ERA LEARN

4th Annual Report on Public-Public Partnerships 2018

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Foreword

The year 2017 was an important milestone for Horizon 2020, marked by the interim evaluation and its follow-up. Partnerships, including the Public-Public Partnerships (P2Ps), have been a key component in this exercise, with important evaluations on the Joint Programming Process, the ERA-NET Cofund actions and, more recently, the different Article 185 initiatives completing the picture on achievements and challenges. Many of these evaluations have relied heavily on data provided by the ERA-LEARN project.

In 2018 ERA-LEARN has delivered impressive work regarding the further collection and analysis of data on funded projects, their pilot integration in eCORDA and the impact assessment at project level. ERAC, the European Research and Innovation Area Council, highly appreciated its advice for the Commission and Member States on Partnerships and the thematic analysis that ERA-LEARN piloted for the Health area, which is currently being expanded to all areas.

The continuation of ERA-LEARN with a new, ambitious set of activities will ensure the necessary support to Participating States and their funding agencies during the transition from Horizon 2020 to Horizon Europe, with the complete revision of the policy approach and implementation of Partnerships.

ERA-LEARN must be congratulated on its contributions. The annual report provides a unique overview on the activities and achievement of Public-Public Partnerships that would not have been possible without the fantastic support and meticulous work of Hayley Welsh, Katrina Watson and Angus Hunter from Optimat. We also very much appreciate the continued support from the networks that take the time to provide the data to ERA-LEARN and increasingly use its online system as the central point to display information on their activities and, in particular, their funded projects. The entire ERA-LEARN team, led by Roland Brandenburg from FFG, continues to make huge progress and I very much look forward to continuing this close collaboration.

Jörg Niehoff

Head of Sector Joint Programming
DG Research & Innovation

Executive Summary

This is the 4th Annual Report on Public-Public Partnerships (P2Ps) that has been prepared by the ERA-LEARN project team using data provided by the P2P networks. The report has adopted a new format in response to feedback from the community and, in addition to providing an updated picture of the evolving P2P landscape and headline statistics, it presents some highlights of best practice from 2018 as networks seek to address specific challenges and create impact for and within the community.

ERA-LEARN entered into the next phase of its development in mid-2018 and will continue to support the P2P community until at least 2022. It will build on the work that was undertaken in the previous phase and continue to help address policy issues. Importantly, it will also support P2Ps in the transition from Horizon 2020 to Horizon Europe.

The report provides a summary of the changes that will take place in relation to European Partnerships in Horizon Europe. A simplification of the forms of partnerships has been endorsed by the Parliament and Council, with three types being suported going forward: co-funded partnerships, co-programmed partnerships and institutionalised partnerships. The provisions for European Partnerships are currently being negotiated and engagement with potential partners and relevant stakeholders will take place once a political agreement has been reached. A strategic coordinating process will be set up for Partnerships to ensure transparency and evidence based selection of them, support their implementation and provide strategic guidance on the overall policy approach.

In relation to the current P2P landscape that has evolved and diversified somewhat since the beginning of Horizon 2020, there are some clear examples of good practice from within the community as networks address challenges related to widening, international cooperation and cross network collaboration. Details related to some of these have been provided in the report to demonstrate such activities; for example

— **Broadening participation in projects funded by ERA-NETs:** The E-Rare 2018 joint transnational call successfully piloted a new approach fostering inclusion of partners from under-represented countries. This resulted, for example, in the number of Czech research teams being included in full proposals increasing from two to seven, of which two were funded.

— **Development of Guidance for Researchers - Effective science-policy interfacing in research:** BiodivERsa 3 has developed a guide helping researchers to better understand what is policy relevance of research and how to efficiently identify the most relevant policies and policy-making bodies for a given research project. This has been already taken up by Horizon 2020 projects and other Partnerships that are developing similar guidelines for their policy areas.

— **Fostering transnational and multidisciplinary collaboration:** JPI HDHL, JPI Oceans and FACCE-JPI have worked together to develop a Knowledge Hub on Food and Nutrition Security. This addresses a topic that crosses the Strategic Research Agendas of all three JPIs and will support the implementation of the Sustainable Development Goals. It will also seek to provide a roadmap for future reseach needs.

— **Supporting ground-breaking European research to redefine the International System of Units (SI):** research teams funded by EMRP contributed to the SI revision, addressing specific measurement challenges related to the the kilogram, the kelvin, the ampere and the second, culminating in this historic step to define all SI units in terms of constants that describe the natural world.

As mentioned, ERA-LEARN continues to provide updated statistical data in relation to networks, calls and funded projects. We could not do this without the support of the P2P networks that take the time to provide this data on a regular basis and so we thank all of them for their continued support.

Detailed charts and high level statistics can be found on the ERA-LEARN website and much of this is summarised throughout the report. Some headlines include:

— 98 networks were active at the beginning of 2018 (40% of which were ERA-NET Cofunds) with 12 ending during the year (mainly FP7 networks)

— 57 joint calls closed in 2018, almost 40% of which were ERA-NET Cofund calls

— Of the 23 ERA-NET Cofund calls that closed in 2018, 12 of these were initial EU co-funded calls and 11 were additional calls (with no EU co-funding). Three networks have already implemented their 3rd additional calls

— By the end of 2018, some 637 joint calls will have been implemented by P2P networks, with a cumulative investment of more than Euro 7 billion in around 7,145 transnational projects

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1. Introduction

This 4th annual report on the P2P landscape, from the ERA-LEARN project, has adopted a new format in response to feedback from the community. The report will continue to provide an up-to-date picture of the current landscape and headline statistics but, while previous reports focussed on statistical data, this new format will take a different approach.

Note that all the statistics that were previously prepared for the annual reports have been updated and are available on the ERA-LEARN website (www.era-learn.eu/p2p-in-a-nutshell/facts-figures).

This report commences with a short overview of the work of ERA-LEARN and some insight into the emerging policy for Horizon Europe. It then provides an update regarding the evolving P2P landscape in relation to calls, committed budgets and transnational projects. This is followed by a description of some of the highlights from 2018 across all network types, providing an outlook on future planned activities and summarising the work that has been ongoing in the area of impact assessment.

In line with previous reporting, the networks are segmented into seven types:

— ERA-NET Cofund (the Horizon 2020 ERA-NET Cofund instrument).[1]

— JPIs (Joint Programming Initiatives).

— Article 185 Initiatives.

— ERA-NET FP6 (the FP6 Coordination and Support Actions).

— ERA-NET FP7 (the FP7 Coordination and Support Actions).

— ERA-NET+ (the FP7 ERA-NET Plus Instrument).

— Self-Sustained Network (P2P networks that continue implementing joint calls after the end of the Commission funding).

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1   Analysis of Cofund networks is shown for both the EU co-funded joint calls and the additional calls (without EU co-funding)

Limitations

The majority of the information and statistical analysis contained in the report is based on factual data provided by the P2P networks but there are some limitations and gaps. In such cases, informed estimates have been made so that the scale and diversity of the joint calls is fully apparent.

The ERA-LEARN team and the Commission rely on the data that comes directly from the P2P networks in relation to calls and projects to ensure we can provide the community with the most accurate and up-to date information and analysis available. It is, therefore, important that we can count on the continuing support of those network coordinators and call secretariats that have provided the necessary data and that others will help us to improve the overall quality of the aggregated data.

Acknowledgements

The ERA-LEARN team would like to sincerely thank the P2P networks that have provided the detailed datasets to support production of this report and the additional statistics available from the ERA-LEARN website. We very much appreciate this ongoing support.

We would also like to thank Jörg Niehoff and his colleagues for providing access to European Commission data, helping to address data gaps and their valuable insight and guidance to support the descriptive analysis.

Feedback

Any comments on this report and/or suggestions for future reports may be addressed to hayley.welsh@optimat.co.uk.

2. ERA-LEARN 2018-2022

The ERA-LEARN Platform entered its next phase of development in the middle of 2018 and will continue to support the P2P community until 2022. Its scope has been extended to build on the lessons from the previous phase, help address policy issues and support the transition from Horizon 2020 to Horizon Europe.

Firstly, the online portal (www.era-learn.eu) has been completely overhauled during 2018. The new version has been designed for improved user navigation and includes new features such as statistics and easier access to country-specific information. A more systematic framework for interaction with the P2P community is also being implemented to complement the annual conferences and guide the development of the new learning materials that will be needed for Horizon Europe.

Secondly, a number of activities are being implemented to help increase the impact of P2Ps in key areas such as cooperation with the innovation community, complementary use of the ESIF, more active participation of EU-13 countries and international cooperation. In some cases, this will require a more thematic approach to the work of ERA-LEARN. Stakeholder workshops and Policy Briefs will be an important means of gathering and communicating evidence and ideas.

Thirdly, the monitoring and impact assessment activities leading to the annual reports and guidance material will be extended to the implementation of a central process for project-level impact assessment and also country-specific analysis.

Last, but not least, will be a more ambitious programme of training workshops. This will build on the current training programme on the H2020 ERA-NET Cofund instrument and be extended to other subjects such as foresight, communication, IPR, impact assessment, internationalisation and inclusiveness. As the new instruments for Horizon Europe become more apparent so ERA-LEARN will aim to respond rapidly with appropriate information and training events. Thematic workshops will also be organised to foster better connections between relevant P2Ps and with other related partnerships and frameworks.

3. European Partnerships in Horizon Europe

The Horizon Europe proposal puts forwards a reform agenda for more strategic, impact oriented and complementary European Partnerships delivering on agreed Union priorities and policies. This is a response to the recommendations of the interim evaluation of Horizon 2020 and the Lamy group, as well as calls made by the Council and Parliament to rationalise the EU funding landscape. European Research and Innovation Partnerships are initiatives where the Union, together with private and/or public partners (such as industry, public bodies or foundations), commit to jointly support the development and implementation of a programme of research and innovation activities.

Various forms of Partnerships have been launched under previous research Framework Programmes to co-invest with industry and Member States in priority areas of research and innovation. The lack of a coordinated policy approach led to over 100 such Partnerships being supported under Horizon 2020, taking multiple forms. The Horizon Europe proposal put forward a simplification of the forms of Partnerships, and this simplification has been endorsed by the Parliament and Council. As a result, Horizon Europe will support three types of partnerships

— Co-funded Partnerships, best suited to Partnerships with Member States and public authorities at its core that rely on aligning national programmes and policies with Union policies and investments;

— Co-programmed Partnerships, aiming to address broader communities, medium term objectives, and that need a higher degree of flexibility in the range of activities, partner composition and resource allocation;

— Institutionalised Partnerships, based on Article 185 or 187 TFEU as well as the Knowledge and Innovation communities of the European Institute of Innovation and Technology (EIT-KICs). These are best suited to long term and highly integrated Partnerships with central implementation structures that have relatively stable objectives and partners (e.g. large companies) and that require stronger (legally binding) commitments for contributions from all partners than other forms of Partnerships. They should only be considered if there is evidence that other forms of Partnerships would not achieve the objectives.

The Horizon Europe provisions for European Partnerships are currently being negotiated between the Council and the European Parliament, broadly confirming the Commission proposal while introducing a number of small modifications that stress the active involvement of Member States.

An important element introduced was the capping of the budgets for Partnerships in the second pillar – Global challenges and industrial competitiveness ("majority of budget in Pillar II to be allocated to actions outside of European Partnerships").

Preparation for the next steps depends on the progress of negotiations. Once there is a political agreement with the Council and the European Parliament on the strategic planning of Horizon Europe, and the areas for missions and institutionalised Partnerships, the Commission services are expected to engage with potential partners and relevant stakeholders to start the preparatory work. This includes the start of Impact Assessment of candidates for institutional Partnerships and the preparatory work for all Partnerships, as well as the subsequent launch of a public consultation in support of the Impact Assessment work.

An important new element is the so-called strategic coordinating process for Partnerships. It is set up following a recommendation of the Council and European Research and Innovation Area Committee (ERAC) in order to:

— Ensure transparent and evidence-based selection of Partnerships, rationalising the landscape and maximising their impacts;

— Support the effective and efficient implementation of Partnerships throughout their lifecycle;

— Provide strategic guidance on the overall policy approach and the future objectives and composition of the Partnership portfolio.

The strategic coordinating process will consist of two parts:

— The advice on the selection of Partnerships will be fully integrated into the Strategic Planning of Horizon Europe, with the Strategic configuration of the Programme Committee as the single entry point for the structured consultation of Member States/Associated Countries. This will ensure focus on commonly agreed objectives and expected impacts, and the overall coherence between the different activities of the Framework Programme, while respecting the existing decision-making processes.

— An independent advisory mechanism will be set up - "Forum for European R&I Partnerships". This will be launched in 2021 with the start of Horizon Europe. Such a Forum will provide strategic input to the Commission and Member States/Associated Countries on the possible set up, implementation, monitoring and phasing out of R&I Partnerships in Europe. The envisaged Forum will support a strategy-led and coherent approach to R&I Partnerships in Europe, with particular regard to links and synergies with relevant national activities. The Forum's advice will enable the full exploitation of the potential of R&I Partnerships for the EU, the Participating States and citizens in an open and effective manner. The Forum will give national authorities access to information concerning Partnerships through a single entry point, enhance coordination with MS/AC programmes to ensure that resources and efforts go in a commonly agreed direction, as well as potentially acting as an incubator for topics of common interest.

4. Evolution and Diversification of P2Ps

This section provides an update on the evolution of the P2P landscape since the dawn of the ERA-NET scheme in 2003. It builds on data presented in the previous annual reports and includes all network types. Please visit www.era-learn.eu/p2p-in-a-nutshell/facts-figures for more detailed graphs and statistics.

P2P Networks

The analysis indicates that 98 networks were active at the beginning of 2018 (around 40% of which were ERA-NET Cofunds) and, during the year, 57 joint calls closed. It is clear, therefore, that not all networks continue to implement joint calls. It is worth noting that 12 networks ended during 2018, mainly FP7 networks, and there are others that are in the monitoring phase of the work, and hence not implementing calls at this stage.

As mentioned in previous annual reports, some of the ERA-NET Cofund networks are directly linked to a JPI, FP7 ERA-NET or self-sustained network and so, while they appear to be less active than others, there continues to be ongoing joint activities within the thematic area (further details are provided in section 5).

Joint Calls

Since 2004, some 637 joint calls have been implemented, this excludes those that were launched, but not closed, before the end of 2018. A summary of calls that closed each year is shown in Figure 1. Note that additional data made available since the previous report has updated some historical figures.
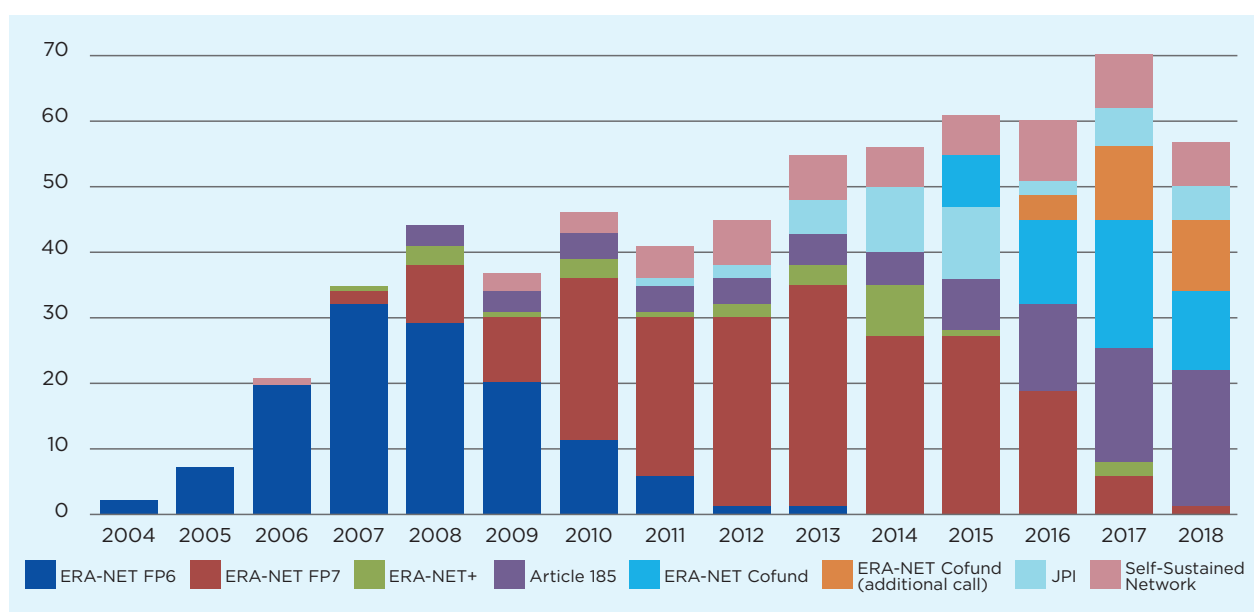

Figure 1: Number of Joint Calls (closed) between 2004 and 2018, by Network Type

Figure 1 presents an interesting picture of the evolving landscape of P2Ps across the years. The changing pattern of calls from FP6 to FP7 is clear and in 2018 only one FP7 call was undertaken, signalling the conclusion of call activity from these networks. Joint call activity peaked in 2017 with some 70 calls closing that year, around 45% of which were from ERA-NET Cofund networks. These networks represent a slightly lower proportion of calls in 2018 (39%). The number of calls implemented by Article 185 networks peaked in 2018 representing 37% of all calls.

Some additional points to note are that:

— The number of additional ERA-NET Cofund calls (without EU co-funding) was almost the same as the number of EU co-funded Cofund calls in 2018, demonstrating the traction that is being gained from the initial EU co-funding

— Only two ERA-NET Plus networks are still active and no further calls will be implemented. Both networks will end in the first half of 2019

— All remaining FP7 ERA-NETs ended during 2018 and so no further calls will be implemented from these networks

— While JPIs and self-sustained networks appear to be less active than other instruments, many are implementing ERA-NET Cofunds to support their programmes and launch calls within specific topics

A cumulative picture of the number of joint calls since 2014 is shown in Figure 2. Clearly the FP7 funding framework has spawned the largest number of joint calls since 2004, amounting to 213 over the years. Since 2015, 81 Cofund calls have closed, 26 of which have been additional calls with no EU co-funding.
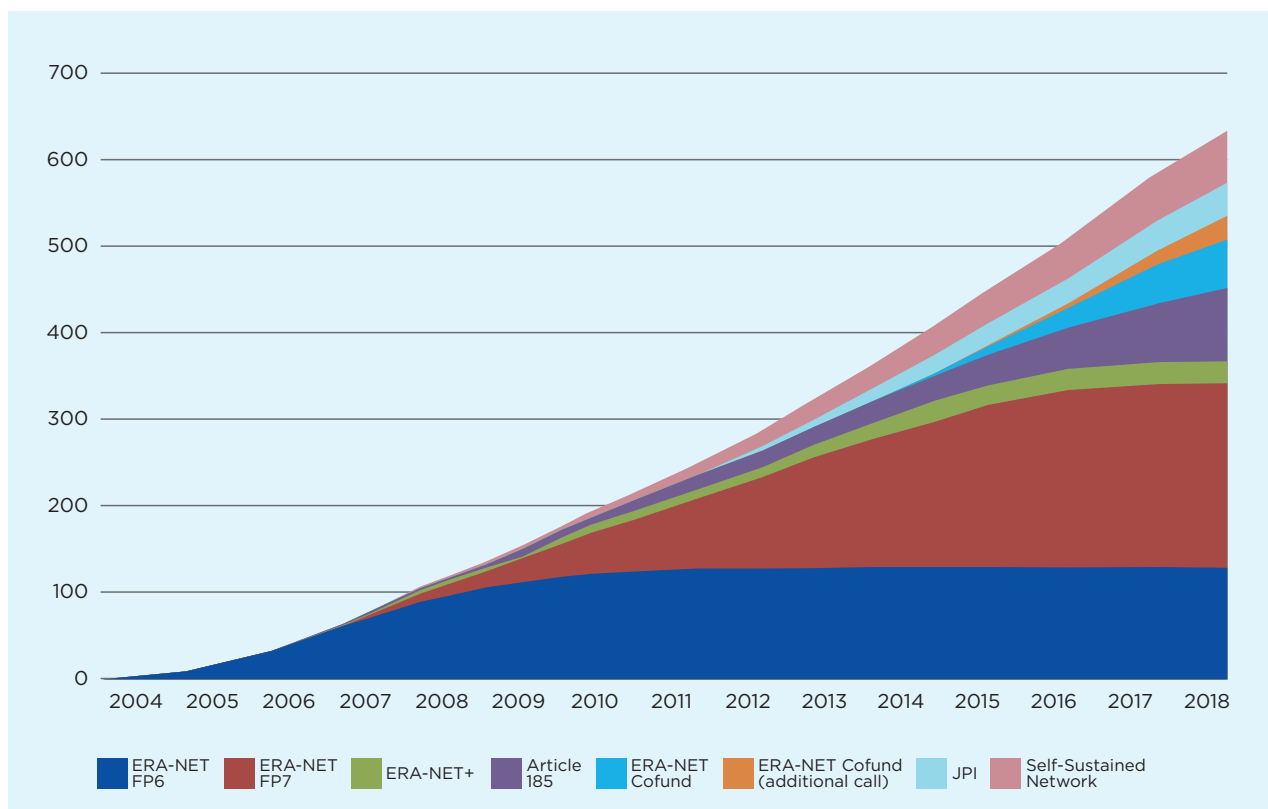

Figure 2: Cumulative Number of Joint Calls, Since 2004, by Network Type

The total national cumulative pre-call budget for all joint calls, since 2004, is more than Euro 7 billion (excluding EU contributions). The annual comparison, by network type, is shown in Figure 3, below. This demonstrates the intention and commitment of the funding agencies participating in the calls rather than the funds that were actually invested following evaluation of, and negotiation with, the selected transnational projects.
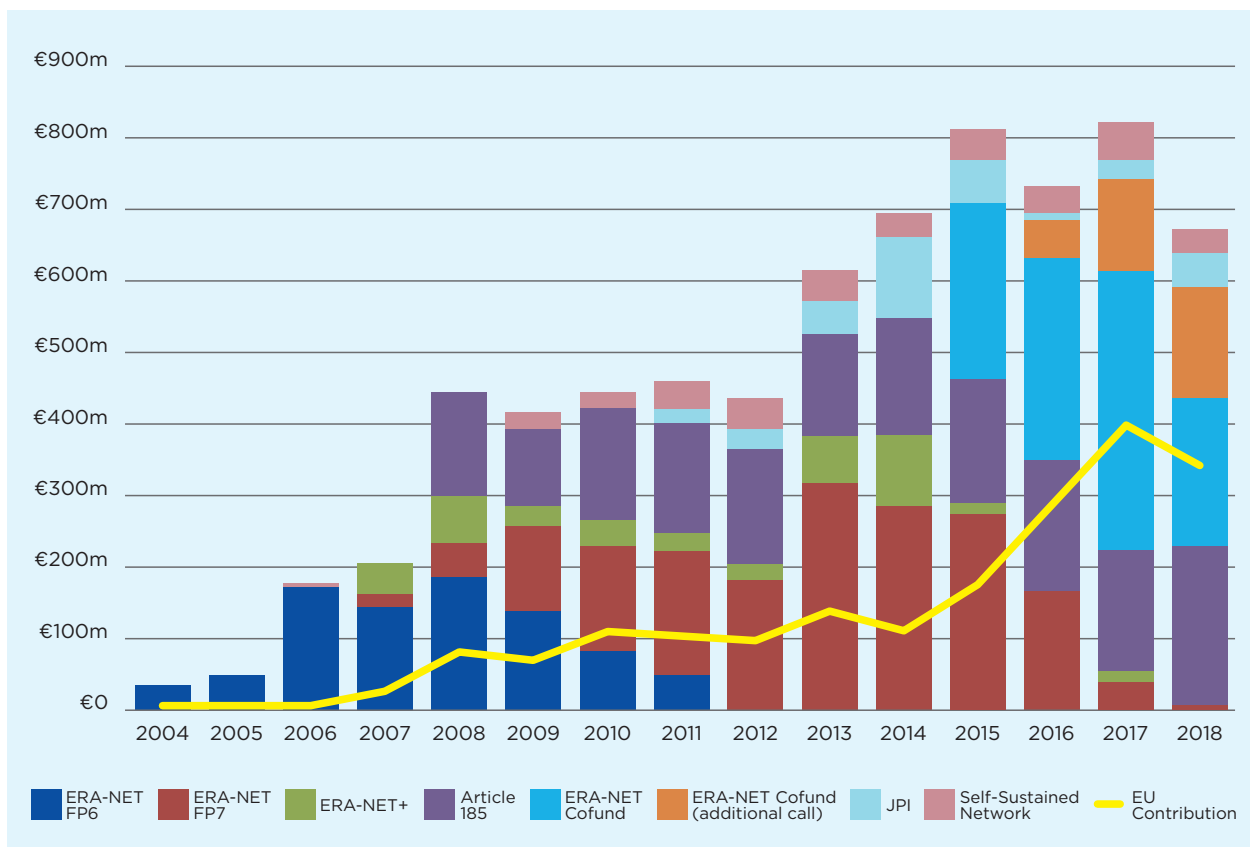

Figure 3: National Joint Call Commitment (with EU Contribution for cofounding of calls overlaid) for all Calls closed 2004-2018, by Network Type

The additional EU contribution to joint calls is highlighted by the yellow line on the graph, equating to more than Euro 1.87 billion of additional committed investment in joint calls since 2004.

Figure 3 demonstrates that, in line with a lower number of joint calls in 2018, there is a corresponding reduction in the financial commitment by national funding organisations for the same period. It is clear, however, that ERA-NET Cofunds have produced the largest national commitment to joint calls, since 2016, with both EU co-funded and additional calls accounting for 51% of the total in 2018 (63% in 2017 and 46% in 2016). Total national commitment to joint calls implemented by ERA-NET Cofunds since their inception has been more than Euro 1.43 billion. It is worth noting again, that funding organisations linked to the JPIs and self-sustained networks will have had an impact on the financial commitment to ERA-NET Cofund calls and so the picture presented in Figure 3 should be considered with this in mind.

2 Based on the thematic priorities of Horizon 2020

Figure 4 looks at the source of funding for all joint calls in more recent years (since 2014). It includes the EU contribution and demonstrates how this has increased from 15% of the total budget in 2014 to 37% in 2018, albeit that the actual value of EU contribution in 2018 was similar to the 2016 value. EU funding peaked in 2017 when there was a significantly higher number of co-funded calls being implemented, in addition to the Article 185 networks. The proportion of funding from Associated and Third countries has remained relatively steady over the years.
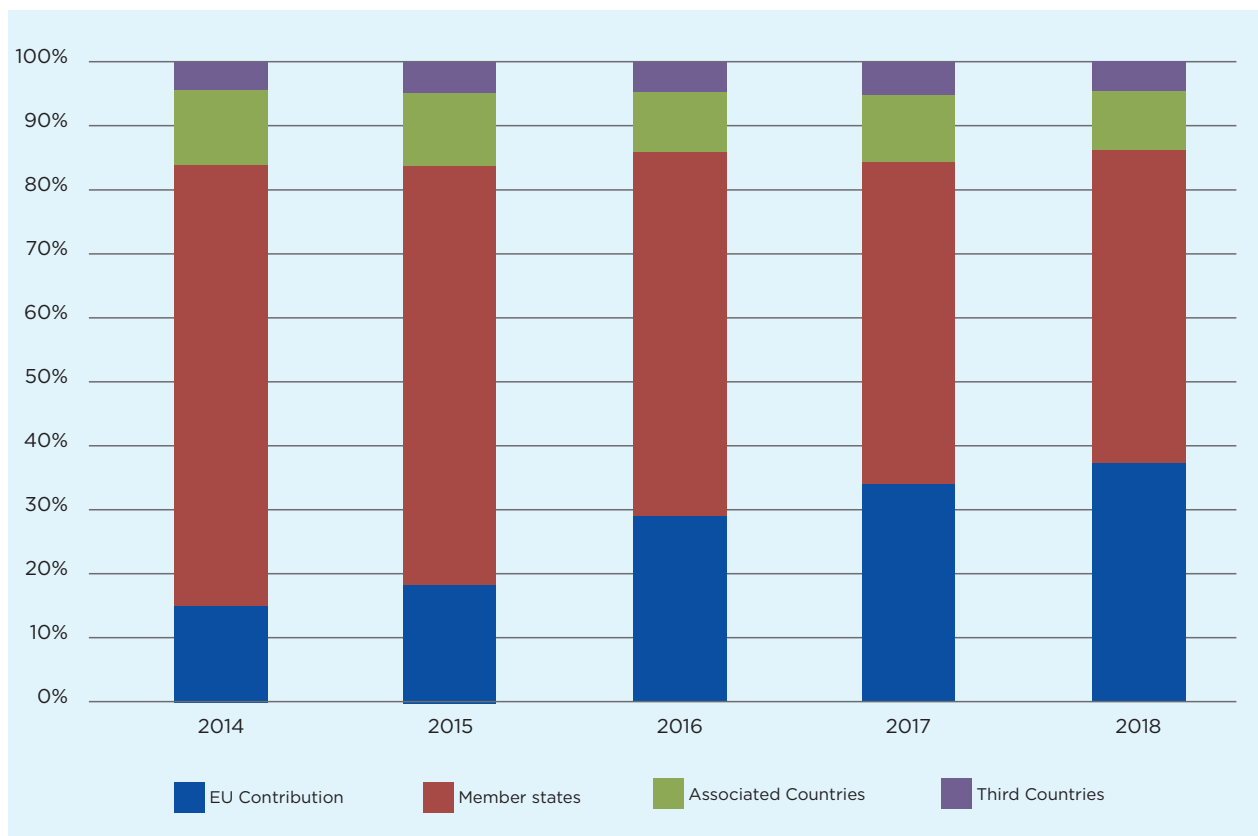

Figure 4: Comparison of the Distribution of Call Budgets for all Calls Since 2014, by Main Funding Source

As might be expected, the total national pre-call committed budget is not always fully utilised and so the actual investment in projects can be lower than planned. Figure 5, below, indicates the cumulative actual investment in projects. This also includes the EU contribution. Note that data in relation to actual national investment in calls is not available for all networks. ERA-LEARN analysis indicates that, on average, the national investment in joint calls is some 90% of the pre-call committed budget and so where actual investment data is not available or has not been provided, the average realisation of budget has been used to produce estimates for the missing population and allow the scale of investment to be approximated.

Without the EU contribution, the estimated actual investment in calls, as expected, is lower than the figures budgeted by the networks. When the EU contribution is added, however, total investment still reaches some Euro 7.67 billion.
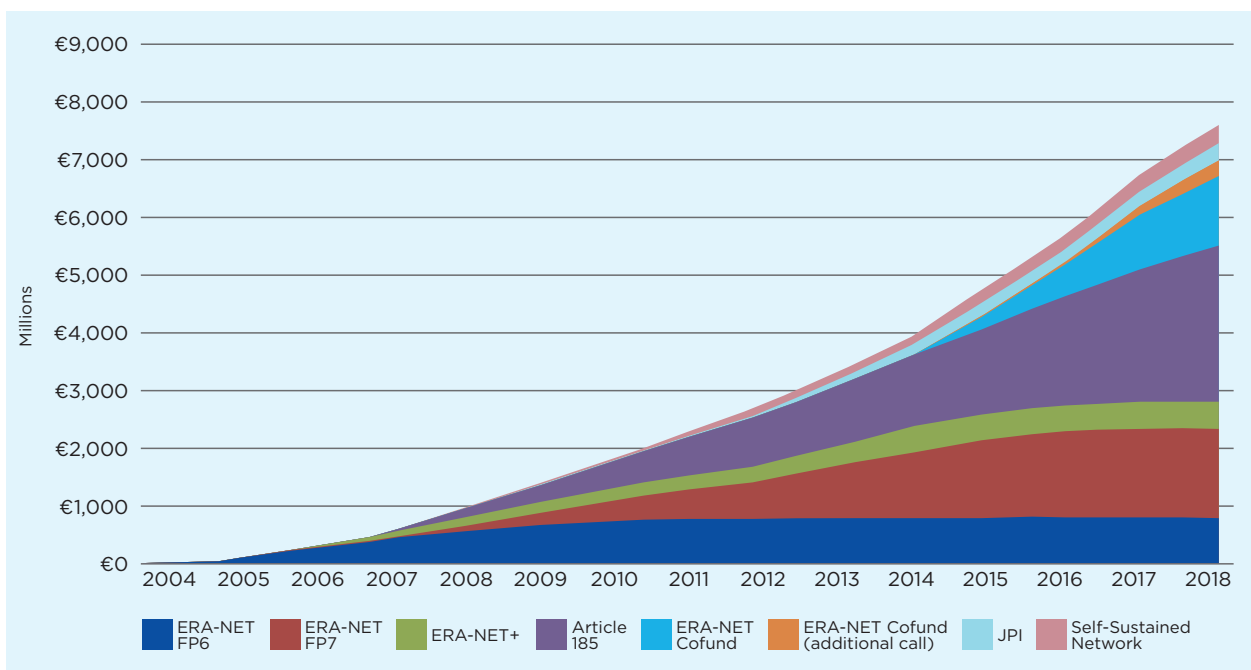
Figure 5: Cumulative Investment in Joint Calls, including EU Contribution, 2004-2018

Note that neither budget nor actual figures include any in-kind contribution to projects (apart from the Metrology Article 185). Complementary investment of institutional funding in Joint Actions, particularly from the JPIs, is also not included.

Portfolio of Funded Projects

More than 7,000 projects have been funded by the joint calls since 2004. Figure 6 shows the annual volume by network type (based on the year the call closed).
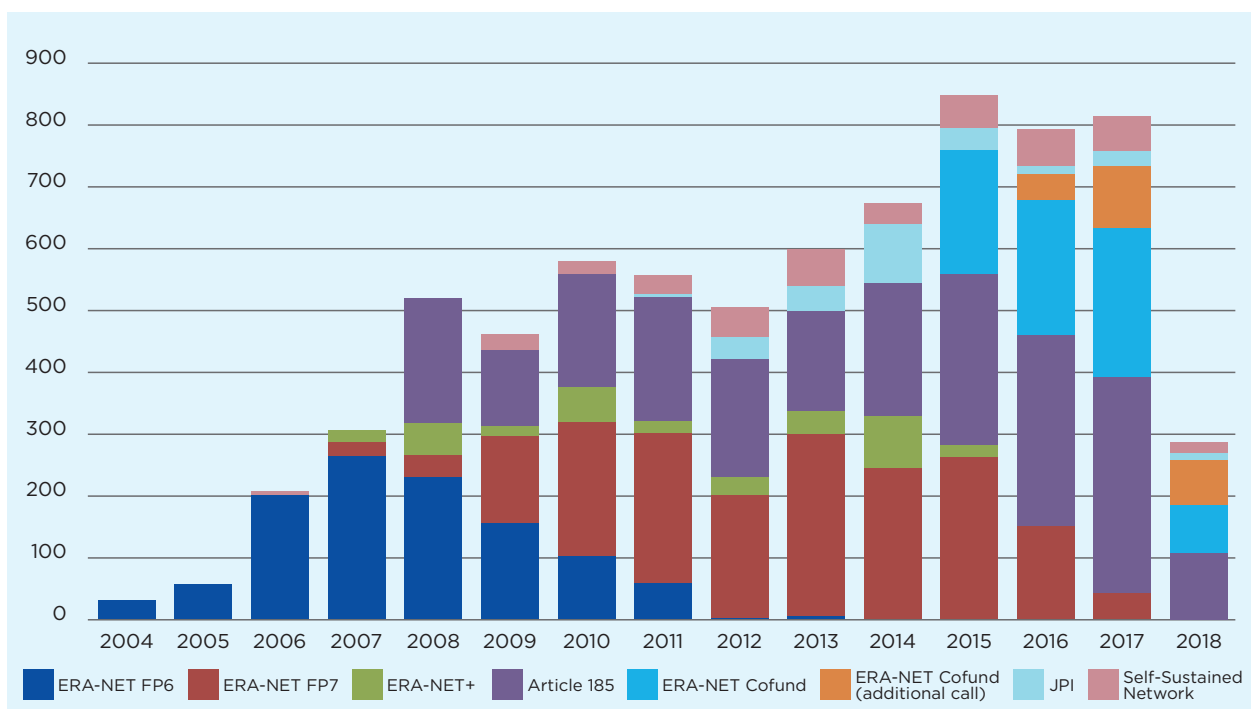

Figure 6: Number of Transnational Projects, by Year and by Network type

The figures for 2018 are low due to the time lag between the joint call being closed and the transnational projects starting, which can often be many months. Only a relatively small number of networks have been able to provide project specific data in relation to their 2018 calls and the data collection process is ongoing.

Note that where no project level data has been provided by the networks, an average figure has been applied to the call to allow reasonable assumptions to be made regarding the overall number of projects that have been funded.

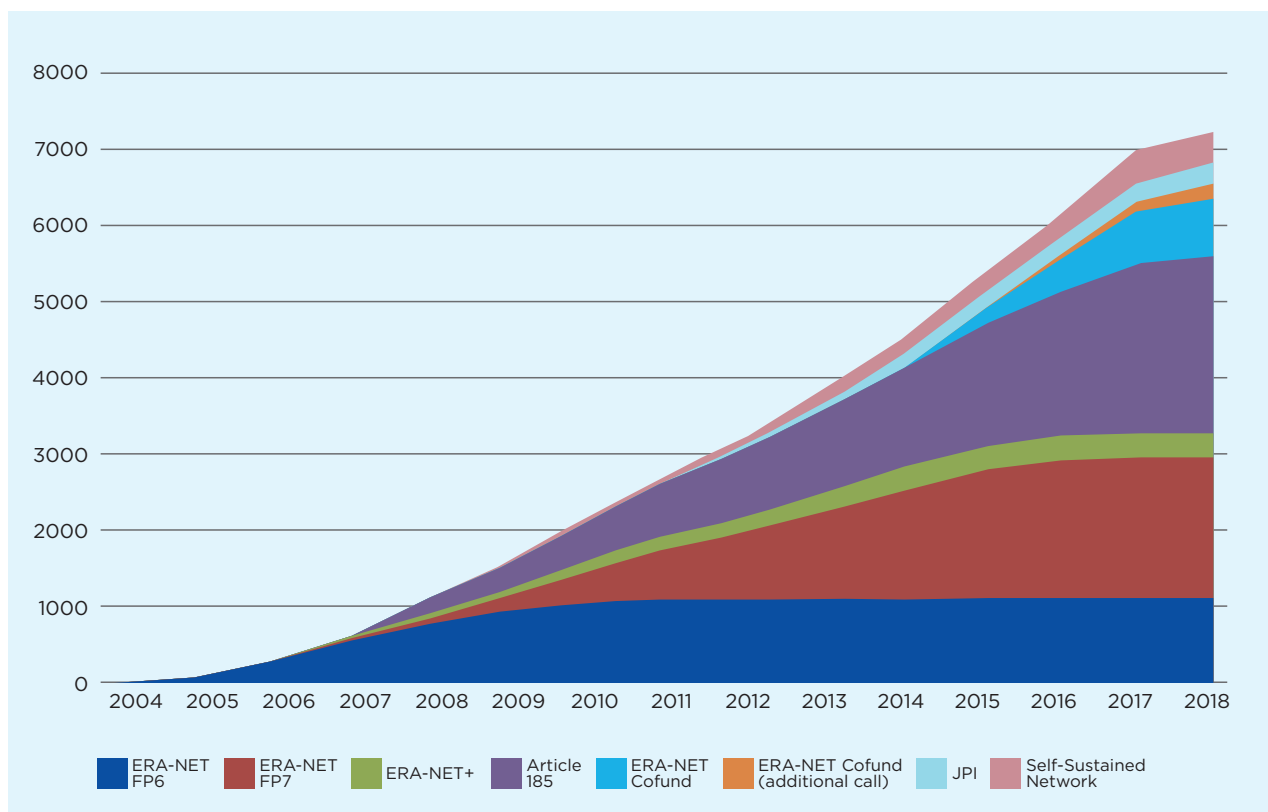The cumulative picture of transnational funded projects is shown in Figure 7.

Figure 7: Cumulative Number of Transnational Projects Funded

ERA-NET Cofund networks have funded around 880 transnational projects since 2015 (again, with limited data available from 2018 calls), with around 20% of these resulting from additional calls (without any EU co-funding).

5. Highlights from 2018

This section of the report provides a number of highlights from 2018 to demonstrate the activities and actions being undertaken that have a particularly high level of impact or ambition in terms of leadership and collaboration.

2018 Joint Calls

In 2018, 57 joint calls closed, across all networks. A breakdown of these is presented in Figure 8 below. In contrast to previous years, while there is a spread of joint call activity across all network types, the ERA-NET Cofund networks are most prominent in terms of the number of joint calls from different networks. While there is significant activity within Article 185 networks, many of the calls have come from one specific network, EDCTP (accounting for around half of those closing in 2018). As mentioned previously, the number of FP7 ERA-NET joint calls has reduced significantly in 2018, with only one joint call closing during the review period.

As in previous reports, the JPI initiated Cofunds have been highlighted separately within the overall ERA-NET Cofund totals to demonstrate the additional work of the JPIs beyond their own joint calls. In 2018, five JPI initiated Cofund calls closed, one of which was an additional call.
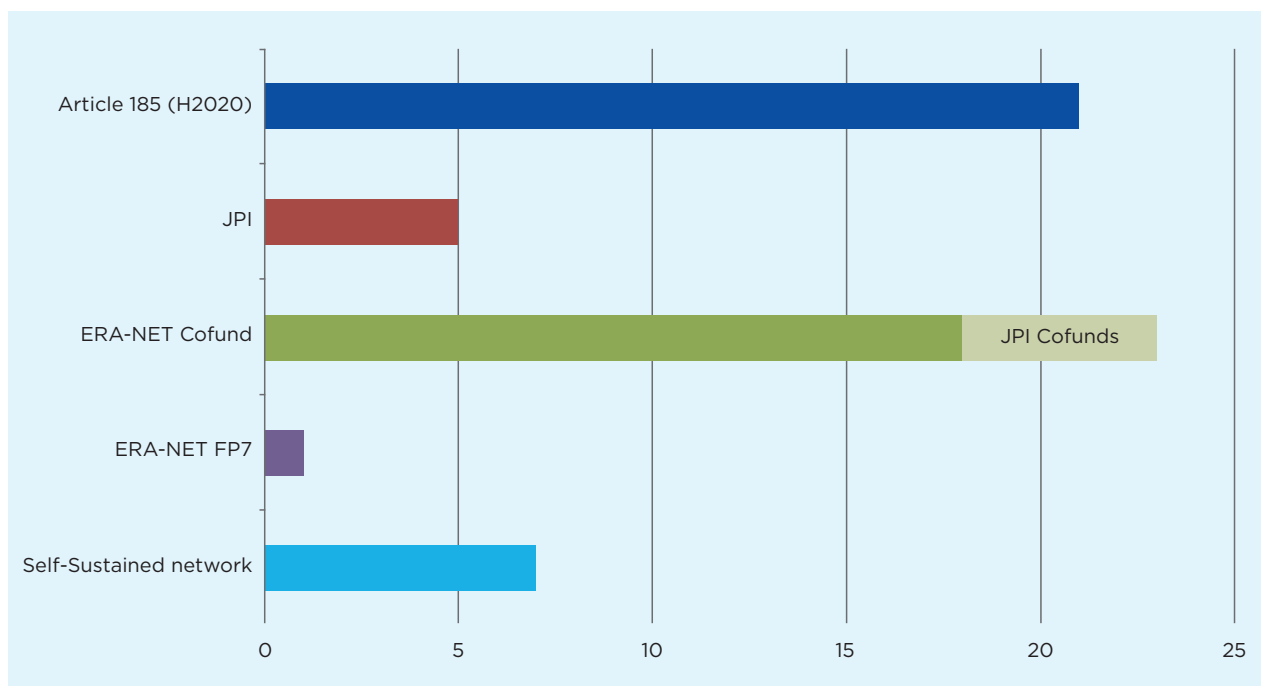

Figure 8: Number of Joint Calls closing in 2018, by Network Type

ERA-NET Cofunds

In relation to the whole population of ERA-NET Cofunds, 12 EU co-funded calls closed during 2018, alongside 11 additional calls. Of the additional calls, five were 2nd calls, three were 3rd calls and three were 4th calls. In 2019, the number of additional calls planned already stands at 20, with one of those being a 5th call (4th additional call) for the network (NEURON Cofund).

Figure 9 highlights the changing picture of ERA-NET Cofund calls, both EU co-funded and additional calls, since 2015. There are many ERA-NET Cofunds that will only ever implement one joint call, but others are using the instrument to launch multiple calls and leveraging the effects and the momentum gained from the initial EU co-funding.
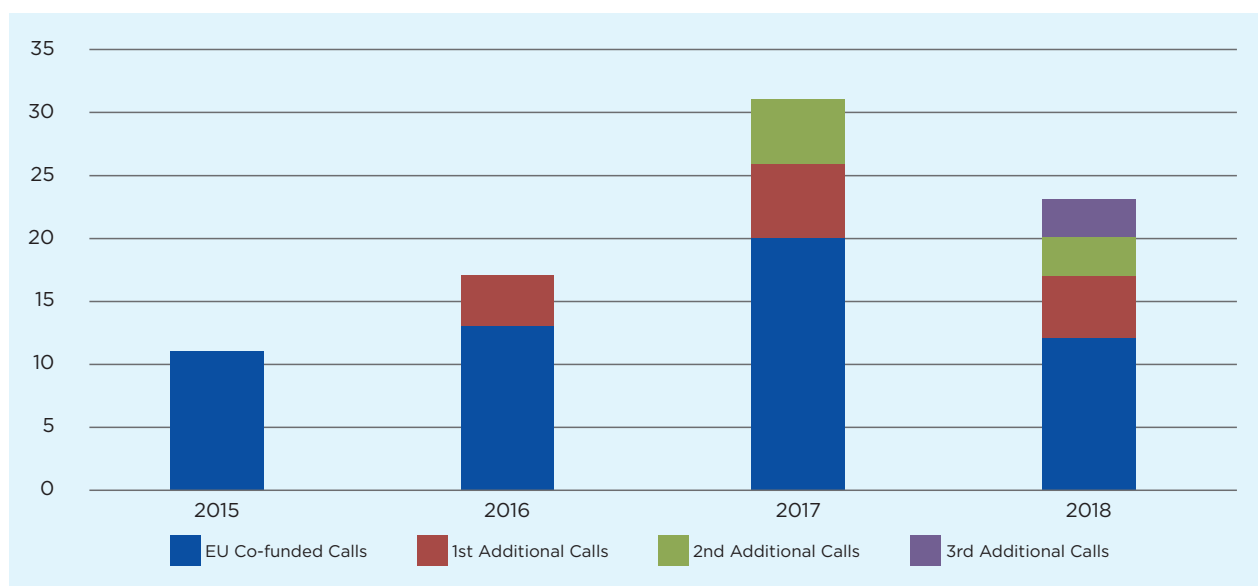

Figure 9: ERA-NET Cofund Calls by Year Call Ended

Two of the additional calls that closed in 2018 were joint calls with other networks; e.g. BESTF 3's second additional call was in conjunction with the 12th joint call of ERA-NET Bioenergy and BioDivERsA3's first additional call was in conjunction with the Belmont Forum. This trend has continued from previous years and appears to be an effective way in which to catalyse activity on a wider platform and harness synergies within the topics covered by the networks.

Some selected examples of good practice being undertaken within the Cofund networks is provided here to demonstrate the work being done to address specific challenges.

Addressing Widening – E-Rare-3 Cofund

The E-Rare 2018 joint transnational call is an example of how one network is seeking to improve the widening concept in its calls. Until then, E-Rare encouraged the inclusion of partners from under-represented countries by expanding the maximum number of research teams that could participate in projects (from 6 to 8) to allow teams from such countries to be included when submitting full proposals. Inclusion of under-represented countries, however, was not mandatory. A change in the 2018 call proposed two options that sought to address the widening issue:

A. *The coordinator/partners of the project(s) that were invited to the 2nd stage of evaluation could, themselves, seek to find suitable partners from a stated list of countries/regions, at the discretion of the project consortium*
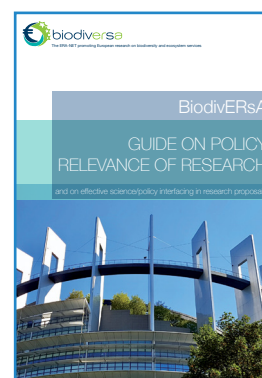
B. *The relevant funding agencies, within under-represented countries, could proactively suggest national /regional teams that could provide additional expertise to projects submitting second stage proposals. Options were then sent to the Joint Call Secretariat and, in turn, the coordinators of relevant projects were asked to consider the addition of any of the specified research teams. Again, all decisions were at the discretion of the project consortium.*

As a result of this new process, option B worked very well for one nation in particular, the Czech Republic. The representative of its funding agency was very active in facilitating the connection between the CZ teams that applied to the 1st stage but were not selected and the coordinators of the projects that were invited to submit full proposals. This approach demonstrated the impact of good communication and a transparent process for widening at the full proposal stage (with dedicated support from the funding agency); it resulted in the number of CZ teams being included in full proposals increasing from two (that were pre-selected) to seven (five projects accepted the inclusion of new CZ teams). Of these proposals submitted, two projects were funded: one with a CZ team pre-selected from the initial stage and one where the CZ team was added at the full proposal stage.

Development of Guidance for Researchers – BiodivERsA 3

BiodivERsa 3 has developed a guide on policy relevance and effective science-policy interfacing in research proposals. The objective of the guide is to help researchers to: better understand what is policy relevance of research; be aware of what the criteria are for evaluating policy relevance of research in BiodivERsA calls; and be able to more efficiently identify the most relevant policies and policy-making bodies for a given research project.

This guide complements the use of the network's Stakeholder Engagement Handbook to help researchers increase the quality of their research proposals in terms of policy relevance. In addition, the network believes that the guide should be helpful in the context of other calls for research proposals launched by initiatives that have the same expectations as BiodivERsA regarding policy relevance of research.

Development of Responsible Research and Innovation Guidelines – EuroNanoMed III

During 2018, the ERA-NET Cofund EuroNanoMed updated its Responsible Research and Innovation (RRI) guidelines to support its 2019 joint transnational call. The original guidelines were developed and implemented for its 2017 call and have since had a significant impact on the activities and progress of other networks, including: support to SUSFOOD's RRI workshop, sharing of information with QuantERA to support the development of its own RRI guidelines and participation in the H2020 project NewHoRRIzon, first Social Lab to increase knowledge of RRI.

JPIs

In 2018, a total of 10 JPI related calls closed. Six of these were specific to the JPIs, three were initial ERA-NET Cofund calls (i.e. EU co-funded) and one was an ERA-NET Cofund additional call. The pattern of JPI related calls since 2015 is shown in figure 10.
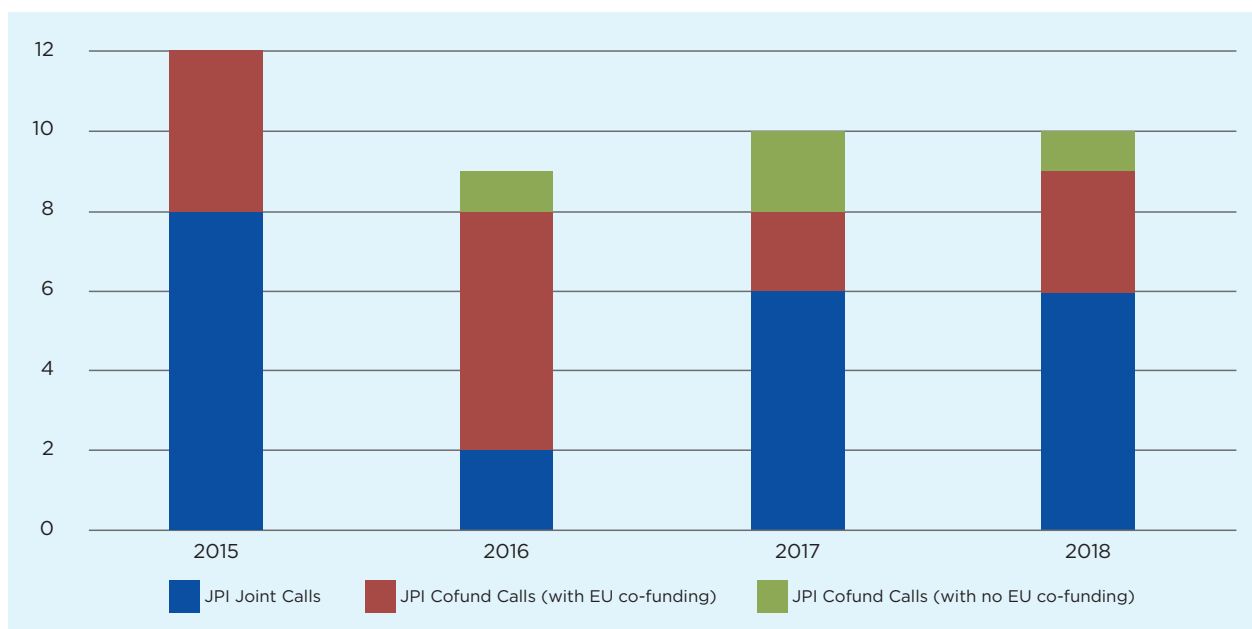

Figure 10: JPI Calls by Year Call Ended

This demonstrates the continued level of call activity within the JPI networks, both within their own programmes and their related ERA-NET Cofund networks.

In addition to joint call activities within the JPIs, other joint activities make up important and significant elements of the work undertaken. Some recent, selected examples of these are described here to demonstrate both the depth and breadth of the collaborative work taking place.

Furthering Collaboration – JPI Urban Europe

JPI Urban Europe successfully launched its first joint call with the National Natural Science Foundation of China (NSFC) in January 2018. The aim of the call was to encourage collaboration between researchers from Chinese and European universities, research institutes, research and technology organisations (including municipal research institutes), cities and city planning departments, as well as European companies, to develop knowledge, integrated solutions and decision support tools to a wide spectrum of urban challenges. Through the call, a total budget of Euro 8 million was made available from European funding agencies, while the Chinese funding agency NSFC supported all Chinese partners of the selected consortia with a total budget of Euro 2.8 million (21.9 million RMB). The call generated an unexpectedly large response, with 128 full proposals submitted in June 2018, reflecting the significant interest from researchers on both sides to cooperate as well as the global nature of urban challenges. The call has resulted in 11 outstanding, truly transdisciplinary projects on urban research.

The collaborative relationship between JPI Urban Europe and NSFC has been further cemented as the latter invited the JPI partnership to a workshop to discuss the future of NSFC and of the continued cooperation on research funding between China and Europe.

Fostering Knowledge Exchange – JPIAMR

JPIAMR has embraced the development of the JPIAMR-VRI (Virtual Research Institute) as one of its key activities as it seeks to reinforce the need for alignment of research. The JPIAMR-VRI is a virtual platform that aims to connect research networks and research performing institutes/centres across sectoral and geographic boundaries to implement collaborative research covering the full One Health spectrum.

The JPIAMR will establish a platform providing an unprecedented level of knowledge exchange, research coordination and sharing of resources, data, and research results to facilitate capacity development and improve the visibility of the AMR researcher base. It will foster coordination, collaboration and even alignment of national strategies and programmes in further developing AMR research.

The JPIAMR Network call entitled "Building the Foundation of the JPIAMR Virtual Research Institute" was launched in May 2018 to identify research community needs and develop ideas to form the foundation for the JPIAMR-VRI. Eight networks were funded as a result of this call.

Fostering Multidisciplinary Coordination – JPI HDHL, JPI Oceans and FACCE-JPI

JPI HDHL, JPI OCEANS and FACCE-JPI have been working together to establish a Knowledge Hub on Food and Nutrition Security. The main objective of this collaboration is to address a topic at the intersection of the Strategic Research Agendas of the three JPIs, and, as such, more effectively inform the EU policies on food and nutrition security and the implementation of the Sustainable Development Goals.

The overall aim of the Knowledge Hub is to foster transnational and multidisciplinary collaboration and networking in order to (i) better understand the impact of climate change on nutritional make-up of food, and (ii) propose adaptive strategies/ measures to ensure food and nutrition security. This Hub will thus bring together experts from different research domains and will involve key stakeholders including agricultural producers, consumers and food industry representatives.

The expected benefit of this initiative is that the Hub will contribute to the development of the knowledge base needed to develop guidelines for producing and consuming more resilient, sustainable and nutritious food. Additionally, it will provide an industrial showcase of new and adapted food products that demonstrate the economic viability of more healthy and sustainable products, targeted policy briefs that provide holistic advice on food systems, and a roadmap for future research needs.

International Outreach – FACCE-JPI

An 'International Conference on Agricultural GHG Emissions and Food Security: Connecting Research to Policy and Practice', was organised jointly by FACCE-JPI, the Global Research Alliance on Agricultural GHGs (GRA) and the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) program in advance of the annual COP24 United Nation's Climate Change Conference in 2018. This took place in Berlin in September 2018 with participation from around 300 scientists and stakeholders from government, public administration, industry and farmer organisations from over 50 countries.

This Conference allowed FACCE-JPI, the GRA and CCAFS to reach out to European and international policymakers, farmer organisations and food industry representatives jointly, in order to make them aware of the state of current mitigation research activities and to identify the research gaps and opportunities that would need to be addressed in the near future. This work also supports efforts to achieve the countries' commitments to climate change (COP21) and sustainable development more generally (e.g. SDG2 and SDG13).

FACCE-JPI and the Global Research Alliance on Agricultural GHGs (GRA) sealed an institutional partnership in 2017. The CGIAR CCAFS programme is an initiative that works on the same topics as FACCE-JPI yet with developing countries. A key benefit for the international partners in collaborating with FACCE is the access to 24 European countries at one time (FACCE has 24 members), a more efficient process than approaching and mobilising countries individually.

International Cooperation – Water JPI

As it works to find opportunities to develop a common strategy for International Cooperation with other European Initiatives, the Water JPI organised a workshop on Strategies for International Cooperation, which was held on the 19th September 2018 in Vienna, Austria. The workshop aimed to bring together other European initiatives (e.g. FACCE, PRIMA), policy-makers and other relevant stakeholders to discuss the current State of Play of international cooperation. It also sought to exchange views and share experiences to identify common barriers as well as common practices. A number of initiatives were represented including DG Research and Innovation, UN-Water and the Groupe de Programmation Conjointe (GPC); in total, 15 different initiatives were represented.

The outcomes of the workshop will feed into the development of future work and inform a second workshop that will take place in 2019. This will be targeted at the research community engaging in the joint actions implemented by the initiatives involving International Cooperation.

Article 185s

In 2018, 21 Article 185 calls closed, with more than 60% of these being implemented by one network, EDCTP. This is due to the nature of the work carried out by this network and the types of grants being awarded for clinical research. The broader pattern of call activity since 2015 is shown in figure 11, demonstrating a relative consistency in the number of calls implemented each year by each network, with only EDCTP showing a significant increase in call numbers since 2015.
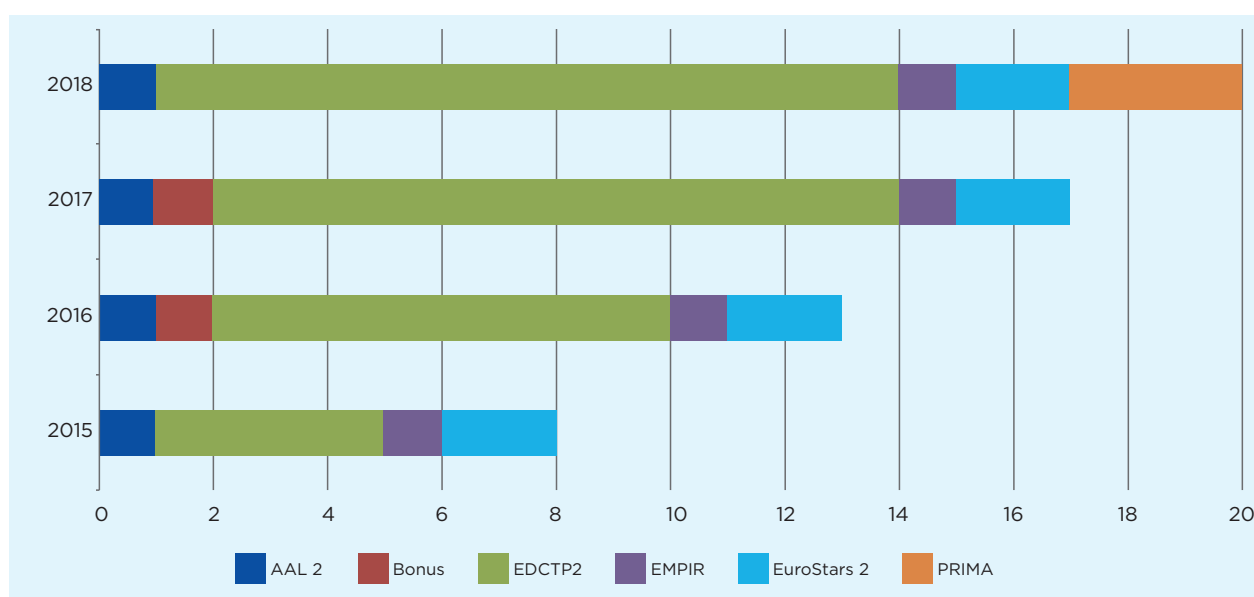

Figure 11: Article 185 Calls by Year Call Ended

An example is shown below of one Article 185 network that used the joint transnational call process to address specific scientific challenges and achieve ground breaking impacts on a global level.

Redefinition of the International System of Units (SI) – EMRP

After decades of ground-breaking laboratory work, and in a landmark decision taken on 16th November 2018, representatives from 60 countries voted to redefine the International System of Units (SI), changing the world's definition of the kilogram, the ampere, the kelvin and the mole, forever.

The decision, made at the General Conference on Weights and Measures in Versailles, France, (organised by the International Bureau of Weights and Measures (BIPM)), means that all SI units will now be defined in terms of constants that describe the natural world. This will assure the future stability of the SI and open the opportunity for the use of new technologies, including quantum technologies, to implement the definitions.

This historic step for the SI units is possible due to the hard work and expertise of many scientists, among them research teams funded via EMRP (the predecessor to the current Article 185, EMPIR).

EURAMET's European Metrology Research Programme (EMRP) supported key European research that contributed to the SI revision and addressed specific SI redefinition measurement challenges related to the kilogram, the kelvin, the ampere and the second.

The changes will come into force on 20th May 2019 and will bring an end to the use of physical objects to define measurement units.

Other Networks

In addition to the main types of networks that the annual report has historically focussed on, we would like to provide a summary of the newly launched European Joint Programme on Rare Diseases. This is an outstanding example of a continually growing, health related partnership that was successfully developed during 2018. This new network involves many different types of actors and initiatives to address the challenges in its field that require an integrated and collaborative approach.

European Joint Programme on Rare Diseases (EJP RD)

Rare diseases (RD) are a prime example of a research area that can strongly benefit from coordination on a European and international scale. RD research should be improved to overcome fragmentation, leading to a more effective use of data and resources, faster scientific progress and competitiveness and, most importantly, to decrease unnecessary hardship and prolonged suffering of RD patients. In order to maximise the potential of existing funded programmes and toolsets, work can be done to support them further, scale up, create linkages and, most importantly, adapt them to the needs of end-users through implementation tests in real settings. Such a concerted effort is necessary to develop a sustainable ecosystem allowing a virtuous circle between RD care, research and medical innovation. To achieve this goal, the European Joint Programme on RD (EJP RD) has two major objectives:

— *To improve the integration, the efficacy, the production and the social impact of research on RD through the development, demonstration and promotion of Europe/world-wide sharing of research and clinical data, materials, processes, knowledge and know-how*

— *To implement and further develop an efficient model of financial support for all types of research on RD (fundamental, clinical, epidemiological, social, economic, health service), coupled with accelerated exploitation of research results for the benefit of patients*

The EJP RD programme will implement activities ranging from research to coordination and networking, including training, demonstration and dissemination activities. This will ensure the implementation of a comprehensive and cohesive research and innovation pipeline 'from bench to bedside'.

Some key facts about the EJP RD programme:

— *European Union contribution: 55 M€*

— *Total budget (min. submitted): 110 M€*

— *Number of partners: 88*

— *Number of participating countries (beneficiaries and linked third parties): 35*

Types of partners involved in the network:

— *32 research funding bodies / ministries; 12 research institutes; 22 universities / hospital universities; 11 hospitals; 5 EU infrastructures; EURORDIS & ePAGs; 6 charities/foundations*

6. Outlook

This section provides a brief overview of planned joint calls during 2019.

Planned Calls for 2019

There are currently 46 transnational joint calls that have been launched and will close during 2019 (20 of these are ERA-NET Cofund additional calls). A further 11 joint calls (all ERA-NET Cofund additional calls) are expected to launch during 2019, giving a total of 57 calls that we are currently aware of.

New ERA-NET Cofund Networks

A number of new Cofund proposals were successfully submitted during 2018 and these will start to implement EU co-funded calls during 2019. A summary of these new networks is provided here:

	ERA-NET Cofund	Call Closure
FETPROACT-03-2018	FET Proactive aims to identify the future and emerging technological paradigms with highest potential for Europe's economy and society.	unknown
CHIST-ERA IV	European Coordinated Research on Long-term ICT and ICT-based Scientific and Technological Challenges.	unknown
CSP ERANET	CSP ERANET is the result of a joint EU call for bridging the gap between research and commercial deployment in the Concentrated Solar Power (CSP) technology, so this technology can play a main role in the European renewable electricity generation in a medium term.	unknown
FLAG-ERA III	FLAG-ERA, the Flagship ERA-NET, gathers national and regional funding organisation with the goal of supporting, together with the European Commission, the FET Flagship initiatives and more generally the FET Flagship programme.	unknown
GOVERNANCE	Understanding the precise nature of the recent turbulence in democratic politics and governance in Europe, how European States can negotiate it and how they can develop strategies to enhance the quality of democratic politics and governance.	2019
JPCOFUND2	Research projects on Personalised Medicine, that may in time bring about the delivery of targeted and timely prevention and therapies for patients of neurodegenerative diseases.	2019
BlueBio	The Cofund is the result of a collaboration between JPI Oceans and the former ERA-NETS COFASP and ERA MBT and consists of 27 partners from 16 countries.	2019

Table 1: New ERA-NET Cofunds to be launched in 2019

Details of all ERA-NET, JPI and Article 185 networks and calls can be found on the ERA-LEARN website.

7. Impact Assessment

ERA-LEARN has started rolling out its centralised project level impact assessment work to support networks to better understand the wider impact of their funding and support on the beneficiaries of transnational projects. This is based on a common framework questionnaire that can be used for all types of project beneficiaries.

The common framework questionnaire is designed to be applicable to all types of beneficiaries / projects and includes questions on:

— Motivation to participate in the project

— Comparison with similar projects involving only national partners

— Comparison with their experience (if applicable) of EU Framework programmes

— Exploitable outcomes for their organisation

— Actions taken to enable exploitation of the research results

— Expected impacts on their organisation from exploitation

— Level of impacts compared with original expectations

— Key factors that may have affected the success of the project

— Anticipated wider impacts beyond their organisation

The data collection process itself is relatively simple and starts with a portfolio of transnational projects that have recently been completed. The process also requires a Call Manager or Network Coordinator who is motivated to implement the process for the mutual benefit of both the individual network and the wider community.

A total of 65 organisations across 20 countries have taken part in the current roll out of the process, this is in addition to the 67 participants from the pilot survey. While the uptake has been relatively low to date, a number of organisations have expressed an interest in using this framework. Timing appears to be a key factor in the decision, but it should be noted that the ERA-LEARN support for impact assessment is an ongoing process and can be used to support networks at any time.

We would encourage all networks to get involved and invite their project beneficiaries to take part in this process by completing the short online survey for as many completed projects as possible. This will enable ERA-LEARN to produce a thorough impact analysis based on the responses collected, which will also be of benefit to the networks directly.

Survey Results

The results of the project level impact assessment have been analysed at an aggregated level and some of the outputs are presented here (this does not include the pilot survey responses). Networks that have taken part, at all stages in the process, have received the raw data from their respondents (GDPR compliant) as well as an analysis in the form of tables, charts and graphs. **We are also able to provide, at any time, the corresponding aggregated data in order that they can compare their own results to the wider pool of responses.**

In relation to the motivation for organisations to participate in the transnational funded projects, there are some clear areas of particular interest; these are:

— To develop new knowledge in the subject area

— Access to public funding

— Build and strengthen new relationships with organisations in other countries

— Access to knowledge/facilities in other countries

These results build on similar feedback from the pilot study where the development of new knowledge was also the primary motivation for participants. Note that the pilot survey focused on projects supported in the Bioeconomy area and the related impact report can be found on the ERA-LEARN website (www.era-learn.eu/documents/policybriefimpactprojectlevel.pdf), with a summary of the exercise found in the next section of this report.

It is interesting to note that respondents that have had prior experience of EU framework programmes indicated three key benefits of the type of transnational P2P funded projects in which they had taken part, namely that:

— Transnational projects are more flexible (e.g. project design, number of partners, changes) than EU projects

— Proposals for transnational projects (co-funded by national agencies) have a higher probability of success than EU Framework Programme projects

— Transnational projects are less bureaucratic in administration than EU Framework Programme projects

The survey also sought feedback on the anticipated impacts, beyond the respondents' organisation, from the exploitable outcomes. The results from this were mixed across the different variables put forward, but the aspects that yielded the highest anticipated impacts were in relation to the benefits for health, safety and quality of life; the ability to improve the quality of products and services and advances in scientific knowledge and technology. This is shown graphically in figure 12.
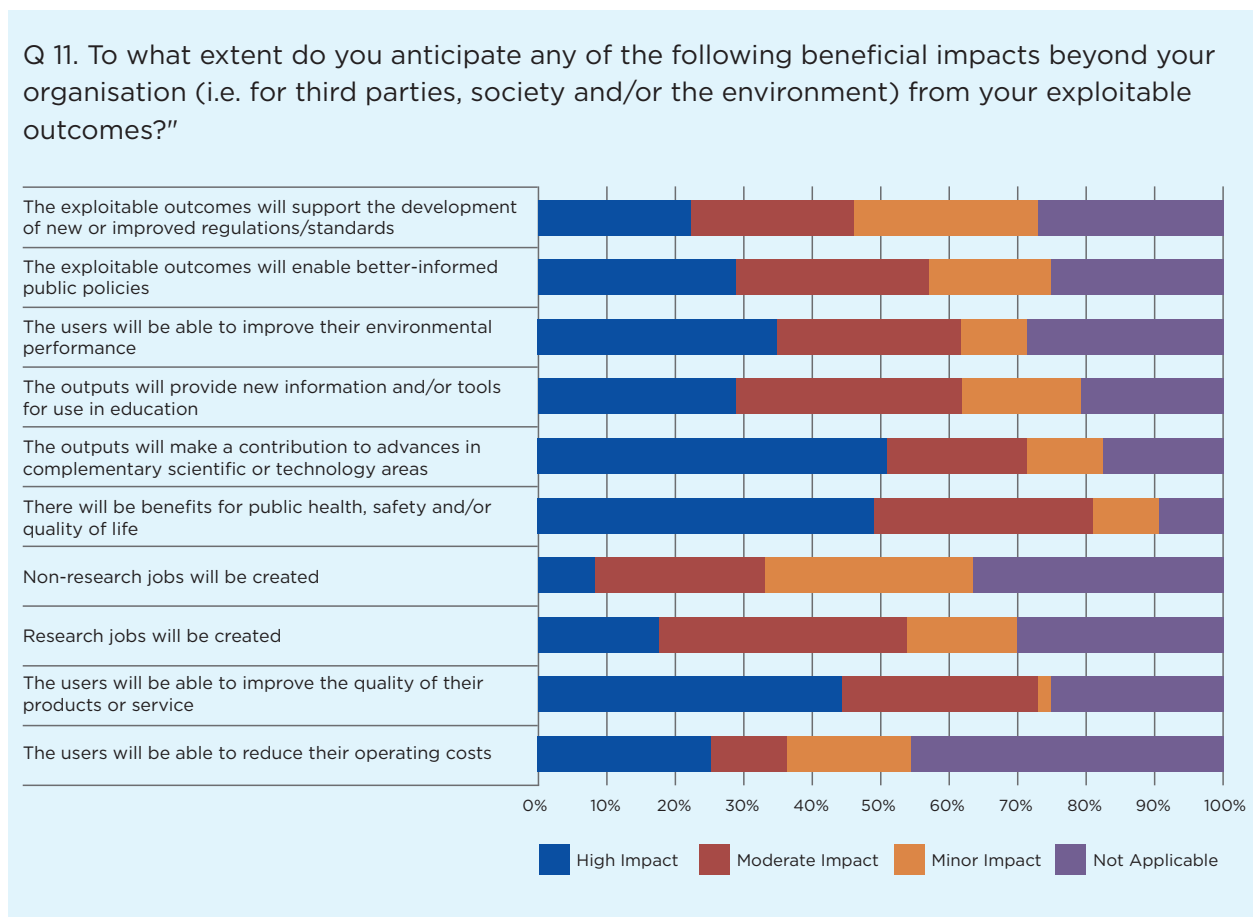

Q 11. To what extent do you anticipate any of the following beneficial impacts beyond your organisation (i.e. for third parties, society and/or the environment) from your exploitable outcomes?"

Figure 12: Project Level Impact Assessment – Interim Aggregated Results for Q11

Again, these results echo those in the pilot survey with the same top three impacts being cited.

As the volume of responses increases, as more networks take advantage of the ERA-LEARN support to collect feedback from their funded projects, then more analysis and benchmarking will be possible.

We would remind networks that if they are interested in using the ERA-LEARN framework for project level impact assessment then they should get in touch[2] to discuss further and to see how this can support their own network level activities as well as benefitting the wider community.

2 Contact hayley.welsh@optimat.co.uk from the ERA-LEARN team

Impact Assessment Pilot of Networks and their Supported Projects in the Bioeconomy Area

The impact assessment pilot mentioned in the previous section included more than the development of the common framework questionnaire and online survey. It was complemented with a series of in-depth qualitative interviews with the three networks involved in the pilot (and a number of their supported projects) and subsequent analysis to produce a policy brief on the impact of P2P supported projects, which is publicly available on the ERA-LEARN website[3]. The networks in the pilot study were all in the Bioeconomy area: CORE ORGANIC II, SUSFOOD and ERA-IB-2.

In summarising the results, the following statements are relevant. Although the networks are different from each other in their thematic focus and target beneficiaries, there is a significant degree of overlap in the recorded findings. For instance, participation of countries in all the networks is guided by different degrees of interest to the specific areas addressed, different levels of research capacity and funding resources. In other words, well-resourced countries with high interest in the specific research area are usually leading evolutions in the network, whereas other countries may be more selective and limited by budget constraints.

When comparing the transnational projects to those of EU Framework programmes, there is general appreciation of lower bureaucracy, flexibility, and solutions-orientation. Additionally, the smaller-scale, P2P projects usually serve as a test bed for more ambitious efforts that follow under Horizon 2020 or other larger programmes.

The key factors for success for the projects are similar to those for the networks themselves: competent coordination team supported by adequate resources and participatory and democratic management procedures within a trust-building environment. One of the most interesting issues that emerged concerns the vital role of the funding agencies before, as well as during, the course of the projects. The differences across the funding agencies involved (i.e. different eligibility rules, proposal submission and evaluation systems, project monitoring and reporting, etc.) cause several problems in the initiation and implementation of projects. These problems are not related to the skills or the experience of the agencies or the project beneficiaries; instead, they can only be dealt with through structural changes in the way these issues are treated within networks.

Overall, impressions by both the network members and project beneficiaries align to a shared sense of satisfaction. Based on the testimonies, this is even more impressive given the small scale of the projects and the relatively limited funds available for projects.

A full report on the impact of networks is available from the ERA-LEARN website (www.era-learn.eu/documents/era-learn-publications/policybriefimpactnetworks.pdf/).

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3 www.era-learn.eu/documents/policybriefimpactprojectlevel.pdf

Examples of Impact Assessment from the Community

Within the ERA-LEARN website, there is a reference library of monitoring and assessment reports that have been produced by some of the more mature P2P networks, as well as from one national funding agency. These are examples of the type of assessments being undertaken by individual networks and agencies to report on the impacts of their networks and funded projects at either a scientific, environmental or programme level.

We would be happy to include any new monitoring and assessment reports from P2P networks that have carried out their own network or project-related assessments.

Examples of what can be found within the Monitoring and Assessment section of the ERA-LEARN website include:

— Three case studies that showcase the processes that allow P2Ps to assess whether, and how, impact will be/has been achieved

— Impact assessment briefing and scientific impact assessment report for BONUS

— Analysis of the outputs of BiodivERsA funded projects

— Monitoring report of ERA-IB-2 procedures and progress

— Impact assessment report for ICT-AGRI

— MANUNET impact assessment report

The ERA-LEARN guide for P2P impact assessment and the policy brief on the perceived impacts of P2P supported projects (summarised in the previous section) are available to support P2Ps in their own monitoring assessment activities. See www.era-learn.eu/support-for-p2ps/monitoring-and-assessment.

EMPIR – Good Practice Example of Impact Assessment Activities

The European Metrology Research Programmes (EMPIR and its predecessor EMRP) take a very proactive approach to understanding and assessing the impacts of the work that is carried out at both programme and project level. It is an excellent example of an ongoing, continuous assessment process that allows it to raise awareness for measurement science and demonstrate the importance and reach of the work to different stakeholder groups.

At a programme level, impact evaluations have been carried out for both EMPIR and EMRP to outline the key achievements and impact of the research programmes at a wider level. Periodically, impact reports for each of the areas in which it operates e.g. health, environment, energy and industry, have also been developed to demonstrate the key technical achievements and early impacts of the projects completed under each specific theme. New measurement capabilities developed as a result of the collaborations within these projects are highlighted within these reports.

In addition, within each of the thematic areas covered by the research programmes, a number of project level impact case studies have been developed – more than 100 and rising. These case studies provide best practice examples of how collaborative research projects can result in real, demonstrable outcomes that address specific measurement challenges in research areas where there is a defined stakeholder need. The case studies are developed internally following submission of a project's final report, where a project has had a defined impact in relation to measurement standards and/or uptake of the project outputs by industry.

The impact case studies are valued by the measurement community and are used by different stakeholder groups to describe the impact of measurement science and encourage future collaboration with industry and its support for the research programme.

The case studies are grouped in the stated thematic areas and are available to view on the EURAMET website (www.euramet.org/metrology-for-societys-challenges/).