consists of centralisation of the unit costs budget (via the Coordinator) and distribution according to the previously established business plan. In such a case all partners agree on the 'mutualisation' of the unit costs for the needs of the consortium and their allocation based on the actual costs that will be incurred by each of the partners.

This second option imposes close financial monitoring and management of activities by the coordinator, but it allows partners to prepare a common strategy and define in detail the additional activities and relevant responsibilities in advance. It is clearly based on mutual trust as participants agree on a more complex distribution of the unit costs which, however, reflects actual expenditures. It is also attractive for some agencies that find it problematic in administrative terms to receive a higher budget than the actual costs incurred.

4.3. Implementation of ERA-NET Cofund actions

Responding to the needs of the ERA-NET community, the European Commission introduced several simplification measures in the ERA-NET Cofund scheme in Horizon 2020. These include:

- a. The simplified, single financial reporting at the end of the action
- b. The unit costs to cover additional activities without the need for detailed financial reporting
- c. The reduced reporting obligations v regular periodic reporting (incl. financial) in FP7
- d. The time to grant reduced to 8 months v long negotiation periods of the past
- e. The new approach of less deliverables and milestones
- f. The electronic system for signing the grant agreement, making amendments and uploading deliverables

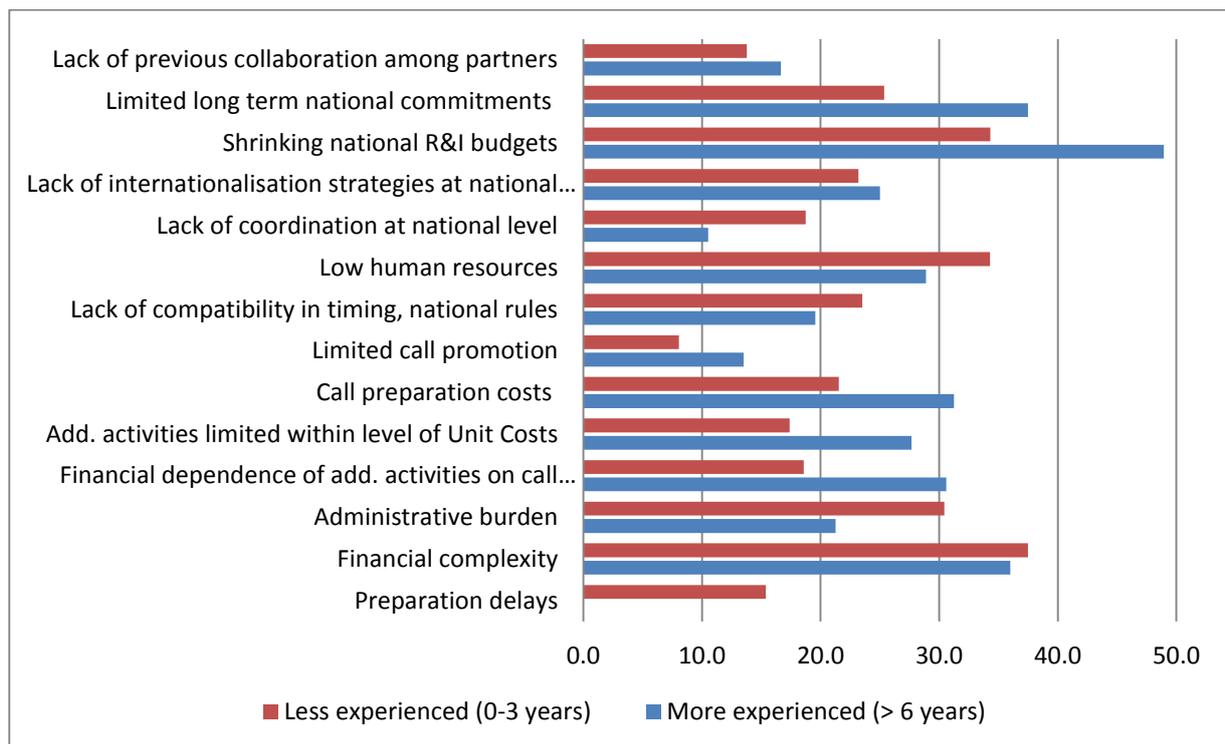
In the online survey, the most experienced respondents²⁰ pointed out that they particularly appreciated the reduced reporting obligations and the electronic system enabling signing, making amendments and uploading deliverables. The concept of the unit cost was not among the first choices of either the most or least experienced respondents. This may reflect mixed views as well as the lack of understanding of the use of the EU contribution as already discussed in the previous section. Interviews with Cofund coordinators largely confirmed these findings. On a positive note, they also highly appreciated the value of the Union contribution as well as the 25 % of indirect costs, and the decrease of the time to grant to eight months.

²⁰ Most experienced respondents were those with more than six years of participating in ERA-NETs. Least experienced were those with less than three years of participating in ERA-NETs.

Despite the simplification measures, the implementation of Cofund actions presents some problems that, interestingly, vary across newcomers and experienced participants. For the newcomers, immediate problems are considered more important — such as the administrative burden of participating in Cofund actions, the limited human resources and the incompatibility of timing and participation rules at the national level. For the most experienced respondents, long-term issues are concerns — such as shrinking national research budgets and limited long-term national commitments. It seems that over the years some learning has occurred, leading to improved understanding of financial rules and regulations by the more experienced Cofund partners.

Discussions with European Commission project officers revealed that there have been discrepancies in the way some project officers manage the Cofund actions regarding for instance the number or type of deliverables, the Grant Agreement requirements or the way to involve third countries. These discrepancies form another problem that Cofund coordinators have had to deal with.

Figure 6: Main problems in implementation (%) (*)



(*) Based on the online survey of ERA-NET Cofund coordinators and partners; values are percentages of those that agreed with the specific problem to a large or very large degree.

4.4. Optimising the use of EU and Member State contributions

The optimisation of the use of the EU and Member State budgets allocated to the co-funded call is crucial in the ERA-NET Cofund as it makes it possible to maximise the number of projects funded and increases the success rate of different countries. The experience from ERA-NET Plus under FP7 was that on average around 18 % of the EU contribution was not spent.

Maximising the EU contribution is directly related to the optimal use of the Member State budgets. The main reason why national budgets may not be optimally used, as stated by ERA-NET Cofund coordinators, is usually the low success rate of proposals involving researchers from their countries, which leads to under-spending of initially earmarked national budgets. This is inherently linked with the research capacity of the countries concerned and may reflect low international profiles and networking activities of the national research communities. It was also reported that the low number of proposals received by some countries may also be due to the complexity of the call scheme, inadequate relevance with the national priorities and competition faced by other calls focusing on the same topics but enjoying better application conditions and funding rates.

Alongside the lack of successful proposals, there is also the insufficiency of national contributions of some countries to finance the successful proposals. In order to overcome both problems some ERA-NETs took advantage of their previous experience and analysed the statistics of oversubscription and undersubscription factors per country from previous calls.

The ERA-NET E-Rare-3 consortium analysed the results of previous calls in terms of oversubscription and undersubscription rates per agency. This made it possible to identify partners that should take specific actions to decrease their oversubscription rate — such as immediately increasing the earmarked funds, or limiting the budget per research partner or per research project. To overcome the problem of countries with low success level the E-Rare-3 partners decided to implement specific measures within the call itself. They introduced incentives to encourage participation of research teams from usually undersubscribed countries in the call and included additional sub-criteria in the selection process. Finally, some of the agencies increased their budget after the first step of the evaluation of research projects. As a result, the actions taken enabled the E-Rare-3 consortium to obtain the total of the EU and Member State contributions and finance 19 out of 21 projects recommended for funding.

ERA-HDHL provided another example. Internal discussions lead to agreement on the following rules that became part of the Consortium Agreement:

- A range of 50 to 70% of the EU contribution (after removal of the expenses for management/coordination and additional activities) will be redistributed proportionally to Parties in accordance of their budget spent in the call.
- A range of 30 to 50 % of the EU contribution (after removal of the expenses for management and additional activities) will be used for gap filling. The part of the EU contribution, which is not spent for gap filling could be additionally redistributed among parties.
- The total contribution of the gap filling received by the party shall not exceed the total national contribution provided by this party to research projects. In addition, a party cannot receive more than 25 % of the total EU budget allocated to the gap filling.
- In case these principles would provoke highly detrimental situation to the overall goals of optimising the national and EU contributions as well as maximising the number of high quality proposals to be funded, once the final ranking list is established by the Scientific Evaluation Committee, the possibility to re-evaluate these principles is given in case these rules leads to the loss of more than 20 % of the total EU contribution.
- In no case will a party be requested to put their national funding into the real common pot.

Another example is provided by WaterWorks 2014. The joint calls launched by WaterWorks 2014 are considered a big success in terms of the use of committed budget: 94 % of the initially committed budget was used. All partners participated in the funding and the distribution of Cofund among the partners was high. The split of the funding was 67 % of national contributions, 22 % of virtual common pot and 11 % of real common pot (used for filling of gaps). Some partners did not make use of their Cofund and placed it as real common pot. This decision made it possible to fund more projects and use a high proportion of the initially committed budget. Considering the total number of proposals submitted to the WW2014 Call (106), the success rate in the call was about 15 %. The following indications were followed to optimise the use of the Cofund:

- Ensure that all the countries are present in the final list of projects eligible for funding
- Agree that the main shared objective is the maximum use of the available call budget
- Balance the Cofund/total funding of all partners with the last remains of the real common pot. The goal was to maximise the number of projects but also to bring in as many partners as possible.
- Guarantee that each funding agency would receive a minimum Cofund equivalent to its call management costs.
- Prior to the selection of projects to be invited to the Step 2 (full proposal), the following criteria was agreed upon: the distribution of Cofund (between real and virtual common pot); the oversubscription limit for all participating countries was set (not more than 3x of their available budget).
- The flexibility of partners is an extremely important aspect for the optimisation of the use of Cofund. At least three countries raised their budget in light of their participation in proposals invited to Step 2. Additionally, partners showed flexibility in adapting the final budget according to their projects at the final selection list — some increased their budget for 50 %, and one partner denounced their share of Cofund, which permitted a higher number of funded projects.

Such approaches help minimise disparities between earmarked and finally needed budgets and enable the maximum use of the EU top-up funding for covering gaps in the ranking list. In taking the necessary measures to ensure best utilisation of national contributions, it is important that these good practices are adjusted and adopted where possible.

In addition, it is equally crucial that participating countries reserve amounts in excess of the minimum national contributions that are necessary at proposal stage to justify the EU contribution. However, making financial commitments as early as two years in advance of the start of the Cofund action, when the exact scope of the call itself is not yet fully determined, is very difficult for some agencies.

4.5. Resource intensiveness, costs coverage and key factors for managing ERA-NET Cofund actions

The most resource-intensive task for ERA-NET Cofund coordinators and partners is the preparation of the co-funded call and the additional activities that usually requires 3 person-months or more. Cofund coordinators are also burdened with the bulk of the work in relation to the management of the action, also taking up 3 person-months or more, as well as the preparation of the grant and the consortium agreement requiring between 0.5-3 person-months.

The costs of these activities are covered by a variety of sources. Preparing the proposal, as well as the grant and consortium agreement is mainly covered by own resources. The fixed EU unit costs are mainly spent on additional activities, but also on project management, preparing the co-funded call and financial reporting. The same type of activities also consume part of the EU top-up funding. Given that the EU contribution cannot be used to cover costs related to the management of the action, these answers may reveal the implementation of the black box approach but also a lack of understanding of how the concepts of the unit costs and black box are to be applied. In addition some coordinators may have different interpretations of what constitutes management and what constitutes coordination costs.²¹

Efficiency is directly related to how the actions are managed internally. In this regard the ERA-NET Cofund coordinators and partners²² clearly identified the key factors for successful management:

- manageable and well-resourced Coordination office,
- manageable internal governance structures (steering committee, WP leader group, etc.),
- manageable and well-resourced call secretariat,
- having an internal strategy in managing ERA-NETs within own organisation/agency,
- transparency and trust among partners,
- clear regulations and IT tools developed on time,
- committed and active individuals,
- experience of the coordinator in managing ERA-NETs, and the
- management style of the coordinator: democratic and inclusive rather than top-down and unilateral.

4.6. Comparison of ERA-NET Cofund with FP7 ERA-NET and overall cost-benefit ratio

To assess the efficiency of the instrument, the ERA-NET Cofund was compared with its predecessor, FP7 ERA-NET, in terms of carrying out specific activities. Although the new instrument is still in its early days in terms of implementation, ERA-NET Cofund is at least as efficient as FP7 ERA-NET in its core activities, i.e. launching and implementing a co-funded call and additional call for proposals, implementing joint activities related to dissemination and up-take of research results, and building a common vision in the area addressed.

²¹ Based on the results of the online survey of ERA-NET Cofund coordinators and partners.

²² *ibid.*

Table 6: Comparison between ERA-NET Cofund and FP7 ERA-NET activities (*)

		Activity done as efficiently or more efficiently than in FP7 ERA-NET	Activity done less efficiently than in FP7 ERA-NET	Non-applicable/Don't know
a.	Mapping of national research in the specific thematic area	% 29.5	25.9	44.6
b.	Creating a database of funded national projects in the specific thematic area	% 25.9	27.1	47.0
c.	Implementing joint foresight activities to explore the future in the given thematic area	% 30.7	27.7	41.6
d.	Developing a common vision in the thematic area	% 37.3	27.7	34.9
e.	Developing/Updating a Strategic Research (and Innovation) Agenda in the thematic area	% 31.9	28.9	39.2
f.	Launching and implementing a co-funded call for proposals	% 43.4	30.7	25.9
g.	Launching and implementing additional call for proposals	% 37.9	31.9	30.1
h.	Organising joint mobility and/or researcher training activities	% 22.9	30.1	47.0
i.	Shared Use of existing infrastructures	% 18.1	27.7	54.2
j.	Joint development of (new) infrastructures	% 16.3	27.1	56.6
k.	Implementing joint activities related to pre-commercial public procurement or procurement of innovative solutions	% 14.5	25.9	59.6
l.	Implementing joint activities related to dissemination and up-take of research results	% 36.7	27.7	35.5
m.	Networking and brokerage events to extend participation to additional countries	% 29.5	30.1	40.4
n.	Capacity building and networking activities to foster participation of low budget/ performing countries	% 28.3	28.3	43.4

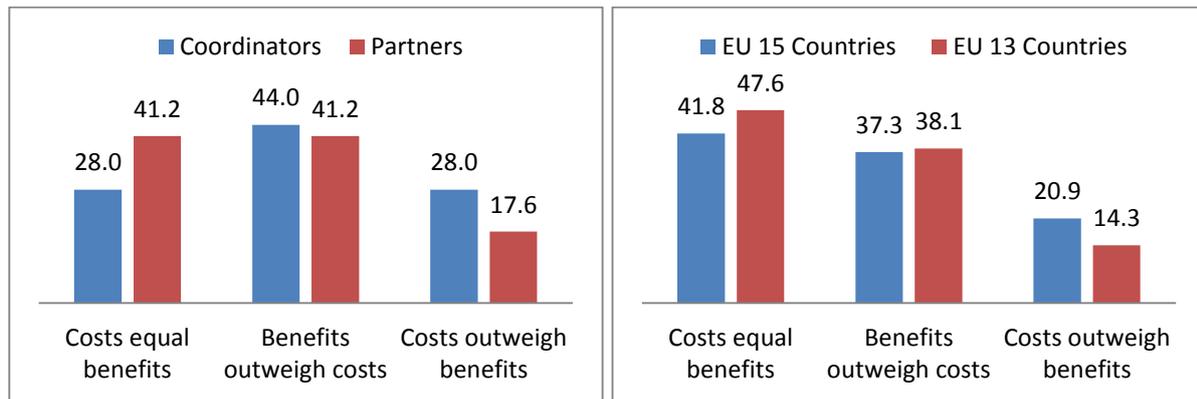
(*) Based on the results of the online survey of ERA-NET Cofund coordinators and partners.

However, there are also non-negligible shares of respondents that believe that with the new instrument activities are done less efficiently than in FP7. This is in line with the assessment of the overall cost-benefit ratio of participating in the ERA-NET Cofund instrument, where a share of 28 % of Cofund coordinators consider that costs outweigh benefits, although this drops down to 17 % in the case of Cofund partners. This possibly reflects the implementation problems discussed above.

Overall, views of the ERA-NET Cofund community²³ were rather split between those that think their participation scores even in terms of costs and benefits and those who appreciate the benefits more than the costs. EU-13 respondents are slightly more critical than their EU-15 counterparts. This less positive stance can be explained by the fact that the flexibility allowed by the instrument has been translated into more complexity and a heavier administrative burden for the ERA-NET Cofund participants and especially the coordinators. The flexibility of the instrument requires a lot of learning and discussions that induce additional management costs at national level and are time consuming. This additional cost is perceived less enthusiastically by the partners coming from EU-13 countries that are often less experienced.

²³ As documented in the responses to the online survey, 34 % of respondents believe costs equal benefits while 29.4 % think benefits outweigh costs.

Figure 7: Cost-benefit ratio for Coordinators – Partners and EU-15 – EU-13 countries (%) (*)



(*) Based on the results of the online survey of ERA-NET Cofund coordinators and partners.

In conclusion, whereas certain simplification measures have taken place that are appreciated by the ERA-NET Cofund community, there are still several issues that cause difficulties in the implementation of the instrument. These can be summarised as follows.

Issues related to the technicalities of the instrument:

- unfriendliness of the SygMa system
- incompatibility of certain evaluation elements in the case of ERA-NET Cofund proposals
- ineligibility of the management costs of the networks
- insufficient level of the unit cost.

Issues that require better communication and learning from good practices:

- complexity in translating EC financial rules into internal rules,
- lack of understanding about the use of EC contribution,
- difficulties in getting the maximum EC contribution and ensuring a fair distribution of the top-up funding.

Issues that relate to national contexts:

- shrinking national research budgets
- inability to commit national budgets two years in advance to the start of the actions
- lack of long-term commitments
- limited human resources and
- incompatibility of timing and participation rules.

Associated to these issues the administrative burden becomes high which leads to non-negligible shares of Cofund participants to state that costs are either equal or even outweigh benefits of participation. It is encouraging that good practices can already be identified on how to solve quite a few of the problems identified above. These need to be communicated widely to the Cofund community.

5. RELEVANCE AND COHERENCE TO EU POLICIES

Relevance looks at the relationship between the needs and problems addressed and the objectives of the intervention.²⁴ The ERA-NET Cofund instrument is placed under the framework of EU policies including ERA, the Innovation Union as well as a series of sectoral strategies and policies. Within this framework it is important to examine the relevance of the instrument in relation to European policy objectives, especially that of creating a critical mass of resources, the level of embeddedness in a wider European strategy for tackling societal challenges, and the level of integration in national policy contexts.

²⁴ http://ec.europa.eu/smart-regulation/guidelines/tool_42_en.htm.

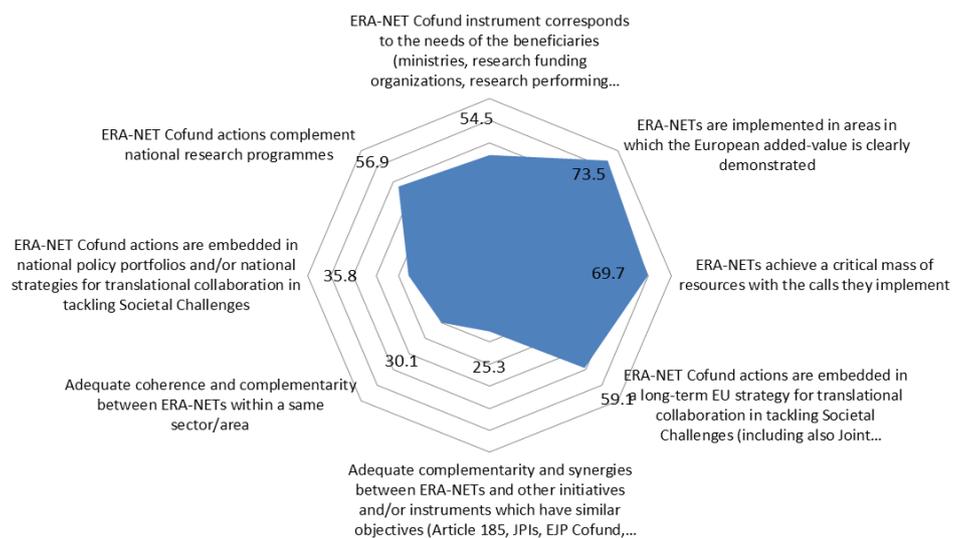
As shown in the following figure, most of the ERA-NET Cofund community considers that the instrument contributes to achieving a critical mass of resources through the implementation of joint calls. Indeed, the co-funded calls implemented by ERA-NET Cofund actions submitted in 2014/2015 resulted on average in a much broader participation of countries (16 instead of 10 under FP7) and substantially larger call budgets (on average EUR 21.6 million). This, compared to the average call budgets of EUR 19 million for FP7 ERA-NET Plus and EUR 7 million for ERA-NETs,²⁵ is a clear indication of building up a critical mass of resources.

The ERA-NET Cofund community also recognises that ERA-NETs are implemented in areas in which the European added value is clearly demonstrated and that the instrument is indeed embedded in a long-term EU strategy for translational collaboration in tackling societal challenges.

To some extent, ERA-NET Cofund actions complement national research programmes. However, they are not fully embedded in national policy portfolios and/or national strategies for transnational collaboration. Agreeing with the analysis of the perceived benefits (section 3.2) this finding is another hint that the ERA-NET Cofund instrument is confined within the mandate limits of research agencies and has not managed to upgrade into a powerful tool affecting national strategies and policies towards alignment in dealing with societal challenges.

Figure 8: Relevance of ERA-NET Cofund to national / European policies (%) (*)

Relevance of ERA-NET Cofund to national / European policies



(*) Based on the results of the online survey addressed to both ERA-NET Cofund coordinators and partners; percentage of respondents that agreed with the specific statements to a large or very large extent.

The various dimensions of the relevance of the instrument were also discussed with European Commission Directors, Heads of Units and Policy Officers as well as national representatives. The main points of these discussions are presented in the following two sub-sections.

5.1. European Commission thematic Directorates & selection of Cofund topics

There are different strategies across the directorates towards the ERA-NET instrument. Within the new framework of EU policies aimed at creating more jobs and growth combined with the challenge-driven approach and new objectives of Horizon 2020, it is imperative to decide which strategy needs to be adopted for the ERA-NET instrument. This can range from a strategy

²⁵ Niehoff J., 2014. The ERA-NET scheme from FP6 to Horizon 2020. Report on ERA-NETs, their calls and the experiences from the first calls under Horizon 2020.

underpinned by considering ERA-NETs as a tool to access additional funds for collaborative research, to a strategy of treating ERA-NETs as an approach for actual coordinating and aligning policies towards commonly set objectives.

Across the Directorates, topics for ERA-NET Cofund actions go through the consultation process with the Programme Committee before they are introduced in the Horizon 2020 work programmes. However, the identification procedure of candidate topics may be more top-down or bottom-up across the different Directorates. This is linked with the existence of a solid EU strategy for the area / sector addressed.

The strategy of the Energy Directorate managing ERA-NETs in non-nuclear research is guided by two main policy drivers: the SET Plan, its objectives and its crucial role in the construction of the Energy Union and strengthening the European Research Area in the energy R&I domain. The ERA-NET Cofund instrument is used to extend the reach of limited Horizon 2020 funds (EU funding of energy research and innovation only constitutes 6 % of total funding). Through this instrument, national funds are redirected to projects with a European dimension. Energy ERA-NET topics have focused so far on high TRL (technology readiness level) demonstration areas, although this is currently under review. Topic identification follows a rather strategic/top-down approach with the Joint Action Working Group of the SET Plan, which is chaired by Member States, being the place where discussions are held about which technology areas could attract interest from Member States and could thus be addressed by ERA-NET Cofund. The topics have to match the SET Plan strategic direction and specific objectives.

Since FP6 and FP7 the Bioeconomy Directorate has been working strategically with ERA-NETs based on input from the Standing Committee on Agricultural Research (SCAR) and its foresights and the relevant JPIs. In Horizon 2020 and the introduction of the ERA-NET Cofund action the process has changed seeking to have fewer and larger ERA-NETs with the aim of achieving a more structuring effect in the domains they address. The new process still places SCAR in a central position but now also includes DG AGRI, JPIs, the Programme Committee and a consultation addressed to national funders to make sure that real commitments can be made. In this new process a number of entry criteria have been formulated to be used for prioritisation (policy relevance, financial resources, added value to ERA). The new process has rationalised the number of ERA-NET topics in Societal Challenge 2 and it is foreseen that the strategy for ERA-NETs and P2Ps will be further developed in the coming years to increase impact and efficiency.

In the Climate action and resource efficiency Directorate, ERA-NETs are used to support basic and longer-term research, whereas large demonstration projects are directed for funding under the Horizon 2020 calls for projects. This is to ensure complementarity, due to the fact that Horizon 2020, in contrast to previous framework programmes, is more oriented towards innovation and market up-take related activities. The overall approach of the Directorate towards ERA-NETs is to achieve alignment at national level, complementarity (with Horizon 2020 supporting higher TRL research) and internationalisation, i.e. extending the network memberships to countries beyond the EU. The selection of topics follows a strategic approach according to the priorities identified for the programming period in question and following consultation with the Programme Committee and relevant JPIs. Efforts are being made to increase synergies and communication between Cofund actions and Programme Committee members as well as JPIs on both cross-cutting issues that can be addressed jointly but also in relation to the strategic utilisation of ERA-NETs.

In the Industrial Technologies Directorate, ERA-NET Cofund is considered crucial to the second pillar of Horizon 2020, i.e. Industrial Leadership. The ERA-NET strategy and topic selection is guided by the existing EU strategy on industrial technologies and related road-maps. The topics are industry-driven, and the relevant Horizon 2020 calls for Cofund actions focus more on technological areas rather than sectors, targeting lower TRL projects given that the higher TRL projects are more appropriately funded in regular Horizon 2020 calls that can support large demonstration projects

with higher funding rates for industrial partners. A CSA Synamera²⁶ is looking into policy coordination, objectives and scope of transnational programme collaboration in the NMP²⁷ area.

The Health Directorate stated that the principles of the instrument are quite relevant to the Directorate's needs, i.e. to coordinate national and regional programmes and to leverage national investments in collaborative research. The ERA-NET Cofund topics are a mix of topics directly supporting the JPis as well as other areas that require translational and interdisciplinary collaboration. Topics may be suggested by individual Member States or by the Directorate itself. The topic selection considers issues like coordination with other relevant instruments, ensuring commitment and specification of activities.

An appropriate budgetary commitment of the Member State is considered imperative for including an initiative in the Work Programmes. There is a clear recommendation in the internal guidance document for the drafting of the work programmes with a threshold for considering a topic to be supported by ERA-NET Cofund: minimum EU contribution of around EUR 5 million, and thus based on the 33 % reimbursement rate, national contributions have to reach minimum EUR 10 million.

Figure 9: Approach for selection of Cofund topics in the European Commission thematic Directorates

Thematic Directorate	Topic selection approach	Topic focus
Industrial Technologies Directorate	strategic/top-down approach (EU strategy on industrial technologies and related road-maps)	low TRL projects
Energy	strategic/top-down approach (Joint Action Working Group of the SET Plan)	high TRL projects
Climate action and resource efficiency	selection based on complementarity with SC5 Innovation Actions and consultation of Programme Committee and JPis	Basic, long-term research
Bioeconomy	strategic/top-down approach (SCAR, JPis)	
Health	mix of topics of strategic interest such as those directly supporting JPis or Member State collaboration, and other areas suggested in a bottom-up approach by several Member States	

Overall, ERA-NET Cofund is considered to correspond to the need of achieving a better coordinated thematic strategy of research and innovation between the European Commission, Member States and Associated Countries. As project officers noted, the ERA-NET scheme is considered also as a learning instrument because it is able to facilitate the internationalisation of the European research and innovation communities, while it enjoys both national and international recognition. It is perceived by the research community as an intermediate step between national and large international projects.

From the Member States' perspectives, based on the interviews with national representatives, the topic selection process is considered suitable especially in countries that have well-established structures. In France, for instance, Programme Committee representatives of different societal challenges organise national thematic groups that allow the connection of all stakeholders (i.e.

²⁶ Synamera is an EU project funded under the Horizon 2020 programme. Synamera aims to improve the visibility for essential stakeholders, most notably national/regional programming and funding authorities, on programming synergetic actions between the European Union and Member States in the NMP Programme.

²⁷ Nanotechnologies, Advanced Materials and Advanced Manufacturing and Processing

researchers, policy makers, etc.) to take decisions and support propositions for inclusion in the Horizon 2020 Work Programmes. Such a structure has been put in place for each of the societal challenges addressed in Horizon 2020.

However, in the case of the EU-13 countries the connection between funding agencies and Programme Committee representatives is not always established. Thus, such countries are very rarely the proposers of new ERA-NET topics and most of the time their participation is limited to joining the ERA-NETs while already in the process of proposal writing.

5.2. Coherence and complementarity among ERA instruments/initiatives

The ERA-NET Cofund instrument is part of a wider EU strategy promoting transnational collaboration in dealing with societal challenges. Other instruments and initiatives like Art 185s or JPIs are also part of this strategy as well as PPPs (JTIs and cPPPs²⁸).

It is widely acknowledged among the stakeholders that the plurality of P2Ps is an issue that needs to be addressed. Based on the data available in the ERA-LEARN 2020 platform (www.era-learn.eu) in certain areas there may be over 20 active P2Ps. Consequently there is need to ensure the complementarity of the different networks in the same area.

Table 7: Relevance of active networks per research area addressed

Research area	Art 169/185 s	ERA-NETs	ERA-NET Cofund	ERA-NET Plus	JPIs	Other	Total
Biotechnology	1	4	0	1	5	1	12
Energy	3	6	9	5	3	5	31
Environment	3	7	9	3	6	9	37
Food, agriculture and fisheries	2	6	6	3	4	5	26
Government and social relations	2	0	0	1	2	0	5
Health	3	6	9	2	5	2	27
Industrial production	1	2	1	2	1	1	8
Information and communication technologies	3	3	0	2	2	2	12
Materials	1	4	2	2	1	1	11
Nanosciences and nanotechnologies	1	3	1	2	0	1	8
No specific thematic focus	0	1	0	0	0	2	3
Other	1	1	1	2	0	4	9
Security and defence	0	0	1	0	0	0	1
Services	2	0	0	0	1	1	4
Socio-economics sciences and humanities	2	1	3	2	3	2	13
Space	1	0	1	0	0	0	2
Transport	2	0	0	1	2	0	5

Source: ERA-LEARN 2020 data; a network may be recorded to address more than one research areas.

²⁸ Contractual Public-Private Partnerships

ERA-NET Cofund actions are able to combine activities for the coordination of national programmes as well as funding of research and innovation projects. In this regard, they may be regarded as overlapping especially with initiatives of a more strategic nature like JPIs. Importantly, this is not the perception of either the ERA-NET Cofund community, or the project officers.

As mentioned earlier (sections 3.1 and 3.2) ERA-NET Cofund is considered more as a tool enabling inter-agency collaboration for supporting transnational research projects, rather than a high-level strategic instrument towards alignment of national policies and programmes which is closer to a JPI. Indeed, 10 out of the 27 already approved ERA-NET Cofund actions are linked to a JPI. In some cases JPIs have initiated new ERA-NET Cofunds while in other cases JPIs have started to cooperate with already existing ERA-NETs.

Seen from a JPI point of view (based on the discussions held with JPI Chairs) the ERA-NET Cofund is highly appreciated as it allows them to perform joint calls within their scope. At the same time, JPIs recognise that ERA-NET Cofund actions are not sufficient for implementing their strategic research agendas and that there are limits to the number of Cofund actions that can be directly linked to JPIs mainly because of the administrative burden involved.

Views in favour of exploiting existing instruments to the maximum as well as building synergies among them were also echoed by different EC Directorates. For instance, the Bioeconomy Directorate argued that JPIs can be reframed into a new inter-governmental institutional role with the orientation towards simplification, connectivity, joint strategy building and division of labour between national/regional and EU levels. The role of the ERA-NETs within this frame should be revisited and supported by a clear shared strategy for ERA-NETs and the other schemes and initiatives for transnational collaboration (JPIs, Art 185 s, EJPs), which is hard to find today either across the Member States or the European Commission Directorates. In this regard it would also be interesting to examine why the concept of the Framework Partnership Agreements that responded to most of the above-mentioned concerns, was abandoned.

The Climate action and resource efficiency Directorate noted that even though coordination among ERA-NETs in similar or highly connected areas has now progressed significantly, more efforts are needed to improve synergies among various ERA instruments and initiatives. To this end, it is encouraging that certain Directorates (like Industrial Technologies) have been quite successful in linking ERA-NET Cofunds with European Technology Platforms and public-private partnerships.

In addition, there are also good practice cases of networks that established synergies with different ERA instruments. Two examples are briefly presented in the following box.

SusAn and ERA-GAS

The European Research Area NETwork on Sustainable Animal Production (ERA-NET SusAn²⁹) started in January 2016. It aims to increase international research collaboration in the area of sustainable animal production. The SusAn ERA-NET launched the first call for transnational research proposals on 4 January 2016. 37 partners from 23 countries have committed EUR 17 million for research. This amount will be topped up with EUR 4 million for research by the European Commission. SusAn is closely linked to the FACCE-JPI, both with regards to the scope which is within the priorities of the FACCE-JPI and also by sharing a number of funding agencies as partners.

ERA-GAS is the ERA-NET Cofund for monitoring & mitigation of Greenhouse gases from agriculture and silviculture. ERA-GAS is initiated by the FACCE-JPI. The funding partners are from 13 European countries and New Zealand.

SusAn and ERA-GAS are also in the process of planning a common call with an FP7 ERA-NET ICT-AGRI 2 in 2017. The idea is to find cross-cutting areas / topics with synergies where ICT, sensors and robotics offer a range of different technological solutions.

²⁹ www.era-susan.eu/.

Interviews with national representatives also echoed the need to establish synergies and coordination among relevant instruments as well as among different ERA-NETs in similar areas. Certain countries, such as Spain, have repeatedly insisted that a comprehensive strategic overview of ERA-NETs is carried out by the Strategic Configuration Committee. This would serve a two-fold purpose: i) having an overall reflection on common efforts mobilised in each Work Programme topic by the Commission and the Member States; and ii) to allow Member States to better plan, deploy and coordinate domestic actions promoting the participation in ERA-NETs, as well as better prioritising participation in the different actions. This strategic overview would inform the decision-making process taking place at the thematic Programme Committees level rather than replace it.

5.3. Relevance and integration at the national level

The existence of a national strategy for participation in ERA-NETs is highly dependent on the country and the challenge being addressed. Ireland, for instance, has taken a strategic, policy-based approach to ERA-NETs in Societal Challenge 2.³⁰ Here the national strategic research agenda for agri-food (SHARP) has identified a series of topic areas that will be funded by all national funding agencies over the next 3 – 4 years. The implementation section of the strategy states that national funding agencies will fund topic areas through pan-European funding instruments (such as ERA-NETs) where possible. Other countries (like the Netherlands, Spain, or Portugal for instance) may not have a specific strategy related to participation in ERA-NETs, but consider the instrument a good means to encourage the internalisation of their national R&I system and participation is mainly driven by the importance of the research topic for their national priorities.³¹

Countries such as Austria, France, Germany, and Norway have specific strategies for participating in ERA-NETs and JPIs, or for international cooperation more broadly. In the absence of a national strategy it is much more complicated for the country to participate. For example, in the Czech Republic there is no targeted programme for participation in international activities and therefore no specific budget. Due to this, Czech participation is very limited and oriented towards initiatives where in-kind contribution can be taken into account, such as JPIs.

Overall, participation in ERA-NETs is guided by the national strategies for research and innovation and the level of convergence between the national and the ERA-NET priorities. Yet, the misalignment of the priorities addressed by public-to-public partnerships with national priorities is perceived more as a barrier by EU-13 than EU-15 countries as highlighted by EU-13 representatives.³² However, this was not the major barrier to participation in Joint Programming in research and innovation. Instead it was the limited financial and human resources.

In summary, ERA-NET Cofunds are implemented in areas with clear European added value and the instrument is embedded in a long-term EU strategy for transnational collaboration in research and innovation. Yet, there is a common plea coming from all different stakeholders (coordinators, national government representatives as well as European Commission officials) to improve coordination among ERA-NET Cofunds in similar areas as well as to establish synergies between ERA-NET Cofunds and other ERA instruments and initiatives.

Although ERA-NET Cofund actions are considered to complement national research programmes, they are not deeply embedded in national policy strategies possibly reflecting lack of ambition of participating states to fully utilise the potential of the instrument towards strategic coordination and alignment. These remarks point to the need to define a strategy for the ERA-NET instrument that is shared both by the different RTD Directorates and among Member States for realising the Cofund's full potential in coordinating and aligning national strategies and programmes.

³⁰ Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy.

³¹ Based on the interviews with Cofund coordinators and national representatives.

³² during interviews and the online survey addressed to national government representatives (that were nominated by the members of the Strategic Configuration Committee).

6. EFFECTIVENESS OF ACHIEVING EU POLICY OBJECTIVES

Effectiveness analysis considers how successful EU action has been in achieving or progressing towards its objectives.³³ The ERA-NET Cofund scheme is placed under the framework of EU policies with relation to ERA, Innovation Union as well as specific challenges supported by Horizon 2020.

Based on the intervention logic (section 1.4, Figure 1), effectiveness of the ERA-NET Cofund instrument should be assessed against two main levels and sets of objectives, i.e.:

Contribution to ERA

- Objective of the ERA-NET instrument itself (priority 2 of ERA):
 - Achievement of critical mass for the funding of transnational projects by pooling of national/regional resources, and
 - Alignment of national R&I policies and programmes
- Contribution to the other ERA priorities:
 - More effective national research systems
 - Mobility of researchers
 - Gender equality and gender mainstreaming in research
 - Optimal circulation and transfer of scientific knowledge
 - International cooperation

Contribution to Horizon 2020 objectives

- Horizon 2020 thematic objectives:
 - Excellent science
 - Industrial leadership
 - Societal challenges
- Horizon 2020 cross-cutting objectives:
 - Innovation and involvement of industry
 - Spreading excellence and widening participation
 - Gender equality (also ERA priority)
 - International cooperation (also ERA priority)
 - Cooperation between science and society (involvement of end-users)

The contribution of the ERA-NET Cofund to the different objectives is presented in the following sections based on the online survey results of the Cofund coordinators and partners, a review of ERA-NET Cofund proposals, and interviews with coordinators, national representatives of Member States, Associated Countries, third countries and European Commission Officials.

6.1. Contribution to ERA objectives

6.1.1. Transnational cooperation

Access to transnational cooperation is a priority for all countries as highlighted by all interviewed national representatives. For EU-13 countries it is of utmost importance and is often the factor that dominates the decision to participate despite the low funding and success rates of their research communities. As they characteristically noted, even if the costs of participation in ERA-NETs appear to be high, some agencies maintain their participation as it is profitable for their national research communities.

As also mentioned above (section 5, Figure 8) a critical mass of resources has been achieved over the years. The co-funded calls implemented by the ERA-NET Cofund actions submitted in 2014/2015 present on average a much broader participation of countries (16 instead of 10 under

³³ http://ec.europa.eu/smart-regulation/guidelines/tool_42_en.htm.

FP7) and substantially larger call budgets (on average EUR 21.6 million v EUR 19 million for FP7 ERA-NET Plus and EUR 7 million for ERA-NETs).

Lasting cooperation is dependent on the maturity of the networks, the level of commitment of the countries involved as well as the availability of funding. Out of the 27 Cofund networks, 10 are successors of previous ERA-NETs, while 10 are linked to JPIs. Thus, they enjoy prior collaborations, some of which may date back for ten years. This is a good indication that the ERA-NET scheme does indeed contribute to building lasting collaboration among agencies and countries in research and innovation. This is also reflected in the perceived impacts (section 3.2) where the ERA-NET Cofund community clearly appreciated transnational connectivity both across agencies and countries as well as research communities.

ERA-NETs do not replace national programmes, but rather are complementary to them. For some topics they may be the only programmes that provide funding in some countries. Yet, the ERA-NET Cofund is not powerful enough to align national programmes/strategies. Instead, Cofund actions are robust tools to increase transnational and international collaboration among funding agencies and form part of the various programmes they offer to their research communities. However, ERA-NETs can be useful in implementing overarching strategies that are formulated within more strategic initiatives like JPIs. ERA-NETs are also considered as a preparatory step towards higher level initiatives such as JPIs or Art. 185s.

6.1.2. International cooperation (beyond the EU)

Strengthening the international dimension (beyond the EU) is gradually happening in ERA-NET Cofunds. Twelve Cofund actions (out of 27) involve third countries as full partners bound by the same rules as European partners (although they do not receive any EC contribution). At the same time 19 Cofund actions include activities dedicated to establishing partnerships with third countries. These include for instance:

- collaboration with international structures (e.g. the Belmont Forum, the Global Research Alliance, International Rare Diseases Research Consortium³⁴),
- work package dedicated to joint calls with third countries, or
- capacity building events with Transatlantic and EU-India Platforms, NORFACE, Net4Society, Science Europe and workshops with other potential partners (USA, Japan, Mexico, etc.)

The participating third countries include Taiwan, USA, New Zealand, Canada, Korea, South Africa and Russia. The representatives of the respective organisations that were interviewed underlined the importance and added value of such transnational collaboration for their research community.

According to a combination of data from CORDA and ERA-LEARN, participation of non-associated third countries in ERA-NETs³⁵ has increased from around 3.5 % in FP7 to around 5 % in H2020. This is particularly significant especially when compared against the overall decrease of international participation, from around 4.7 % in FP7 to 2.4 % in H2020.

At the same time, the international dimension is topic-specific, thus it may be a strong feature of some ERA-NET Cofunds while not in others. This explains the different strategies across thematic Directorates. In the health area, for instance, which is an international topic by definition, Cofund actions do pursue the extension of their networks internationally. In the energy area, however, the international dimension is limited or rather targeted to specific countries that can contribute to strengthening competitiveness of the EU.

³⁴ www.belmontforum.org; www.globalresearchalliance.org; www.irdirc.org.

³⁵ Number of times that entities from non-associated countries have participated in ERA-NETs over the number of times that entities from any country have participated in ERA-NETs.

The Directorate for International Cooperation promotes the ERA-NET Cofund instrument outside the EU through the Joint Steering Committee for scientific and technological cooperation and continuous dialogue with Third Countries. On the one hand, they encourage ERA-NET actions to open to international cooperation and, on the other hand, they seek the interest of third countries to join. ERA-NETs give access to third countries to an ideal platform for joint calls with funders from Member States, thus complementing Horizon 2020 as well as the bilateral collaborations that may already exist with Member States.

Full involvement of third countries in ERA-NET Cofund actions faces some challenges that need to be tackled. Certain countries might find it difficult to sign the grant agreement because it is mainly addressing countries receiving EU support which is not the case for third countries. Nevertheless, the participation of third countries as full partners in the co-funded call may significantly influence its results (especially in case of oversubscription); thus, it is natural that they need to sign the grant agreement since the co-funded call benefits from the EU contribution. Alternatively, third countries can participate in the co-funded call, without signing the grant agreement, by giving their researchers the status of associated partners to research projects which means that they cannot enjoy the role of project coordinator and their contribution is usually limited to less pivotal tasks. This arrangement might not be agreeable to them. There have also been cases where instructions from the project officers regarding the involvement of third countries varied, which makes the situation even more confusing. Furthermore, participation of third countries may block the ranking list due to limited national contributions and inability to use the EU top-up funding to cover the gaps. Thus, it is important to discuss and agree internally at the very early stages of the Cofund action whether and how such issues should be dealt with.

Good practice examples of networks that involve international partners should be identified and spread to the ERA-NET Cofund community.

The Africa-EU Partnership

Since ERAfrica (FP 7 ERA-NET) Europe has taken a consolidated approach to collaborate with Africa with the aim of strengthening African research capacities and improving the impact of research for development. The Horizon 2020 work programme has opened an opportunity for a new ERA-NET Cofund called LEAP-AGRI that will contribute to coping with the challenges of food and nutrition security. The consortium has 23 African and European partners. All partners appreciate the strength and flexibility of the ERA-NET Cofund instrument to improve the research capacity and launch common calls.

6.1.3. Knowledge transfer, mobility and gender aspects

ERA-NET Cofund actions include a specific work package that is dedicated to the transfer of knowledge and the dissemination of results. The elaboration of the dissemination activities at the proposal stage is satisfactory. The preparation of a specialised dissemination strategy is usually the first task of the respective work package and the description of detailed activities is not usually fully developed at the proposal stage. Nevertheless, all the ERA-NET Cofund proposals have planned certain activities enabling knowledge transfer and dissemination targeting users and stakeholders as well as the co-funded projects and other EU initiatives. These may include for instance:

- knowledge transfer / brokerage workshops with industry or other relevant stakeholders,
- knowledge sharing networks / workshops with other EU and international stakeholders,
- working structures to coordinate collaboration with other ERA-NETs,
- joint events with other relevant initiatives — mutual learning, development of common strategic agenda,
- knowledge exchange / clustering workshops of funded projects,
- knowledge hubs,
- promotion of data sharing and publication via open access journals,
- production of webinars and website content available to large public,
- training activities and seminars,
- appointment of special groups (e.g. Knowledge Exchange Strategy Group).

European Commission officials suggest that knowledge transfer and dissemination of results of co-funded projects needs to be supported by a single, central system following open science principles and approaches.

Mobility is promoted through the exchange activities within the funded research projects. In addition some Cofund actions have defined mobility and staff exchange schemes as part of their additional activities (see the following section on the widening dimension). Overall, however, mobility could be further supported if Cofund actions were connected to relevant EU funding mechanisms like Marie Skłodowska-Curie (MSC) Actions or the COST programme.³⁶ This can be done especially in the case of the in-kind based ERA-NET Cofund or the EJP Cofund where the participation of research performing organisations (RPOs) is also allowed. For instance, one could imagine that the RPOs participating in the Cofund could form a network and apply for support to the MSC programme. At the same time COST could be promoted within the research communities addressed by the Cofund encouraging the formation of networks of researchers to apply under the co-funded calls.

Regarding gender, there are different aspects that need to be considered. First, there is the research aspect, i.e. the need to undertake a gender analysis in research areas where the gender dimension is relevant. The proposal template includes the following question on the gender dimension: 'Where relevant, describe how sex and/or gender analysis is taken into account in the project's content'. This is topic-specific and is addressed in certain ERA-NET Cofund actions like in the case of nutrition in ERA-HDHL, or cardiovascular diseases in ERA-CVD, where the gender dimension in the relevant research area is highlighted in the drafting of the call text.

Secondly, there is the human capital development aspect, i.e. the degree to which the Cofund actions pay attention to having a balanced spread across genders in management bodies (management boards, steering boards, advisory boards, evaluation panels, etc.). Art. 33.1 of the grant agreement states that 'the beneficiaries must take all measures to promote equal opportunities between men and women in the implementation of the action. They must aim, to the extent possible, for a gender balance at all levels of personnel assigned to the action, including at supervisory and managerial level'. ERA-NET Cofund actions do try to achieve gender balance in the composition of their management structures and evaluation committees as argued in the Cofund proposals.

Thirdly, there is the issue of human capital development at the project level, i.e. whether the networks encourage gender balance in the structures and positions of responsibility that are formed in the research project proposals. While this may be considered in some Cofund actions, there is no evidence to suggest that this is done systematically by all actions.

Overall, the coordinators as well as European Commission officials felt there is room for improvement in addressing the gender dimension in the ERA-NET Cofund instrument. Clear instructions on how to assess the gender dimension in ERA-NET Cofund actions for European Commission project officers and external evaluators are needed.

6.2. Contribution to Horizon 2020 objectives

The ERA-NET Cofund plays an important role in addressing Horizon 2020 objectives. Most of ERA-NET Cofund actions are embedded within the so called Societal Challenges and contribute to meeting these challenges. The quality of the research projects supported under Cofund actions is comparable to that of project supported under Horizon 2020 regular calls as noted by European Commission project officers.

³⁶ The MSC scheme encourages mobility of researchers by bringing together universities (or research institutions) and often private partners to provide training to scientists through networks or open PhD programmes. COST supports the establishment of new networks of partners where there is an added value for collaboration in a specific domain.

The contribution of the ERA-NET Cofund to innovation and to the competitiveness of the European economy is very much topic-specific. Certain ERA-NET Cofund actions such as in the areas of energy or water target high TRL projects. Some examples are shown below.

DemoWind 1 is the Offshore Wind European Research Area Network (ERA-NET) Cofund, funded by Horizon 2020. DemoWind brings together European R&D funding organisations from six countries and aims to support the development and demonstration of innovative technologies which can reduce the cost of offshore wind energy. DemoWind targets capital intensive demonstration projects that would be difficult or impossible for a single country to support. DemoWind launched its first co-funded call in 2015 with a total budget of EUR 31 million. Projects must advance innovative technologies from Technology Readiness Levels (TRL) 5 or 6 to TRL 6 or 7. In similar lines, DemoWind 2 is focused on enabling industry to push technologies mainly from TRL 5-6 up to TRL 6-8 through transnational innovation demonstration projects.

However, ERA-NET Cofund relies mainly on national programmes that often address research only. The contribution of the ERA-NET Cofund to innovation may be limited due to the fact that in several countries high TRL projects are often funded by loans which are not eligible for the EU contribution under ERA-NET Cofund actions. As a result, the participation of these countries in innovation-oriented ERA-NET Cofund actions is limited. They might still participate in the call, but will not receive any co-funding from H2020 for the projects they are supporting.

The involvement of end-users is increasingly addressed in ERA-NET Cofund actions. All but two ERA-NET Cofund actions have taken specific steps for engaging end-users. This is done through a variety of means such as:

- inclusion in Advisory Boards,
- dedicated work packages to interactions of science and society or science and business,
- stakeholder engagement toolkit,
- consultation before the selection of the call topic or surveys for contributions to the SRAs,
- inclusion in the project evaluation, dissemination and communication phases,
- seminars with stakeholders,
- user dedicated working groups, workshops and conferences,
- involvement as full partners and funders in the ERA-NET (e.g. European Society of Cardiology),
- links and collaboration with relevant other structures like ETPs or PPPs.

Whereas most of the ERA-NETs engage end-users only through participation in the Advisory Board, ERA-NETs such as BESTF 3, SMartGridsPlus or SOLAR ERA-NET involve industry and SMEs via specific workshops or matchmaking events with the researchers to help the faster translation of project results into products. ERA-NET E-Rare-3 and ERA-CVD involve end-users (patients) as full members of the consortium, where they participate as partners (funders) and are involved in all activities of the ERA-NET suggesting specific activities facilitating the relation between researchers and patients but also establishment of long-term collaboration and partnerships with public funding agencies.

Finally, as mentioned above, ERA-NET Cofund is a flexible instrument which allows the Commission to promote transnational collaboration in research and innovation not only within the EU but also abroad. By doing so, it demonstrates its potential to set global research and innovation agendas, contributes to increasing the visibility of the European research community and involves more partners in advanced, emerging and developing countries.

6.3. The widening dimension and EU-13 participation

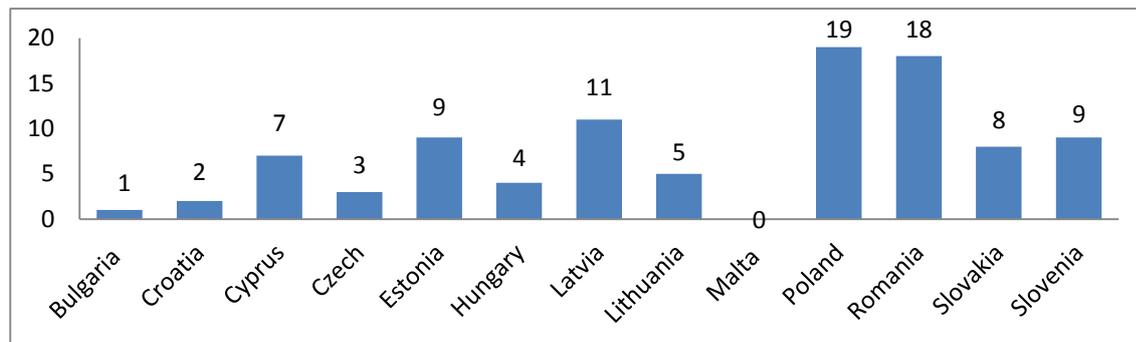
Although including EU-13 countries in Cofund actions is not an objective as such, it contributes to achieving critical mass and increasing the impact of research. By doing so, it contributes to building a more effective ERA. Consequently, strengthening the participation of EU-13 and underrepresented countries in Cofund actions is essential.

Horizon 2020 introduced the so called widening concept addressing a category of countries (not only EU-13) for which the low level of performance in research and innovation represent a barrier

to competitiveness, growth and jobs. The widening countries include: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia and Slovenia.

An analysis of the first 27 ERA-NET Cofund actions shows that the top 5 best performing EU-13 Member States in relation to the number of participations in ERA-NET Cofund actions are: Poland, Romania, Latvia, Estonia and Slovenia. The rest are relatively less actively engaged (being involved in less than 9 ERA-NET Cofund actions) or moderately engaged (less than 5). Of all the ERA-NET Cofund actions it is DemoWind 1 and 2 that do not involve any EU-13 partners, while the most populated actions with EU-13 partners are M-ERA-NET 2 (with 10 EU-13 partners), HERA JRP UP (with 7) and TRANSCAN 2 (with 6).

Figure 10: Number of participations of EU-13 countries in ERA-NET Cofund actions



Regarding their role in the Cofund actions, EU-13 partners, namely partners from Cyprus, Czech Republic, Romania, Slovakia, Slovenia and Poland are Task or WP leaders in 13 of the Cofund actions. Among the first 27 Cofund actions, which were introduced in 2014 and 2015 there were no coordinators from EU-13. But in 2016 Poland took the leadership being coordinator of Quantum ERA-NET Cofund.

The type of tasks that EU-13 partners are usually responsible for include: monitoring and assessment of projects resulting from co-funded calls (for the Romanian, Slovakian and Cypriot partners); communication, exploitation and dissemination of the research results (for Slovenian partners); and management of the co-funded call (Cypriot, Polish and Czech partners). A good example of engagement of EU-13 partners in leading positions is TRANSCAN 2 where partners from both Slovakia and Slovenia have a major role in the project management.

Based on the interviews with national government representatives and agencies coming from the EU-13 countries, the major factors limiting their participation in ERA-NET Cofund actions include:

- 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;
- 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 sources;
- Lack of awareness of the Cofund instrument;
- Lack of experience with the tasks at hand or WP leadership;
- Complicated national administrative procedures.

Additionally, other limitations are related to the following aspects:

- The Cofund consortia are not always very experienced in widening mechanisms;
- The enlargement of the consortium is not always accompanied by appropriate widening measures to make the enlargement successful in terms of EU-13 success rates and active engagement;
- The management costs are not covered by the EC in the Cofund instrument;

- The limited number of staff managing the Cofund does not allow to develop a widening strategy;
- The synergies with the European Structural and Investment Funds (ESIF)³⁷ are not exploited.

Notwithstanding the above obstacles, 15 ERA-NET Cofund actions (out of 27) do report specific inclusiveness measures encouraging the participation of partners (both funding agencies members and researchers at project level) from low-performing countries (also including EU-13). Based on a review of their websites and different platforms these measures can be grouped as follows:

- Offering partnering tools through matchmaking and brokerage events to researchers to search for collaborators (not directed explicitly to EU-13 but is many times an effective measure to foster new collaborations from EU-13). This has been done by ERA-NET SG+,HERA JRP UP, SOLAR-ERA-NET COFUND, E-RARE 3 and ERA –CVD.
- Having dedicated tasks to integrate new members through training and guidance on how to get actively involved in ERA-NET Cofund and to perform capacity building activities (e.g. development of competences for WP / task leadership roles). This is the case for instance of BiodivERSA 3 and TRANSCAN 2.

TRANSCAN 2,³⁸ involving 6 EU-13 partners out of 28 partners in total, offers some examples of inclusiveness measures (although not exclusively addressing EU-13): a) exchange/mobility schemes of individual researchers/ professionals in order to bring new expertise to an existing multi-disciplinary transnational team, b) recruitment of individual researchers/professionals in order to cover expertise and 'knowhow' unavailable in the existing team, c) exchanges/mobility of researchers (especially young researchers) between teams and countries participating in the project to foster a multi-disciplinary approach in research, d) short term training of scientists, as well as operational staff, e) technical workshop referring to the scientific work planned in the project, f) short training (1 or few weeks) of several partner teams. These measures are expected to increase the level of integration and experience of the participating funding agencies which will then help them undertake more leading roles in future ERA-NET Cofund actions.

- Increasing the maximum number of partners in a Cofund proposal if EU-13 participants are added (as in ERA-HLDL and E-RARE 3)
- Launching a targeted call for research proposals for EU-13 countries. Coming from the ERA-NET Cofund community the suggestion was made to include in a dedicated call, research topics that are highly relevant for EU-13 areas of interest taking also into consideration the smart specialisation strategies of EU-13 countries. This could increase the success rate for EU-13.
- Allowing EU-13 partners to join research consortia at a later stage (i.e. after the pre-proposal stage).

For instance, in the 2014 co-funded call of NEURON Cofund (with 4 EU-13 partners) research groups from three EU-13 countries which had so far not been successful in the joint call (Latvia, Slovakia and Romania) were invited by the national representatives to contact the successful consortia and ask for possibilities of collaboration, based on the budget from their own national funding agency and the condition of an added value for the consortium. So far, researchers from Latvia and Slovakia were accepted by successful consortia consisting of German, French, Swedish and Israeli researchers.

The COST programme³⁹ can be another good example in terms of a proactive inclusiveness strategy. COST has developed an action plan which aims to increase inclusiveness in COST

³⁷ ESIF refers to: ERDF – European Regional Development Fund, CF - Cohesion Fund, ESF - European Social Fund, EAFRD - European Agricultural Fund for Rural Development and EMFF – European Maritime and Fisheries Fund.

³⁸ <http://transcanfp7.eu/transcan/mod/resource/view.php?id=87>.

³⁹ COST is the European framework supporting transnational cooperation among researchers, engineers and scholars across Europe.

activities of EU-13 and other countries defined as COST Inclusiveness Target Countries (ITCs). Half of the COST budget is dedicated to activities with a focus on engaging researchers from ITCs and during the annual Work and Budget Plan negotiations the degree to which the expenditure had a balanced reimbursement for ITCs is also analysed. In addition, the main proposers are strongly advised to include ITC participants in Action Leadership positions and to ensure that significant proportion of events take place in ITC locations.

Establishing synergies between Horizon 2020 and ESIF is another important factor that could strengthen the participation of EU-13 countries in ERA-NET Cofund actions. However, based on interviews with national representatives as well as EU-13 funding agencies, it is not clear how synergies between ESIF and Horizon 2020 could be implemented. Nevertheless, EU regulations⁴⁰ that lay down the rules for ESIF, Horizon 2020 and other EU programmes directly managed by the Commission in the areas of research, innovation and competitiveness have dedicated provisions to ensure coordination, synergies and complementarities between funds. In addition, the European Commission published guidance for policy makers and implementing bodies *Enabling synergies between European Structural and Investment Funds, Horizon 2020 and other research, innovation and competitiveness-related Union programmes (2014)*⁴¹ which offers examples of synergies between Horizon 2020 and ESIF (e. g. implementation schemes for ERA-NET Cofund, JPIs, JTIIs, MARIE CURIE Cofund, KICs, etc.). Based on this guidance synergies can be achieved through:

- bringing together Horizon 2020 and ESIF money in the same project;
- successive projects that build on each other or;
- parallel projects that complement each other;
- ESIF programmes could also be designed and implemented to take up high quality project proposals from Horizon 2020 or other centrally managed programmes, for which there is not enough budget available in the respective programmes.

Importantly, some Cofund actions have planned for dedicated activities to examine potential synergies between regional, national and European funds. For instance, ERA-NET Smart Cities and Communities – ENSCC⁴² with 3 EU-13 partners among the total of 18, explores the potential for combining structural funds and national research and innovation funds through a dedicated work package that enables the mapping and sharing of existing best practices in combining different funding resources. Two pilot actions are also envisaged that will enable a number of projects co-funded under ENSCC to follow up their activities under ESIF. M-ERA-NET 2⁴³ with 43 partners, 10 of which from EU-13 partners, has a dedicated task focused on identifying clear options for harmonising national and regional funding schemes and monitoring procedures.

The above analysis shows that specific measures fostering widening for EU-13 countries are both needed and possible. These measures can be summarised as follows:⁴⁴

- a) networking tools on a central platform (utilising the ERA-LEARN 2020 P2P partners search tool or other tools) followed by networking events for creating Cofund consortia with a good balance between EU-15 and EU-13 partners;

⁴⁰ Regulation 1303/2013 laying down common provisions of the ERDF, ESF, Cohesion Fund, EAFRD and EMFF; Regulation 1299/2013 on specific provisions for the support from the ERDF; Regulation 1300/2013 on the Cohesion Fund; Regulation 1304/2013 on the ESF and Regulation 1302/2013 on a European grouping of territorial cooperation (EGTC).

⁴¹ http://ec.europa.eu/regional_policy/sources/docgener/guides/synergy/synergies_en.pdf.

⁴² <http://jpi-urbaneurope.eu/enscc/>.

⁴³ <https://m-era.net/joint-calls/joint-call-2016>.

⁴⁴ Based on interviews with EU-13 organisations, national representatives and the workshop discussions with ERA-NET Cofund coordinators.

- b) flexibility to add research organisations from EU-13 or other underrepresented countries between phase 1 and 2 of the evaluation process of the project proposals (in agreement with the project coordinator) in order to increase success rates for EU-13 and thus increase chances to retrieve the maximum of EU top-up and national contributions;
- c) possibility to increase the maximum number of participants in project proposals in case EU-13 organisations are added;
- d) capacity building activities in the first two years of ERA-NET Cofund actions. These should be addressed to all new partners involved in the action. Such activities could be staff exchange schemes, or master classes on inclusiveness such as the one organised by the Platform of Bioeconomy ERA-NET Actions;
- e) dedicated calls to be set up in ongoing Cofund actions for short term fellowships for young scientists from EU-13;
- f) transfer of the knowledge and results produced in the co-funded projects to EU-13 scientists through dedicated additional activities or calls;
- g) training seminars to be organised (utilising the ERA-LEARN 2020 resources) for EU-13 potential project managers/coordinators as well as for promoting synergies with structural funds;
- h) guidance document for drafting the call topic towards internationalisation and widening;
- i) financial flexibility of EU contribution with higher level of EU contribution for those Cofund actions with increased participation from EU-13 and other underrepresented countries;
- j) utilisation of the H2020 NCP network in EU-13 for better dissemination of the co-funded calls;
- k) indicators for assessing and monitoring the level and type of participation of EU-13;
- l) establishment of a help desk at the level of DG RTD dedicated to the use of ESIF in ERA-NET Cofund and establishing close communication and collaboration between DG REGIO and DG RTD officials to improve understanding of ESIF facilities and rules.

6.4 Potential contribution of ERA-NET Cofund to the 3 'O' policies

The Commission has set three goals — Open Innovation⁴⁵, Open Science and Open to the World⁴⁵ — to reinforce Horizon 2020 and the ERA policies. These goals should not be seen as new policy initiatives or programmes but as a conceptual way of thinking and defining policy priorities.

Open Innovation is to be seen as a way for Europe to get more out of its innovation talent and innovation efforts. ERA-NETs have historically been more focused on coordinating research activities among countries than on coordinating innovation actions. The extent to which ERA-NET actions focus on innovation is more linked to the type of participating organisations and their priorities rather than to any obstacles posed by the instrument itself. Our analysis shows in areas like energy or water there has been a focus on innovation and industry involvement. In addition, there have been several FP7 ERA-NET examples dealing with innovation. Such an example was the call that the FP7 ERA-NET ICT-AGRI 2 in 2014 performed and launched together with the cPPP Future Internet (FI-PPP) with the aim to boost the development of smart services and applications for the agri-food sector. While there are many examples of innovation platforms in Europe, ERA-NET Cofund actions could be practical ways of supporting Open Innovation in linking national with European innovation programmes.

Open Science (Open Access) represents an approach to the scientific process enabling free access to publications, research results and data. The idea is to make research and its findings freely accessible to any interested person including other scientists thus improving knowledge circulation. Several ERA-NETs (e.g. ICT-AGRI 2) and JPIs (JPI Climate) have already had a focus on Open Access while several ministries and public funders involved in ERA-NET Cofund actions have formulated policies that make public-funded research results available in the public sphere in order to make science better and strengthen the knowledge-based economy. ERA-NET Cofund actions could be a pragmatic way of encouraging Open Access and Open Science approaches in research organisations.

⁴⁵ Open Innovation, Open Science and Open to the World a vision for Europe, available at <http://bookshop.europa.eu/en/open-innovation-open-science-open-to-the-world-pbK10416263>.

Open to the world is about cross-border research cooperation so that Europe can access the latest knowledge and the best talents world-wide. Several challenges targeted by European policies such as energy, climate change, health, water and food security, are also global challenges. Thus Europe should be in the lead of developing global research partnerships. Based on the analysis of the ERA-NET Cofund actions, there are many ERA-NETs already today that have included partners from non-European countries. Representatives of organisations from Third Countries were also quite positive in taking part in ERA-NET Cofund actions, although some organisations have difficulties in signing the grant agreement and the consortium agreement. ERA-NET Cofund actions offer a pragmatic means to establishing dialogues with international partners and build critical mass of resources beyond the EU in tackling these challenges. Today both the European Commission and the Member States have a number of contacts with countries outside Europe. ERA-NET Cofund actions could be an efficient way to promote the EU as a major global player and get access to research, innovation and knowledge created outside EU.

In conclusion, ERA-NET Cofund significantly contributes to strengthening transnational cooperation and establishing a lasting cooperation among countries to tackle common challenges. A critical mass of resources has been created over the years with an increasing number of partner countries and substantially larger call budgets. Coordination of existing national programmes is achieved although not to the level of aligning national strategies. ERA-NET Cofunds needs to be underpinned by an overarching strategy acknowledging this potential.

The instrument has facilitated widening participation to lower performing countries, although there are several areas of improvement. Nonetheless, it is encouraging that there are already good practice cases of Cofund networks involving lower performing countries. ERA-NET Cofund actions are also gradually strengthening the international dimension with an increasing number of participating third countries since FP7.

Dissemination of results and knowledge transfer is facilitated through dedicated work packages. The involvement of stakeholders outside the research community such as public authorities, businesses and other end-users is increasingly addressed. Gender issues have been taken into consideration in some research areas.

7. EU ADDED VALUE OF ERA-NET COFUND

This section addresses the added value of the ERA-NET Cofund instrument, i.e. the value it brings additionally to that of other comparable options like previous versions of the ERA-NET instrument or national programmes. EU added value brings together the findings of the other criteria, presenting the arguments on causality and drawing conclusions, based on the evidence to hand, about the performance of the EU intervention.⁴⁶

Based on the analysis presented in the previous sections and the discussions with all the stakeholders addressed it becomes clear that the added value of ERA-NET Cofund lies in the support for transnational collaboration and related benefits:

- increasing the quality of research activities (increased competition in research leading to higher quality and excellence)
- allowing countries to access complementary knowledge and/or research capacity from other countries to address specific societal challenges (critical mass)
- allowing countries to improve their scientific and technological capabilities
- increased funding and visibility of certain research areas
- collaboration with third countries and increased visibility and attractiveness of the EU research and innovation system

As a coordinator characteristically noted '*ERA-NET Cofund is an essential instrument that ensures international collaboration. If it has not existed it would be much more complicated to collaborate.*

⁴⁶ http://ec.europa.eu/smart-regulation/guidelines/tool_42_en.htm.

The EU contribution is very useful to fund more projects and unlock ranking list where necessary. In some cases, like in E-Rare-3 and JPco-fuND the number of projects funded was doubled thanks to the EC contribution (in E-Rare-3 from 10 to 19, in JPco-fuND from 10 to 21). Moreover, unblocking the ranking list enables support of more research teams in the countries involved thus improving their success rates. This was particularly appreciated by the countries that usually present lower success rates due to the fact that their research teams participate in projects that are ranked lower.

European Commission project officers considered that the value for money in terms of the investment made by the EU v the national contributions of Member States was quite satisfactory, although in some cases like bioeconomy the call sizes may be rather small in terms of budgets. They also stated that the calls of ERA-NET Cofund instruments can be used as an intermediary step in preparing researchers to take part in regular Horizon 2020 calls. This is eased also by the fact that the success rate of ERA-NET calls is higher than those of Horizon 2020.

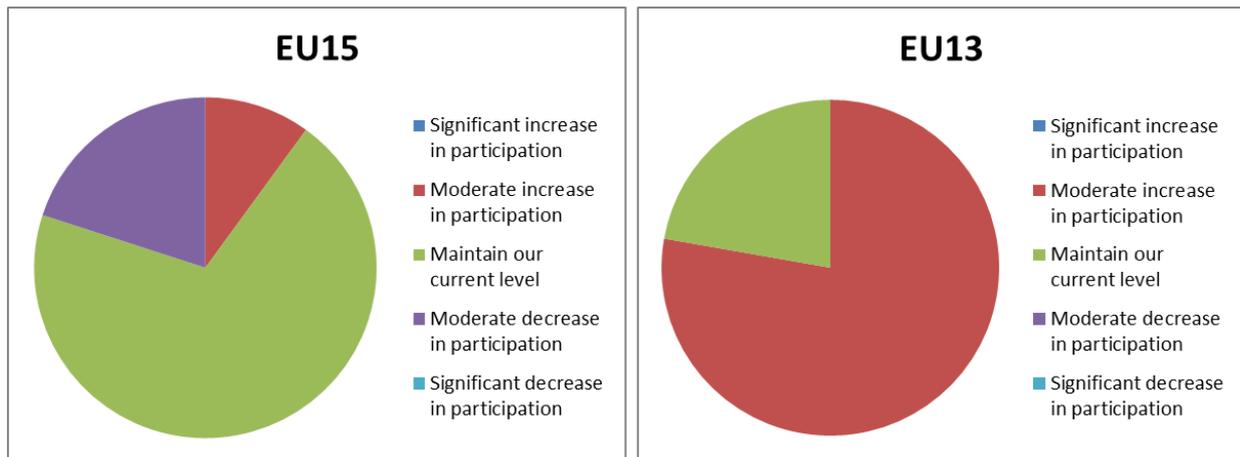
Along similar lines, senior Commission officials stressed the key role of the instrument for structuring the ERA as well as in stimulating joint actions between the member countries. Officials in the Health Directorate stated that some of the ERA-NET actions have served as entry points for Horizon 2020 proposals/projects in similar topics and noted that the projects funded by ERA-NETs are smaller but not necessarily of lower quality than normal Horizon 2020 research projects.

The merging of the ERA-NET and ERA-NET Plus is seen as a positive step. The core activity should remain the joint calls, while additional activities should be possible and developed on a case-by-case basis. ERA-NETs can be useful in implementing overarching strategies that are formulated within more strategic initiatives like JPIs, although they can also serve to structure new collaborations for specific topics that may appear. This implies a need for a more flexible version of the instrument in the future.

There are a number of issues that need consideration in order to improve the efficiency of the instrument and thus its added value in comparison to its predecessor, FP7 ERA-NET. As summarised in section 4, whereas certain simplification measures are appreciated by the ERA-NET Cofund community (reduced reporting obligations, electronic system, simplified, single financial reporting) there are still several areas of improvement both in the proposal and grant agreement preparation phase as well as in the implementation phase of the instrument. The most important challenges are how to manage the financial aspects of the instrument due to complexity in translating EU financial rules into internal rules, the lack of understanding about the use of EU contribution, and difficulties in getting the maximum EC contribution and ensuring a fair distribution of the top-up funding. Associated to these issues the administrative burden is kept high which leads to non-negligible shares of Cofund partners (28 %, cf. Figure 7) to state that the costs of participation outweigh the benefits.

However, the vast majority of national government representatives (24 out of the 27) stated that they were satisfied with their participation in the ERA-NETs overall. In addition, the majority of EU-15 national representatives plan to maintain their current participation in the future while the majority of EU-13 national representatives plan to increase it (although moderately).

Figure 11: Intentions of countries with regards to participation in ERA-NET Cofund in the future as expressed by the national representatives (*)



(*) Based on the online survey addressed to national representatives.

In summary, the added value of ERA-NET Cofund primarily lies in strengthening transnational collaboration, and providing the ability to fund more projects through the EC top-up funding. The added value of the instrument is also demonstrated through the achievement of its objectives as presented in section 6, in particular:

- increasing the quality of research activities (increased competition in research leading to higher quality and excellence),
- allowing countries to access complementary knowledge and/or research capacity from other countries to address specific societal challenges (critical mass),
- allowing countries to improve their scientific and technological capabilities,
- contributing to increased funding and visibility of certain research areas,
- facilitating the collaboration with third countries and increasing the visibility and attractiveness of the EU research and innovation system.

However, while the new version seems to be doing at least as well as its predecessor in relation to launching and implementing calls, a significant share in the ERA-NET Cofund community still thinks that the FP7 ERA-NET version was more efficient in implementing the activities examined. In relation to the future form of ERA-NET Cofund, the need emerges for a more flexible version of the instrument underpinned by a clear strategy for ERA-NETs shared among all stakeholders and reflecting the instrument's intervention logic.

8. RECOMMENDATIONS

In line with the above findings and based on consultations with the stakeholders we suggest a number of short-term recommendations. These are underpinned by a key recommendation presented as the first and lead to concrete suggestions about the future format of the ERA-NET instrument under the next Framework Programme.

Key recommendation

ERA-NET Cofund actions need to be underpinned by a comprehensive strategy in the challenge/thematic area addressed and synergies with other instruments and initiatives should be explored in order to achieve ERA objectives more efficiently.

We strongly believe that more efforts need to be devoted to embedding ERA-NETs in a coordinated and coherent strategy across thematic areas and in synergy with other instruments and initiatives. This will fully exploit their potential in achieving ERA objectives. **Decisions to support ERA-NETs should be based on a coherent strategy underpinning their development in the area concerned.**

Strategies for challenges/thematic areas should be supported by an exercise — to be carried out by the interested Member States and Associated Countries assisted by the Commission — to determine **complementarity and synergies with other existing P2Ps and PPPs as well as the Framework Programme Work Programmes**. This also needs to address the request expressed by Member States for a balance of investments between P2Ps / PPPs initiatives and instruments and the 'regular' Horizon 2020 research and innovation actions.

In practical terms **synergy building** can be facilitated by **thematic workshops** bringing together representatives of all relevant instrument and initiatives in a challenge/thematic area. This would help to **establish regular contacts and closer links among the stakeholders from Member States and EC** involved in the programming process and the implementation of activities. This can include **carrying out joint foresight exercises or other joint activities, such as launching calls together** taking into account the whole EU landscape and exploiting synergies with national programmes and strategic themes and topics prioritised by Programme Committees of the Framework Programme.

Short-term recommendations (in the context of the Horizon 2020 WP 2018-2020)

At the planning/programming level

1. More focus on the strategic potential for ERA-NET Cofund actions in the process of designing the Horizon 2020 Work Programmes and at national level

- The Commission services should develop and implement **clear long-term strategies for the use of the ERA-NET Cofund instrument** for the relevant challenges and priorities. They should involve Member States and Associated Countries and the relevant bodies and configurations. This should be reflected in the drafting of the Work Programme topics as well as in the evaluation criteria applied for Cofund proposals.
- The **strategies should also address the relevant horizontal policies and issues**, e.g. the international dimension, innovation, sustainable development and climate change as well as gender equality.
- ERA-NET Cofund actions should be dependent on clear criteria and conditions being fulfilled, including **strong financial upfront commitments from participating states**.
- Member States need to **integrate the ERA-NET Cofund instrument in their national strategy portfolios, with a strong and longer-term financial and political commitment** to public-public partnerships.
- Commission services should increase the take-up of policy-related results and knowledge produced in the different public-public partnerships — in particular ERA-NETs — **when drafting the Horizon 2020 Work Programmes**.

At the implementation level

2. Change the design of the instrument to better reflect participants' level of ambition in terms of collaboration and commitment

- In line with the first recommendation and in order to better exploit the potential of ERA-NET Cofund actions, some changes could be made to how the instrument is used. The **flexibility of the definition in the General Annexes and the drafting of topics should be used to better reflect the level of ambition**. In addition to the minimum obligation to implement a co-funded joint call, additional requirements could be added e.g. by making additional activities and additional joint calls compulsory.

3. Improve efficiency of implementation by stepping-up the learning curve and sharing knowledge, experience and good practices

- DG RTD should **continue the communication and training activities** addressing the relevant Commission services with a particular focus on the policy objectives and the use of ERA-NETs in the context of thematic strategies. At the same time, they should ensure the coherent implementation of actions across services including executive agencies. Particular attention should be paid to the **financial issues** consortia have to take into account.
- **Guidance on preparing and implementing ERA-NET Cofund actions** should be further improved, notably within the ERA-LEARN 2020 context, serving both the needs of newcomers and those of more experienced ERA-NET partners. This should cover the entire cycle from proposal preparation, grant agreement preparation, organisation and implementation of the co-funded call and other activities, monitoring and impact assessment.
- Particular attention should be paid to **exploiting synergies with European Structural and Investment Funds (ESIF)** with a view of better aligning operational practicalities in the next programming cycle.
- **ERA-LEARN 2020**, the common support platform for public-public partnerships, should play a **central role in organising the knowledge sharing process and documenting good practices** in close collaboration with users. The aim should be to establish standard practices that can be implemented across all ERA-NETs. The visibility of ERA-LEARN 2020 and the important services it provides needs to be improved. ERA-LEARN could also expand its role to that of a supplier of professional services on demand by ERA-NETs, especially in tasks related to managing calls and disseminating results.

4. Ensure efficient management of the Union contribution and national contributions

- Participants should ensure that calls' financial management aim at **maximising the number of proposals evaluated above threshold that can be funded**. This requires sufficient and balanced national financial commitments and a relationship of trust between the participants as well as dissemination of good practices.
- Complete absorption of the financial commitment from the EU to the ERA-NET Cofund actions is a major concern for Commission services and requires participating states to make national commitments to the co-funded calls in excess of the minimum amounts necessary to justify the requested EU contribution. **Any funded actions should include a minimum of 25 % reserve in order to reduce the risk of not fully using the EU contribution**.
- Participating states and their funding agencies should consider **standard practices that can be implemented across all ERA-NETs to simplify implementation and minimise wasteful use of resources**, e.g. common funding rules with the possibility to centralise grant management, common reporting procedures, common starting dates of projects, etc., abiding by Framework Programme standards.

5. Better exploit the potential of ERA-NET Cofund actions in supporting the widening strategy

- Participating states and the Commission services should promote **a proactive approach engaging low-performing countries at the topic selection stage for ERA-NET Cofund**

actions, i.e. in the joint vision development and strategic agenda setting to promote a stronger role for low-performing countries.

- Participants should make use of the flexibility of the ERA-NET instrument and further develop and **implement good practices to boost participation of beneficiaries from low-performing countries** in selected proposals (adaptation of evaluation sub-criteria, flexibility to add beneficiaries between phase 1 and 2 of the evaluation process of the project proposals; transfer of the knowledge and results produced in the co-funded projects to scientists from low-performing countries through dedicated additional activities, post call researchers' grants).
- The Commission should regularly **monitor participation of low-performing countries, inform the ERA-NET Cofund community and disseminate good practices** through ERA-LEARN 2020.

At the exploitation, monitoring and evaluation level

6. Improve knowledge and valorise impacts of ERA-NET Cofund actions and funded projects

- A **common procedure should be built up for monitoring and assessing impacts of ERA-NET Cofund actions and their resulting projects** including SMART key performance indicators. This task can build on the work that is currently done under the ERA-LEARN 2020 project for setting up a central framework for monitoring and evaluating P2Ps.
- The **dissemination and exploitation of results from projects funded by ERA-NETs should be systematically improved at both national and transnational level**, building on current good practice but also expanding towards a broader portfolio of activities. This should include better valorisation in the context of national and European policy making e.g. through dedicated 'policy briefs'.
- Participating States and Commission services should more proactively **promote the label of ERA-NET as a brand for transnational research collaboration** within the EU as well as beyond.

The future of ERA-NETs

The experts agree that the future Framework Programme needs to **continue supporting programme level collaboration of Member States and Associated Countries via ERA-NETs**. The future form of support to public-public partnerships should be an adaptable scheme reflecting:

- the level of ambition and commitment of participating states,
- the scale and scope of the area addressed, and
- the relevance to the objectives of the Framework Programme.

It should allow

- **a 'softer' approach** in areas where participating states are committed to collaborate and objectives can be achieved by mainly providing longer-term financial support to management and coordination, including costs of implementing joint calls. In these cases funding of the networks should be ensured via the standard coordination and support actions.
- **a strong 'co-funding' approach** for mature networks with strong long-term financial commitment from participating states and high relevance for Framework Programme objectives. In these cases the future instrument should allow full flexibility concerning the range of activities (including multiple co-funded calls), the variety of stakeholders involved (research funders as well as governmental research performing organisations) and the level of EU contribution in order to ensure the achievement of a critical mass of resources and actors.

The Commission services should develop the approach under the next Framework Programme by involving the relevant stakeholders from Member States and Associated Countries. The Commission services should also consider further simplifying the toolbox by **designing one comprehensive Cofund instrument**. It is also suggested to **re-consider eligibility of costs of national financial instruments** in the context of Cofund actions and **revise the Financial Regulation** accordingly.

9. REFERENCES

A. Documents

Cost Strategy (2016) Inspiring researchers, strengthening Europe. Strategic vision for the COST Association

ERAC (2011) ERAC Opinion on ERA-related instruments 24 May 2011.

ERA-LEARN 2020 Deliverable 3.2. Policy Brief on impact assessment of networks – 2015, <https://www.era-learn.eu/publications/other-publications>.

ERA-LEARN 2020 Deliverable 5.2 Annual Joint Programming Conference Report

ERA-NET Cofund proposals of the 27 first ERA-NET Cofund Actions approved in H2020 WP 2015/2016

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - Partnering in Research and Innovation. Brussels, 21.9.2011, COM(2011) 572 final

European Commission (2014) Enabling synergies between European Structural and Investment Funds, Horizon 2020 and other research, innovation and competitiveness-related Union programmes. Guidance for policy-makers and implementing bodies.

European Commission (2016) Open Innovation. Open Science. Open to the World.

European Commission, Tool #42: Identifying The Evaluation Criteria And Questions. http://ec.europa.eu/smart-regulation/guidelines/tool_42_en.htm

French Authorities Position Paper on the ERA-NET Cofund instrument

German Federal Ministry of Education and Research (2015) The European Research Area and the Funding of Research and Innovation by the European Union. A contribution to the policy debate. 2015

Horizon 2020 General Annexes 2016/17, http://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016_2017/annexes/h2020-wp1617-annex-d-eranet-cofund_en.pdf

Horizon 2020 Work-programmes 2015/2016

Hunder, A., Hernani, J. T., Giry, C., Danielsen, K., Antoniou, L., (2016) Evaluation of Joint Programming to Address Grand Societal Challenges. Final Report of the Expert Group. European Commission

Julkowska, D., (2015) The Interactions between European and National Programming. Master's Report.

Meagher, L. R. (2013). Research impact on practice. Case Study Analysis Report to the ESRC

Rigby, J., Cox, D., Barker, K. (2014) Case studies of Impact from the ESRC Genomics Forum.

B. Presentations

Collins, M., Gonzalez, J. M., Rauschen, S., Willis, T., Constantin, F., Niehoff, J., (2016) Co-fund governance in the Horizon 2020 Societal Challenge 2 area. Presentation of the approach for the revision of the WP 2017 concerning ERA-NETs, based on the process worked out by PC/SCAR Task Force

Elisabeth Bertrand Horizon 2020. ERA-NET Cofund actions. WP 2014/15 and ERA-NET call topics 2014 overview. DG Research & Innovation.

Jörg Niehoff Horizon 2020 ERA-NET Cofund actions. DG Research & Innovation

Jörg Niehoff, (2014). ERA tools for Public-Public Partnerships, https://www.era-learn.eu/events/annual-joint-programming-2015-new-date-2016/10_Niehoff.pdf. DG Research & Innovation

Jörg Niehoff, (2014). The ERA-NET scheme from FP6 to Horizon 2020, <https://www.era-learn.eu/publications/ec-publications/the-era-net-scheme-from-fp6-to-horizon-2020>. DG Research & Innovation

C. On-line sources

Websites of the 27 ERA-NET Cofund Actions (call announcements, call descriptions, governance structures, activities, etc.)

10. ANNEXES

10.1. Acknowledgements

The Expert Group would like to thank the ERA-NET Cofund coordinators and participants as well as the national government representatives for their participation in the respective online surveys. The group also appreciates the time they gave for either an interview or for attending the dedicated workshop that was organised to validate the conclusions and recommendations coming from our analysis. Special thanks are also due to JPI chairs and Cofund evaluators who agreed to be interviewed.

The help and assistance provided by the colleagues from the ERA-LEARN consortium was invaluable in carrying out the analysis. We would like to thank Mr Angus Hunter, Ms Hayley Welsh and Ms Christina McGhee from Optimat, Dr Ben Kummer from VDI/VDE-IT and Dr Chiara Marziocchi from the University of Manchester.

Finally, the members of the Expert Group also wish to thank the Commission officials from the Joint Programming Sector of DG RTD for their full support and assistance: in particular Mr Jörg Niehoff, Mr Emmanuel Gayraud, Mr Andrei Lintu and Ms Nadine Coppin. In addition, we would like to thank senior officials and project officers in the different DG RTD Directorates who offered their time for discussions, attended the dedicated workshop, or provided data and written comments on various occasions.

10.2. Analytical methodology

The evaluation issues addressed

The evaluation issues addressed were set out in the Terms of Reference and included:⁴⁷

- efficiency: the relationship between the resources used by an intervention and the changes generated by the intervention (which may be positive or negative);
- effectiveness: how successful EU action has been in achieving or progressing towards its objectives;
- relevance and appropriateness: the relationship between the needs and problems in society and the objectives of the intervention;
- coherence: how well or not different actions work together, and
- EU added value: changes which it can reasonably be argued are due to EU intervention, rather than any other factors.

The methods applied to collect evidence

The methodology consisted of desk research, online surveys, interviews conducted by the experts in Brussels, in the Member States or by phone with ERA-NET coordinators, representatives of funding agencies and research performing organisations, representatives of research ministries and sectorial ministries as needed, Commission services in charge of the ERA-NETs and other relevant stakeholders.

The different levels addressed

As the ERA-NET Cofund instrument is still in its early stages the methodology followed the approach of a formative evaluation. Recommendations were sought on how best to adjust the instrument in the future. Three levels were addressed in particular:

⁴⁷ http://ec.europa.eu/smart-regulation/guidelines/tool_42_en.htm.

- the policy level: the instrument's rationale and intervention logic;
- the operational level: the governance and management processes and structures, the organised activities, and the outcomes, outputs and perceived impacts;
- the central management of the instrument: the role of Commission officials in designing and centrally managing the instrument.

The targeted stakeholders

In accordance with the above levels the target audiences included:

- ERA-NET Cofund coordinators and partners;
- Member State representatives;
- stakeholders from Associated and Third Countries;
- European Commission senior officials;
- European Commission officials dealing with horizontal issues such as widening, international cooperation and gender;
- representatives of other P2P s such as JPI chairs.

The policy level was covered with interviews with European Commission senior officials as well as with national government representatives nominated by the Strategic Configuration Programme Committee of Horizon 2020. National government representatives were initially invited to take part in an online survey that was then followed by selected interviews. The aim was to ensure that the views of all countries were reflected: not only the most interested involved countries, but also the interested but less involved and the low performing countries.⁴⁸ The survey was completed by national representatives of 10 EU-15 countries, 8 EU-13 countries and 5 non-EU countries. It was followed by 12 interviews.

The operational level was covered by interviewing ERA-NET Cofund coordinators and partners as well as European Commission project officers. The method applied was an online survey that was sent to all ERA-NET Cofund coordinators and partners. The survey managed to achieve a 50 % response rate.⁴⁹ This was supplemented by individual interviews with the 27 ERA-NET Cofund coordinators. Some selected partners were also interviewed to cover gaps from survey responses as well as to ensure that perspectives from different funding agencies from various countries were taken into account. This was especially relevant for less active Member States, including EU-13 countries. Agencies from non-EU countries identified as quite active or interested in the instrument were also interviewed.

European Commission project officers were interviewed on the central management of the ERA-NET Cofund actions. This was done during a workshop held in Brussels on 23 February. In addition, individual interviews were conducted with policy officers dealing with specific issues such as widening, international cooperation, and gender.

To further complete the overview of different stakeholders, the chair and rapporteur of the Expert Group informed the JPI chairs about the group's mandate and explored JPIs' interest in getting

⁴⁸ By low performing countries we refer to countries that invest relatively little in ERA-NET Cofunds. This may include several EU-13 countries as well as some EU-15 countries.

⁴⁹ Responses are representative of the total population of ERA-NET Cofund coordinators and participants in terms of countries and the 27 ERA-NET Cofund actions.

involved in the analysis. This resulted in collecting the opinions of all JPI chairs during the analysis phase.

Finally, a workshop was organised with the ERA-NET Cofund coordinators and selected partners on 21 June 2016. The workshop was an opportunity to present an overview of the evaluation's interim results, validate the main findings, and discuss recommendations.

The different means by which each stakeholder type was addressed are shown in the following table. In order to support the tasks a total of six interview templates⁵⁰ were created and two online survey questionnaires.⁵¹

Table 8: Methods applied per stakeholder group addressed

Stakeholder type	Interviews	Online survey	Workshop
European Commission senior officials	X		
European Commission project and policy officers	X		X
ERA-NET Cofund coordinators	X	X	X
ERA-NET Cofund participants	X	X	X
National representatives	X	X	
ERA-NET Cofund evaluators	X		
JPI chairs	X		

The members of the Expert Group met formally on eight occasions to review evidence and draw up their conclusions. In between the meetings the experts discussed regularly in tele-conferences organised with the help of the European Commission.

10.3. Glossary

ERA-NET Scheme: The ERA-NET Scheme was the first policy implementation tool introduced in FP6 aimed at supporting the coordination and cooperation of national and regional research programmes. The scheme and its future form (ERA-NETs and ERA-NET Plus in FP7) is addressed to programme managers and / or owners and has received proposals for coordination actions in several fields of science and technology using a bottom-up approach.

ERA-NET Cofund: ERA-NET Cofund under Horizon 2020 is the merger of the former ERA-NET and ERA-NET Plus actions and is implemented by using 'programme co-fund actions'. This instrument is designed to support public-public partnerships, including joint programming initiatives between Member States, in their preparation, establishment of networking structures, design, implementation and coordination of joint activities, as well as EU topping-up of a trans-national call for proposals. It allows for programme collaboration in any part of the entire research-innovation cycle.

ERA-NET Cofund community: ERA-NET Cofund coordinators and partners

⁵⁰ Addressing ERA-NET Cofund coordinators and participants, specifically EU-13 participants, third countries, JPI chairs, European Commission senior officials, and national government representatives.

⁵¹ These referred to the online survey involving all ERA-NET Cofund coordinators and participants and the one targeting the national government representatives nominated by the Strategic Configuration Committee.

National government representatives: individuals (public officials or country experts) who were nominated by the members of the Strategic Configuration Committee to report the official position of their countries.

Programme owners: national/regional ministries/authorities responsible for defining, financing or managing research programmes carried out at national or regional level.

Programme managers: research councils or funding agencies or other national or regional organisations that implement research programmes under the supervision of the programme owners. Their participation has to be mandated by the national/regional authorities in charge (normally the ministry responsible).

Research funder / funding agency: legal entities owning or managing public research and innovation programmes.

Structural funds/ESIF: The EU's five structural and investment funds (ESIF) consist of the [European Regional Development Fund](#); the [European Social Fund](#); the [Cohesion Fund](#); the [European Agricultural Fund for Rural Development](#) and the [European Maritime & Fisheries Fund](#). Overall, the policy aims to strengthen economic and social cohesion in the European Union by reducing the differences in development between regions. The day to day operation and selection of all projects happens at Member State level. Each Member State has several managing authorities that are in charge of administering the funds through operational programmes. Operational programmes must be co-financed by the Member States.

Public-to-public partnerships for joint programming in research and innovation: initially, the process of joint programming was linked primarily to JPIs. However, over the years the meaning of joint programming has broadened to include other relevant instruments and initiatives. Currently it is understood that the process of joint programming can be put into operation through three main public-to-public partnerships — ERA-NETs (including the latest version in H2020 — ERA-NET Cofund), Art. 185, and JPIs.

Article 185 (Art. 185): these are public-to-public partnerships where participating EU Member States integrate their research efforts by defining and committing themselves to a joint research programme, in which the EU promotes the voluntary integration of scientific, managerial and financial aspects.

Joint programming: joint programming is a Member State-led process designed to optimise existing and future publicly funded research efforts in Member States. It aims to promote cross-border cooperation and the coordination and alignment of national publicly funded research programmes in a limited number of fields, each addressing a specific societal challenge, through specific initiatives, the so-called *Joint Programming Initiative*.

European Joint Programme (EJP): The European Joint Programme under Horizon 2020 is a co-fund action designed to support coordinated national research and innovation programmes. The main activity of the action is the implementation of a joint programme of activities to attain objectives common to Horizon 2020, ranging from research to coordination and networking activities, including training activities, demonstration and dissemination activities, support to third parties etc. The main beneficiaries are research performing organisations.

Alignment: Alignment is the strategic approach taken by Member States to modify their national programmes, priorities or activities as a consequence of the adoption of joint research priorities in the context of joint programming with a view to implement changes to improve the efficiency of investment in research at the level of Member States and ERA.

How to obtain EU publications

Free publications:

- one copy:
via EU Bookshop (<http://bookshop.europa.eu>);
- more than one copy or posters/maps:
from the European Union's representations (http://ec.europa.eu/represent_en.htm);
from the delegations in non-EU countries (http://eeas.europa.eu/delegations/index_en.htm);
by contacting the Europe Direct service (http://europa.eu/eurodirect/index_en.htm) or
calling 00 800 6 7 8 9 10 11 (freephone number from anywhere in the EU) (*).

(*) The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you).

Priced publications:

- via EU Bookshop (<http://bookshop.europa.eu>).

This report presents the findings, conclusions and recommendations of the analysis of the first ERA-NET Cofund actions that was performed by the expert group set up by the Commission in December 2015. The analysis shows that the ERA-NET Cofund actions are strongly perceived as a valuable instrument for contributing to the objectives of EU policies (ERA and Horizon 2020). The added value of ERA-NET Cofund lies primarily in strengthening transnational collaboration and building long-lasting relationships across countries. It also supports more ambitious calls and funds more projects through the EU top-up funding. However, ERA-NET Cofund actions are less considered as strategic instruments that can influence national strategies. Although cross-national alignment is aimed at, this does not upgrade to a higher policy level beyond the already set strategies and mandates of existing institutions. The analysis also highlighted certain implementation issues that deter increased efficiency of the instrument although important steps have been taken in this direction. The expert group has made six (6) specific recommendations addressing the strategic/policy as well as the implementation level. Yet the key message of this report can be summarised in one Key Recommendation: ERA-NET Cofund actions need to be underpinned by a comprehensive strategy in the challenge/thematic area addressed and synergies with other instruments and initiatives should be explored in order to achieve ERA objectives more efficiently. This recommendation should underline all the rest as well as the future format of the ERA-NET instrument. It is suggested that this should be an adaptable scheme reflecting the different levels of maturity of networks, as well as the ambitions and commitments of Member States.

Studies and reports