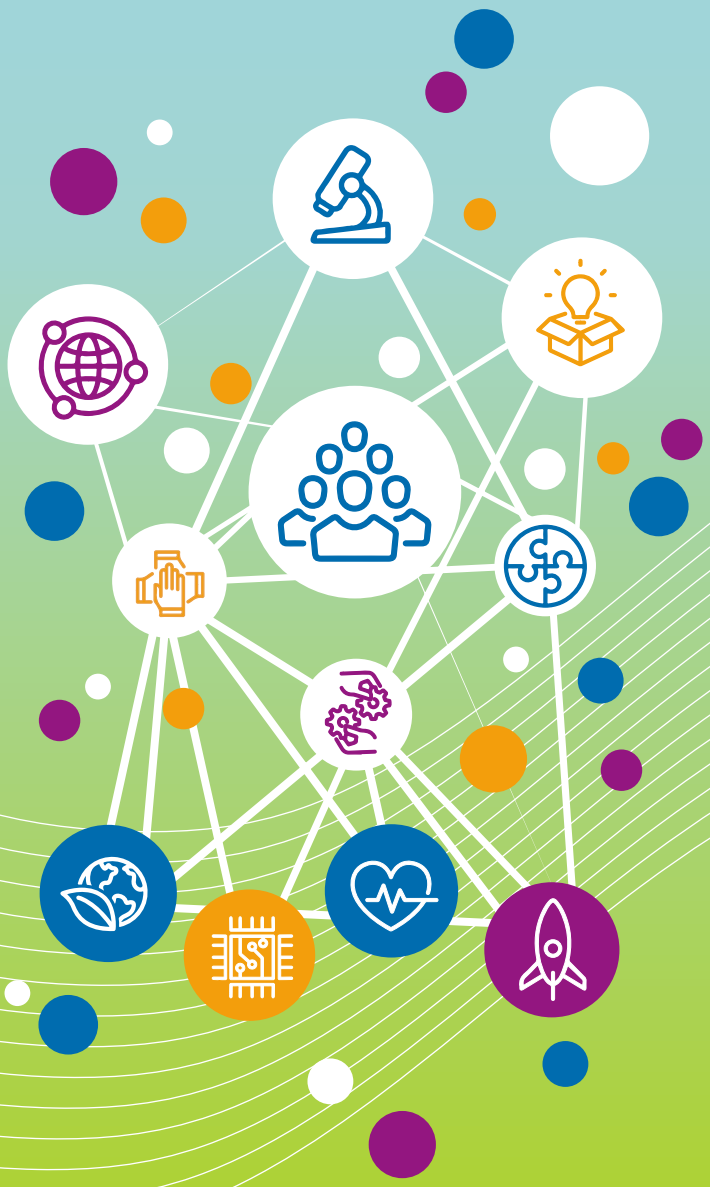
European Commission

PERFORMANCE OF EUROPEAN PARTNERSHIPS

BIENNIAL MONITORING REPORT 2022 ON PARTNERSHIPS IN HORIZON EUROPE

3. European Partnerships at the country level



Research and Innovation

3. EUROPEAN PARTNERSHIPS AT THE COUNTRY LEVEL

HIGHLIGHTS OF THIS CHAPTER

Member States recognise the value of partnerships by showing increased interest and commitments in the Horizon Europe partnerships.

Acknowledging the value of Horizon Europe partnerships as more strategic policy instruments marks a difference from the way in which the first partnerships were perceived back in FP6 and FP7 when they were merely considered as an additional funding source.

The partnerships have led to a variety of impacts at national level going beyond those created by the transnational collaboration in R&I. These include structural impacts improving the national R&I governance system, as well as dedicated funding structures and tools enriching the national portfolios.

Some partnerships have also been instrumental in improving the capacity of certain countries in relation to infrastructures. This is particularly important for the less-advanced countries.

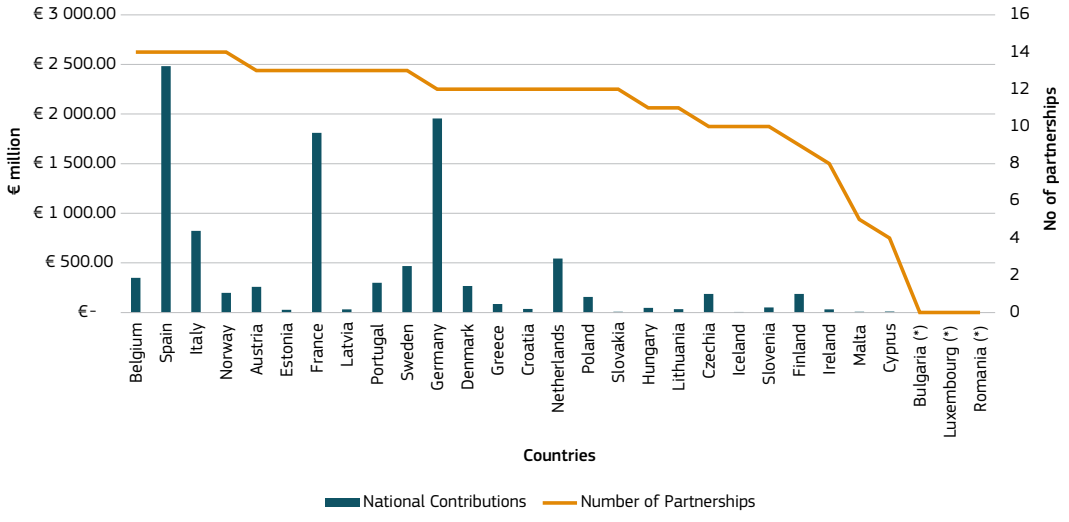
SELECTED KEY FIGURES OF COUNTRY PARTICIPATION IN HORIZON EUROPE

Member States and Associated Countries have committed **EUR 9 billion as national contributions in the first 14 partnerships** to be launched under Horizon Europe (Figure 31).

This is more than half of the partnerships' total estimated budgets that amounts to EUR 17 billion (Figure 32). Considering that the pre-call national contributions earmarked by Member States and Associated Countries for partnership calls during H2020 was around EUR 3.13 billion, **this is a remarkable achievement.**

It is only comparable to the estimated actual investment in calls that the participating states have made since 2004, including the EU contribution, which reaches some EUR 9.1 billion based on the ERA-LEARN Annual Report 2020[102].

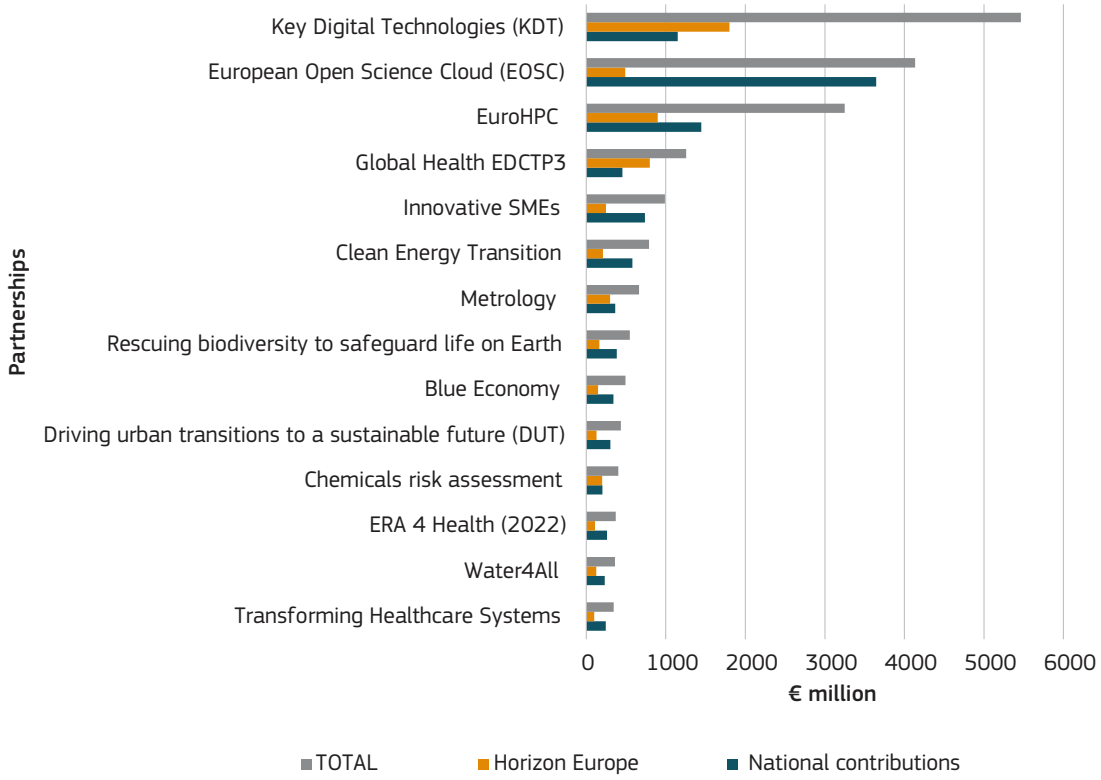
FIGURE 31. National commitments (EUR m) and number of partnerships per country in Horizon Europe



Source: EC; Data snapshot, November 2021; (*) unknown data

101) https://www.era-learn.eu/documents/annualreport2020

FIGURE 32. Total committed budget by MS/AC to the European Partnerships under Horizon Europe (EUR m).



Source: EC; Data snapshot, November 2021

3.1 FRAMEWORK AND METHODOLOGY

3.1.1 AIM OF THE CHAPTER AND SPECIFICITIES OF THIS REPORT

The primary aim of the subchapter is to present the performance of the participating countries (Member States and Associated Countries) in the European R&I partnerships. Due to the fact that not all the new partnerships are fully operational yet and the data on various indicators do not exist, a compromise has been made to focus on the performance of the participating countries in the existing partnerships – i.e. under Horizon 2020, based on data in the period 2014-2020. Thus, the aim of the chapter in the first biennial monitoring report, which is special in this respect, is to illustrate what kind of information, data and analysis can be presented rather than presenting actual monitoring and evaluation data from the new partnerships and the Associated Countries' performances.

More specifically, the partnerships under Horizon 2020 covered in this chapter due to the absence of data on Horizon Europe partnerships, include:

- 99 P2P partnerships including ERA-NET Cofunds, EJPs, Art. 185 initiatives and JPIs (included in the ERA-LEARN database as H2020 networks plus the 10 JPIs, https://www.era-learn.eu/network-information/networks/view)
- 6 EIT KICs (EIT Climate-KIC, EIT Digital, EIT Food, EIT Health, EIT InnoEnergy, EIT RawMaterials)
- 8 JUs (BBI, ECSEL, EuroHPC, SC2, FCH, IMI 2, SESAR, Shift2Rail)
- 10 cPPPs (FoF, EeB, EGVI, SPIRE, Photonics, Robotics, EuroHPC, 5G, Cybersecurity, Big Data Value).

The countries addressed include the 27 EU Member States plus Iceland and Norway as Associated Countries.

This first BMR presents data under different types of partnerships, including EIT KICs, P2Ps, JUs and cPPPs, but in future BMRs these will be replaced by the three new types, i.e. co-funded, co-programmed and institutionalised. Whereas the data presented here refer to the Horizon 2020 period 2014-2020, the following reports will present data under Horizon Europe as and when this becomes available.

3.1.2 DATA CAVEATS

The country fiches draw upon various sources of data that are not harmonised and, as such, introduce a number of gaps and inconsistences. In particular,

- The ERA-LEARN data used, at a cut-off date of June 2021, was approximately 75% complete, as not all the information required (especially project-related and financial data) had been fully updated by the partnerships. The quantitative data included in the country fiches were pre-filled in by the Expert Group and sent to the delegates of the MS/AC with a request, among others, to verify whether the financial data (actual national contributions made as grants to supported projects) coming from ERA-LEARN were close to reality. Whereas such verification was possible in some countries with centralised funding systems, it was impossible in most of the countries due to the numerous and highly decentralised funding structures involved in partnerships. Thus, the financial data presented in the first page of the country fiches must be treated with due caution.

- It is also important to emphasise that the data collected in terms of actual national contributions in selected projects do not consider differences across countries in the eligibility of certain expenses. In some countries, for example, only additional costs of a research project are eligible while personnel costs are not.

- Furthermore, in-kind contributions made by funding organisations when participating in public R&I partnerships – which differ from country to country – are not usually considered as national investments in partnerships and are thus not included in the data presented in the report, although this has changed under Horizon Europe.

- Besides the ERA-LEARN database, eCORDA data extracts have been provided by the Commission regarding the data for EIT KICs, JUs and cPPPs. As these sources are not connected to each other, certain gaps could not be bridged. For instance, data on project outputs (publications and IPR applications) were only available for JUs, EIT KICs and cPPPs and there were no data on the number of proposals submitted for P2Ps or EIT KICs, the latter due to the different nature of the concept of 'project' in the EIT KIC model.

3.1.3 STRUCTURE OF THE COUNTRY FICHES AND RELATED CLARIFICATIONS

Each country fiche is structured into four pages. The first page presents data regarding the participation of the MS/AC in public partnerships where the participating countries earmark national funds to financially support the partnership programme. This is only relevant for the so-called P2Ps. Thus, all the data presented on the first page of the fiche refer only to P2Ps.

The second and third page draws on data from different types of partnerships (P2Ps and PPPs), albeit the caveats presented above regarding the number of proposals submitted. Fiche Table 1 showing the 'Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities' is based on the actual national contributions for P2Ps, as recorded in the ERA-LEARN database and on the net EU contributions in eCORDA as regards the other instruments. The data presented on page 3 refers to the collaborator countries of the specific

country based on the data included in eCORDA. It should be noted that the eCORDA-project-related data covers different types of instruments, including JUs, cPPPs, etc. In the case of the collaborations (fiche page 3), all the data were considered; thus, fiche Figure 3 presents the top collaborators overall. The project-related data on fiche page 2, however, were split to present each instrument separately.

The quantitative data presented in the fiches is complemented by qualitative inputs (in fiche boxes) the content of which was provided by the MS/AC themselves under the Expert Group's guidance. In particular, the start of the fiche is marked by certain key highlights about overall country performance or a specific element the country wanted to note. A second input refers to the 'Key intentions for the future'. This mainly addressed the thematic priorities to be targeted by the country either through the partnerships or in Horizon Europe overall.

The inputs related to 'Additional investments/activities triggered' (page 2) mainly referred to the role of the EU's top-up funding that enabled more projects to be supported. This has been particularly valuable for those research groups coming from the widening countries, and to other investments or activities triggered at the national level.

BOX 32. EXAMPLES OF ACTIVITIES TRIGGERED BY THE COUNTRIES' PARTICIPATION IN PARTNERSHIPS

A national umbrella programme was created for co-funding Hungarian participation in ERA-NETs *(Hungary's country fiche).*

Similarly, in Slovakia, a national programme supporting the preparation of Horizon Europe project proposals and a dedicated call to co-fund the participation of Slovak institutions in European Partnerships were designed *(Slovakia's country fiche).*

Strong participation by SMEs in partnerships has been facilitated in Iceland by increased national support through tax incentive schemes. This, in turn, has provided further justification for maintaining a generous tax incentive scheme in Iceland *(Iceland's country fiche).*

In Malta, additional activities included a bilateral funding programme that was developed through Malta's active participation in the PRIMA programme, as well as a proposal-writing assistance scheme to facilitate the participation of less-experienced researchers in PRIMA projects *(Malta's country fiche).*

Participation in Horizon 2020 partnerships has also resulted in new national-level structures for funding in Lithuania, where the Ministry of Energy is planning a dedicated funding tool to co-fund partnerships in the clean energy transition field *(Lithuania's country fiche).*

A Seal of Excellence support scheme ("2nd opportunity") was put in place in Cyprus in order to help implement excellent ideas not funded by the Commission instruments, including the partnerships *(Cyprus' country fiche).*

Source: Country fiches

The inputs provided on 'Complementary and cumulative funding' (page 2) reveal that countries have not made use of possibilities to combine different funding sources to support their participation in partnerships during Horizon 2020. However, some of them clearly intend to do so in the future. As discussed in Chapter 2, based on the insights included by the Member States and Associated Countries in their country fiches, the tendency is to apply a more strategic approach to partnerships at the national level in future and to exploit different funding sources as far as possible. Some countries have already implemented this approach successfully in H2020 partnerships, while others have been more reluctant to do so considering that certain EU funds like the ESIF/ERDF are not available to the same extent in all countries.

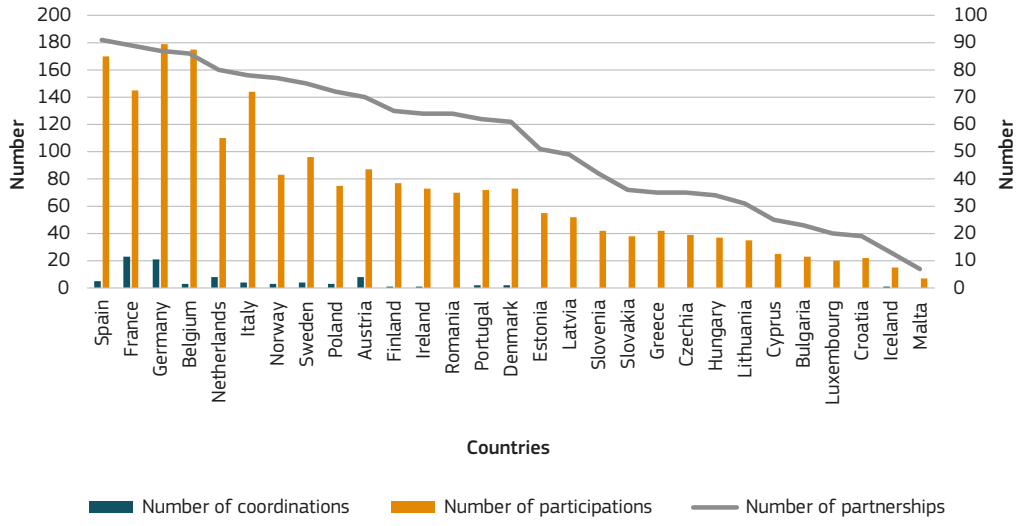
Finally, the last text box on page 4 of the fiche addresses success stories on impacts at the national level regarding, for instance, impact on policy, programme design/management, creation of national coordination mechanisms, funding levels of certain areas, etc. as well as the impact on alignment of national policies. This has attracted a variety of views that are presented in more detail in the next subchapter.

3.2 DISAGGREGATED/COMPARATIVE INDICATORS BETWEEN COUNTRIES

3.2.1 COUNTRY PARTICIPATION IN P2PS DURING H2020

Based on the ERA-LEARN data, there are 99 P2P H2020 partnerships in total. It is interesting to note that half of the participating countries take part in 60 or more of these (green line, Figure 33), while five participate in more than 80 of them. Nevertheless, not many countries take the leading role of coordinating a partnership, the lack of administrative resources being the main reason here. This role is distributed among the most active countries, i.e. France, Germany, the Netherlands, Austria and Spain.

FIGURE 33. Participation in P2Ps per country during H2020

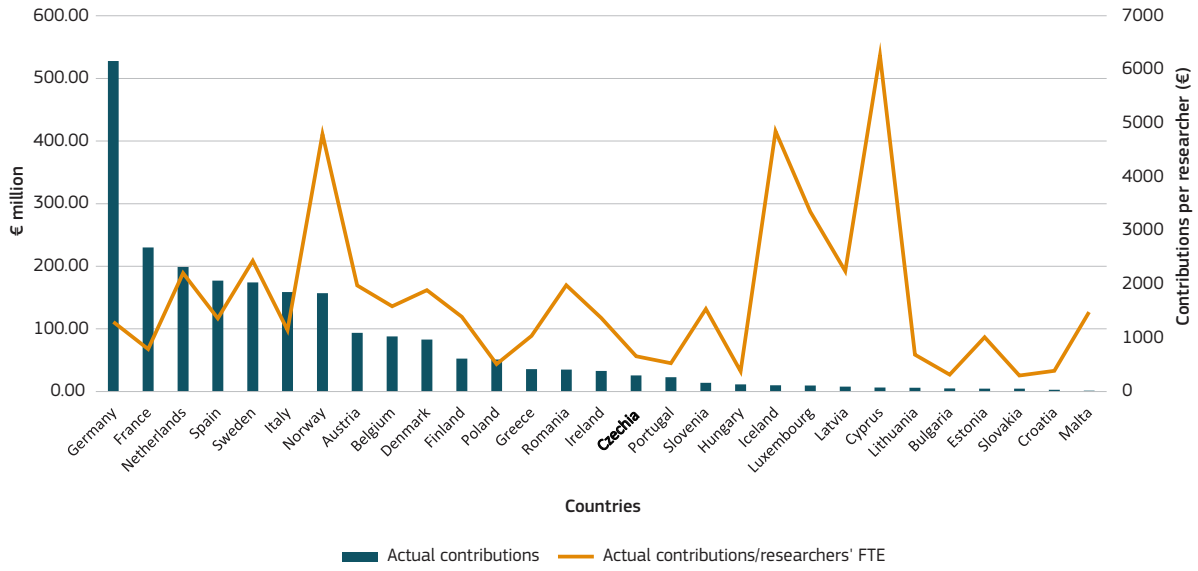


Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) excluding EIT KICs, EuroHPC and ECSEL. Horizon 2020 public-public partnerships include ERA-NET Co-funds, EJPs, Art. 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part in as a participant – for certain countries, more than one national organisation may take part thus the participations may be more than the number of partnerships a country is part of. Total Partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

3.2.2 ACTUAL NATIONAL CONTRIBUTIONS IN P2PS DURING H2020

Germany tops all participating countries in terms of the actual contributions made in joint calls, with EUR 528 million during Horizon 2020. This is more than double the amount made available by the second country in the rankings – France, with EUR 230 million. However, when these contributions are normalised by the number of researchers (FTE), the situation changes with countries such as Cyprus and Iceland coming top although their contributions are much lower in absolute figures (EUR 6 million and EUR 10 million, respectively per country). The exception is Norway which provides a relatively high contribution (EUR 156 million) that also represents a considerable amount per researcher (EUR 4 793 per researcher). Sweden and the Netherlands also report high averages per researcher and relatively large contributions.

FIGURE 34. Actual national contributions (EUR m) in P2Ps during H2020 and contribution per researchers' FTE (EUR)



Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020). Actual national contributions are the funding given by each country tocover the participation of national science and technology groups in the funded projects in the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country, estimated in average FTE between 2014-2019, based on Eurostat data.

3.2.3 IMPACTS AND SUCCESS STORIES

Participation of the Member States and Associated Countries in partnerships has increased over the years. This experience has led to a variety of impacts, as articulated in the country fiches. First, as highlighted by all countries, their participation in the partnerships, overall, combined with the more strategic approach required in Horizon Europe, resulted in improved policy coordination at the national level. This was achieved through the creation of national coordination processes bringing together all research funders and ministries, interministerial coordination groups, multi-sectoral groups, or dedicated units to enhance collaboration and coordination among the key national stakeholders.

Going even further in some cases, changes were made to regulations to allow sectoral ministries to also fund scientific R&I activities (Slovenia) or to integrate decision-making around participation in European Partnerships in relevant existing national funding structures (the Netherlands).

Second, significant policy learning was achieved thanks to participation in partnerships, in particular, developing the SRIAs.

BOX 33. EXAMPLES OF POLICY IMPACTS AT THE NATIONAL LEVEL

'SRIAs of BiodivERsA influenced the national strategy. Also, the national cancer plan benefitted from EU network research agendas.' *(Belgium's country fiche)*

'Participation in JPI Ocean has been very important to Norway. This cooperation has contributed to the alignment of research policy in this field in Europe. Norway has been very active in this initiative and is also a candidate coordinator for the Blue Economy partnership in Horizon Europe.' *(Norway's country fiche)*

'JPIs influenced national policy making with their SRIAs – the effect is noticeable in the strategic aspects of relevant national strategies related to the SRIAs of JPI JPND (dementia control strategy) and JPI Climate (strategic framework for adaptation to climate change).' *(Slovenia's country fiche).*

'European Partnerships have inspired Swedish thematic R&I programmes to tackle societal challenges with national programme committees and strategic R&I agendas.' *(Sweden's country fiche).*

'JPI Urban Europe and its ERA-Net activities resulted in the partnership Driving Urban Transition with a high impact on Austrian R&I in its domain and on the EU-Mission on Cities.' *(Austria's country fiche)*

Source: Country fiches

Third, specific dedicated structures and tools were also designed in some cases to further assist participation in partnerships by the national research and business communities.

BOX 34. EXAMPLES OF DEDICATED STRUCTURES AND TOOLS

'The Estonian Environmental Investment Centre is planning a dedicated funding tool to co-fund partnerships (in the environmental field).' *(Estonia's country fiche)*

'A national umbrella programme was created for co-funding Hungarian participation in ERA-NETs. The previously fragmented programmes to co-fund certain ERA-NETs have been aligned.' *(Hungary's country fiche)*

'Strong participation by SMEs in partnerships has been facilitated by increased national support through tax incentive schemes. This in turn provides further justification for maintaining a generous tax incentive scheme in Iceland.' *(Iceland's country fiche)*

'To increase participation in European Partnerships under Horizon Europe, a national programme supporting the preparation of Horizon Europe project proposals and a dedicated call to co-fund the participation of Slovak institutions in European Partnerships were designed.' *(Slovakia's country fiche)*

'National measures that aim to support participation in EU programmes for research and innovation.' *(Croatia's country fiche)*

'A bilateral funding programme that was developed through Malta's active participation in the PRIMA programme, as well as a proposal writing assistance scheme to facilitate the participation of less experienced researchers in PRIMA projects.' *(Malta's country fiche)*

'The Ministry of Energy is planning a dedicated funding tool to co-fund European Partnerships (in the field of clean energy transition).' *(Lithuania's country fiche)*

'A Seal of Excellence support scheme (2nd opportunity) was put in place in order to help implement excellent ideas not funded by the Commission.' (*Cyprus country fiche)*

Source: Country fiches

Last but not least, countries have highlighted the significant role specific partnerships have played in important decisions either in relation to infrastructure or in key areas of national expertise.

BOX 35. EXAMPLES OF KEY ROLE OF CERTAIN PARTNERSHIPS FOR SOME COUNTRIES

'Nationally funded platforms and infrastructures are aligned with European Research Infrastructures (for example, the Biobank platform with BBMRI-ERIC, the platform for clinical research with ECRIN-ERIC, etc.) and European initiatives (Beyond 1 Million Genome Project with IMPACT).' *(Spain's country fiche)*

'The Bulgarian petascale supercomputer, [is] among the five petascale supercomputers that were developed with support from EuroHPC.' *(Bulgaria's country fiche).*

'The JU ECSEL shows that even a small country like Austria can have a strong position by contributing to the European microelectronic research roadmaps and therefore can be very effective in related research and innovation projects.' *(Austria's country fiche)*

Source: Country fiches

Based on the future intentions stated in the country fiches, there is unanimity that the participating countries will continue to support the partnerships in Horizon Europe with increased interest and commitments and will apply a more strategic approach in their participation. This marks a difference in the way that partnerships are now appreciated by Member States and Associated Countries. When the first ERA-NETs were launched in FP6 and FP7, they were primarily seen as an additional funding source to complement the national and the EU Framework Programmes. As noted in the 'Analysis of ERA-NET Co-fund actions under Horizon 2020'[102], stakeholders in the participating states as well as EC officials had not yet realised the full potential of the scheme as a policy instrument in terms of alignment and strategic development.

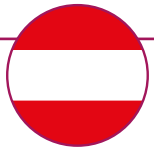
Since then, however, based on the ERA-LEARN Annual Report 2020, some 747 joint calls have been implemented by P2Ps, while the number of additional ERA-NET Co-fund calls (without EU co-funding) has been higher than the number of calls that have received EU co-funding since 2018. At the same time, more JPI calls were implemented in 2020 than in any year since 2015[103]. This demonstrates the leverage effect of the initial EU co-funding as well as the growing interest and attractiveness of the partnerships for the participating states and their research communities.

Overall, countries have realised the partnerships' strong role in contributing to ERA's advancement, bringing different communities together (research funders, performers, businesses, users, regional/local authorities), and society at large, and consolidating whole sectors of research and the economy. Jointly addressing sometimes urgent challenges that cross-national borders is another motivation that now seems more relevant and pertinent than ever.

3.3 COUNTRY FICHES

The information presented below gives a snapshot of the performance of the 27 EU Member States, Iceland and Norway in partnerships under Horizon 2020, as well as future intentions of the countries for participating in Horizon Europe partnerships.

102) https://op.europa.eu/en/publication-detail/-/publication/74c34f43-b147-11e6-871e-01aa75ed71a1 [hyperlink?]
103) ERA-LEARN Annual Report 2020, https://www.era-learn.eu/documents/annualreport2020



KEY HIGHLIGHTS

Austria has been participating very actively in partnerships and it has a strong commitment to European and international research collaboration. Researchers appreciate the participation in transnational projects. Austria's participation is highly beneficial for the further development of national R&I in the domains in question. For Horizon Europe, the Austrian RTI Strategy 2030 stipulates increasing participation in European Partnerships by following a more strategic approach at the national level and supporting participation with an efficiently coordinated portfolio of funding.

70 H2020 public partnerships (*)

Or **70.71%** of total (99 partnerships)

87 H2020 public partnerships (*) participations

Or **4.04%** of total

8 H2020 public partnerships (*) coordinations

Or **8.08%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€93.57 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **4.30%** of total

€1 940

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

In Horizon Europe, Austria will continue its active participation in partnerships with a focus on strengthening national priorities and aligning with national programmes and priorities. Austria provided financial commitment to 13 partnerships in the first wave, for example industry driven initiatives such as Key Digital Technologies and also on partnerships addressing health topics or biodiversity. Austria is the lead for the co-funded partnerships Driving Urban Transition and Clean Energy Transition.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	4.99 %	0.40 %	3.25 %	13.15 %
Climate action, environment, resource efficiency and raw materials	12.76 %	0.03 %	2.21 %	6.35 %
Europe in a changing world - inclusive, innovative and reflective Societies	3.37 %		5.32 %	8.67 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	5.56 %	7.49 %		4.30 %
Future and Emerging Technologies	3.72 %		0.50 %	7.96 %
Health, demographic change and wellbeing	36.16 %	16.96 %		12.33 %
Information and Communication Technologies		36.69 %	83.85 %	15.78 %
Secure, clean and efficient energy	10.37 %	6.18 %	4.87 %	14.36 %
Smart, green and integrated transport	23.07 %	32.25 %		17.10 %
	100.00 %	100.00 %	100.00 %	100.00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

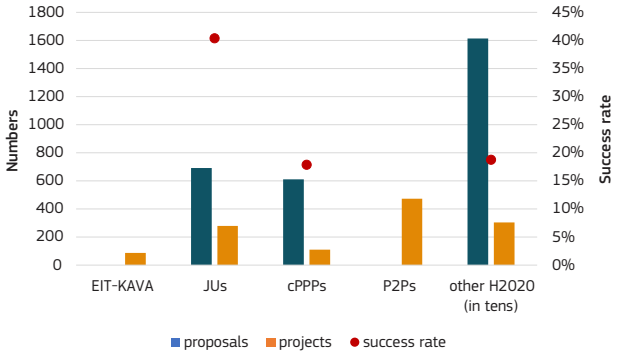
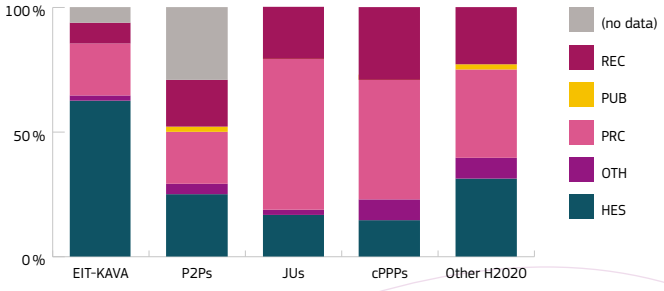


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

The Austrian success rate in Horizon 2020 is amongst the highest in the EU. Concerning partnerships, Austria is very successful in industry driven initiatives like JUs and cPPPs. As an example, the JU ECSEL shows that even a small country like Austria can have a strong position by contributing to the European microelectronic research roadmaps and therefore can be very effective in related research and innovation projects.

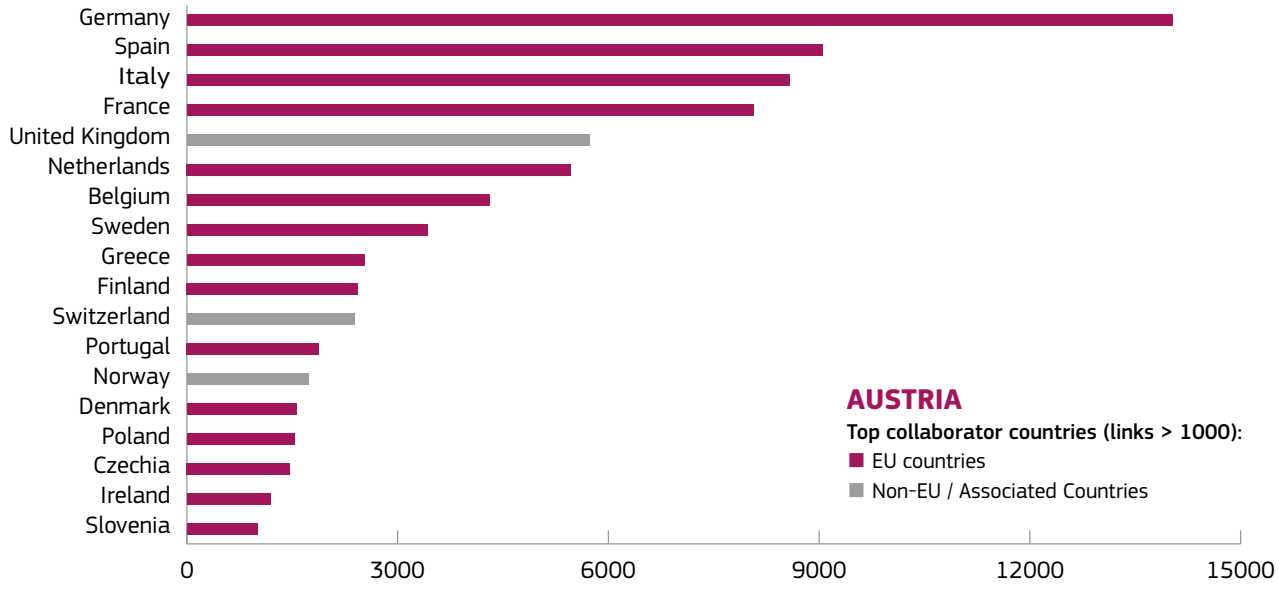
IMPACT OF EU CONTRIBUTION

In terms of transnational cooperation, ERA-NET funding is seen as a door opener and an entry point to international cooperation, particularly for SMEs. The EU contribution has enabled the funding of additional projects and has allowed R&I collaboration in projects of European dimension.

COMPLEMENTARY AND CUMULATIVE FUNDING

Austria has not use other EU funds for co-funding transnational calls so far. The partnership Clean Energy Transition can be seen in some context to the RRF-financed Austria participation in the first wave of IPCEI Hydrogen. Austria builds on the partnership Driving Urban Transition and on JPI Urban Europe in defining R&I activities related to the Cities Mission in Horizon Europe.

FIGURE 3: Top collaborators of Austrian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda (showing countries of >1000 links)

SUCCESS STORIES

The **impact of participation** in partnerships can be illustrated by some indicative examples among plenty:

- JPI Urban Europe and its ERA-Net activities resulted in the partnership Driving Urban Transition with a high impact on Austrian R&I in its domain and on the EU-Mission on Cities.

- Austrian researchers participated successfully in ERA-Net Biodiversa. It laid the ground for the new partnership Biodiversity in which Austria will participate and from which the Austrian research community can greatly benefit.

In relation to alignment, there has been a shift towards finding a common position on alignment in Austria among the major R&D stakeholders. A collaborative process bringing together the relevant Austrian research stakeholders to work towards a common national agreement on transnational alignment in research strategy, planning and funding was set up, during the course of which awareness for alignment topics was raised and commitments towards future alignment among national RTI stakeholders was built. (For details see https://www.era-learn.eu/documents/eralearn2020_t43_casestudyno4_commonalignmentpositioninaustria_final.pdf).

KEY HIGHLIGHTS

The cumulated involvement of all Belgian federated entities illustrates the importance attributed to partnerships. They hold a solid position that the partnerships are beneficial.

Each Belgian entity applies its own strategy for its participation and the repartition of the funding. This leads to a relatively high number of participations. This strong engagement will be maintained.

The low number of coordinations might reflect the decentralised nature of the Belgian R&I system where smaller administrations cannot afford to spend much time on coordinating many partnerships. In addition, certain complexities and administrative rigidities within the partnerships may explain this as well.

86 H2020 public partnerships (*)

Or **86.87%** of total (99 partnerships)

175 H2020 public partnerships (*) participations

Or **8.12%** of total

3 H2020 public partnerships (*) coordinations

Or **3.03%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€88.06 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **4.05%** of total

€1 561

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY AREAS ADDRESSED

The difference in RFOs (funding of fundamental/basic vs. applied research) is reflected in their policies: the former support as many topics as possible via P2Ps while the latter tend to focus on fewer topics (more technology oriented) with a higher budget. The most important topics are: health and life sciences, digital technologies, agile production methods, circular materials, sustainable energy, agri-food, biotech, clean tech, water and blue economy, management of the environment and urban planning.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	10.05 %	1.64 %	2.56 %	10.30 %
Climate action, environment, resource efficiency and raw materials	19.87 %	0.04 %	5.68 %	8.02 %
Europe in a changing world - inclusive, innovative and reflective Societies	5.60 %		6.98 %	8.59 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	15.31 %	18.03 %		8.10 %
Future and Emerging Technologies	4.14 %		1.19 %	4.88 %
Health, demographic change and wellbeing	32.05 %	22.89 %		17.33 %
Information and Communication Technologies		34.22 %	78.78 %	14.73 %
Secure, clean and efficient energy	4.21 %	2.96 %	4.83 %	13.95 %
Smart, green and integrated transport	8.76 %	20.23 %		14.10 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

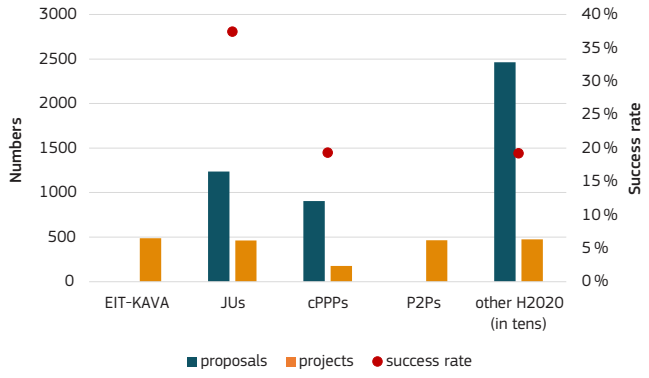
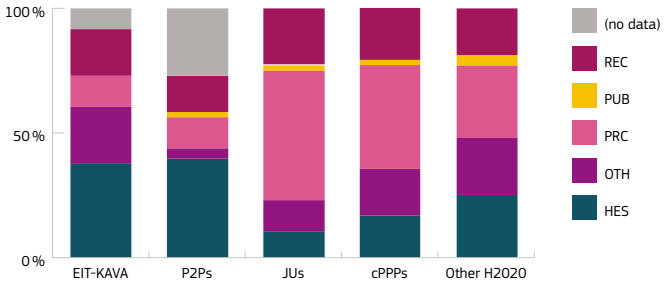


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

ADDITIONAL INVESTMENTS/ACTIVITIES TRIGGERED

Some reduced forms of Seal of Excellence funding are available for ERC Seals of Excellence and for SME instrument Seals of Excellence.
FP6/FP7 ERA-NETs IRAsme and CorNet still continue to use regional funding only.
Networking and collaborations in some thematic areas have been developed successfully.

COMPLEMENTARY AND CUMULATIVE FUNDING

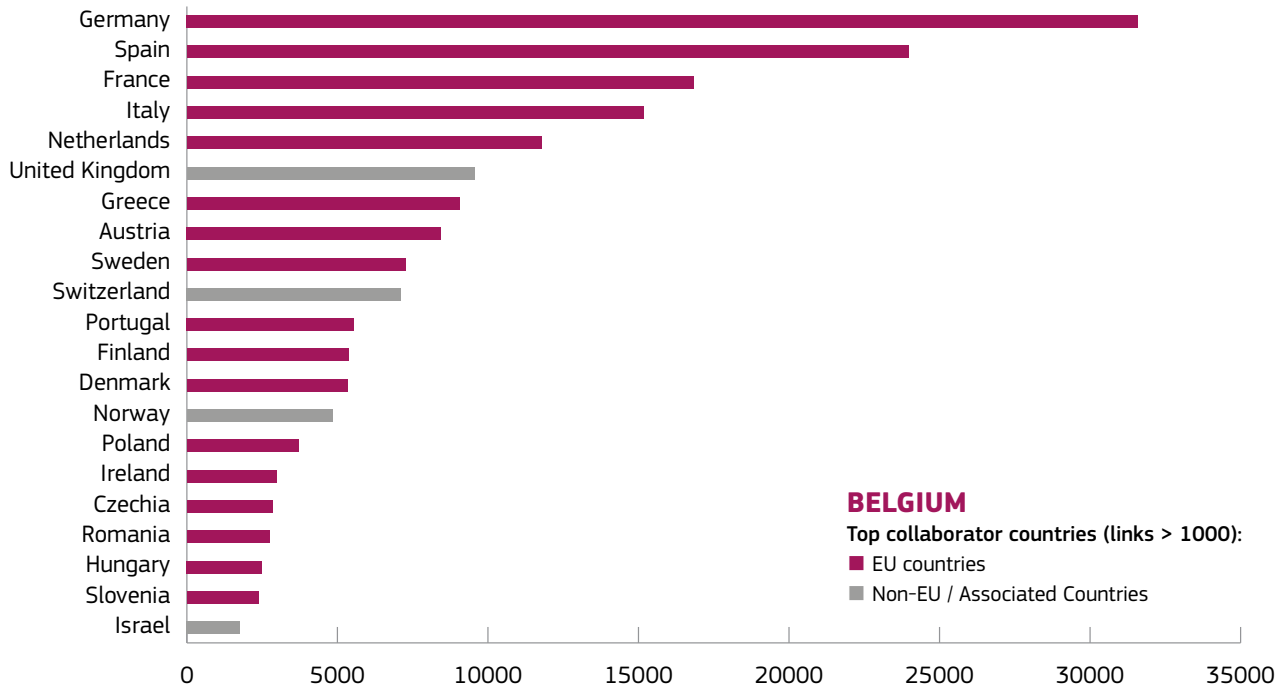
In Wallonia, participation in partnerships is closely linked to the Smart Specialisation Strategy. The Wallonia Brussels Federation has a strategy in place to participate in all co-funded partnerships where basic research can be performed.

In the Brussels Capital Region, R&I investment follows the Regional Innovation Plan priorities and S3.

ESIF funds in the Brussels Capital Region and in the Walloon Region are used to co-finance projects in the areas of S3. The level of ERDF investment varies considerably across the regions (very small amounts in Brussels; larger amounts in Wallonia).

In Flanders, ESIF funds are not used for participating in partnerships. RRF money is used to support R&I activities but not directly linked to European Partnerships.

FIGURE 3: Top collaborators of Belgian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing countries with links >1 000

SUCCESS STORIES

- Regional programmes in Belgium complement EU funding in the areas of AI and digital technologies.
- Fundamental and basic research happens in a bottom-up way, leading to broad participation across all scientific fields.
- SRIAs of BiodivERsA influenced the national strategy. Also, the national cancer plan benefitted from EU network research agendas.
- S3 allows better preparation and alignment with PRI (regional innovation plan and policies); this is a clear structuring effect.
- The elaboration of new partnerships encourages stakeholders to work together and co-create the programmes, and in some Belgian region(s), align the funding instruments, identify and act on target groups.
- The requirement to collaborate contributes to the structuring of the R&I ecosystem in the Brussels region involving actors and funding instruments in a more holistic approach towards R&I.

KEY HIGHLIGHTS

Bulgaria experienced relatively unsatisfactory participation in European Partnerships under Horizon 2020. A lack of national funding and an inefficient mechanism for collaboration with industry are identified as the key challenges/factors which have led to this situation. National-level budgetary and re-prioritisation processes, as well as ad hoc factors also contributed toward an inability to use allocated resources. Bulgarian higher education institutions, research performing organisations, and in particular SMEs, also seem to be little interested and/or unable to participate in European Partnerships mainly due to the challenges stated above.

Bulgaria has an ambition to allocate significant resources from the Programme for R&I and Digitalisation for Smart Growth (under ESIF) for national co-funding and other relevant support schemes to address these challenges, as well as establish an adequate coordination mechanism between sectoral ministries and industry stakeholders. National resources will also be leveraged. Bulgaria hopes to significantly boost its participation and performance.

23 H2020 public partnerships (*)

Or **23.23%** of total (99 partnerships)

23 H2020 public partnerships (*) participations

Or **1.07%** of total

0 H2020 public partnerships (*) coordinations

Or **0%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€4.8 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **0.22%** of total

€307

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	22.11 %	1.94 %	0.00 %	7.25 %
Climate action, environment, resource efficiency and raw materials	25.32 %	0.00 %	0.00 %	6.15 %
Europe in a changing world - inclusive, innovative and reflective Societies	0.00 %		32.54 %	19.69 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	23.67 %	13.41 %		10.67 %
Future and Emerging Technologies	28.89 %		2.47 %	3.83 %
Health, demographic change and wellbeing	0.00 %	0.00 %		5.05 %
Information and Communication Technologies		20.46 %	64.99 %	13.50 %
Secure, clean and efficient energy	0.00 %	14.33 %	0.00 %	29.68 %
Smart, green and integrated transport	0.00 %	49.86 %		4.18 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument.

FIGURE 1: Eligible proposals, projects and success rates

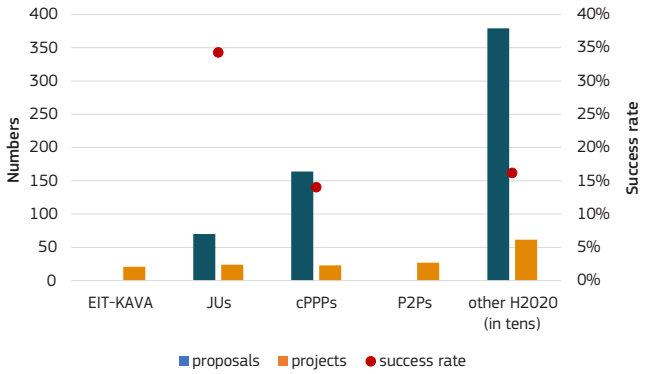
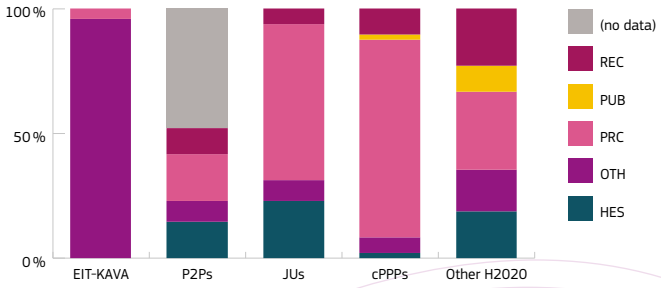


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA. JUs. cPPPs. other H2020 projects (RIAs. CSAs. etc.)

No proposal data for P2Ps. EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

It is well observed that Bulgarian participation in European Partnerships achieves higher success rates than the average rates for Bulgaria in Horizon 2020, especially in JUs, which is not unusual per se, but can be seen as a major reason to step-up national efforts in supporting and encouraging participation in all partnerships under Horizon Europe, including EIT-KICs.

ADDITIONAL INVESTMENTS AND QUALITATIVE IMPACTS

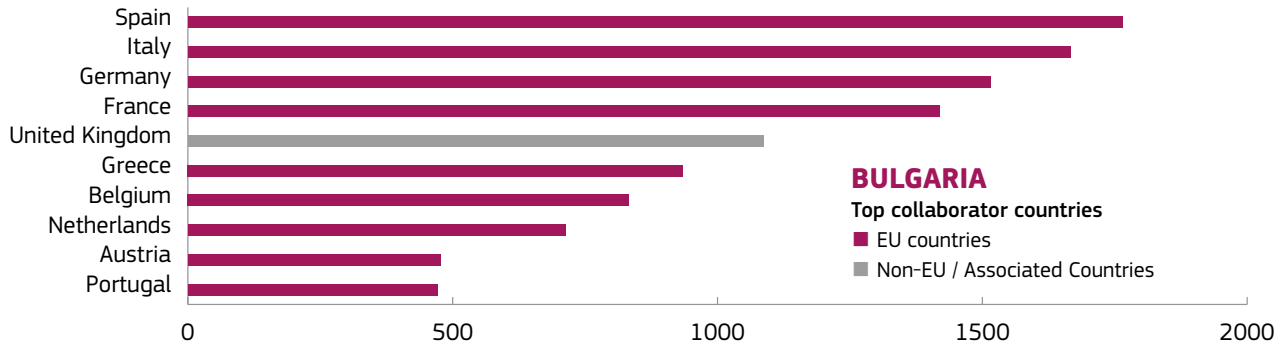
There is very little data and analysis on triggered additional investments. National investments under EuroHPC to acquire a petascale HPC system can be pointed out as an exception.

Increasing the post-project internationalisation (international collaboration) of research teams and organisations can be identified as a qualitative impact. This is increasingly important for the Bulgarian national R&I system.

COMPLEMENTARY AND CUMULATIVE FUNDING

Complementary and cumulative funding from the national budget was made available for partnerships and other calls under H2020 that require such – e.g. Teaming using ESIF, despite the gaps in coordination, allocation and execution of such resources throughout the years. Inconsistent performance by national funding bodies makes it difficult to assess the processes and the impact.

FIGURE 3: Top collaborators of Bulgarian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda (showing top-10 collaborator countries)

SUCCESS STORIES

- Bulgarian participation in EuroHPC JU, despite challenges of the national budgeting and coordination processes related to European Partnerships, can be seen as a success story. The Bulgarian petascale supercomputer, among the five petascale supercomputers that were developed with support from EuroHPC (35% of the procurement was funded by the EU), leveraged significant national resources and high-level political engagement. The supercomputer, named Discoverer, currently ranks 91st among the global top 500.

- The project is implemented by the consortium Petascale Supercomputer Bulgaria, which consists of Sofia Tech Park JSC, the association National Center for Computer Applications, and the Strategic Center for Artificial Intelligence. The supercomputer itself was delivered by Atos.

- Discoverer was officially inaugurated on 21 October 2021. The special high-level event was attended by the Minister of Education and Science, Nikolay Denkov; the Minister of Economy, Krasimir Kiryakov; the Deputy-Mayor of Sofia, Doncho Barbalov; Commissioner Mariya Gabriel; EuroHPC Executive Director Ander Jensen and others.

KEY HIGHLIGHTS

Croatia's participation is linked with the following partnerships: JPI Oceans, PRIMA, ERA-NETs (BlueBio, ERA PerMed) and EuroHPC. The national strategic documents (e.g. Smart Specialisation Strategy) has indicated the importance of increasing R&I capacity and collaboration between research organisations and enterprises. The future participation in new European Partnerships will be more strategical and better aligned with national priorities. In this regard, the integration of research communities and the business sector is one of the main goals. This could be achieved within the partnerships and for this reason Croatia has expressed interest in participating in various partnerships within Horizon Europe. For the Croatian researchers and entities, the participation in joint calls organised by partnerships that may provide new skills that could contribute to increasing national participation in framework programmes.

19 H2020 public partnerships (*)

Or **19.19%** of total (99 partnerships)

22 H2020 public partnerships (*) participations

Or **1.02%** of total

0 H2020 public partnerships (*) coordinations

Or **0%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€2.88 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **0.13%** of total

€371

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

The Ministry of Science and Education (MSE) has established the intersectoral group for strategic support and collaboration on national level with the aim to increase national participation, empower operational and human capacities and enable synergies. Since Croatia was the most successful in the area of ICT, energy, food and maritime, Croatia will continue to prioritise those areas in the new Framework Programme. In this regard, MSE has implemented national measures supporting participation in EU programmes for R&I, especially strategic research areas such as ICT, health, energy and artificial intelligence.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	0.00 %	12.08 %	0.00 %	4.29 %
Climate action, environment, resource efficiency and raw materials	0.00 %	0.00 %	10.95 %	9.75 %
Europe in a changing world - inclusive, innovative and reflective Societies	5.83 %		26.62 %	11.64 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	57.82 %	45.68 %		8.95 %
Future and Emerging Technologies	0.00 %		0.00 %	3.26 %
Health, demographic change and wellbeing	0.00 %	2.11 %		14.39 %
Information and Communication Technologies		6.39 %	62.43 %	11.20 %
Secure, clean and efficient energy	36.35 %	5.25 %	0.00 %	28.50 %
Smart, green and integrated transport	0.00 %	28.49 %		8.03 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument.

FIGURE 1: Eligible proposals, projects and success rates

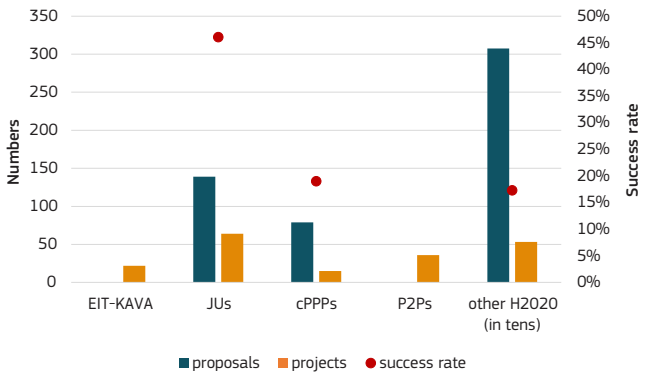
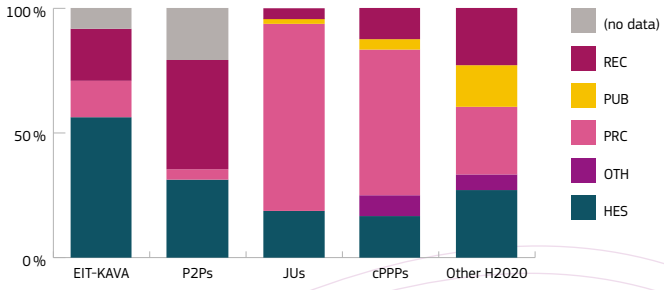


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA. JUs. cPPPs. other H2020 projects (RIAs. CSAs. etc.)

No proposal data for P2Ps. EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

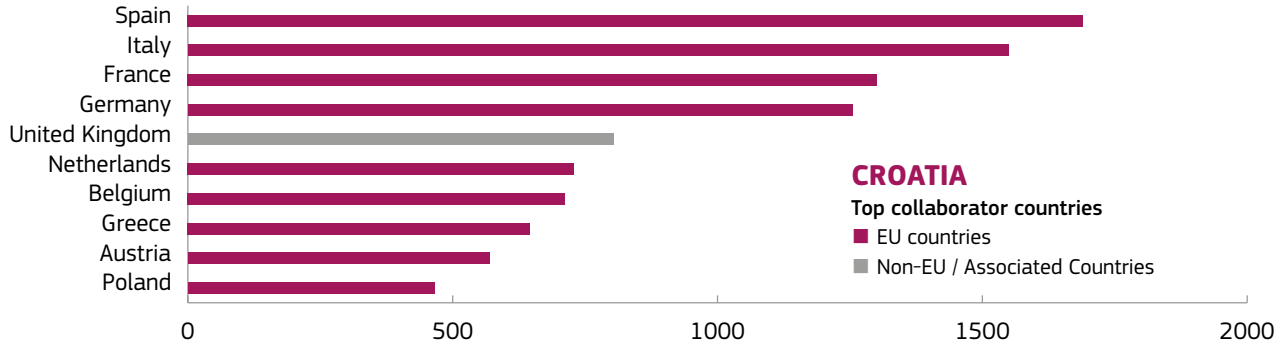
ADDITIONAL ACTIVITIES TRIGGERED

Participation in additional joint calls leads to new knowledge and policy interventions envisaged under the S3 and are expected to enhance Croatia's overall R&I performance and capacities. Croatia has developed the NCP network for applicants applying to joint transnational calls (JTCs) as well as a national scheme for co-funded projects. The aim is to encourage Croatian researchers to participate in Horizon Europe funding schemes and partnerships. Croatian participation in partnerships played a key role in increasing collaboration between academia and industry as well as enabling new opportunities for networking.

COMPLEMENTARY AND CUMULATIVE FUNDING

National funding agencies have not used other EU funds for co-funding JTCs during 2014-2020. All JTCs were financed from the national state budget. In this regard, for the Horizon Europe programme period Croatia will ensure instruments aimed at enabling synergies and complementarities between public sector R&D, industrial development and human capital development.

IGURE 3: Top collaborators of Croatian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing top-ten collaborator-countries

SUCCESS STORIES

- National measures that aim to support participation in EU programmes for research and innovation.
- Establishing the thematic advisory working group to increase cooperation, ensure synergies and implement joint actions between different stakeholders and ministries.
- Croatian participation in partnerships was a valuable learning exercise for R&I stakeholders and for funding agencies seeking to develop new skills in programme coordination and implementation.
- Croatia, represented by the Faculty of Electrical Engineering and Computing, University of Zagreb, is participating as a partner in EuroHPC, which has ensured stronger visibility for the Croatian research community and the further involvement of the Croatian Research Area in the European Research Area.

KEY HIGHLIGHTS

Cyprus has a small but growing R&I ecosystem that plays a limited but slowly expanding role in economic growth. With an R&D expenditure of 0.74% of GDP in 2019, international cooperation has long been identified as a key ingredient for development. Participation in H2020 partnerships has been satisfactory but the small budget allocated and its fragmentation over a number of partnerships has limited the potential impact on Cyprus' R&I community. Participation in new European R&I partnerships will be more strategic in order to best serve the needs of the R&I community and at the same time address national priorities.

25 H2020 public partnerships (*)

Or **25.25%** of total (99 partnerships)

25 H2020 public partnerships (*) participations

Or **1.16%** of total

0 H2020 public partnerships (*) coordinations

Or **0%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€6.42 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **0.30%** of total

€6 110

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021). H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY AREAS ADDRESSED

According to the Smart Specialisation Strategy for Cyprus (S3Cy 2015), tourism and energy were identified as the major priority sectors for future investment. From the primary sector, construction, transport and health emerged as secondary priority sectors. The environment as well as ICT were defined as important horizontal sectors.

In line with this, Cyprus has so far committed to participating in four partnerships under Horizon Europe, focusing on the clean energy transition, the blue economy, key digital technologies and SME support.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	11.62 %	0.00 %	0.00 %	7.80 %
Climate action, environment, resource efficiency and raw materials	23.31 %	0.00 %	2.40 %	5.60 %
Europe in a changing world - inclusive, innovative and reflective Societies	12.57 %		20.19 %	19.37 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	21.38 %	35.83 %		4.24 %
Future and Emerging Technologies	0.00 %		0.00 %	5.06 %
Health, demographic change and wellbeing	25.49 %	0.00 %		9.66 %
Information and Communication Technologies		54.74 %	73.79 %	24.19 %
Secure, clean and efficient energy	1.87 %	0.00 %	3.61 %	13.51 %
Smart, green and integrated transport	3.76 %	9.43 %		10.56 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

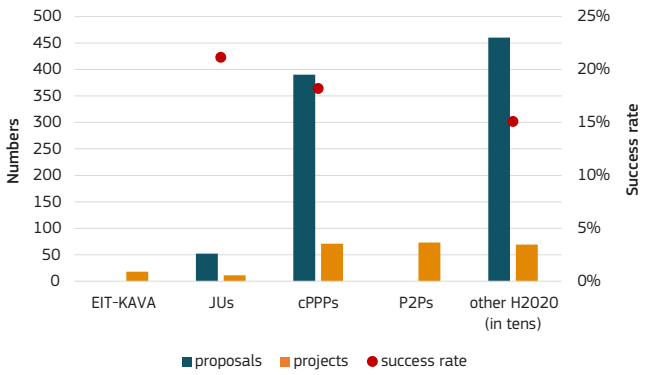
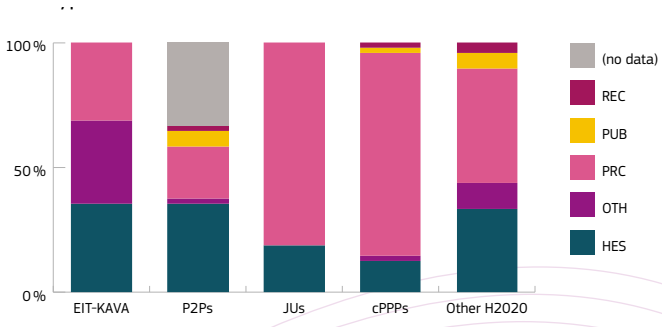


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

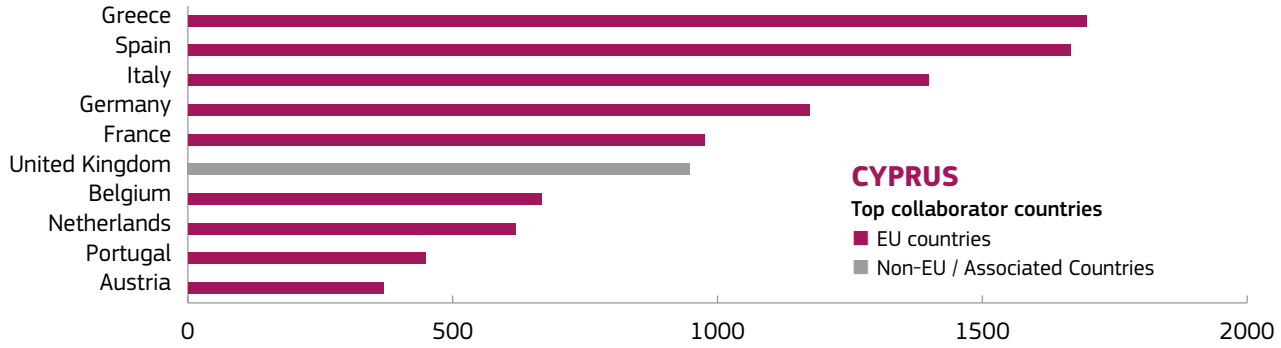
COMPLEMENTARY AND CUMULATIVE FUNDING

Cyprus had not used ESIF/ERDF funds for supporting participation in European collaborations in the past. However, ESIF 2021-2027 co-funding will be used to support participation in the four partnerships selected under Horizon Europe, as mentioned above (and any others to be selected during the course of the programming period).

ADDITIONAL INVESTMENTS TRIGGERED

Cyprus has been quite successful in H2020. This was the result of the ecosystem's quality and pursuit of internationalisation, assisted by an active national NCP-system as well as various national schemes supporting and motivating participation in H2020. Furthermore, a Seal of Excellence support scheme (2nd opportunity) was put in place in order to help implement excellent ideas not funded by the Commission.

FIGURE 3: Top collaborators of Cypriot researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing top-10 collaborator-countries

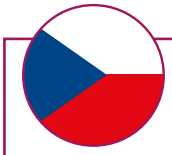
SUCCESS STORIES

- H2020 funded the development of six Centres of Excellence in Cyprus through the TEAMING scheme. These are expected to become R&I technology hubs for Cyprus and beyond while making significant contributions to relevant partnerships.

- A National Strategy for R&I is under preparation by the newly-formed Deputy Ministry for Research Innovation and Digital Policy (DMRID). This will address/promote the priorities of the government in R&I and the needs and challenges of the national R&I ecosystem. A review of Cyprus' Smart Specialisation Strategy will complement the National Strategy. When these strategies are adopted the selection of new participating partnerships will be based on their alignment with national priorities.

- Collaboration between DMIRID and RIF for the selection and coordination of participation in Horizon Europe partnerships has enhanced the national R&I governance structure.

- In a national study amongst R&I stakeholders it was indicated that access to funding was a main driver for participation in H2020. Next to the typical drivers for international research that were common to all (development of knowledge and capabilities, development of international networks and partnerships etc.) there was a strong emphasis on the sharing of costs and risks in the creation of IPR and innovation in general among start-ups and SMEs, while the universities (especially the private ones) highlighted the need for funding 'seed' research. On the matter of partnerships, stakeholders highlighted the opportunity provided to network at the European level, implement cutting-edge research and increase prospects for sustainable and successful collaborations in key thematic areas.



KEY HIGHLIGHTS

For Czechia, the new landscape of European Partnerships represents a significant opportunity to further develop the existing platforms and strengthen the newly emerging ones related to international cooperation in research, development and innovation. European Partnerships are viewed as an opportunity to capitalise on Czechia's research capacities and capabilities at the international level, which can ultimately help to address topics with an international dimension. Therefore, in order to ensure sustainable economic growth and an ability to cope with the socio-economic challenges, it is crucial that Czechia is actively involved in new European Partnerships.

35 H2020 public partnerships (*)

Or **35.35%** of total (99 partnerships)

39 H2020 public partnerships (*) participations

Or **1.81%** of total

0 H2020 public partnerships (*) coordinations

Or **0%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€25.62 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **1.18%** of total

€646

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

In line with the National Research, Development and Innovation Policy of Czechia 2021+, Czechia will continue in efforts to effectively promote the priority orientations or themes of Czechia's research and innovation in the Horizon Europe. However, the priority areas for the national participation within the European Partnerships are not limited and will depend primarily on the absorption capacity of the research performing organisations as well as financial capacity of the state budget to finance their participation.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	18.08 %	0.60 %	1.60 %	10.47 %
Climate action, environment, resource efficiency and raw materials	20.68 %	0.23 %	13.21 %	4.69 %
Europe in a changing world - inclusive, innovative and reflective Societies	12.24 %		4.75%	5.74%
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	0.00 %	2.82 %		8.75 %
Future and Emerging Technologies	10.47 %		1.68 %	5.12 %
Health, demographic change and wellbeing	36.98 %	3.33 %		8.71 %
Information and Communication Technologies		19.46 %	76.75 %	15.83 %
Secure, clean and efficient energy	1.55 %	1.72 %	2.01 %	11.58 %
Smart, green and integrated transport	0.00 %	71.85 %		29.10 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument.

FIGURE 1: Eligible proposals, projects and success rates

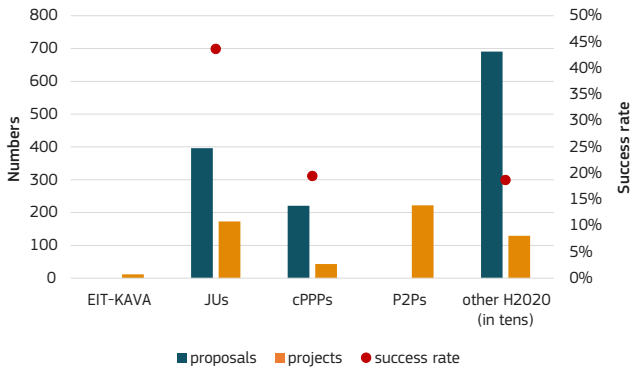
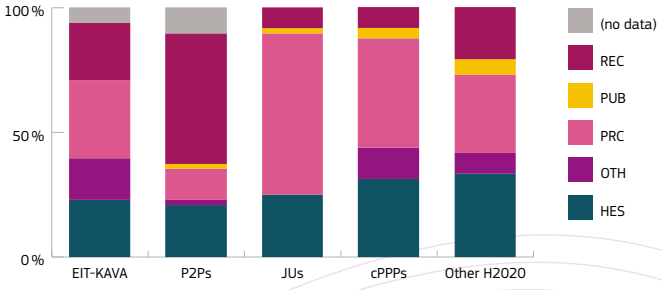


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

IMPACT OF EU CONTRIBUTION

The funding mechanism for current programmes and initiatives based on joint funding has proven to be effective. The top-up contribution served as a positive motivating factor, especially for research performing organisations, which perceived this opportunity as a means to maximise the impact of their scientific contributions while receiving a higher level of funding than would have been possible from national contributions.

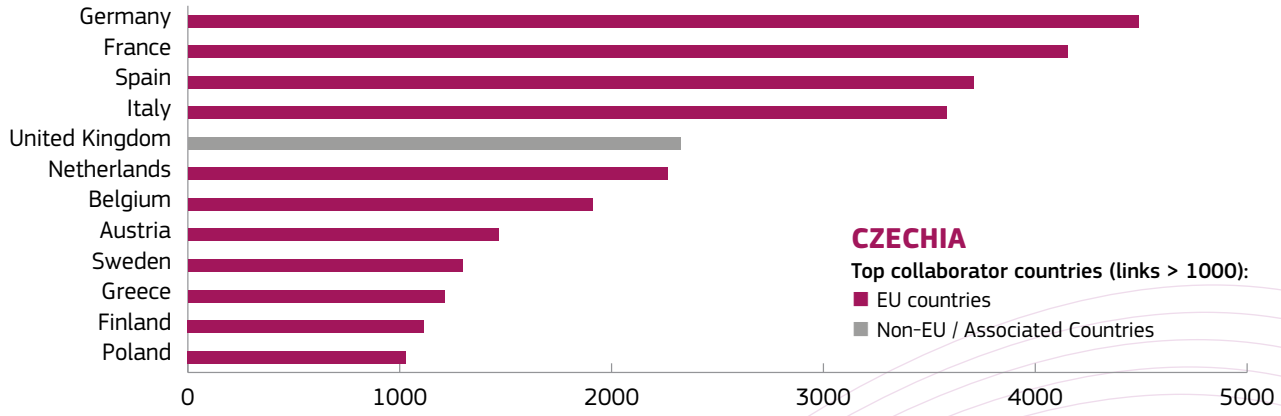
ADDITIONAL INVESTMENTS TRIGGERED

In Czechia, the Ministry of Education, Youth and Sports is the central coordinating body for international research and development cooperation. The ministry supports a number of research areas at the horizontal level. In the future, Czechia will aim to link national sectoral policies even more closely to the European Partnerships portfolio and thus involve other sectoral ministries, which have so far participated partially in international research and development cooperation within the EU's framework programmes. This will allow them to cooperate even more closely in their respective thematic areas in order to achieve the maximum possible impacts.

COMPLEMENTARY AND CUMULATIVE FUNDING

The aim of Czechia is to make the best use of ESIF in order to strengthen the capacity of research consortia within international programmes so as to have a practical impact at the national and macro-regional levels. Therefore, it is essential to establish clear guidance for synergic cooperation mechanisms, in a way that allows for a variable portfolio of co-funding.

FIGURE 3: Top collaborators of Czech researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing countries with links > 1 000

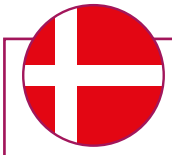
SUCCESS STORIES

- Public-to-public partnerships have proved to be an important tool for Czechia to strengthen cooperation in research and innovation at the international level, especially in the framework of initiatives implemented on a legislative basis (Joint Undertakings).

- International cooperation under joint programming initiatives has also achieved the expected results, broadening the portfolio of cooperation and, above all, enabling research organisations to establish the necessary networks with partner institutions from abroad. The research community could therefore benefit from the opportunity to build their international profiles. On the other hand, national funding authorities were able to make use of the exchange of experiences.

- Due to the experience acquired so far, a need has been identified to set up a functional coordination system in Czechia which would interconnect the Ministry of Education, Youth and Sports, which has the central role in the research and development governance system, and sectorial ministries and agencies in order to better define the needs and the necessities of the national research community, and to find more effective forms of supporting the involvement of organisations doing research in the international programmes and initiatives.

- Under EuroHPC, Czechia is hosting the Karolina supercomputer, which became operational in 2021.



KEY HIGHLIGHTS

Denmark has participated in a number of partnerships in Horizon 2020. It is the intention under Horizon Europe to continue giving high priority to partnerships, with a focus on partnerships supporting the national strategy to focus on green research and innovation. Danish participation in partnerships has been very successful in a number of areas and Danish scientists and companies have benefitted from the increased internationalisation the partnerships have opened up for them.

61 H2020 public partnerships (*)

Or **61.6%** of total (99 partnerships)

73 H2020 public partnerships (*) participations

Or **3.4%** of total

2 H2020 public partnerships (*) coordinations

Or **2%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€83 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **3.8%** of total

€1 869

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

In 2020, the Danish government introduced a new research strategy focusing on green science and innovation. This means that national funding of science and innovation will focus on green areas such as climate, energy, environment, recycling, and transportation. In addition, Denmark will continue to prioritise Danish positions of strength like health, ICT, and food/bio.

The new strategy will set the direction for Danish prioritisation of its engagement in future partnerships. Denmark has committed to participate in all 14 partnerships from the first wave of Horizon Europe partnerships starting in 2021/22.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	0.00 %	2.28 %	0.25 %	9.53 %
Climate action, environment, resource efficiency and raw materials	18.99 %	0.28 %	2.08 %	7.53 %
Europe in a changing world - inclusive, innovative and reflective Societies	3.96 %		0.73 %	4.58 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	26.19 %	18.24 %		14.09 %
Future and Emerging Technologies	2.52 %		0.72 %	6.65 %
Health, demographic change and wellbeing	29.87 %	28.40 %		16.44 %
Information and Communication Technologies		4.77 %	83.99 %	10.83 %
Secure, clean and efficient energy	10.73 %	16.21 %	12.23 %	21.58 %
Smart, green and integrated transport	7.73 %	29.81 %		8.76 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument.

FIGURE 1: Eligible proposals, projects and success rates

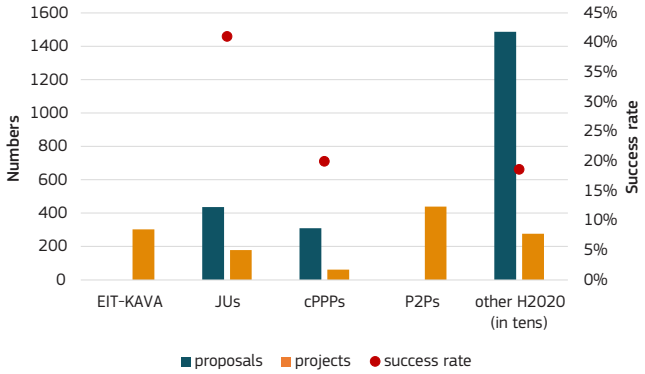
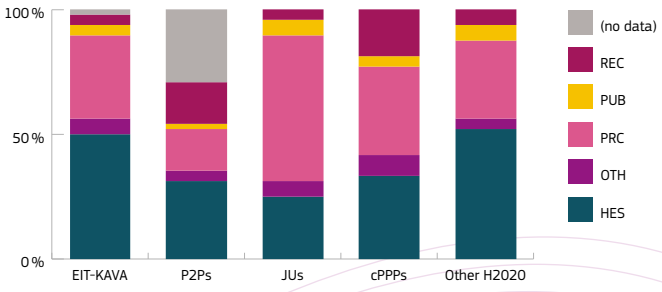


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

ADDITIONAL INVESTMENTS TRIGGERED

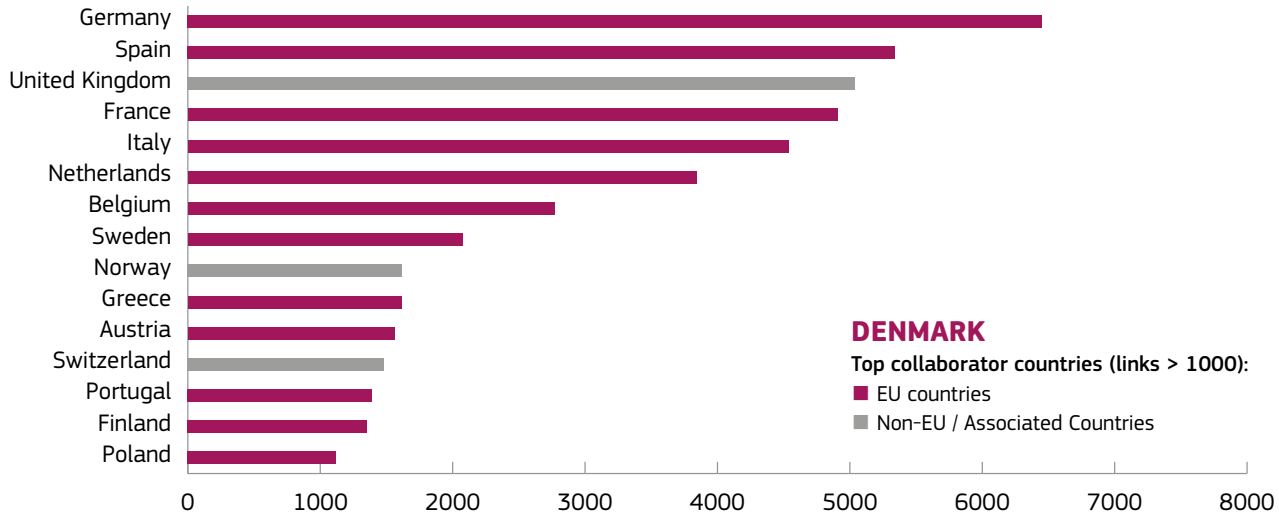
With a more strategic approach to partnerships, it is expected that partnerships will play a stronger role in some areas (especially green research and innovation) and will attract participation – both in-cash and in-kind – from both public and private partners.

COMPLEMENTARY AND CUMULATIVE FUNDING

The main financial supporter of Danish participation in partnerships is the Innovation Fund Denmark. Other ministries (environment, transportation, health, etc.) primarily participate in partnerships on an in-kind basis.

An element in the Danish strategy for green science and innovation is a mapping of European funding sources for green science and innovation. The purpose is to secure Danish knowledge and access to international funding that can boost Danish (and European) implementation of green solutions, for instance through partnerships.

FIGURE 3: Top collaborators of Danish researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing countries where links >1 000

SUCCESS STORIES

- In 2020 the Danish government launched a new strategy for a green science and innovation strategy. An element of this strategy is to establish a number of national partnerships focusing on green research and innovation. The new green strategy emphasises that national partnerships should seek international collaborations, and partnerships in Horizon Europe are mentioned as important potential partners.

- In general, partnerships have become more visible and effective instruments for Danish researchers. The interest for partnerships among universities, companies etc. has increased – especially for participating in the planning and implementation of new Horizon Europe partnerships.

KEY HIGHLIGHTS

Compared to Horizon 2020, Estonia's participation in new European Partnerships will be more strategic and better aligned with national priorities. Participation is associated with the focus areas defined in the new Research and Development, Innovation and Entrepreneurship (RDIE) Strategy for 2021-2035. In addition, national level co-funding mechanisms were re-designed to allow a wider range of actors to join EU partnerships.

51 H2020 public partnerships (*)

Or **51.55%** of total (99 partnerships)

55 H2020 public partnerships (*) participations

Or **2.55%** of total

0 H2020 public partnerships (*) coordinations

Or **0%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€7.1 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **0.21%** of total

€1 533

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: : ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by public partnerships. Actual contributions for each researcher are the total of actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) averaged between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

In Horizon Europe, Estonia will continue participating in partnerships, with a primary focus on priority areas (Research and Development, Innovation and Entrepreneurship Strategy 2021-2035):

- digital solutions across all areas of life
- health technologies and services
- valorisation of local resources
- smart and suitable energy solutions
- thriving Estonian society, language and cultural space.
- For the new funding period (2021-2035), Estonia's participation in partnerships is more strategic – the participation is primarily focused on initiatives related to the new RDIE strategy 2021-35 focus areas.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	23.15 %	1.61 %	0.00 %	9.38 %
Climate action, environment, resource efficiency and raw materials	18.47 %	0.00 %	0.00 %	5.84 %
Europe in a changing world - inclusive, innovative and reflective Societies	3.15 %		28.49 %	20.15 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	26.59 %	76.93 %		6.32 %
Future and Emerging Technologies	0.00 %		0.00 %	3.28 %
Health, demographic change and wellbeing	28.65 %	10.54 %		15.10 %
Information and Communication Technologies		4.59 %	67.83 %	16.41 %
Secure, clean and efficient energy	0.00 %	2.44 %	3.68 %	18.58 %
Smart, green and integrated transport	0.00 %	3.88 %		4.95 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument.

FIGURE 1: Eligible proposals, projects and success rates

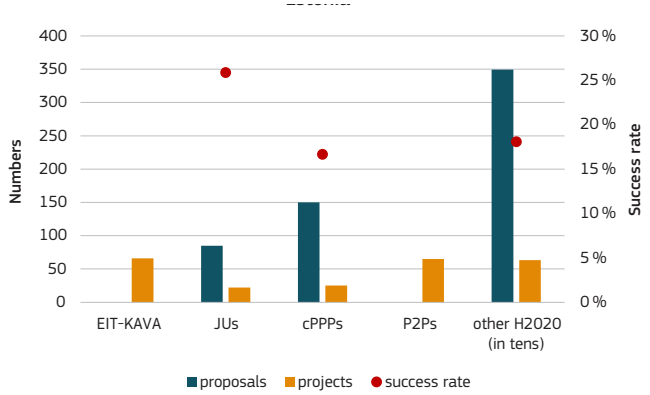
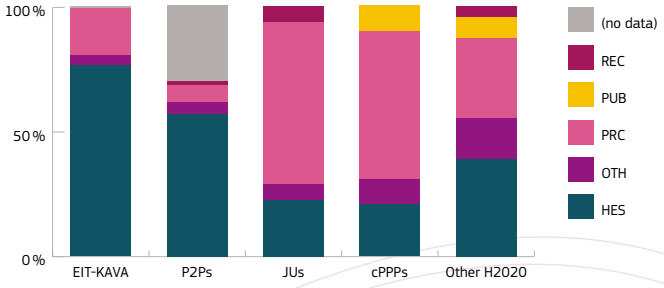


FIGURE 2: Types of project beneficiaries (%)



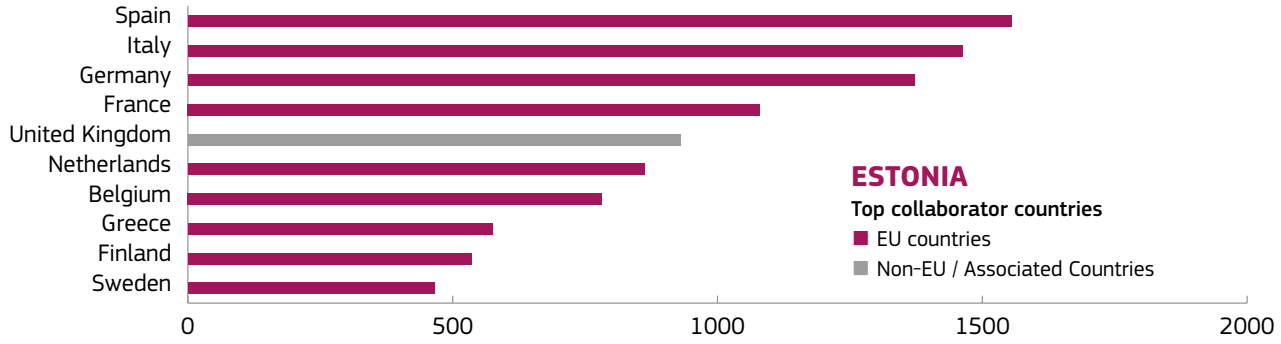
Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

COMPLEMENTARY AND CUMULATIVE FUNDING

- Participating in partnerships has been an example of synergy between different EU programmes: Estonia has supported participation in European Research Area activities (including partnerships) with ERDF: about 1/3 of ERA-NET participations in Horizon 2020 were funded from structural funds. This also remains a very important funding source in Horizon Europe.
- In Estonia, sectoral ministries are responsible for their sectorial partnerships. Therefore the national ministries actively seek co-funding from national level funding sources, and also from other EU funding sources.
- During Horizon 2020, the ministries' capacity to determine the R&D needs of society has improved considerably due to the active involvement in partnerships' strategic planning on the national level. In Horizon Europe, six ministries have committed to supporting participation in partnerships with EUR 27 million and ensuring the complementarity of national policy goals with global societal challenges.

FIGURE 3: Top collaborators of Estonian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing top-ten collaborator-countries

SUCCESS STORIES

- **Impact on programme design/management**: Participation in Horizon 2020 partnerships has resulted in new national-level structures for funding. For example, in the case of European Partnerships, the Estonian Environmental Investment Centre is planning a dedicated funding tool to co-fund partnerships (in the environmental field).

- **Impact on national coordination mechanism**: The Research and Development **Council* revised** the national coordination mechanism for new European Partnerships to better fit with the overall (budget) planning at the national and EU level (including the change in data collection timing).

Impact on alignment

- The abovementioned revision changed national co-funding criteria to also allow additional new partners to participate in a partnership's related projects (e.g. SMEs and regional authorities). The aim is to align national co-funding rules with overall Horizon Europe principles (to more engage different types of participants in the programme).

* The Research and Development Council advises the Republic's government in matters relating to the research and development strategy, thereby directing the systematic development of the national research, development and innovation system.

KEY HIGHLIGHTS

Finland has strategically joined those Horizon Europe Partnerships that play a key role in tackling the targets of the twin transition and recovery from corona pandemic. Participation in European Partnerships have been considered as an effective way to build and execute RDI agendas with European partners. The recent update of the national RDI Roadmap includes several actions aiming to increase participation in partnerships. for example by improved advisory services and by using RRF funding.

65 H2020 public partnerships (*)

Or **66%** of total (99 partnerships)

77 H2020 public partnerships (*) participations

Or **3.6%** of total

1 H2020 public partnerships (*) coordinations

Or **1%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€52.6 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **2.4%** of total

€1 396

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

Thematically the weight of participation is in such areas as health, environment and IT/digital, where Finland has been an active participant during H2020.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	0.00 %	2.52 %	2.73 %	9.94 %
Climate action, environment, resource efficiency and raw materials	27.70 %	0.00 %	1.99 %	10.97 %
Europe in a changing world - inclusive, innovative and reflective Societies	4.12 %		4.62 %	6.82 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	20.38 %	26.60 %		7.51 %
Future and Emerging Technologies	0.64 %		0.00 %	6.28 %
Health, demographic change and wellbeing	38.13 %	17.20 %		13.95 %
Information and Communication Technologies		32.55 %	89.72 %	21.70 %
Secure, clean and efficient energy	1.01 %	14.04 %	0.94 %	14.07 %
Smart, green and integrated transport	8.03 %	7.09 %		8.75 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

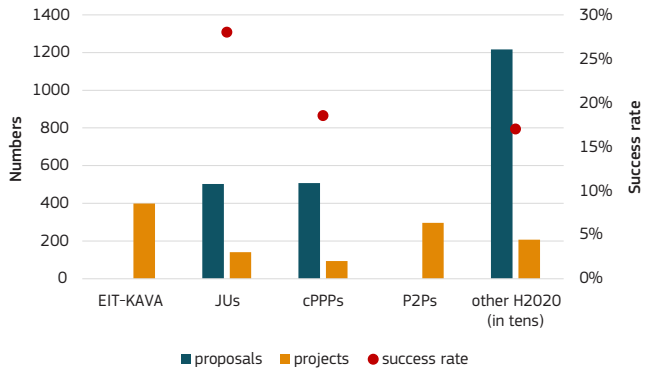
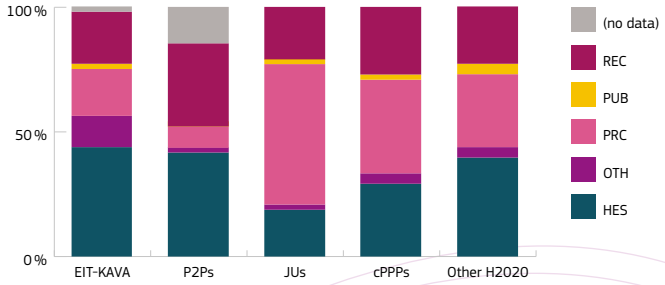


FIGURE 2: Types of project beneficiaries (%)

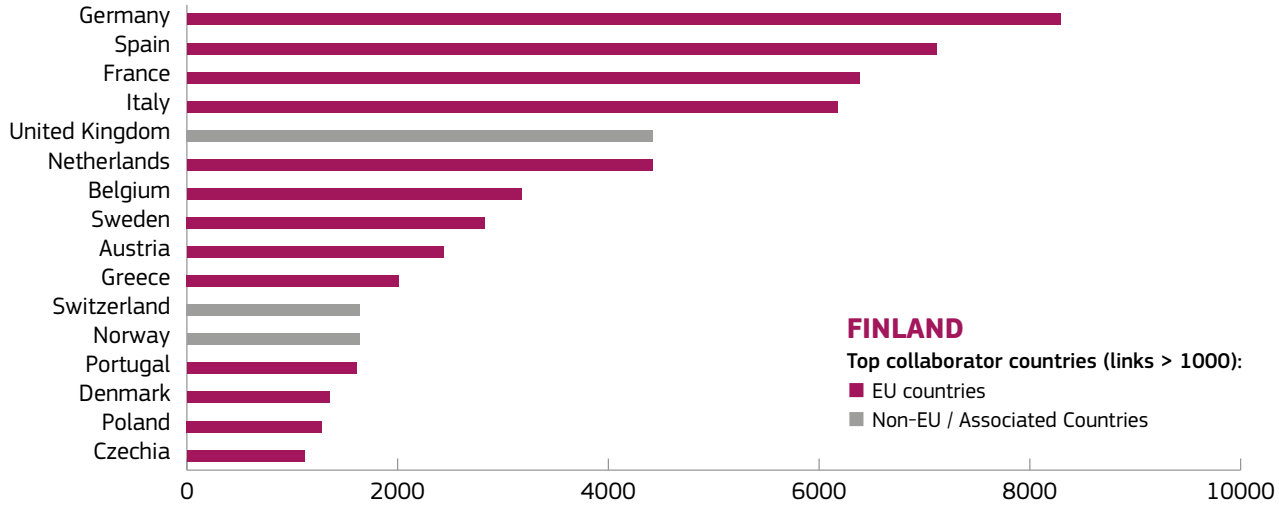


Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

In general, success rates have been higher in partnerships compared to other instruments in Horizon 2020. This is an additional positive feature of partnerships, as higher success rate reduces over-all cost of the preparations of the project proposals.

FIGURE 3: Top collaborators of Finnish researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)

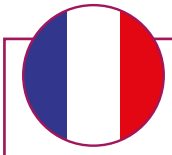


Source: eCorda; Showing countries where links >1 000

SUCCESS STORIES

- In EuroHPC partnership, Finland is hosting and funding the LUMI pre-exascale supercomputer together with nine other EuroHPC Participating States (BE, CH, CZ, DK, EE, IS, NO, PL, SE) and the EuroHPC Joint Undertaking. LUMI will be operational in 2021-2022 and is located in Kajaani in the Datacenter of CSC – IT Center for Science.

- The policy-driven Baltic Sea research and development programme (BONUS, 2010-2020) was funded jointly by the national research institution in eight EU member states around the Baltic Sea (DK, EE, FI, DE, LC, LT, PL, SE) and the EU for a total of EUR 100 million. The BONUS programme supported multidisciplinary science and created a scientific basis for decision making and thus responded to the major societal and environmental challenges in the Baltic Sea region. The Academy of Finland had observer status in BANOS (the Baltic Sea and North Sea Coordination and Support Action), which co-created the R&I agenda for the Baltic Sea and the North Sea region to be used for further activities, like for example the European partnership A climate neutral, sustainable and productive blue economy.



KEY HIGHLIGHTS

France has been strongly committed to European Partnerships in H2020, thanks to solid research and innovation communities, and to the commitment of national institutions, notably its national research funding agency and national thematic research organisations. Transnational collaboration is considered as a key policy and partnerships allow researchers to take part in transnational collaborative projects through the procedures of national funding agencies. This approach will continue to be promoted with the new European Partnerships in Horizon Europe, in line with developments at the national level (e.g. national strategies in a number of defined areas within PIA4).

89 H2020 public partnerships (*)

Or **90%** of total (99 partnerships)

145 H2020 public partnerships (*) participations

Or **6.7%** of total

23 H2020 public partnerships (*) coordinations

Or **23%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership

€230 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **10.6%** of total

€778

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

France has been strongly involved in partnerships addressing societal and technological challenges, such as in health, transport and ICT areas. This will continue to be a priority, notably in the context of the establishment of the national strategies funded by PIA4 at the national level. Moreover, partnerships also promote interdisciplinarity, which is considered as essential to address grand challenges.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	7.13 %	1.78 %	4.64 %	8.52 %
Climate action, environment, resource efficiency and raw materials	18.16 %	0.37 %	1.25 %	4.92 %
Europe in a changing world - inclusive, innovative and reflective Societies	2.45 %		10.37 %	5.55 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	17.66 %	6.45 %		5.98 %
Future and Emerging Technologies	5.07 %		2.13 %	7.51 %
Health, demographic change and wellbeing	45.83 %	11.15 %		14.23 %
Information and Communication Technologies		19.74 %	78.84 %	15.89 %
Secure, clean and efficient energy	2.87 %	2.61 %	2.76 %	11.52 %
Smart, green and integrated transport	0.82 %	57.90 %		25.88 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

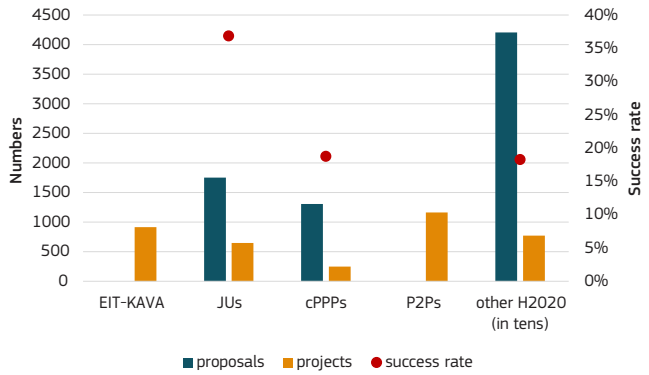
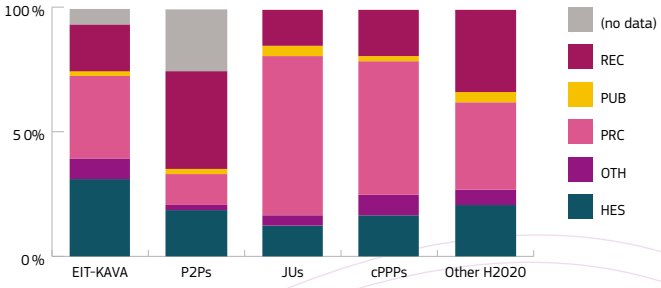


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

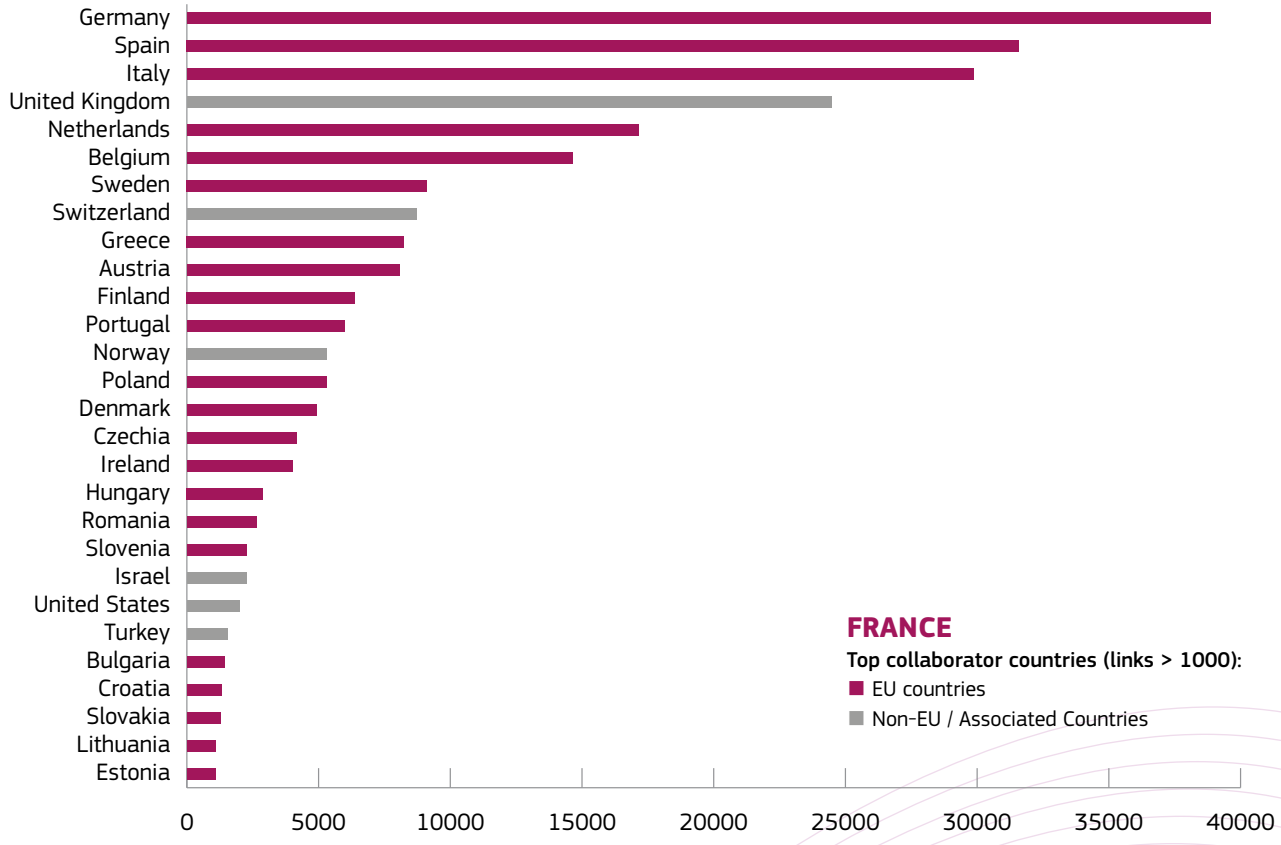
ADDITIONAL INVESTMENTS TRIGGERED

French RPOs and RFOs, notably the National Research Agency (ANR), have often participated in additional activities carried out by the networks (joint calls, knowledge hubs), showing the interest of national communities in being part of these transnational activities beyond the EU contribution.

COMPLEMENTARY AND CUMULATIVE FUNDING

France's national contribution to European partnerships has been mainly through national public funds for R&I, notably through the ANR for joint calls. In some cases, such as for ECSEL, it has also allowed the pooling of other national funds dedicated to this area at the national level to ensure complementarity with the European level.

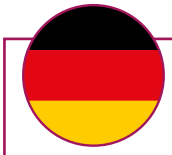
FIGURE 3: Top collaborators of French researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing countries where links >1 000

SUCCESS STORIES

- In the area of quantum technologies, structuring at the European level, notably through the QuantERA network, has been key for support at the national level, and this domain is now well positioned in terms of national priorities.
- French teams have successfully participated in networks and partnerships targeting developing countries (LeapAGRI, Water JPI, PRIMA, etc.), which have helped to pull the European Research Area towards the Global South. Numerous success stories during H2020 show how these projects have had an impact on research policies in these countries.
- In the area of antimicrobial resistance (AMR), it has been shown that France's participation in joint initiatives, in particular JPI AMR, has led to an increase of projects in this area at the national level, demonstrating impact in terms of topic alignment between European and national research activities.
- The implementation of partnerships (such as ERA-NETs, JPIs etc.) has led to the development of coordinating structures at national level (e.g. mirror groups), which has gradually made it more and more normal to have a structuring approach at the national level in order to be more efficient. In this context, the five national thematic alliances (made up of national research organisations and universities) have had an important role in terms of programming.
- Some topics have first benefited from structuring actions at European level (networks/partnerships) before being strongly supported at national level, e.g. quantum technologies.
- Many partnerships have been coherent with national strategies in corresponding areas, including at the level of sectoral ministries, and the input to sectoral policy making is important (recommendations, policy papers, etc.).



KEY HIGHLIGHTS

Germany has always been actively involved in current and earlier formats of European Partnerships and has shown strong commitment in all research areas, also taking often a leading/coordinating role within the partnerships. The national engagement is also facilitated by national actions for strategic participation. Since their launch, Germany has made high investments in partnerships and will continue to play an active role in the future. The new European approach to partnerships is accompanied nationally by a new and more strategic decision-making process that targets and involves all national stakeholders of European Partnerships.

87 H2020 public partnerships (*)

Or **87.88%** of total (99 partnerships)

179 H2020 public partnerships (*) participations

Or **8.31%** of total

21 H2020 public partnerships (*) coordinations

Or **21.21%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€527.83 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **24.28%** of total

€1 263

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

With a view to its involvement in European Partnerships, Germany is participating in all thematic areas with different foci depending on the partnership format: in P2P partnerships there is a strong focus on health, agri-food and climate action, while most of the JUs and cPPP investments go to ICT, transport and energy. Strategic focus in the future will create synergies between national strategies and the Strategic Plan which includes partnerships and missions.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	8.91 %	0.44 %	3.09 %	11.77 %
Climate action, environment, resource efficiency and raw materials	20.34 %	0.48 %	3.20 %	6.46 %
Europe in a changing world - inclusive, innovative and reflective Societies	2.56 %		5.44 %	4.90 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	16.37 %	6.67 %		4.30 %
Future and Emerging Technologies	2.08 %		4.64 %	8.67 %
Health, demographic change and wellbeing	40.73 %	13.94 %		14.40 %
Information and Communication Technologies		26.41 %	81.92 %	17.60 %
Secure, clean and efficient energy	6.62 %	7.81 %	1.70 %	12.40 %
Smart, green and integrated transport	2.38 %	44.24 %		19.50 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

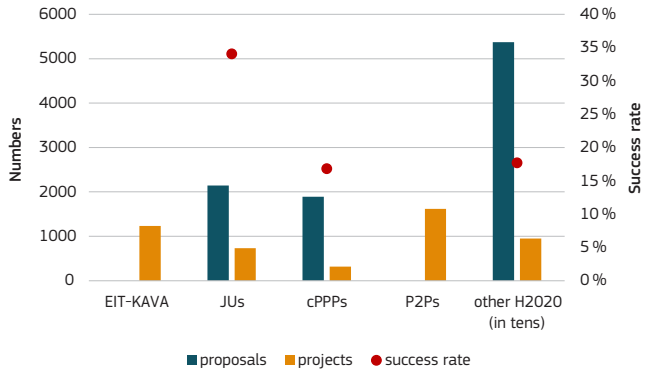
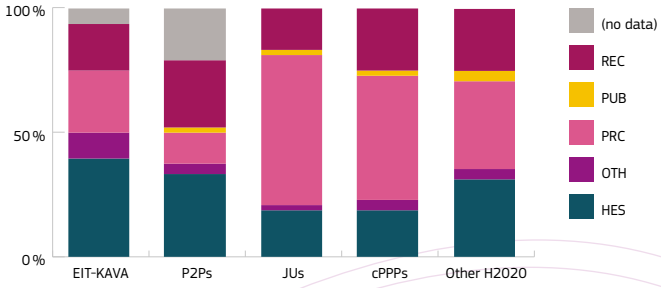


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

For Germany, there is a clear additional value concerning the participation in partnerships. Collaboration in smaller teams with well-known national processes in connection with a higher success rate compared to the framework programme offers the chance for many researchers to enter the European and international research arena.

IMPACT OF EU CONTRIBUTION

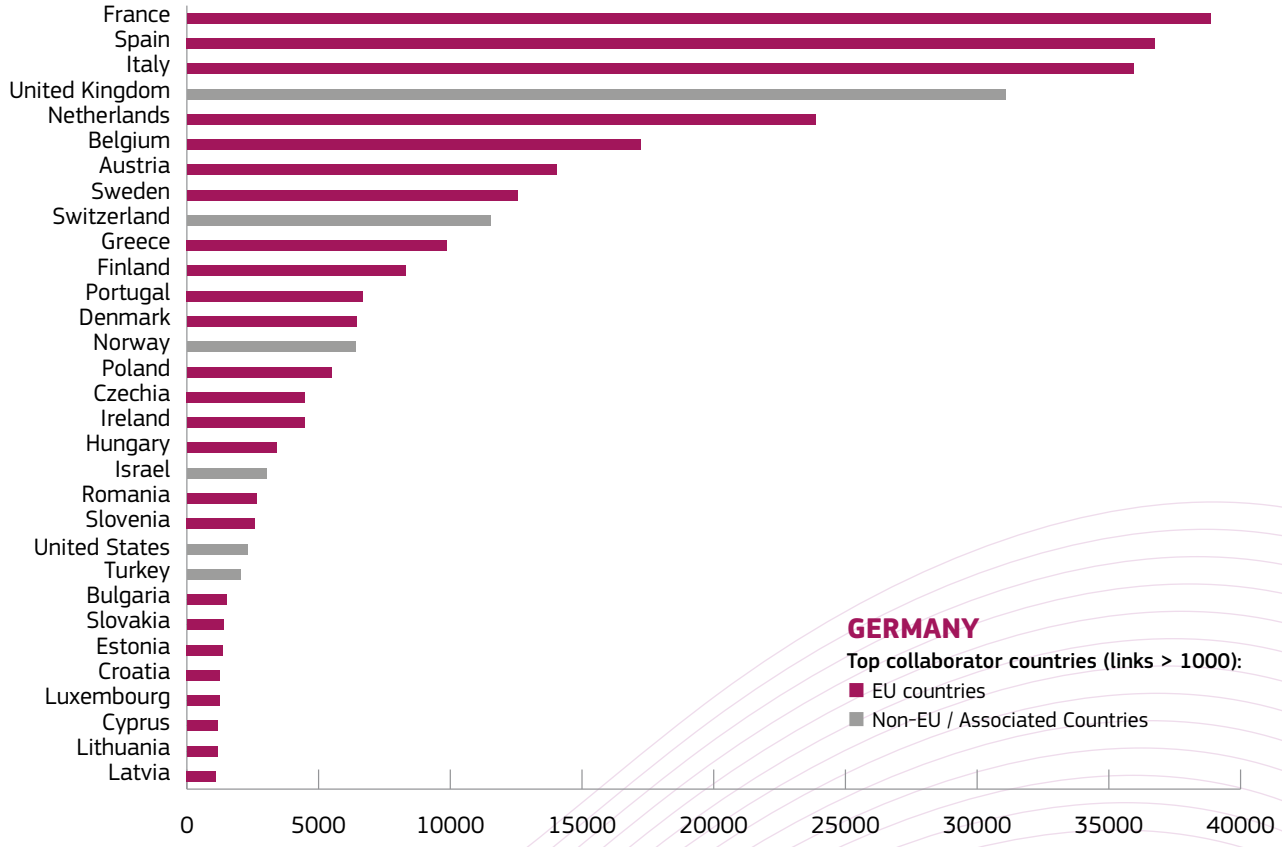
With P2Ps as well as cPPPs and Joint Undertakings, partnerships are sufficiently diverse to cater to the broad thematic scope and needs of the research landscape in Germany.

Via partnerships, researchers may access transnational R&I programmes, while at the same time work within familiar national administrative procedures. Moreover, researchers from certain non-EU countries may more easily access P2P partnerships through national programmes. In combination with European funding via the framework programme as well as national level funding, partnerships complete the R&I policy toolbox.

COMPLEMENTARY AND CUMULATIVE FUNDING

In Germany, national contributions for partnerships come from five federal ministries, notably in charge of education and research, economy, health, transport and infrastructure and agriculture. Stronger contributions from the regional level (Länder) is encouraged, supported by a working group with federal and regional representatives. In single cases, structural funds are involved. Important partnerships involving regional and national co-funding include ECSEL, the EIT on raw materials or the ERA CoBioTech.

FIGURE 3: Top collaborators of German researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing countries where links >1 000

SUCCESS STORIES

- In support of the new approach to partnerships under Horizon Europe and with a view to a closer coordination of the broad partnership landscape in Germany, the Federal Ministry for Education and Research has launched a national coordination process that includes all relevant stakeholders from the research and business communities as well as other relevant ministries (economy, environment, health, transport and agriculture).

- R&I actors highly appreciate the unique opportunity for cooperation among Member States and/or industry sectors at the programme level. Moreover, partnerships often serve as a nucleus for stable and long-term R&I cooperation networks in the ERA. These networks proved to be key to tackling global challenges as well as ensuring Europe's technological sovereignty beyond the EU's R&I framework programme.

- As one of the leading industrial locations and science hubs in the world, Germany is pursuing an active role in encouraging international cooperation in research and innovation. Partnerships proved to be an attractive tool for encouraging the participation of relevant R&I actors beyond the EU.

KEY HIGHLIGHTS

Overall participation of Greece in European Partnerships under H2020 is considered beneficial as it encourages international networking and the creation of common agendas in R&I while ensuring relevance with national priorities. An item of concern is the lack of Greek partnership coordinators, despite the fact that the country is not a newcomer to ERA-NET schemes. The participation of Greece in the Art. 185 and 187 partnerships could have been broader if ESIF were eligible as a national contribution.

32 H2020 public partnerships (*)

Or **32.32%** of total (99 partnerships)

42 H2020 public partnerships (*) participations

Or **1.95%** of total

0 H2020 public partnerships (*) coordinations

Or **0%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€35.6 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **1.60%** of total

€1 038

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY AREAS ADDRESSED

Greece participates in co-funded partnerships with ERDF funds. As a result, consistency with the Research and Innovation Strategy for Smart Specialisation (RIS3) is an on/off criterion for selecting calls and topics in which to participate. The priorities of ERDF's current programming period (2021-2027) as identified in the National RIS3 through the entrepreneurial discovery process are: the agro-food chain, environment and circular economy, biosciences-health and pharmaceuticals, transport and logistics, materials-construction and industry, tourism-culture and creative industries, sustainable energy, and digital technologies. Participation in the partnerships also depends on the availability of national funds, which is seriously limited by the non-eligibility of ERDF as a national contribution to the JUs, Art. 185 and Art.187 partnerships. This has implications at the level that priorities are addressed.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	10.07 %	1.38 %	1.87 %	12.20 %
Climate action, environment, resource efficiency and raw materials	22.22 %	0.00 %	2.39 %	6.52 %
Europe in a changing world - inclusive, innovative and reflective Societies	0.00 %		14.62 %	16.46 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	45.87 %	20.06 %		6.50 %
Future and Emerging Technologies	3.04 %	0.00 %	1.91 %	4.32 %
Health, demographic change and wellbeing	16.42 %	8.05 %		9.00 %
Information and Communication Technologies		21.61 %	75.17 %	26.04 %
Secure, clean and efficient energy	2.37 %	12.19 %	4.04 %	10.74 %
Smart, green and integrated transport	0.00 %	36.72 %		8.22 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

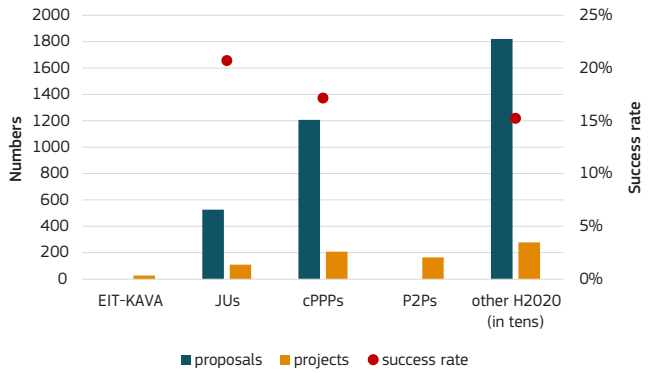
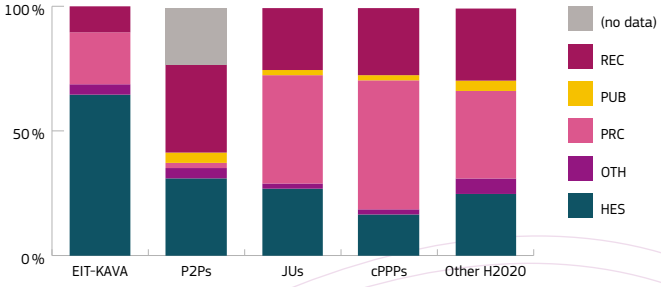


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

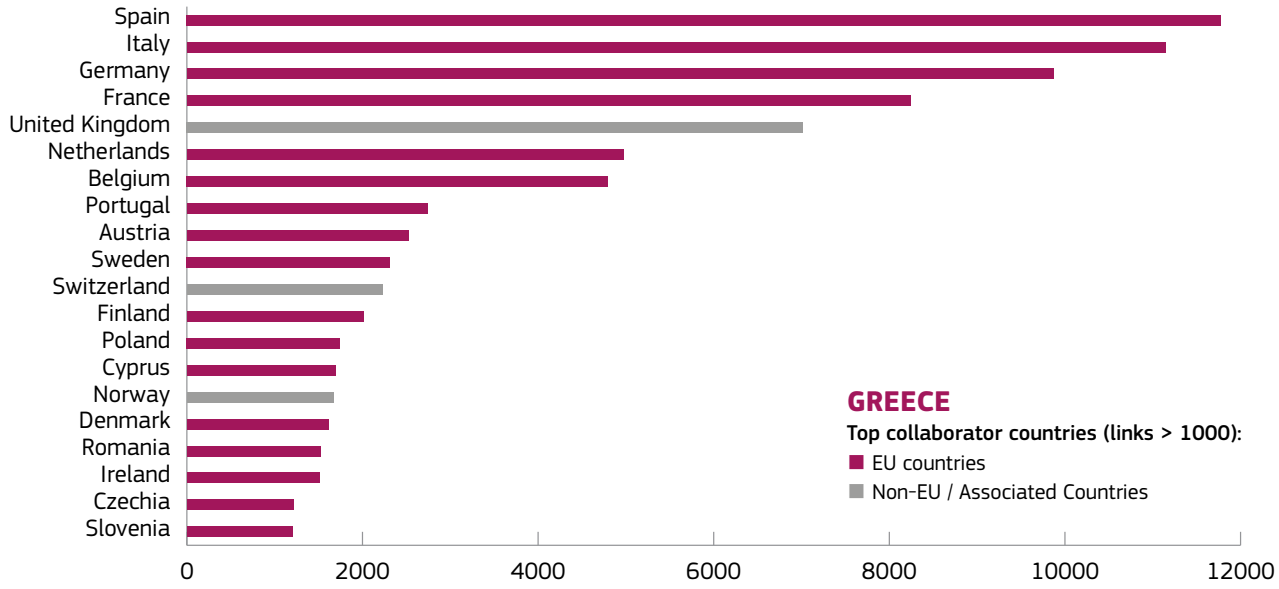
ADDITIONAL INVESTMENTS TRIGGERED

Participation in PRIMA and EuroHPC attracted national investments equal to the EU's contribution. Even though participation in JUs and Art. 185 and Art. 187 initiatives is modest, primarily due to limited national funds and administrative resources, the picture may change in the future when the central management of funds is applied.

COMPLEMENTARY AND CUMULATIVE FUNDING

Greece's participation in ERA-NET schemes was funded through ESIF/ERDF; the funding scheme involved certain challenges related mainly to the restrictions arising from requirements for a regional distribution of ESIF funds and the different timelines for implementation, especially towards the end of programming periods.

FIGURE 3: Top collaborators of Greek researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda (showing countries of >1000 links)

SUCCESS STORIES

- From the perspective of a funding agency or a research performing organisation, PRIMA is a success story as it provides opportunities for cooperation with countries in the immediate neighbourhood outside the EU and it addresses research and innovation fields that are not adequately covered in H2020 calls.
- Greece's participation in European partnerships under H2020 has been a learning exercise for researchers and the funding authority (General Secretariat for Research and Innovation) mainly related to programme design and coordination.
- It is worth mentioning that certain Greek regions and especially the Region of Western Greece, which has a very active research and innovation ecosystem in the area of materials science, among others, participated independently in ERA-NET schemes and funded the participation of their institutions with regional funds.

KEY HIGHLIGHTS

Hungary's participation level in H2020 partnerships was rather low, in particular in industry-led programmes such as cPPPs, P2Ps, JUs with public co-finding (ECSEL) and EIT KICs activities were the most successful areas. Hungary's performance improved towards the end of the programme (raised awareness and increased involvement and national co-funding in P2Ps). For Horizon Europe, a more strategic approach will be followed, since partnerships can play a key role in better integration of participants from Widening countries in European RDI networks and can be well aligned with national sectorial and S3 priorities. Therefore a significantly increased participation is foreseen in Horizon Europe partnerships with higher national funding allocations (including use of ERDF).

34 H2020 public partnerships (*)

Or **34.34%** of total (99 partnerships)

37 H2020 public partnerships (*) participations

Or **1.72%** of total

0 H2020 public partnerships (*) coordinations

Or **0%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€11.45 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **0.53%** of total

€366

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data

KEY INTENTIONS FOR THE FUTURE

The main thematic priorities for Hungary, reflected also in the investment into H2020 partnerships, were health, ICT, transport, and agricultural and food technologies. These areas were also identified as the priorities of the Hungarian S3 strategy for 2014-20 and in general these are the fields where Hungarian organisations perform the best in the traditional H2020 call as well. As for Horizon Europe, stronger links with national sectorial strategies will be ensured through specific coordination mechanisms with the responsible ministries. Hungary's participation in European Partnerships will be also aligned with the thematic priorities of the S3 Strategy for 2021-27 which are the following: health, digitalisation, agriculture and food industries, resource efficient economy, energy and climate, and creative industries.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	5.91 %	0.48 %	1.74 %	9.18 %
Climate action, environment, resource efficiency and raw materials	2.71 %	0.00 %	2.33 %	7.92 %
Europe in a changing world - inclusive, innovative and reflective Societies	0.00 %		3.35 %	10.15 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	6.71 %	4.35 %		16.03 %
Future and Emerging Technologies	10.54 %		0.00 %	4.89 %
Health, demographic change and wellbeing	57.00 %	22.75 %		12.40 %
Information and Communication Technologies		50.12 %	87.61 %	16.18 %
Secure, clean and efficient energy	2.71 %	0.13 %	4.97 %	11.71 %
Smart, green and integrated transport	14.42 %	22.17 %		11.53 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

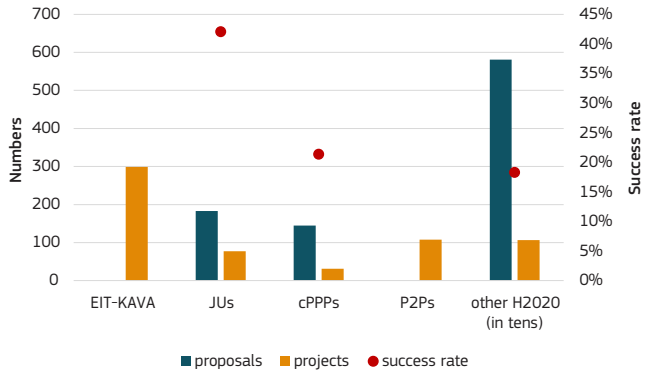
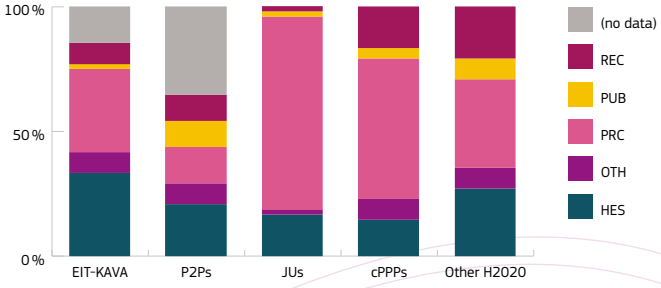


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

In Hungary the source of national co-financing for successful participants in H2020 partnerships was the National Research Development and Innovation Fund (NRDI Fund). Co-funding provided by the European Commission enabled the support of more projects.

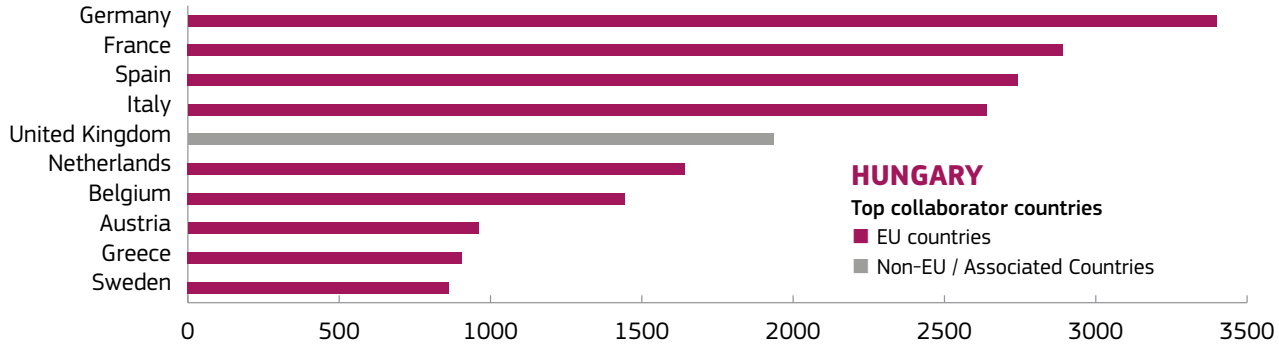
COMPLEMENTARY AND CUMULATIVE FUNDING

For Horizon Europe partnerships it is foreseen that in addition to the national funding (NRDI Fund) ERDF sources will also be used to support Hungarian participation (ERDF for convergence regions and the NRDI Fund for the capital region). ERDF funding allocated to support Hungarian participation in Horizon Europe partnerships will be part of the Economic Development and Innovation Operational Programme Plus (EDIOP Plus).

ADDITIONAL INVESTMENTS TRIGGERED

As a positive impact of a stronger coordination with sectorial ministries in relation to participation in H2020 partnerships, a more intense working level cooperation has been established through collaboration in thematic working groups, national hubs with a broader scope than the partnerships. Discussions have started on how to mobilise additional funding from the budget of sectorial ministries to support Hungarian participation in Horizon Europe partnerships.

FIGURE 3: Top collaborators of Hungarian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)

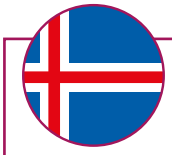


Source: eCorda; Showing top-10 collaborator-countries

SUCCESS STORIES

- Impact on policy, programme design/management: in the last years of Horizon 2020 a national umbrella programme was created for co-funding Hungarian participation in ERA-NETs. The previously fragmented programmes to co-fund certain ERA-NETs have been aligned. This approach makes it possible to use national co-funding in a more efficient way by re-allocating the funding between different sub-programmes if needed based on Hungary's performance in specific ERA-NETs.

- Impact on the national coordination mechanism: in the preparation phase for Horizon Europe coordination with the ministries responsible for sectorial policies and strategies has improved a lot. The process is managed by the National Research Development and Innovation Office. Awareness was raised about partnerships and Horizon Europe priorities in general, discussions were organised on how to set priorities regarding Hungarian participation in partnerships, and regular communication channels were established.



KEY HIGHLIGHTS

At the national level the emphasis on international partnerships has focused on areas such as the blue economy, and geothermal and hydropower energy. Out of the 13 partnerships Iceland has actively participated in 6 are in these fields, which is clearly reflected in the country's thematic success in Horizon 2020. And this success has, in return, been a boost to national research and innovation activities in these fields – a clear synergy between international and national interests.

13 H2020 public partnerships (*)

Or **13.13%** of total (99 partnerships)

15 H2020 public partnerships (*) participations

Or **0.7%** of total

1 H2020 public partnerships (*) coordinations

Or **1.01%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€10 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **0.45%** of total

€4848

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

For Horizon Europe, Iceland will continue to participate in partnerships in the focus areas it has previously participated in but will also expand this to include partnerships under Cluster 1 Health in particular.

Iceland will be more active in other co-funded partnerships. Out of the nine co-funded partnerships that started in 2021, Iceland has decided to participate in eight.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	9.42 %	0.00 %	0.00 %	6.05 %
Climate action, environment, resource efficiency and raw materials	9.42 %	0.00 %	0.00 %	6.93 %
Europe in a changing world - inclusive, innovative and reflective Societies	2.75 %		0.00 %	2.85 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	29.48 %	49.73 %		17.59 %
Future and Emerging Technologies	0.00 %		25.63 %	0.53 %
Health, demographic change and wellbeing	0.00 %	1.99 %		14.90 %
Information and Communication Technologies		15.59 %	74.37 %	6.15 %
Secure, clean and efficient energy	48.94 %	9.09 %	0.00 %	43.37 %
Smart, green and integrated transport	0.00 %	23.60 %		1.65 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

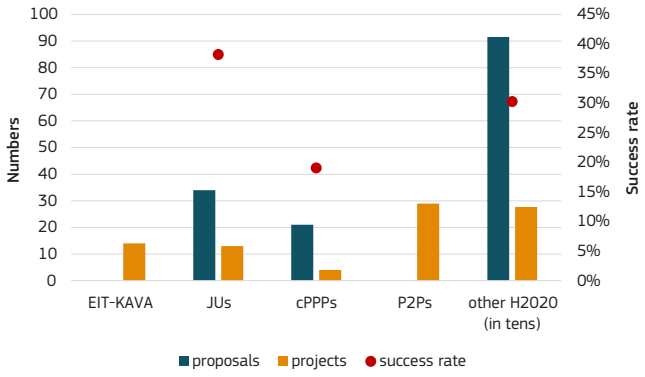
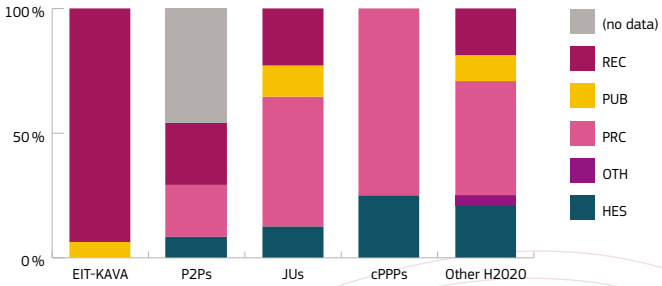


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

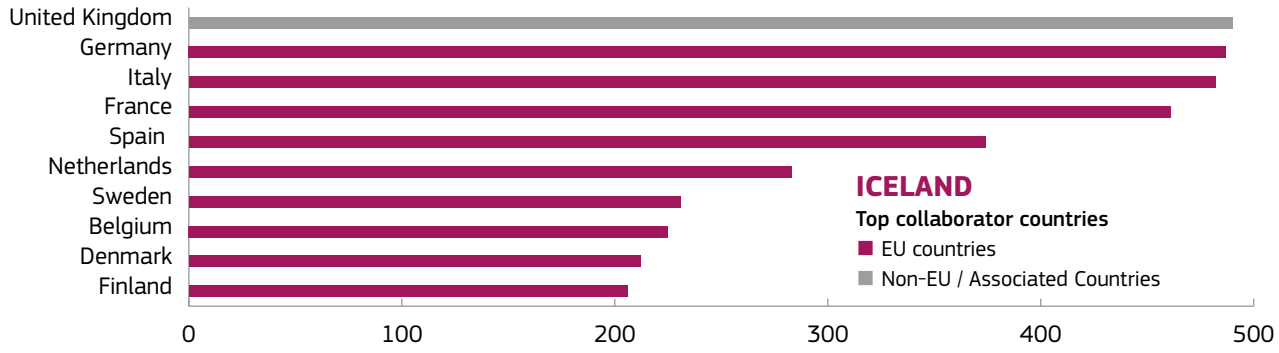
ADDITIONAL INVESTMENTS TRIGGERED

Strong participation by SMEs in partnerships has been facilitated by increased national support through tax incentive schemes. This in turn provides further justification for maintaining a generous tax incentive scheme in Iceland.

COMPLEMENTARY AND CUMULATIVE FUNDING

Business expenditure on research and innovation has grown quite significantly since 2014. This has been helped by an active participation in European cooperation both through partnerships and research actions under Horizon 2020 and improved tax incentives for companies. National funding was increased significantly in response to the pandemic and this should provide a good basis for Icelandic companies to continue their strong participation in future partnerships.

FIGURE 3: Top collaborators of Icelandic researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing top-10 collaborator-countries

SUCCESS STORIES

- The GEOTHERMICA ERA-NET has been a successful component of Iceland's strategy to increase and expand international cooperation in this field. This can be seen from the fact that 27% of the funding to Icelandic participants in Horizon 2020 is within the field of secure, clean and efficient energy.
- Increased national support of research and innovation in SMEs together with participation in Eurostars has resulted in a notable success in the SME Instrument under Horizon 2020. This is an example of a good alignment between national and European policy.
- The Science and Technology Policy for Iceland for 2020-2022 shows a clear alignment with European policy and major societal challenges and green and digital solutions to them. Active and increased participation in European cooperation is also a key component to that policy, which resulted in participation programmes Iceland has not participated in before (Digital Europe, Life and Space) and that have clear synergy with Horizon Europe and the partnerships.

KEY HIGHLIGHTS

Grand challenges such as digital transformation, climate action and COVID-19, which were relatively minor features in Ireland's previous innovation strategy, Innovation 2020, are now centre-stage in research, innovation and enterprise policy development. These challenges will be central to Ireland's innovation strategy for 2022 to 2027, which is framed as an enabler of social, cultural, ecological and economic innovation. Challenge-driven innovation is included alongside innovation for economic prosperity in Ireland's new framing for innovation policy. Ireland will continue to leverage Horizon Europe partnerships in pursuit of these twin goals.

64 H2020 public partnerships (*)

Or **65%** of total (99 partnerships)

73 H2020 public partnerships (*) participations

Or **3.4%** of total

1 H2020 public partnerships (*) coordinations

Or **1%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€33 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **1.5%** of total

€1 378

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

Ireland will continue to participate in Horizon Europe partnerships, with a focus on areas defined by Ireland's forthcoming research and innovation strategy and other national strategic priorities, which are informed by major sectoral policies including: Ireland's Climate Action Plan 2021, Food Vision 2030, Strategy 2021-2025 - Health Research - Making an Impact, Ireland's Industry 4.0 Strategy, Ireland's National Smart Specialisation Strategy, Enterprise Ireland's strategy 2022-2025 and SFI Strategy 2025.

Issues of particular salience in the coming period include transdisciplinary research integrating STEM and AHSS, and alignment of Ireland's innovation strategy with the emergence of technological universities and their priorities.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	6.06%	0.77%	1.96%	12.53%
Climate action, environment, resource efficiency and raw materials	18.24%	0.00%	0.54%	4.84%
Europe in a changing world - inclusive, innovative and reflective Societies	3.05%		10.62%	8.25%
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	20.30%	36.52%		12.25%
Future and Emerging Technologies	0.73%		0.00%	3.18%
Health, demographic change and wellbeing	44.77%	36.26%		18.70%
Information and Communication Technologies		11.73%	79.41%	22.27%
Secure, clean and efficient energy	5.35%	0.40%	7.46%	12.83%
Smart, green and integrated transport	1.49%	14.33%		5.15%
	100,00%	100,00%	100,00%	100,00%

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

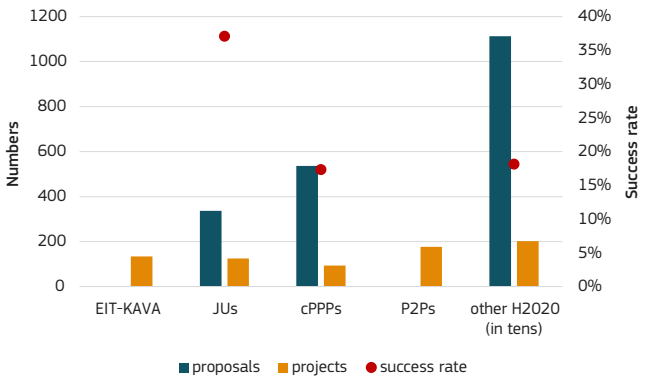
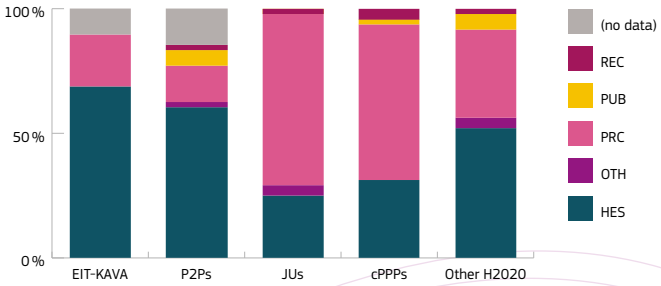


FIGURE 2: Types of project beneficiaries (%)



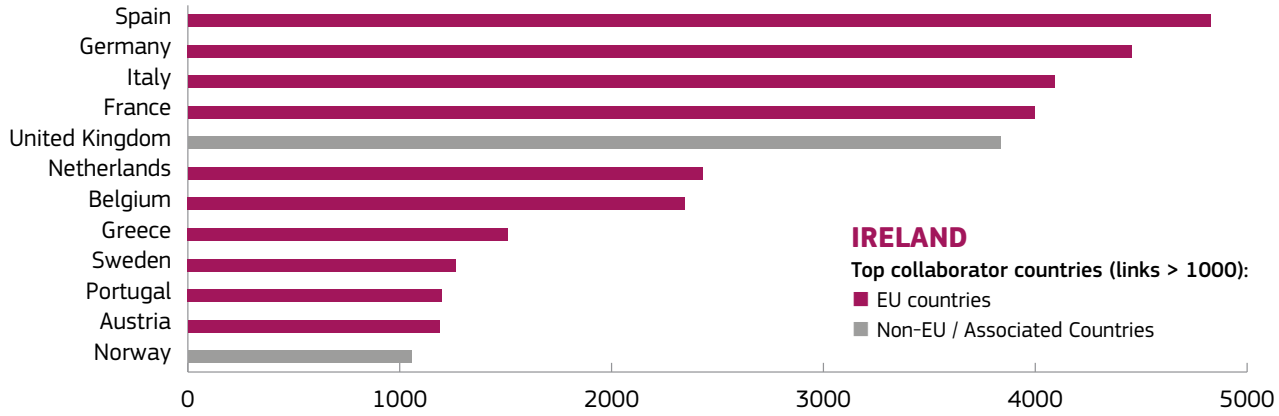
Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

COMPLEMENTARY AND CUMULATIVE FUNDING

In Ireland, the sectoral ministries are responsible for sectorial partnerships within the wider government framework for international R&D activities led by the Department of Further and Higher Education, Research, Innovation and Science. Therefore, ministries actively seek co-funding from national-level funding sources, and also from other EU funding sources to contribute to the fulfilment of Ireland's RD&I policy objectives.

FIGURE 3: Top collaborators of Irish researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing countries where links >1 000

SUCCESS STORIES

- Ireland's new research and innovation strategy will include revised governance structures to enable maintain and enhance cross-government coordination and action, including oversight of Ireland's participation in Horizon Europe partnerships.

KEY HIGHLIGHTS

In comparison to H2020 partnerships, where a bottom-up approach was used, for Horizon Europe the identification of themes where a partnership was needed followed a more strategic and top-down approach. In parallel with the definition of Horizon Europe, Italy defined its own National Research Programme 2021-27, taking into account the national priorities and needs and the new European Framework Programme as well. National participation in European Partnerships has been included in this overall strategic planning, providing the possibility to also align participation in European Partnerships with national strategies and, therefore, to sensibly increase Italy's financial participation.

78 H2020 public partnerships (*)

Or **78.79%** of total (99 partnerships)

144 H2020 public partnerships (*) participations

Or **6.69%** of total

4 H2020 public partnerships (*) coordinations

Or **4.04%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€158.80 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **7.3%** of total

€1 113

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

Considering the dimension of its research and innovation landscape, Italy will be participating in almost all partnerships. However, a stronger focus will be given to themes connected to sustainable blue economy, health and health systems-oriented research, the clean energy transition and digital technologies.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	11.04 %	1.81 %	4.52 %	12.44 %
Climate action, environment, resource efficiency and raw materials	10.85 %	0.06 %	3.70 %	6.98 %
Europe in a changing world - inclusive, innovative and reflective Societies	1.69 %		8.92 %	7.81 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	28.97 %	11.09 %		7.13 %
Future and Emerging Technologies	2.52 %		1.43 %	7.90 %
Health, demographic change and wellbeing	42.21 %	10.37 %		11.81 %
Information and Communication Technologies		15.43 %	77.30 %	15.41 %
Secure, clean and efficient energy	0.76 %	6.56 %	4.14 %	12.26 %
Smart, green and integrated transport	1.96 %	54.69 %		18.25 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

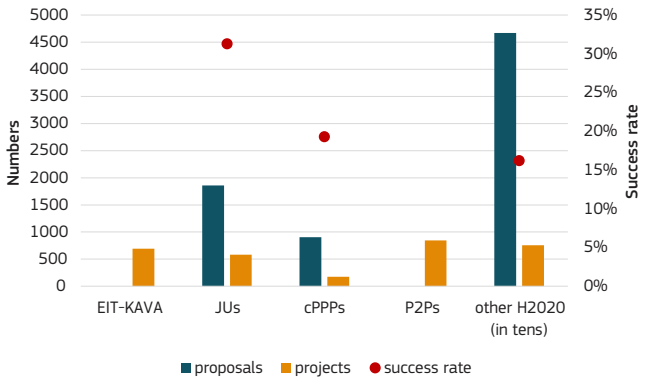
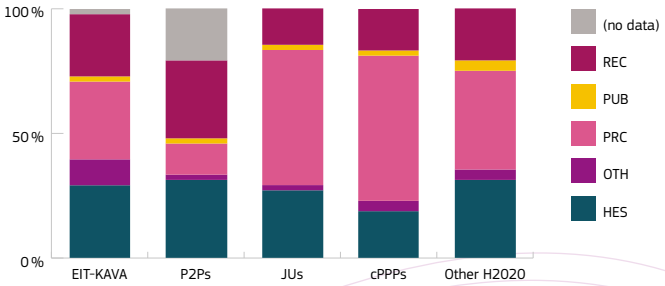


FIGURE 2: Types of project beneficiaries (%)



ource: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

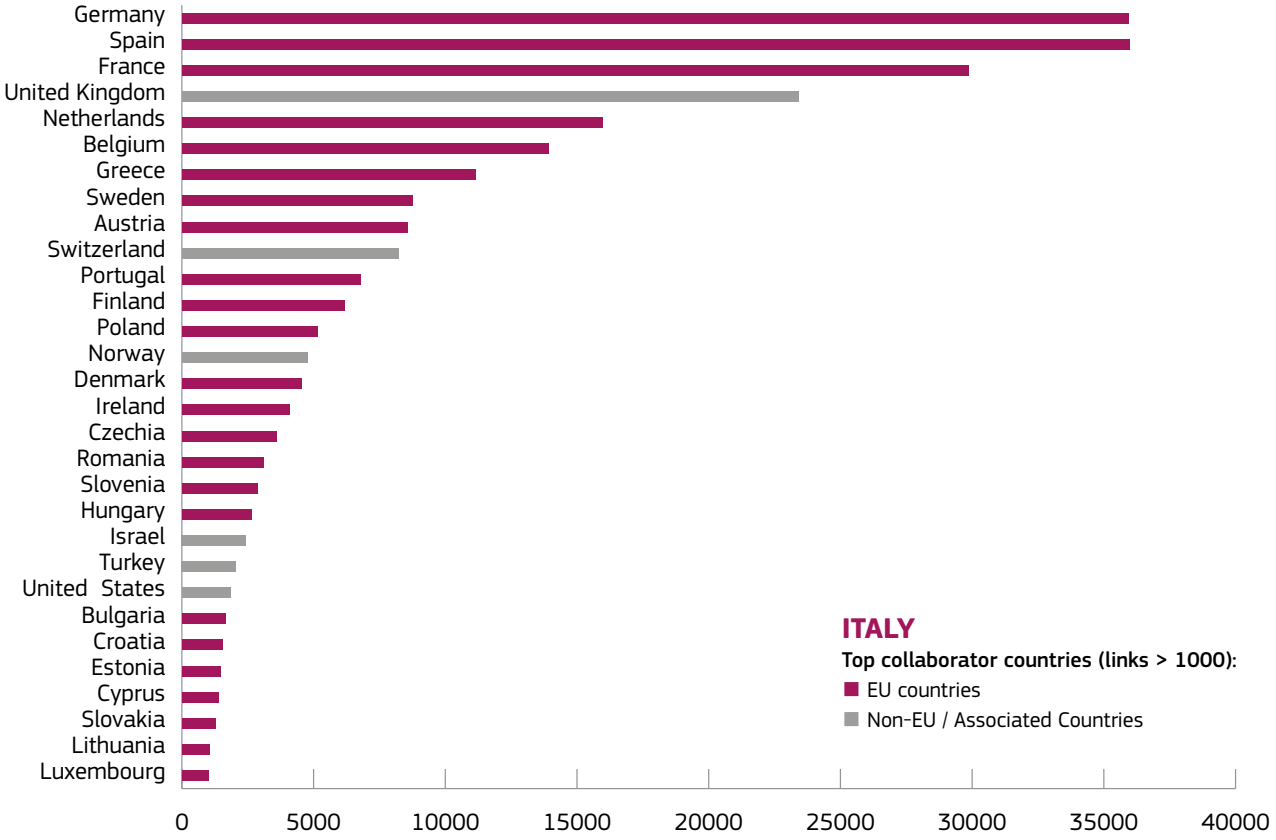
Preliminary data on participation in partnerships projects show an increased level of coordination between research and industrial actors, as well as a good participation by SMEs with respect to large enterprises.

COMPLEMENTARY AND CUMULATIVE FUNDING

Partnership are stimulating an increased and synergic cooperation among different ministries, including some who have been involved only marginally in European research activities in the past. This will result in additional investments either directly in co-funding research projects and in supporting new or improved additional activities.

Partnerships are triggering a synergic use of different funds, like for example national/regional funds, cohesion funds and recovery and resilience funds, with the aim to create more opportunities for Italian researchers to participate to European projects.

FIGURE 3: Top collaborators of Italian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



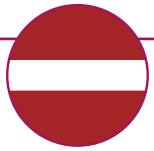
Source: eCorda; Showing countries where links >1 000.

SUCCESS STORIES

- The positive results of H2020 partnerships pushed the Ministry of Universities and Research into creating a dedicated Directorate-General in charge of the internationalisation of universities and research.
- A new funding law, approved in December 2021, simplifies participation in European Partnerships and supports the research projects selected by these initiatives.
- Under EuroHPC, Italy is hosting the LEONARDO supercomputer. LEONARDO will be operational at the end of 2022 and is located on the premises of Tecnopolo di Bologna.

Impact on alignment

- Thanks to the opportunities provided by the partnerships, dialogue and coordination among different ministries has increased, even if a complete alignment is still far from being achieved, mainly due to the different sources of funding.



KEY HIGHLIGHTS

Not available

49 H2020 public partnerships (*)

Or **49.49%** of total (99 partnerships)

52 H2020 public partnerships (*) participations

Or **2.41%** of total

0 H2020 public partnerships (*) coordinations

Or **0%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€7.88 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **0.36%** of total

€2 274

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

Not available

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	30.44 %	0.00 %	0.00 %	7.96 %
Climate action, environment, resource efficiency and raw materials	10.71 %	0.00 %	0.00 %	5.72 %
Europe in a changing world - inclusive, innovative and reflective Societies	0.60 %		6.80 %	9.10 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	3.83 %	67.93 %		15.32 %
Future and Emerging Technologies	5.70 %		0.00 %	4.00 %
Health, demographic change and wellbeing	41.47 %	2.13 %		11.97 %
Information and Communication Technologies		19.04 %	89.25 %	18.26 %
Secure, clean and efficient energy	3.52 %	0.35 %	3.95 %	21.23 %
Smart, green and integrated transport	3.73 %	10.56 %		6.43 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

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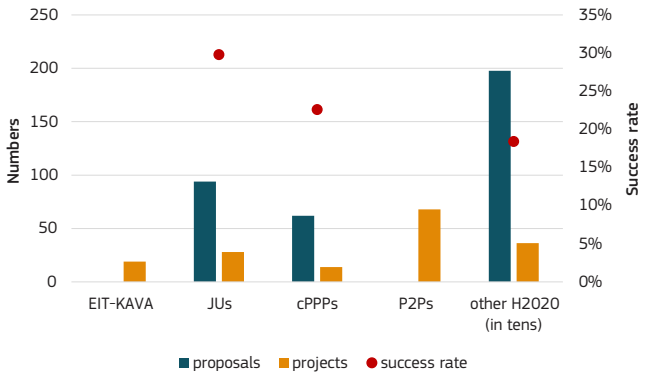
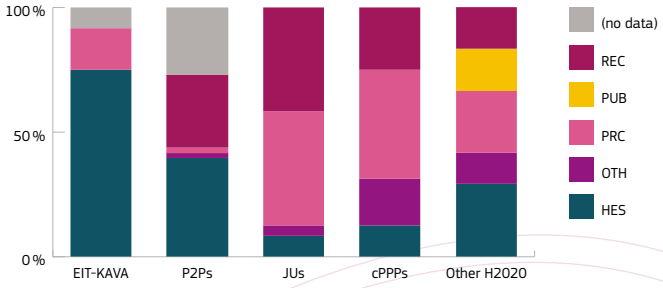


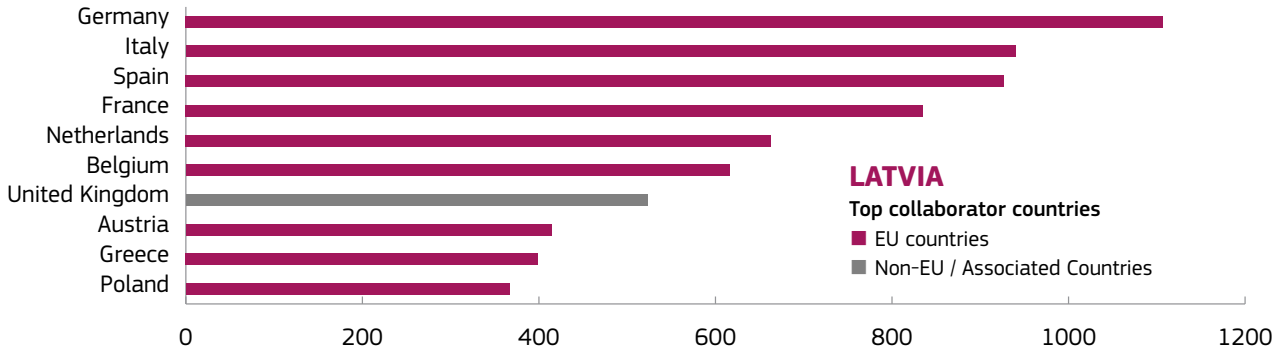
FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

FIGURE 3: Top collaborators of Latvian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing top-10 collaborator-countries

KEY HIGHLIGHTS

Lithuania's participation in the new European Partnerships has been designed on the analysis of country research potential and participation in Horizon 2020 co-funded instruments. National funding mechanisms seek to align national research funding with ERA policy priorities as well as ESF and RRF where specially dedicated funding instruments for Horizon Europe acceleration were created.

European Partnerships are planned for funding by ERDF, and projects will have to meet Lithuania's priorities on smart specialisation. Under the Research Development Programme, which is a long-term programme up to 2030, the country's legal and financial efforts will focus on challenges such as strengthening human resources and competencies to develop high-quality science and research-based technologies, building high-level scientific knowledge that enhances the country's competitiveness, building science-intensive businesses and strengthening science and business cooperation, and the development of an entrepreneurial culture in research and study institutions, which will strengthen the potential participation in international R&D programmes.

31 H2020 public partnerships (*)

Or **31.31%** of total (99 partnerships)

35 H2020 public partnerships (*) participations

Or **1.62%** of total

0 H2020 public partnerships (*) coordinations

Or **0%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs.
Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€6 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **0.28%** of total

€690

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual contributions is the money given by each country to cover for the participation of national researchers in the funded projects. (**) Actual contributions for each researcher is the total actual contributions by a country divided by the number researchers in the country estimated in full-time equivalents (FTE) average between 2015-2019 based on EUROSTAT.

KEY INTENTIONS FOR THE FUTURE

In Horizon Europe, Lithuania's participation in partnerships is more strategically oriented to national R&D&I priorities – participation is primarily focused on the priority areas of smart specialisation, which are in line with the strategic goal set in the National Progress Plan 'to move towards sustainable economic development based on scientific knowledge, advanced technologies, and innovation and increase the country's international competitiveness':

- health technologies and biotechnology
- new production processes, materials and technologies
- information and communication technologies

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	71.90 %	0.00 %	0.00 %	10.61 %
Climate action, environment, resource efficiency and raw materials	8.21 %	0.00 %	0.00 %	6.85 %
Europe in a changing world - inclusive, innovative and reflective Societies	4.72 %		5.95 %	16.03 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	11.91 %	6.96 %		9.94 %
Future and Emerging Technologies	0.00 %		0.00 %	1.22 %
Health, demographic change and wellbeing	0.00 %	0.00 %		5.18 %
Information and Communication Technologies		30.06 %	91.07 %	21.23 %
Secure, clean and efficient energy	3.27 %	2.47 %	2.98 %	15.75 %
Smart, green and integrated transport	0.00 %	60.51 %		13.20 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

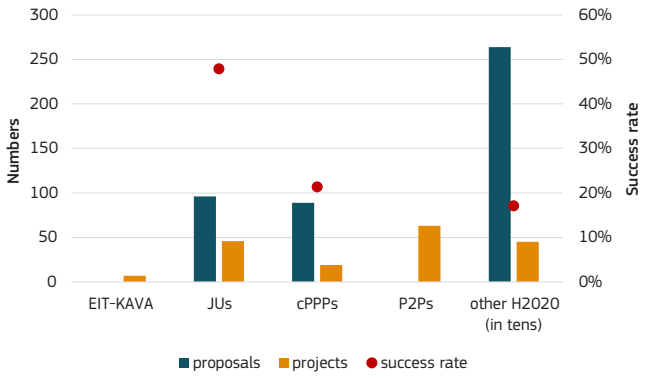
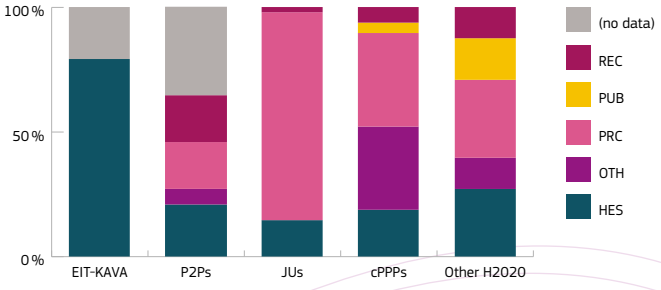


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

IMPACT OF EU CONTRIBUTION

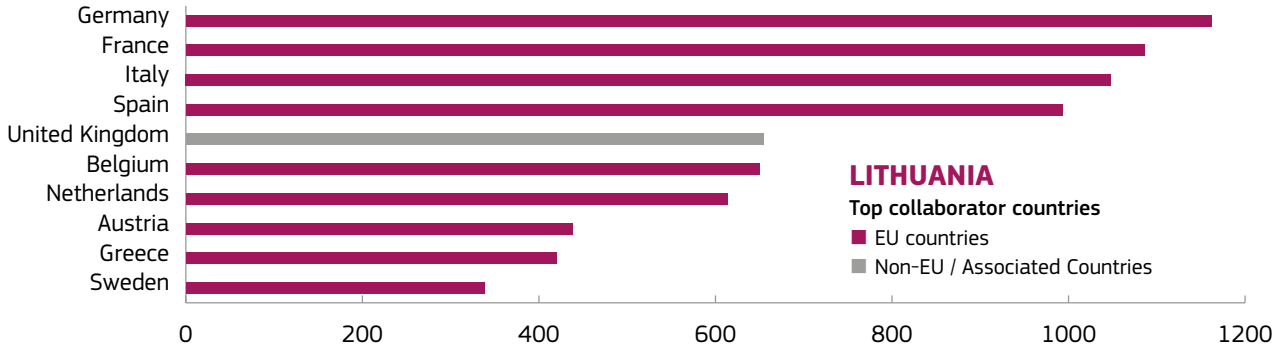
Lithuania's participation in Horizon 2020 co-funded schemes was designed to align thematic priorities with nationwide science and research programmes and was funded from the national budget. This allowed the reinforcement of local research objectives and strengthened the local research community's focus on internationalisation.

Using this instrument, the objectives of closer integration to ERA and overcoming the lack of international dimension in national science and research projects are deemed to facilitate the innovation potential of research results.

COMPLEMENTARY AND CUMULATIVE FUNDING

For Horizon Europe, two ministries (the Ministry of Science, Education and Sport and the Ministry of Energy) have committed to supporting participation in partnerships with approximately EUR 30 million and have ensured the complementarity of national policy goals with global societal challenges.

FIGURE 3: Top collaborators of Lithuanian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda (showing top-ten collaborator countries)

SUCCESS STORIES

- Impact on management: participation in Horizon 2020 partnerships has resulted in new national-level structures for funding. For example, the Ministry of Energy is planning a dedicated funding tool to co-fund European Partnerships (in the field of clean energy transition).
- Impact on national administration mechanism: the Ministry of Education, Science and Sport, together with the dedicated agencies and other sectoral ministries, revised the national coordination mechanism for the new European Partnerships to better fit with overall (budget) planning at the national and EU level.

KEY HIGHLIGHTS

Horizon 2020 in general has been a springboard for Luxembourg, entering the framework programme as a Widening country and steadily improving its performance. Partnership participation under Horizon 2020 was mainly used to build up collaborative networks, which are now coalescing into projects in other parts of the framework programme. National schemes offer complementary opportunities for international collaborations. Future participation in Horizon Europe partnerships will be based on the national research strategy as well as a critical mass of research in the respective domains.

21 H2020 public partnerships (*)

Or **21.21%** of total (99 partnerships)

21 H2020 public partnerships (*) participations

Or **0.93%** of total

0 H2020 public partnerships (*) coordinations

Or **0%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs.
Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€9.47 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **0.43%** of total

€3 304

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

Public partnerships have been used prominently for health research in accordance with significant investment by the government in that area. ICT and material science research are integral parts of Luxembourg's economy and feature a higher degree of private participants. Future priorities include:

- industrial and service transformation
- personalised healthcare
- sustainable and responsible development
- 21st century education.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	28.43 %	0.00 %	1.78 %	12.52 %
Climate action, environment, resource efficiency and raw materials	0.00 %	0.00 %	0.12 %	1.59 %
Europe in a changing world - inclusive, innovative and reflective Societies	6.68 %		20.58 %	15.29 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	3.95 %	0.68 %		3.44 %
Future and Emerging Technologies	0.00 %		0.00 %	4.07 %
Health, demographic change and wellbeing	60.54 %	73.02 %		18.51 %
Information and Communication Technologies		13.03 %	75.95 %	26.63 %
Secure, clean and efficient energy	0.40 %	9.69 %	1.57 %	8.92 %
Smart, green and integrated transport	0.00 %	3.57 %		9.02 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

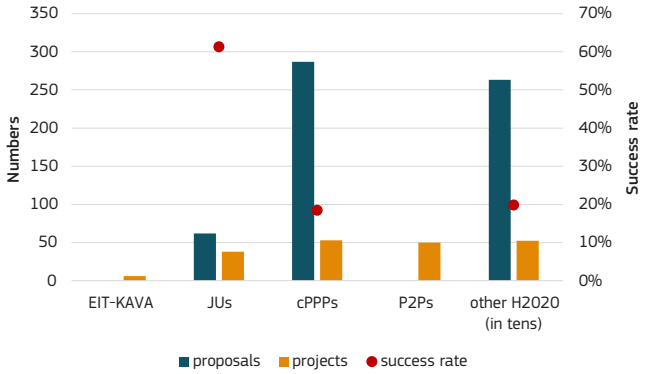
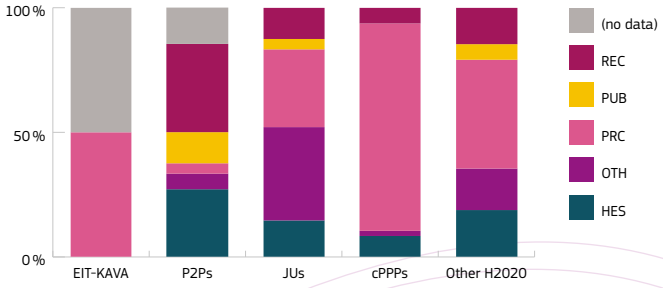


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

Luxembourg has a high overall success rate under Horizon 2020. Participation in the JU Innovative Medicines Initiative has been proven to be of high interest and success among all the partnerships. As can be seen in Figure 2, Luxembourg has an above average participation by the private sector in Horizon 2020, as there is a significant share of specialised private companies active in these fields.

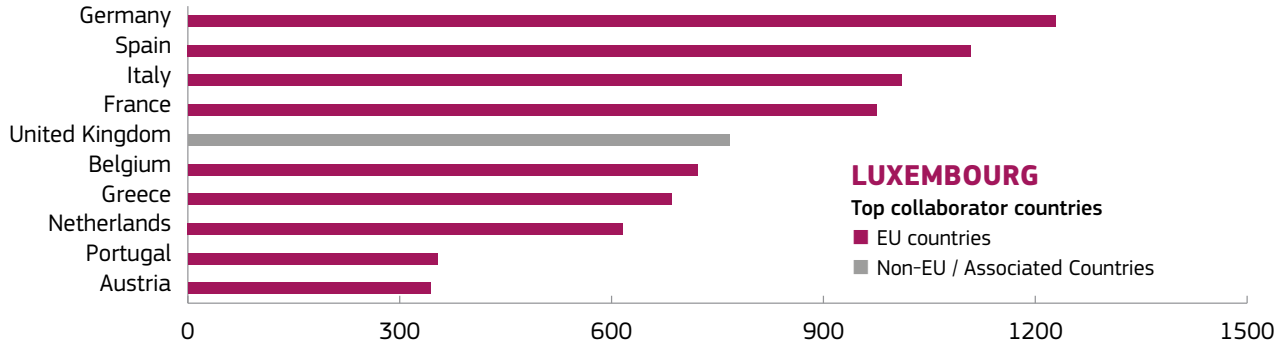
COMPLEMENTARY AND CUMULATIVE FUNDING

A specific programme was set up to financially incentivise the participation of companies in certain parts of the framework programme. In parallel, public researchers that are the most successful in Horizon 2020 can receive an additional research funding bonus.

ADDITIONAL INVESTMENTS TRIGGERED

Partnerships are complemented by additional national funding instruments that support bilateral and multilateral RD&I projects, some of which are follow-up projects or initiators of EU-funded projects.

FIGURE 3: Top collaborators of Luxembourgian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing top-10 collaborator-countries

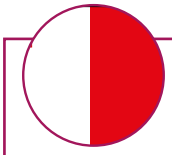
SUCCESS STORIES

- Overall, participation in Horizon partnerships has contributed to the structuring of the national RD&I landscape. Health-related partnerships, for example, have contributed to the consolidation of that domain, which has been defined as a national priority area only a little over 10 years ago. For example, national flagship projects such as the National Centre of Excellence in Research on Parkinson's Disease (NCER-PD) have been complemented by participation in the JPND and other Horizon 2020 programmes.

- National strategies such as the Data-Driven Innovation Strategy for the Development of a Trusted and Sustainable Economy as well as the National Research and Innovation Strategy are well aligned with and complement participation in partnerships such as EuroHPC, which has its headquarters established in the country.

- Other relevant partnerships in the areas of clean steel, hydrogen, energy transition, and process industries are also strongly aligned with key industrial sectors in the country and the national priority of sustainable development.

- Under EuroHPC, Luxembourg is hosting the MeluXina supercomputer which became operational in 2021.



KEY HIGHLIGHTS

Throughout Horizon 2020, Malta participated in various partnerships, most notably in the blue economy sector, a strong pillar of the Maltese economy. Other notable areas include agriculture, food, water management and quantum technologies. Malta's participation in the upcoming Horizon Europe Partnerships will also be strategic based on identifying Malta's research and innovation gaps, via consultation with relevant Ministries and stakeholders, whilst also seeking alignment with Malta's most advanced draft of the Smart Specialisation Strategy 2021-2027. Going forward, Malta shall continue strengthening its participation in Horizon Europe partnerships by substantially increasing available funding from the national budget.

7 H2020 public partnerships (*)

Or **7.07%** of total (99 partnerships)

7 H2020 public partnerships (*) participations

Or **0.32 %** of total

0 H2020 public partnerships (*) coordinations

Or **0 %** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€1.5 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **0.07 %** of total

€1 448

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

In Horizon Europe, Malta shall continue its participation in partnerships with a primary focus on the following priority areas:

- sustainable blue economy
- health systems and technologies
- clean energy transitions
- digital technologies
- high-performance computing
- water management
- agriculture and food systems.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	0.00 %	0.00 %	0.00 %	3.11 %
Climate action, environment, resource efficiency and raw materials	0.00 %	0.00 %	0.00 %	16.15 %
Europe in a changing world - inclusive, innovative and reflective Societies	0.00 %		23.40 %	27.68 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	94.40 %	0.00 %		15.57 %
Future and Emerging Technologies	0.00 %		0.00 %	2.45 %
Health, demographic change and wellbeing	0.00 %	0.00 %		2.60 %
Information and Communication Technologies		0.00 %	76.60 %	12.28 %
Secure, clean and efficient energy	5.60 %	12.37 %	0.00 %	7.77 %
Smart, green and integrated transport	0.00 %	87.63 %		12.40 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

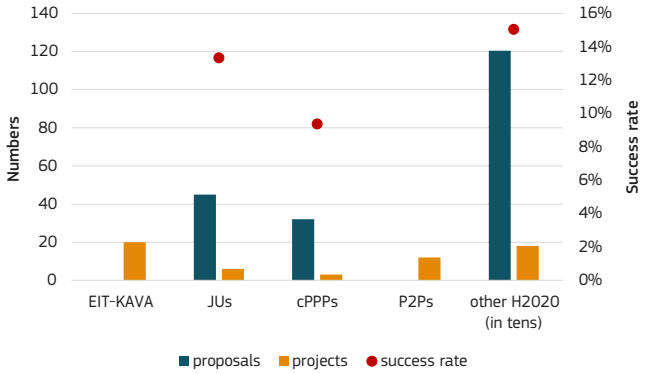
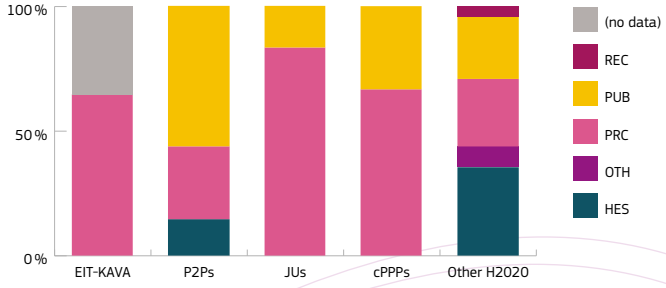


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

ADDITIONAL INVESTMENTS TRIGGERED

Participation in additional joint calls seems to be a successful mechanism for increasing R&I project funding while supporting priority thematic areas. They have also contributed to the internationalisation of activities and policies, including at the bilateral level outside of the EU. Additional activities such as participation in the development of thematic SRIAs have been an excellent opportunity for including the Maltese R&I priorities in the EU's research agenda.

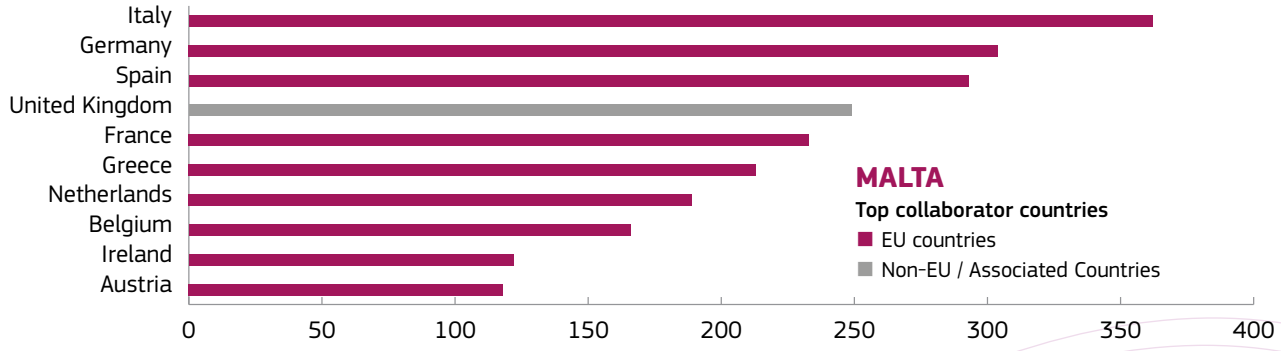
Additional activities also included a bilateral funding programme that was developed through Malta's active participation in the PRIMA programme, as well as a proposal writing assistance scheme to facilitate the participation of less experienced researchers in PRIMA projects.

COMPLEMENTARY AND CUMULATIVE FUNDING

The EU contribution in both ERA-NET and the Article 185 initiative PRIMA has leveraged national funding that in turn enabled participation in additional partnership activities. These include additional calls following the initial co-funded call in the case of ERA-NET, and additional bilateral activities in the case of PRIMA.

For Horizon Europe, Malta will be looking into using alternative sources of funding, such as ERDF funding, to top up its national contribution to the partnerships. So far, Malta has committed to participate in seven new partnerships under Horizon Europe, with the participation of five different governmental entities. It will also continue its participation in the PRIMA programme. The following partnerships have been already identified: Clean Energy Transition, Sustainable Blue Economy, Transforming Health and Care Systems, Innovative SMEs, Euro HPC, Water4All, and Key Digital Technologies.

FIGURE 3: Top collaborators of Maltese researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing top-10 collaborator-countries

SUCCESS STORIES

- Impact on programme management: during Horizon 2020 and the partnerships carried out under this framework programme, Malta has obtained significant experience in programme management, particularly with respect to implementation, monitoring and related processes. This experience can be used throughout the strategic implementation of the new Horizon Europe partnerships.

- Impact on national coordination mechanism: In 2019, the Malta Council for Science and Technology set up a dedicated Internationalisation unit to deepen international collaboration among local and foreign researchers and stakeholders. This has enabled more dedicated resources for Malta's participation in the upcoming Horizon Europe partnerships. Also, owing to the interest that was shown by local stakeholders in partnerships, Malta will increase its allocated national budget to boost the impact of the research outcomes being generated through the selected partnerships.

KEY HIGHLIGHTS

Internationalisation is an important part of Dutch national research and innovation strategies. Dutch researchers, organisations and businesses are internationally very active and competitive, and the scientific and innovation challenges they work on are often cross-border. In the past, the Netherlands has invested and actively participated in large public-private partnerships, as well as in the majority of JPIs. The high participation rate of over 80% reflects the Netherlands' close involvement and high level of ambition in the overall partnership landscape. With the start of Horizon Europe, the country underlines the importance of high-impact R&I partnerships closely connected with policy as well as society to collaborate in tackling global challenges.

80 H2020 public partnerships (*)

Or **80.81%** of total (99 partnerships)

110 H2020 public partnerships (*) participations

Or **5.11%** of total

8 H2020 public partnerships (*) coordinations

Or **8.08%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€198.75 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **9.14%** of total

€2 175

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

For Horizon Europe, the overall coordination in the Netherlands is much more developed compared to the past. However, decisions about actual participation, roles and budget remains under the responsibility of the sectoral ministries and their agencies or research funders. This ensures a policy-oriented, impact-driven approach, as well as a scientific rationale. New mechanisms have been set up to integrate decision making about participation in European Partnerships in relevant existing national funding structures. Since the science and innovation base in the Netherlands is very broad, as is reflected in the table below, no predefined thematic focus for participation has been defined.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	3.89 %	0.83 %	1.60 %	8.34 %
Climate action, environment, resource efficiency and raw materials	10.58 %	0.00 %	8.77 %	7.18 %
Europe in a changing world - inclusive, innovative and reflective Societies	6.15 %		3.28 %	5.06 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	5.88 %	10.16 %		8.38 %
Future and Emerging Technologies	1.67 %		1.12 %	4.98 %
Health, demographic change and wellbeing	50.61 %	41.68 %		29.30 %
Information and Communication Technologies		24.51 %	82.90 %	12.99 %
Secure, clean and efficient energy	14.31 %	5.30 %	2.34 %	12.02 %
Smart, green and integrated transport	6.91 %	17.53 %		11.75 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

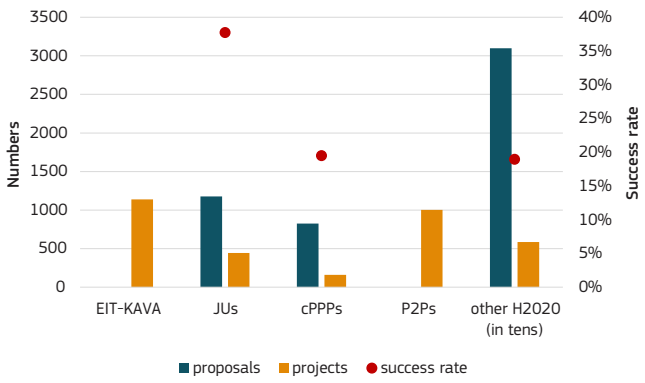
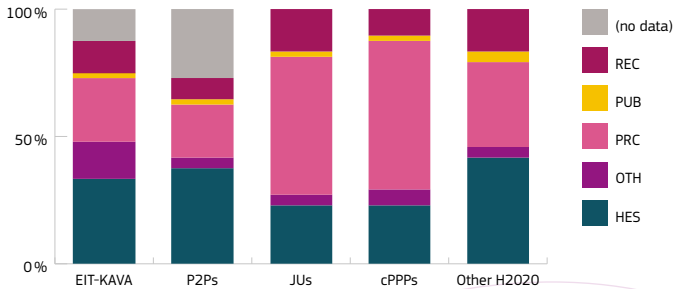


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

The overall success rate of the Netherlands in Horizon 2020 is above the average, which is reflected by the participation in different partnership types (Figure 1). Under Horizon Europe, Dutch participation is more policy-oriented than before, as well as more aligned with existing national R&I funding schemes. Sectoral ministries remain responsible for their thematic partnerships and work closely together on cross-sectoral aspects. The national ministries actively seek co-funding from national level funding sources, like existing subsidy programmes on energy and climate innovations.

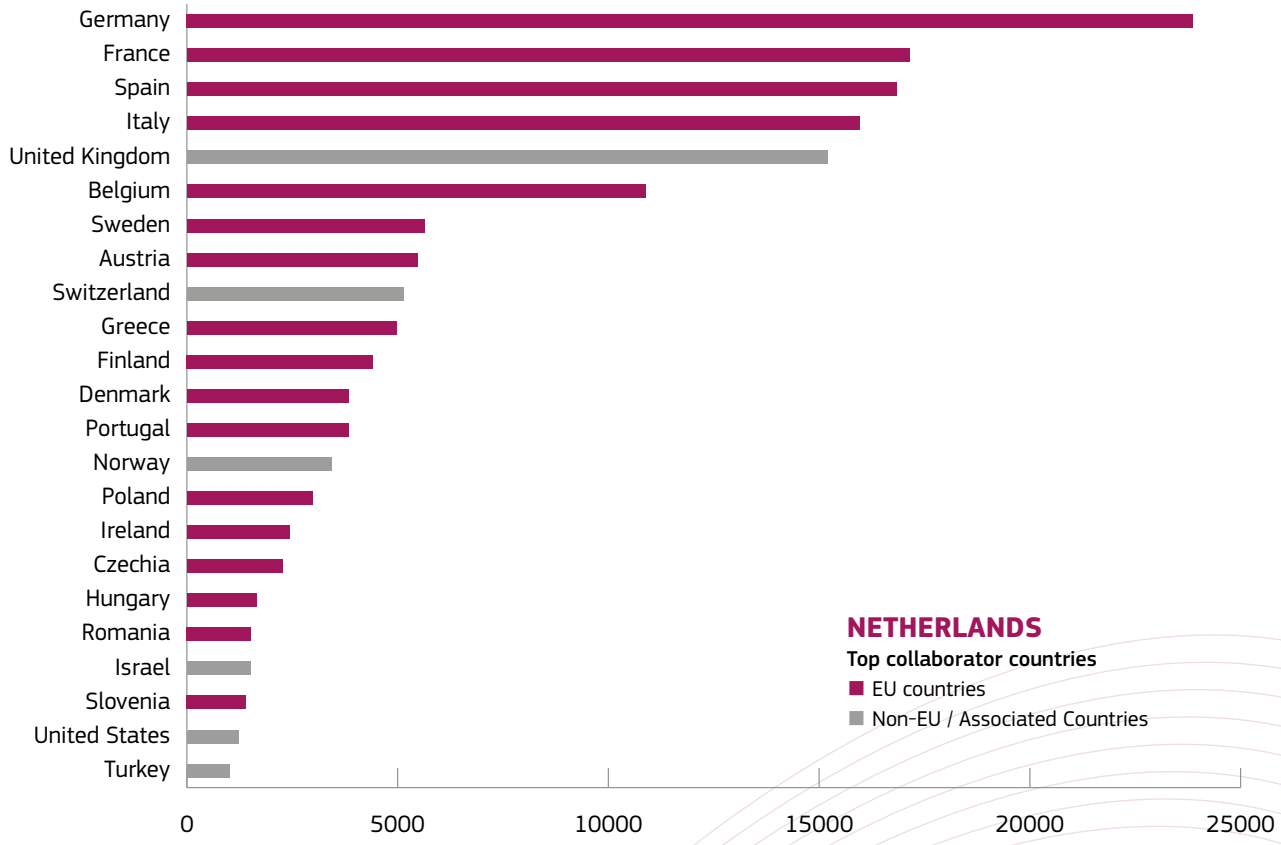
ADDITIONAL INVESTMENTS TRIGGERED

The Netherlands welcomes the private investments that can be triggered by partnerships. This was one of the findings of the evaluation of Dutch participation in Eurostars-2. Furthermore, the Dutch government has made additional national investments with the goal of preparing and strengthening the position of Dutch participants in some of the public-private partnerships without member state contributions.

COMPLEMENTARY AND CUMULATIVE FUNDING

Under Horizon 2020, synergies were successfully sought with existing national funding programmes, which aim to strengthen under Horizon Europe. Netherlands seeks programmatic synergies between EU programmes like Horizon and ESIF and national and regional programmes engaging the national and regional stakeholders and addressing partnerships amongst other instruments. Where appropriate and relevant, the Netherlands will explore this possibility of combining different programmes for Horizon Europe.

FIGURE 3: Top collaborators of Dutch researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCORDA; Showing countries where links >1 000

SUCCESS STORIES

- Active Dutch participation in JPIs has significantly broadened and deepened contacts and interactions between ministries and funding bodies of different European countries. JPIs created new and active trans-national communities with the shared interest of fostering research on specific (societal) themes.

- Based on the past experience, it has become more important for the Netherlands to integrate decision making about participation in European Partnerships under Horizon Europe in relevant existing national funding structures. The main national research funders often fund their participation jointly with sectoral ministries to guarantee alignment with national policies as well as with the R&I communities. The Dutch Research Council has embedded participation in the partnerships within the main national research agendas.

- Participation in public-private partnerships has triggered private investments and increased cooperation between private and public organisations, which significantly adds to creating and developing local and transnational thematic research and innovation ecosystems in Europe.

KEY HIGHLIGHTS

Norway is actively engaged in public European R&I partnerships. Norwegian companies and research institutes are also active in industry -driven partnerships. Of the 99 public partnerships launched under Horizon 2020 and 10 JPIs, Norway takes part in 78 initiatives. Promoting collaboration with the EU is emphasised in the government's Long-Term Plan for Research and Higher Education, the government's Strategy for Research and Innovation Cooperation with the EU (Horizon and ERA) and the Action Plan for Internationalisation 2021-2027 by the Research Council of Norway (RCN). The RCN supported 434 projects in the co-funded calls of Horizon 2020 partnerships (2014-2019). The financial contributions to joint calls, normalised by the number of researchers, is one of the highest in Europe.

78 H2020 public partnerships (*)

Or **78.78%** of total (99 partnerships)

83 H2020 public partnerships (*) participations

Or **3.85 %** of total

3 H2020 public partnerships (*) coordinations

Or **3.03 %** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€156.86 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **7.21 %** of total

€4 693

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY AREAS ADDRESSED

The national priority areas in the revised Long-Term Plan for Research and Higher Education (2019-2028) are:

- seas and oceans
- climate, the environment and clean energy
- public sector renewal and better public services
- enabling and industrial technologies
- societal security and social cohesion in a globalised world.

Norwegian participation in public partnerships is to a large degree in line with the priority areas, including climate, oceans and public sector/health. Industry-driven partnerships mainly overlap with the enabling and industrial technologies priority, but also include energy and transport.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	11.60 %	0.96 %	6.79 %	8.41 %
Climate action, environment, resource efficiency and raw materials	19.43 %	0.00 %	13.97 %	11.76 %
Europe in a changing world - inclusive, innovative and reflective Societies	2.92 %		8.39 %	6.40 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	19.72 %	28.87 %		9.53 %
Future and Emerging Technologies	0.11 %		0.50 %	2.97 %
Health, demographic change and wellbeing	31.96 %	8.61 %		21.76 %
Information and Communication Technologies		11.48 %	67.01 %	9.61 %
Secure, clean and efficient energy	9.73 %	8.27 %	3.34 %	17.09 %
Smart, green and integrated transport	4.54 %	41.81 %		12.46 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

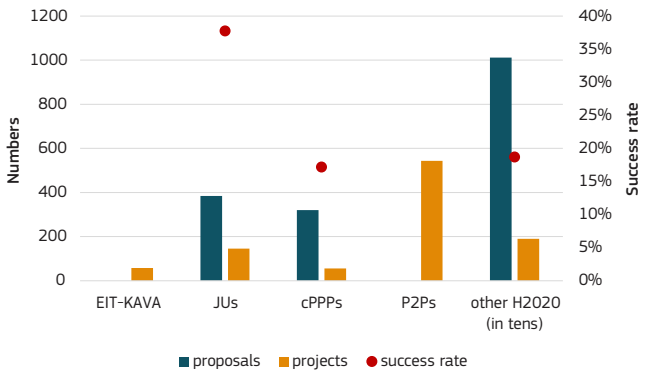
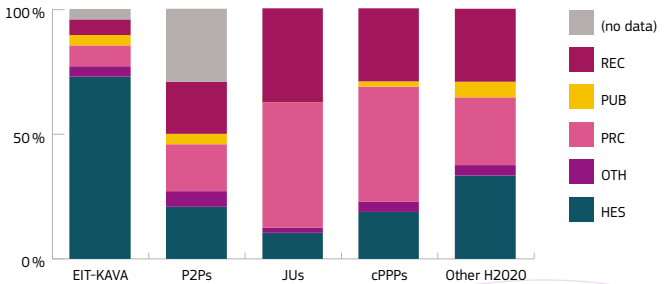


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

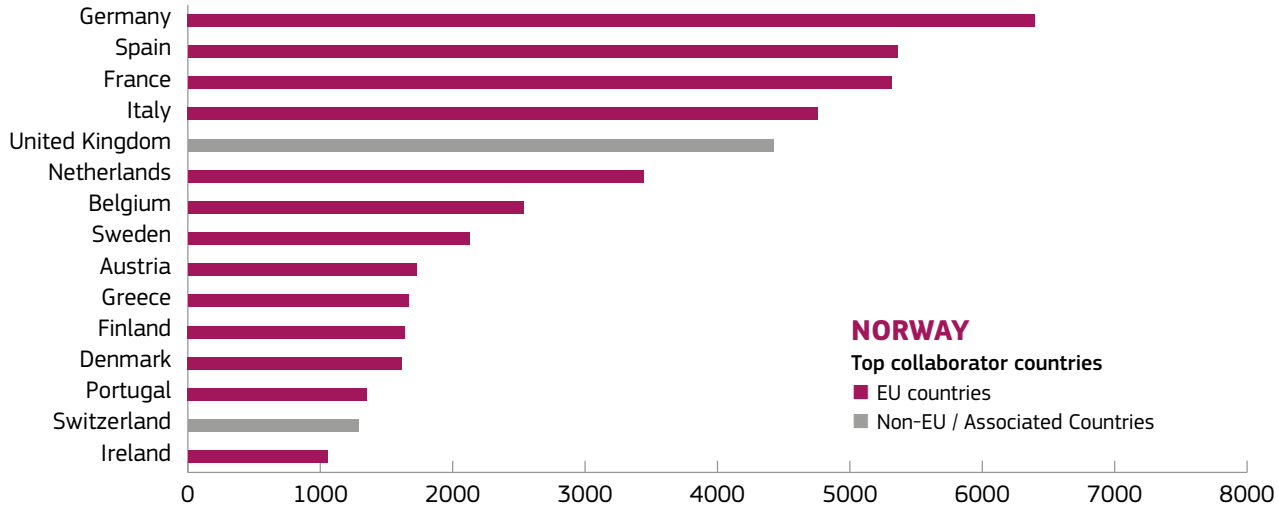
ADDITIONAL INVESTMENTS TRIGGERED

For the new funding period, the government's strategy for Norwegian participation in Horizon Europe and ERA (2021-2027) states that Norway will have a stronger focus on combing funding from Horizon Europe with national and private funding to strengthen areas that are important to Norwegian research and innovation, society and economy. European Partnerships are especially emphasised. The sectoral ministries in cooperation with in particular the Research Council of Norway are responsible for their sectorial partnerships. The Ministry of Education and Research is responsible for national coordination.

COMPLEMENTARY AND CUMULATIVE FUNDING

Norway is not a part of the EU's cohesion policy funds but contributes to cohesion through EEA and Norway grants, including support for participation in the ERA. For the period 2021-2027, Norway participation included DIGITAL, COSME, InvestEU and EDF in addition to Horizon Europe. The government's strategy for Norwegian participation in Horizon Europe and ERA (2021-2027) emphasises the need to develop synergies between participation in different EU programmes, including European Partnerships. Norway has so far committed to supporting participation in 14 co-funded and institutionalised partnerships with about EUR 200 million for the period 2021-2027.

FIGURE 3: Top collaborators of Norwegian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing countries where links >1 000

SUCCESS STORIES

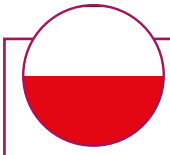
- Norway has been quite successful in the M-ERA.NET for research and innovation on materials and battery technologies, which supports the European Green Deal. Several projects have been published as success stories.
- The partnerships have broadened and deepened the collaboration between ministries and European research funding agencies and has contributed to mutual learning and the sharing of best practice.
- Norwegian participation in industrial partnerships (JU and cPPP) is often based on a collaboration between industry and a research institute (like SINTEF).

Impact on alignment

- Participation in JPI Ocean has been very important to Norway. This cooperation has contributed to the alignment of research policy in this field in Europe. Norway has been very active in this initiative and is also a candidate coordinator for the Blue Economy partnership in Horizon Europe.

Impacts at national level

- Participation in partnerships, as well as in Horizon Europe as such, gives access to funding, important networks and large European projects. This is important both for the industry, for research institutions and for important priority areas like energy, ocean and climate.
- Norway has coordinated a large partnership on CO2 capture and storage. There are Norwegian participants in many of the projects, and several of them have contributed to the government´s climate policy.
- The GPC monitoring report found that two thirds of the investments in joint activities came from seven countries, among these Norway. This report also stated that Norway has improved its research capacity through partnership participation.
- The active involvement in partnerships' strategic planning on the national level has broadened and deepened contacts and interactions between the funding ministries and RCN as the implementing body.



KEY HIGHLIGHTS

Decisions on participation in Horizon Europe partnerships are made on the basis of Poland's broad participation in Horizon 2020. Poland, through a number of institutions, was a member of almost three-quarters of all Horizon 2020 partnerships. Compatibility between national and EU framework programmes is enshrined in the Strategy for Responsible Development (SRD) up to 2020 (including the perspective up to 2030). The SRD also defines the goals of Poland's participation in the framework programmes. There is a National Science Policy and Productivity Strategy up to 2031 under development, both with a relationship to EU programmes. Polish coordination of ERA-Net co-funded initiatives contributed to spreading excellence across the European Research Area.

72 H2020 public partnerships (*)

Or **72.73%** of total (99 partnerships)

75 H2020 public partnerships (*) participations

Or **3.48%** of total

3 H2020 public partnerships (*) coordinations

Or **3.03%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€51.07 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **2.35%** of total

€487.4

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

Poland will participate in all HE pillars and intends to promote inclusiveness in research and the ERA. The largest resources will be allocated to areas related to a healthy society, green economy and innovative technologies and industrial processes. The priority areas are in line with the Strategy for Responsible Development and RIS3 as well as in the proposal for the Productivity Strategy. Poland recognises the importance of digital technologies and technologies that can ensure Europe's security and technological sovereignty: computing, microelectronic, quantum, photonics, digitalisation in manufacturing industry. Social sciences and the humanities are also important.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	17.62 %	1.45 %	9.33 %	12.21 %
Climate action, environment, resource efficiency and raw materials	9.82 %	0.00 %	3.38 %	7.13 %
Europe in a changing world - inclusive, innovative and reflective Societies	3.17 %		2.12 %	10.30 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	24.14 %	17.31 %		6.29 %
Future and Emerging Technologies	4.89 %		2.98 %	4.82 %
Health, demographic change and wellbeing	32.72 %	4.40 %		7.69 %
Information and Communication Technologies		18.00 %	80.01 %	29.30 %
Secure, clean and efficient energy	2.98 %	2.31 %	2.19 %	11.91 %
Smart, green and integrated transport	4.65 %	56.54 %		10.35 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

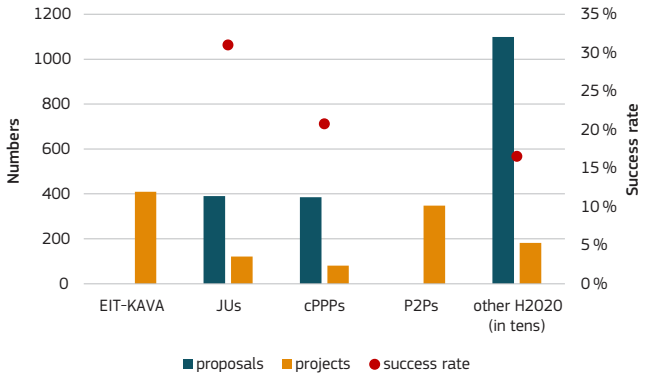
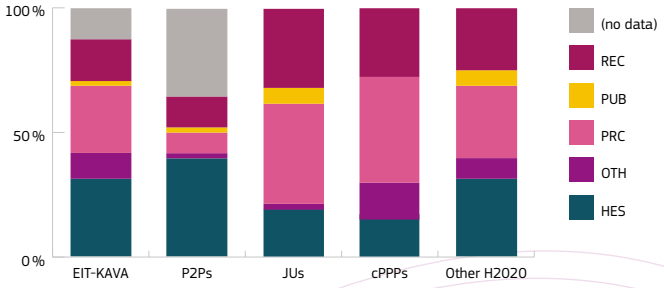


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

For many Polish applicants, participation in Horizon 2020 partnerships was a valuable experience, which allowed them to develop international cooperation links and apply this experience to other parts of the programme. For the funding agencies it was a steppingstone to the development of international cooperation programmes: building trust, increasing visibility, new chances, and better internal management.

ADDITIONAL INVESTMENTS TRIGGERED

There was a steady increase in the number of entities interested in cooperation in Horizon 2020 partnerships. Thanks to the obligatory participation of enterprises in some of the initiatives, it was also possible to attract the private sector to Horizon 2020.

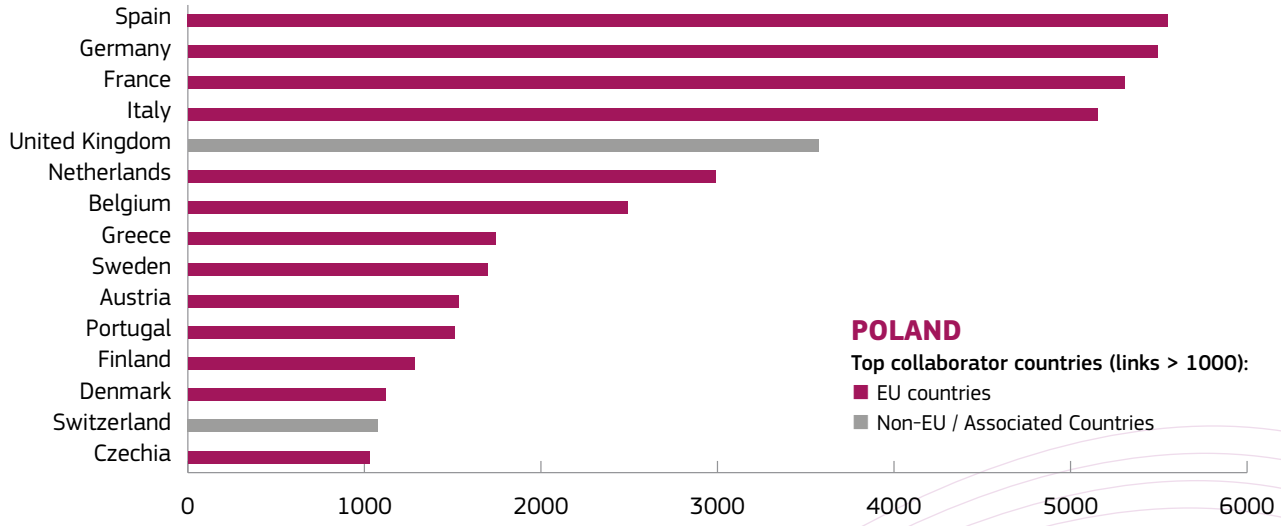
There is an ambition to take advantage of the synergy between national and European instruments. For this reason, Poland has changed the structure of its NCPs and incorporated NCPs into the main funding agency NCBR (National Centre for Research and Development).

Moreover sectoral ministries are involved in the relevant partnerships.

COMPLEMENTARY AND CUMULATIVE FUNDING

The main complementary funding is provided by two main R&I funding agencies: the National Science Centre (national funding) and the National Centre for Research and Development (both national funding and ERDF and EDF funding). This should be understood not as cumulative funding, but rather as parallel to other programmes. Poland is interested in introducing actual synergies in funding between ERDF and Horizon Europe provided adequate guidelines are developed by the European Commission. ERA-NET Cofund was an important tool for achieving a higher success rate in calls for proposals additional funding from the EU helped fund more collaborative research projects and thus enhance impact of partnerships.

FIGURE 3: Top collaborators of Polish researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda (showing countries of >1000 links)

SUCCESS STORIES

- The success rate of Polish partners in applying to ERA-NETs was higher than that for regular Horizon 2020 calls. This led to a positive impact due to previous experiences on the decision to join European Partnerships in Horizon Europe.
- A coordination group consisting of representatives of the R&I funding agencies, NCPs and Ministry of Education and Science was established for monitoring the preparation and implementation of partnerships.
- A working group on the alignment of national and ERDF programmes with Horizon Europe was established at the National Centre for Research and Development (main funding agency).
- Sectoral ministries were involved in the partnerships planning phase.
- Inspired by the dialogue with the scientific community, the National Science Centre initiated and has been implementing QuantERA, QuantERA II and CHANSE, and the first ERA-NET Cofund programmes coordinated by an EU 13 country.
- The National Science Centre coordinated programmes that successfully engaged funding organisations from various regions of Europe, and introduced measures supporting the participation of researchers from less-performing countries in funded projects.
- The National Science Centre's participation in ERA-NET Cofund programmes was a stepping stone for building bilateral and multilateral initiatives with international partners, as well as the successful application for EU funds, such as MSCA co-fund programmes: Polonez and Polonez Bis.
- The Polish research community was mobilised to become involved in international consortia within Horizon 2020's ERA-NET Cofund programmes and perform research focused on significant societal challenges and enhance impact of the research results in collaboration with academic and non-academic stakeholders.

KEY HIGHLIGHTS

Portugal's participation in Horizon 2020 partnerships was fully within the principles and purposes outlined in the Resolution of the Council of Ministers n.º 78/2016, which defines a set of general guidelines for the articulation of the internationalisation policy of higher education and science and technology with other public internationalisation policies.

Portugal's participation in Horizon 2020's partnerships contributed to the financing of R&D investment in areas of strategic importance to the country, and it is envisioned that Portugal's participation in Horizon Europe's partnerships will follow the positive trend.

62 H2020 public partnerships (*)

Or **62.63%** of total (99 partnerships)

72 H2020 public partnerships (*) participations

Or **3.34%** of total

2 H2020 public partnerships (*) coordinations

Or **2.02%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€22.9 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **1.05%** of total

€513

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

For Horizon Europe, Portugal will continue participating in partnerships with a focus on the following broad strategic areas:

- digitalisation
- climate action, including energy transition
- oceans
- health
- social sciences and humanities.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	4.81 %	2.82 %	5.30 %	12.41 %
Climate action, environment, resource efficiency and raw materials	21.57 %	0.00 %	5.47 %	9.33 %
Europe in a changing world - inclusive, innovative and reflective Societies	1.96 %	0.00 %	10.32 %	9.95 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	25.68 %	25.35 %		9.67 %
Future and Emerging Technologies	1.59 %		0.59 %	5.40 %
Health, demographic change and wellbeing	32.97 %	17.36 %		11.44 %
Information and Communication Technologies		16.82 %	70.46 %	17.64 %
Secure, clean and efficient energy	8.30 %	1.32 %	7.86 %	16.77 %
Smart, green and integrated transport	3.13 %	36.33 %		7.38 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

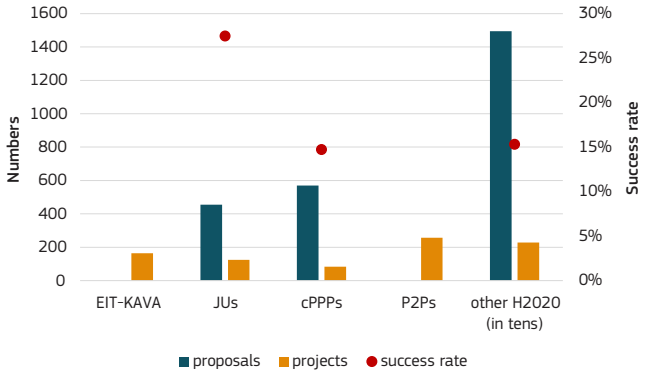
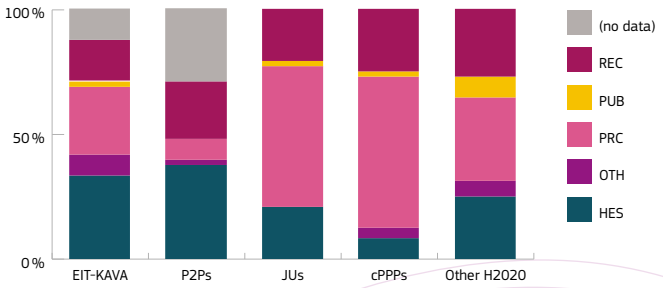


FIGURE 2: Types of project beneficiaries (%)



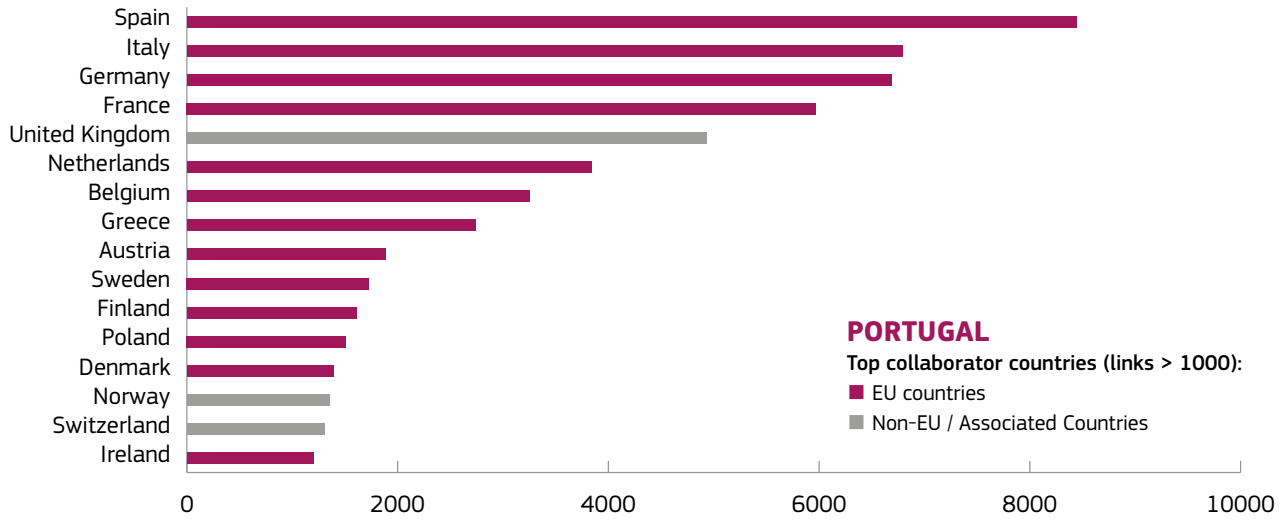
Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

ADDITIONAL INVESTMENTS TRIGGERED

Portuguese participation in European Partnerships has contributed to the financing of R&D activities in many different areas, which in many cases resulted in spill over effects and triggered additional complementary investments using other funding opportunities.

FIGURE 3: Top collaborators of Portuguese researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing top collaborator-countries (links >1000)

KEY HIGHLIGHTS

Not available

64 H2020 public partnerships (*)

Or **64.65%** of total (99 partnerships)

70 H2020 public partnerships (*) participations

Or **3.25%** of total

0 H2020 public partnerships (*) coordinations

Or **0%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€34.89 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **1.61%** of total

€1 992

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

Not available

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	32.99 %	0.00 %	1.54 %	4.32 %
Climate action, environment, resource efficiency and raw materials	10.96 %	0.00 %	0.00 %	7.33 %
Europe in a changing world - inclusive, innovative and reflective Societies	0.00 %		36.50 %	19.97 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	13.82 %	57.81 %		8.86 %
Future and Emerging Technologies	2.22 %		1.14 %	2.14 %
Health, demographic change and wellbeing	32.89 %	4.14 %		12.00 %
Information and Communication Technologies		5.25 %	57.13 %	15.38 %
Secure, clean and efficient energy	5.04 %	0.71 %	3.69 %	15.94 %
Smart, green and integrated transport	2.09 %	32.09 %		14.07 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

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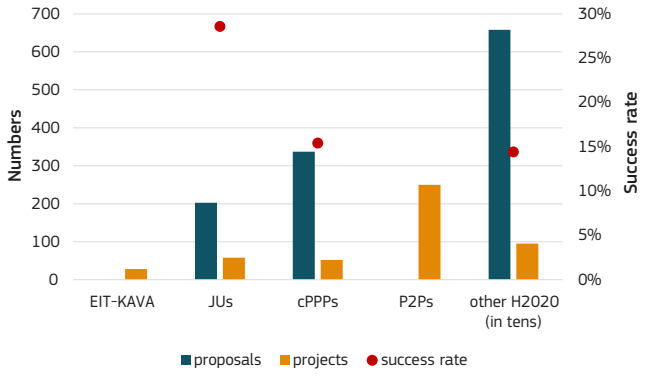
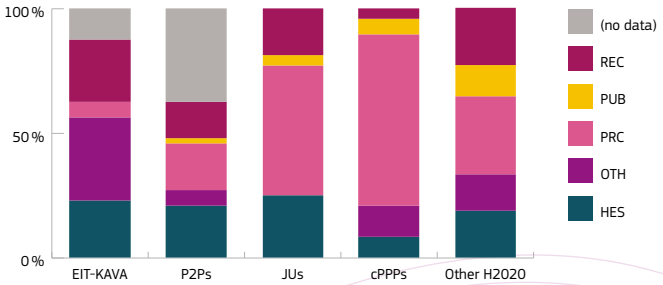


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

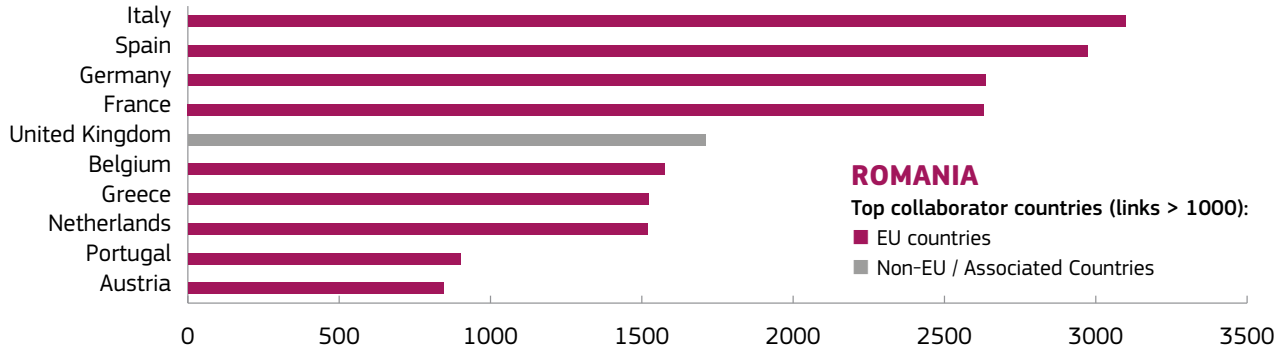
ADDITIONAL INVESTMENTS AND QUALITATIVE IMPACTS

Not available

COMPLEMENTARY AND CUMULATIVE FUNDING

Not available

FIGURE 3: Top collaborators of Romanian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing top-ten collaborator-countries

KEY HIGHLIGHTS

Compared to Horizon 2020, support for Slovak participation in new Horizon Europe partnerships will be less fragmented and focus more on inter-sectoral cooperation. The available funding is expected to increase mainly through EU structural funds, which in Horizon 2020 did not match the interest from potential participants. A significant increase of the interest from the universities, business sector and relevant state authorities that want to participate in new Horizon Europe partnerships has been observed. Many actors are already participating in the preparatory phases. There is a strong national political support for increased participation in Horizon Europe partnerships. There is also an increasing focus on capturing synergies, for example through co-funding the participation of Slovak institutions from EU structural funds during the new programming period.

36 H2020 public partnerships (*)

Or **36%** of total (99 partnerships)

38 H2020 public partnerships (*) participations

Or **1.8%** of total

0 H2020 public partnerships (*) coordinations

Or **0%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs.
Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€4.5 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **0.2%** of total

€296

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

Slovak participation in the Horizon Europe partnerships will be aligned with the new updated Slovak smart specialisation strategy, RIS3 SK 2021+, which includes the following priority domains: vehicles for the 21st century, industry for the 21st century, digital Slovakia and creative industry, population health and medical technology, and healthy food and the environment.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	22.32 %	0.19 %	13.52 %	8.38 %
Climate action, environment, resource efficiency and raw materials	3.53 %	0.00 %	0.00 %	8.20 %
Europe in a changing world - inclusive, innovative and reflective Societies	0.00 %		8.68 %	16.02 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	0.58 %	74.14 %		11.46 %
Future and Emerging Technologies	9.70 %		0.00 %	2.33 %
Health, demographic change and wellbeing	61.48 %	0.00 %		6.62 %
Information and Communication Technologies		11.17 %	72.52 %	15.00 %
Secure, clean and efficient energy	2.39 %	0.00 %	5.29 %	18.40 %
Smart, green and integrated transport	0.00 %	14.51 %		13.60 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

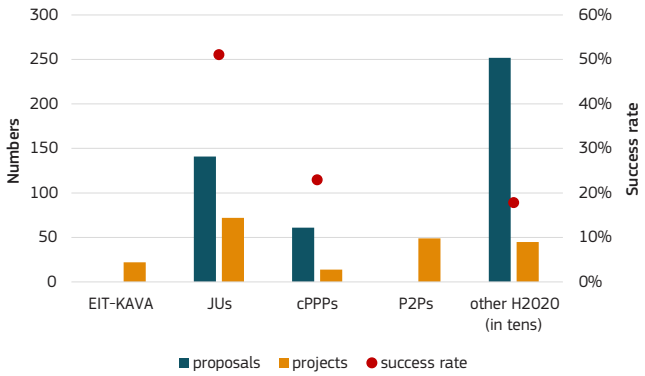
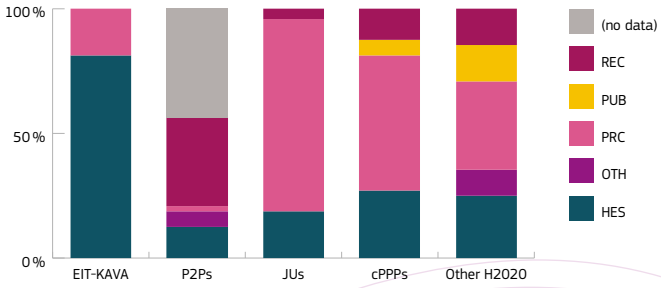


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

ADDITIONAL INVESTMENTS TRIGGERED

Some Horizon 2020 partnerships were co-funded by the Ministry of Education, Science, Research and Sport of the Slovak Republic (e.g., ENIAC-ECSEL, EUROSTARS2, Neurodegenerative Disease Research), or different state authorities (e.g., EMPIR). The Slovak Academy of Sciences provided support for ERA-NETs.

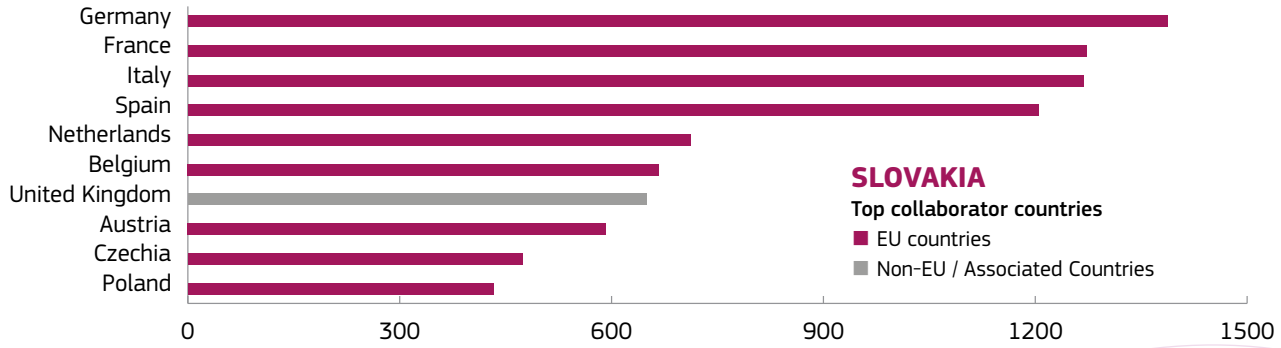
To increase participation in European Partnerships under Horizon Europe, a national programme supporting the preparation of Horizon Europe project proposals and a dedicated call to co-fund the participation of Slovak institutions in European Partnerships were designed. This scheme will be administrated by the Slovak Research and Development Support Agency.

COMPLEMENTARY AND CUMULATIVE FUNDING

In Horizon 2020 no specific synergies with other EU programmes were supported. To increase the participation of Slovak institutions in Horizon Europe partnerships, the focus will be on synergies with EU structural funds. The participation of Slovak institutions in European Partnerships and the co-funding of partnerships calls will be supported from EU structural funds. ESIF calls are expected to increase the participation of Slovak institutions in Horizon Europe (none were implemented during Horizon 2020).

During Horizon 2020 no ESIF calls were implemented to support the participation in the new programming period. However Slovakia expects ESIF calls to increase the participation of Slovak institutions in Horizon Europe.

FIGURE 3: Top collaborators of Slovak researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing the top-10 collaborator countries

SUCCESS STORIES

- Support to increase the participation of Slovak institutions in new partnerships was recognised as a priority and was included in all major strategic documents on R&I support including the updated RIS3SK 2021+ Strategy and the Slovak Recovery and Resilience Plan.
- Impact on national coordination mechanism: Support for the participation in partnerships was endorsed by the Council for the European R&D Policies in Slovakia, which consists of representatives of relevant ministries, the Slovak Academy of Sciences, universities and business associations.
- However Slovakia are yet to finalise the coordination and monitoring mechanism for partnerships.

KEY HIGHLIGHTS

Slovenian research performing and research funding organisations along with other institutions have enjoyed the concept of partnerships since FP6's ERA-NETs in. For a small country joining the EU in the fifth wave and which is less known to the European research community, it primarily meant enabled participation, strengthened transnational collaboration and an increased possibility to network. To some extent this led to an increased quality of research activities and of management of research projects, reflected in the improved quality of research projects at the national level. Due to a cumbersome research funding system, the support scheme for addressing grand societal challenges has never been effective and therefore inclusion in the JPIs has always been inadequate.

42 H2020 public partnerships (*)

Or **42.42%** of total (99 partnerships)

42 H2020 public partnerships (*) participations

Or **1.95%** of total

0 H2020 public partnerships (*) coordinations

Or **0%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€13.9 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **0.64%** of total

€1 519

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

The main strategic document, the Resolution on Research and Innovation Strategy of Slovenia (2011-2020), does not prescribe or prioritise specific research fields. Therefore, the decision for various partnership collaborations has mostly been bottom-up, coming from a strong research base. With this approach several different research thematic fields have been supported. This can also be seen from Table 1, where, overall all thematic fields are addressed. The existence of a critical mass in a research field is not a precondition for support. Smaller research groups are equally supported, which has led to high success in the ERC grantees. With the newly adopted *Scientific Research and Innovation Activities Act* (November 2021), research fields are turned towards addressing grand societal challenges: climate change, energy, natural resources, health and aging.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	21.24 %	0.89 %	0.80 %	14.17 %
Climate action, environment, resource efficiency and raw materials	15.84 %	0.00 %	0.00 %	10.20 %
Europe in a changing world - inclusive, innovative and reflective Societies	3.18 %		21.92 %	7.60 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	15.70 %	30.99 %		7.14 %
Future and Emerging Technologies	3.71 %		0.00 %	2.55 %
Health, demographic change and wellbeing	27.21 %	6.43 %		8.49 %
Information and Communication Technologies		20.28 %	71.18 %	14.77 %
Secure, clean and efficient energy	10.92 %	10.81 %	6.10 %	23.13 %
Smart, green and integrated transport	2.20 %	30.61 %		11.94 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

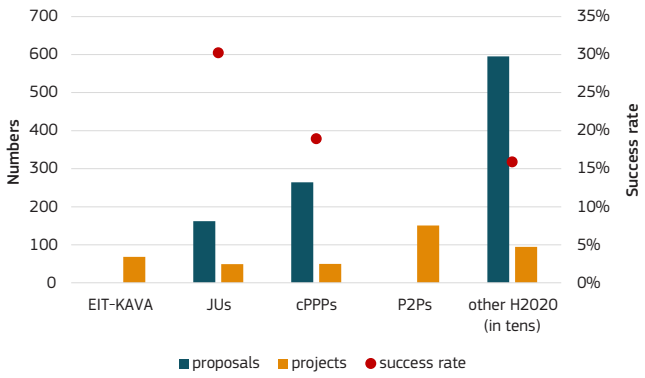
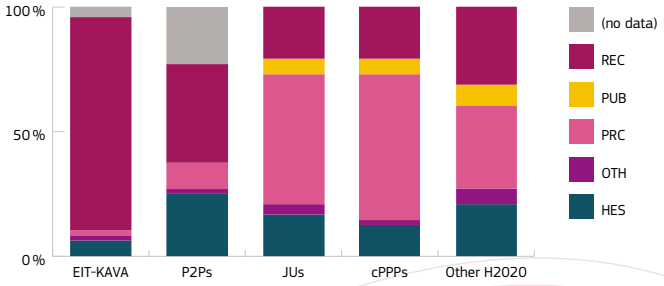


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

Due to the huge decrease of expenditure on research and development from 2014 onwards, Slovenian research performing organisations and other institutions have shifted their way of working and securing funding for R&I projects towards the framework programme. Precisely because of this, a large increase in the number of project proposals can be seen for Horizon 2020.

ADDITIONAL INVESTMENTS TRIGGERED

Participation in additional joint calls seems to be a successful mechanism for increasing R&I project funding while supporting the priority thematic areas. These have also contributed to the development of internationalisation activities and policies, including at a bilateral level outside the EU. Additional activities, such as the participation in the development of thematic SRIAs, have been an excellent opportunity for including the Slovenian R&I priorities in the EU's research agenda.

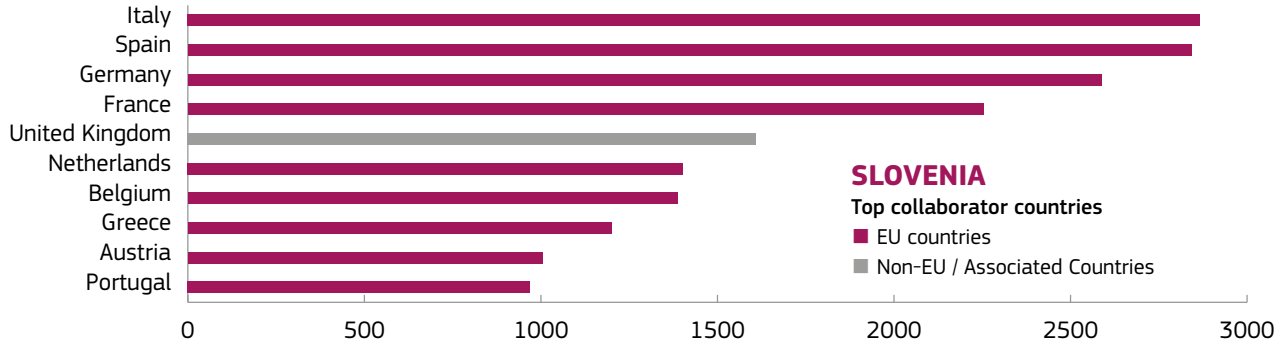
COMPLEMENTARY AND CUMULATIVE FUNDING

Slovenia is funding its participation in the partnerships mostly from the state budget, except in the case of Eurostars, where the funding is made available through ERDF funds.

LIFE funding was used in some projects as a springboard to Horizon 2020.

Although possible, RRF will not be used for the European R&I partnerships.

FIGURE 3: Top collaborators of Slovenian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing the top-10 collaborator countries

SUCCESS STORIES

- Slovenia is a relatively small country with a limited national budget for R&D. Since there are no specific research programmes that address societal challenges, it is difficult to secure advance commitment for partnership calls. On top of that, the lack of sufficient funding and human resources at the ministry continues to be a major barrier to more engaged participation in partnerships.

- A significant achievement in responding to the great interest of Slovenia's research base in participating in partnerships was the development of a procedure to formalise the decision making process for participation. A group was created involving the Director General of the Science Directorate, the Strategic Programme Committee delegate for Horizon 2020/HEU, relevant other Horizon 2020/HEU programme committee delegates, and the representative from the Research Funding Agency. Decisions are made based on several scoring criteria.

- Due to the involvement in the partnership landscape, the newly adopted Scientific Research and Innovation Activities Act prescribes that the financing of scientific research and innovation activities shall also be carried out by other ministries in accordance with their competencies.

- JPIs influenced national policy making with their SRIAs – the effect is noticeable in the strategic aspects of relevant national strategies related to the SRIAs of JPI JPND (dementia control strategy) and JPI Climate (strategic framework for adaptation to climate change).

- Under the EuroHPC partnership, Slovenia is hosting the Vega supercomputer, which became operational in 2021.

- Transnational joint calls for the ERA-NET scheme were a successful mechanism for developing great research and innovation collaborations and producing impactful R&I projects on the one hand, and on the other, increasing R&I project funding that increased international cooperation.

- Partnerships also helped to raise awareness among sectoral ministries on the role of R&I and the opportunities for collaboration.

KEY HIGHLIGHTS

The participation of Spain in partnerships has experienced a significant increase during the last decade, being at the moment one of the most active countries in the EU.

The integration of the Spanish Research, Technology and Innovation System (SECTI) in the European Research Area, is one of the main goals of the new Spanish State Plan for Scientific, Technological Research and Innovation (PEICTI 2021-2023). It addresses the alignment of the main objectives and promotes the participation of Spanish entities (mainly RPOs and RFOs) in partnerships and joint programming initiatives.

For the Spanish researchers and entities, the participation in joint calls organised by partnerships allows for the less experienced to gain contacts and skills for future participation in Framework Programme calls.

91 H2020 public partnerships (*)

Or **92%** of total (99 partnerships)

170 H2020 public partnerships (*) participations

Or **8%** of total

5 H2020 public partnerships (*) coordinations

Or **5%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofunds, EJPs, Art 185 initiatives and JPIs.
Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€177.1 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **8%** of total

€1 362

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

On the basis of the participation in partnerships, in H2020 calls, as well as the priorities of the PEICTI, Spain is willing to support strategic research areas such as energy, health, ICT, and environment, among others. As the figure above shows, Spain has participated in 92% of the total partnerships, showing the global country's interest in all thematic areas.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	15.89 %	2.58 %	5.50 %	13.90 %
Climate action, environment, resource efficiency and raw materials	17.94 %	0.05 %	5.00 %	7.76 %
Europe in a changing world - inclusive, innovative and reflective Societies	1.72 %		7.88 %	5.95 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	27.50 %	14.27 %		7.53 %
Future and Emerging Technologies	2.48 %		1.92 %	6.03 %
Health, demographic change and wellbeing	24.22 %	16.66 %		13.35 %
Information and Communication Technologies		8.41 %	76.49 %	16.52 %
Secure, clean and efficient energy	6.10 %	3.82 %	3.20 %	13.70 %
Smart, green and integrated transport	4.16 %	54.22 %		15.25 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; Values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

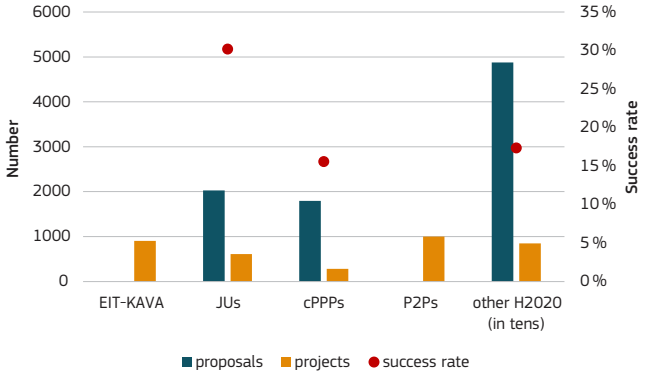
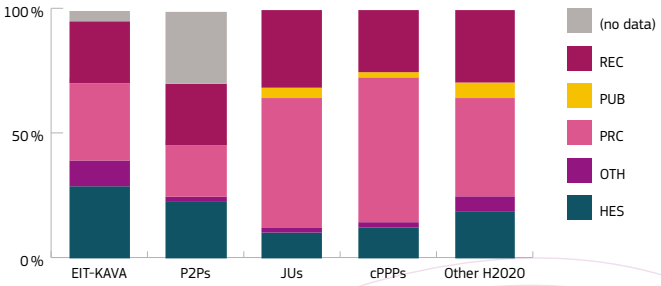


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2).

ADDITIONAL INVESTMENTS AND QUALITATIVE IMPACTS

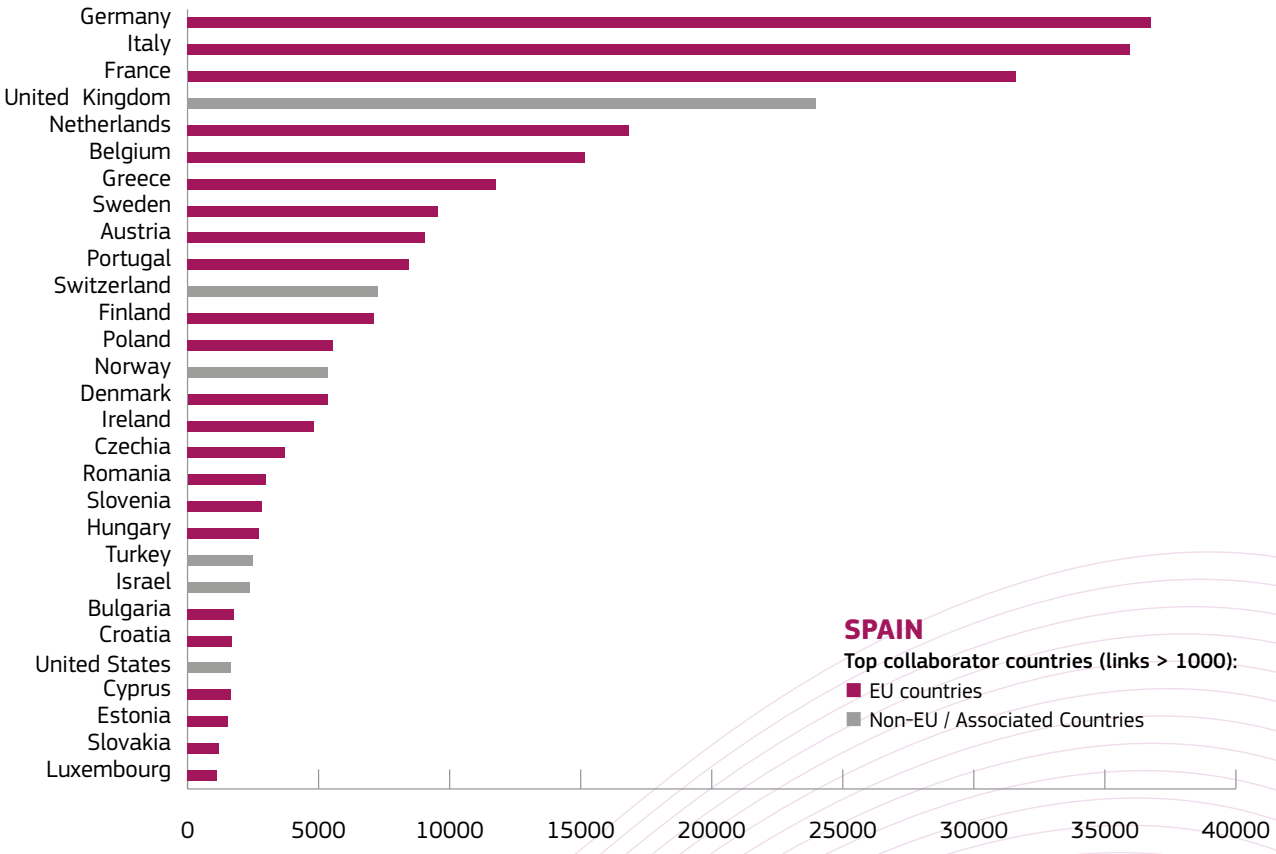
Participation in additional joint calls seems to be a successful mechanism for increasing R&I project funding while supporting the priority thematic areas. They have also contributed to the development of internationalization activities and policies, including at bilateral level outside the EU. Additional activities such as the participation in the development of thematic SRIAs have been an excellent opportunity for including the Spanish R&I priorities in the EU research agenda.

COMPLEMENTARY AND CUMULATIVE FUNDING

Funding agencies at National level have not used other EU Funds for cofunding Joint Transnational Calls during the period 2014-2020. Nevertheless, the PEICTI 2021-2023, counts with additional funding from the RRF to promote internationalisation of the STI system.

At regional level, some Smart Specialisation Strategies foresee the use of European Structural and Investment Funds to cofund joint international calls, enhancing the internationalisation of the regional STI systems.

FIGURE 3: Top collaborators of Spanish researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda (showing countries of >1000 links)

SUCCESS STORIES

- Alignment of the PEICTI and the Horizon Europe Programme towards the European Research Area.
- Creation of a national Joint Programming Working Group, for the coordination of the Spanish participation in joint programming initiatives.
- Development of the Agencia Estatal de Investigación Dashboard with data on project funding through joint calls.
- New and simplified national granting processes as a sort of 'seal of excellence', for the allocation of funds, by automatically accepting the peer review done during the international evaluation.
- National funded platforms and infrastructures are aligned with European Research Infrastructures (e.g. Biobank platform with BBMRI-ERIC, platform for clinical research with ECRIN-ERIC, etc.) and European initiatives (Beyond 1 Million Genome Project with IMPACT)
- Continuation of the participation in joint international calls, beyond the end of EC funded ERANETS. E.g. the 4th EULAC STI Call is foreseen to be launched by the end of 2021. Calls started with the FP7 ERANET-LAC. In the 4th Call preparation, four H2020 projects have collaborated: EULAC ResInfra, EULAC PerMed, SINCERE and ENIRCH LAC. This multiple project collaboration is another success story.

KEY HIGHLIGHTS

Sweden has a long history of active and numerous participations in both public and industry-led European Partnerships. The country's high investment in R&I and international collaboration contributes to Sweden being a frontrunner in innovation, a knowledge society, and where R&I promotes a climate-neutral, fair, and resilient society which meanwhile strengthens industrial competitiveness. European Partnerships are a vital instrument contributing to this and a tool for reaching common objectives. In the national strategy for Horizon Europe, partnership funding will be further integrated with the priorities of national R&I funding.

75 H2020 public partnerships (*)

Or **75.8%** of total (99 partnerships)

96 H2020 public partnerships (*) participations

Or **4.5%** of total

4 H2020 public partnerships (*) coordinations

Or **4%** of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) Excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€174 million

in actual national contributions in public partnerships during H2020 (2014-2020)

Or **8%** of total

€2 401

per researcher FTE (average between 2014-2019 based on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.

KEY INTENTIONS FOR THE FUTURE

The Swedish national R&I priorities are climate and the environment, health and welfare, digitalisation, skills and working conditions, and a strong and democratic society.

The priorities are reflected rather well in the P2P expenditure in Horizon 2020 as are Sweden's industrial strengths: transport, health, ICT, energy technology, forestry, raw materials and manufacturing. The coming European Partnerships cover these areas well and Sweden is committed to participate in most of these.

TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	0.00 %	1.37 %	11.51 %	9.45 %
Climate action, environment, resource efficiency and raw materials	26.41 %	0.00 %	5.76 %	8.43 %
Europe in a changing world - inclusive, innovative and reflective Societies	4.56 %		5.54 %	4.94 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	13.14 %	7.84 %		4.90 %
Future and Emerging Technologies	3.43 %		6.17 %	9.72 %
Health, demographic change and wellbeing	30.57 %	24.67 %		19.32 %
Information and Communication Technologies		15.07 %	65.22 %	12.99 %
Secure, clean and efficient energy	7.79 %	1.90 %	5.79 %	11.98 %
Smart, green and integrated transport	14.10 %	49.15 %		18.27 %
	100,00 %	100,00 %	100,00 %	100,00 %

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument

FIGURE 1: Eligible proposals, projects and success rates

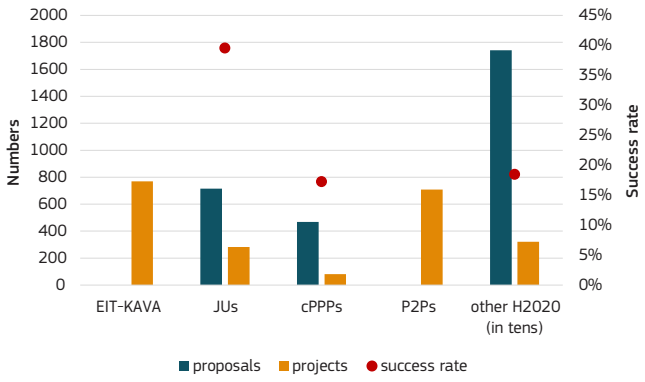
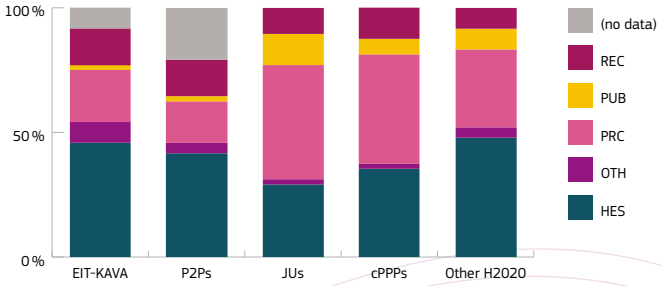


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA, JUs, cPPPs, other H2020 projects (RIAs, CSAs, etc.)

No proposal data for P2Ps, EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

ADDITIONAL INVESTMENTS TRIGGERED

European Partnerships have inspired Swedish thematic R&I programmes to tackle societal challenges with national programme committees and strategic R&I agendas.

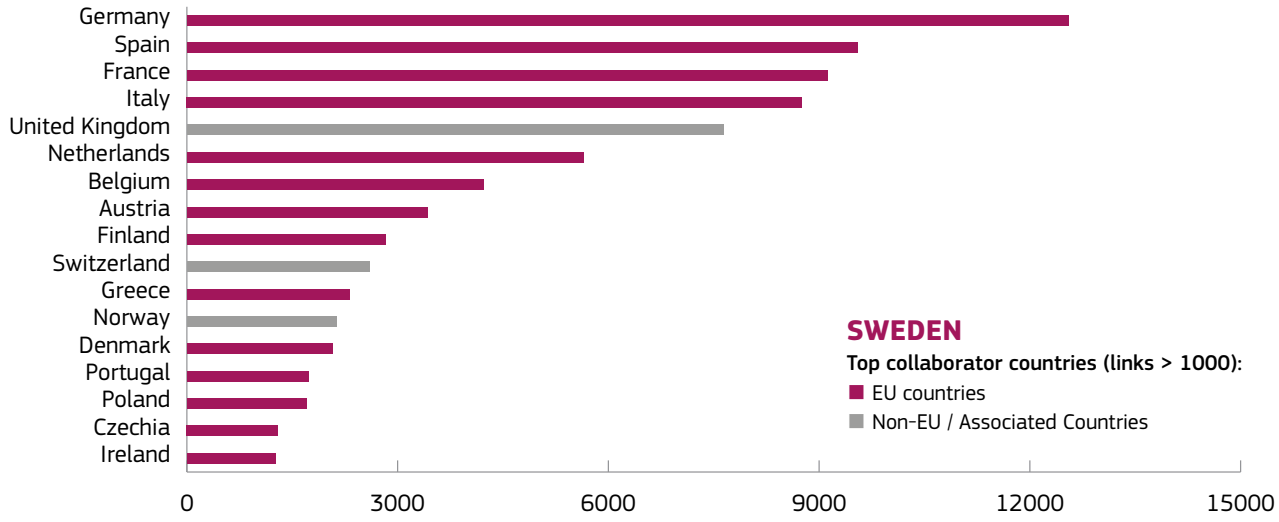
The EU gap-filling contribution has unlocked funding by making it possible to approve additional projects. This, in turn, includes more countries thereby widening the ERA.

COMPLEMENTARY AND CUMULATIVE FUNDING

Sweden has launched 17 national research programmes and strategic innovation programmes to tackle societal challenges. Strengthening the links to European research and implementing the ERA are among the aims for these programmes that are important instruments for creating synergies between national funding and partnerships.

Synergies between partnerships and other EU funds have not been used to any great extent so far. Sweden plans to leverage synergies under Horizon Europe.

FIGURE 3: Top collaborators of Swedish researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda; Showing countries where links >1 000

SUCCESS STORIES

- FP7 inspired Sweden to create an EU-coordination function (EU-sam) to enhance cooperation and synergies between the national funding agencies. EU-sam helps the funding agencies to cover funding gaps, promote multidisciplinary work, provide ERA policy advice to the ministries and to further align national funding with EU funding. Some EUR 20 million is earmarked annually for the national co-funding of partnerships via EU-sam.

- A total of 28 countries have joined the call to tackle antimicrobial resistance under the umbrella of JPIAMR, which is coordinated by Sweden. JPIAMR has been supported by several actions under Horizon 2020; it has found synergies with other JPIs, and has inspired national R&I programmes in Sweden and policy alignment.

- Eurostars is a successful instrument for Swedish innovative, R&D performing SMEs. During recent years Swedish project partners have been represented in many of the highest ranked projects and Sweden stands out as one of the countries with the highest number of applications as well as funded projects.

- In ERA-Net Smart Energy Systems (SES) Joint Call 2018, 23 projects were awarded funding. EU funds enabled Sweden to participate in a large share of the projects, which focused on developing integrated local and regional energy systems to meet the energy challenge. SES's funding budget exceeded EUR 30 million.