

Special report

Synergies between Horizon 2020 and European Structural and Investment Funds

Not yet used to full potential



EUROPEAN
COURT
OF AUDITORS

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Executive Summary

I In the Europe 2020 Strategy, the Commission highlighted the role of research and innovation as a key driver of social and economic prosperity and environmental sustainability. The two main funds supporting research and innovation were the 8th EU framework programme for research and innovation, called Horizon 2020, with a budget allocation of €76.4 billion, and the European Structural and Investments Funds (ESIFs), mainly the European Regional Development Fund (ERDF) with close to €41 billion committed to research and innovation activities. Although Horizon 2020 and the ESIFs both supported research and innovation, their objectives, implementation, management modes and priority setting differed.

II For the first time, the 2014-2020 legal frameworks of Horizon 2020 and the ESIFs included a specific request to establish synergies between the two programmes. Synergies involve two or more programmes interacting to produce a greater effect than individual interventions. Synergies can take different forms, and may include ESIFs supporting capacity-building activities for research to increase the chances of beneficiaries subsequently receiving the more competitive H2020 funding (upstream synergies), or ESIFs funding the exploitation or further development of Horizon 2020 projects' results (downstream synergies).

III This special report is the latest in a series of ECA publications examining the EU support provided for research and innovation activities. It complements our [special report 15/2022](#) on the measures to widen participation in Horizon 2020.

IV In this audit, we assessed whether the Commission and the relevant national/regional implementing authorities had taken appropriate measures to establish synergies between Horizon 2020 and the ESIFs. We examined whether these bodies had given due importance to factors that were instrumental in creating synergies, and had planned and implemented measures to establish synergies.

V We found that some factors instrumental in creating synergies were not yet fully in place and that the implementation varied depending on the type of synergy. For example, apart from differences in the legal frameworks of the two programmes which the Commission had already addressed for the 2021-2027 period, cooperation between the two programmes' research and innovation stakeholders was still limited. The absence of an integrated database for ESIF projects that is interoperable with the Horizon 2020 database made it difficult for the Commission and national/regional authorities to identify and explore possible synergies. In addition, as there was no

system for monitoring synergies, the Commission was not in a position to systematically identify and promote examples of good practice.

VI We found that the ESIFs' strategic documents, i.e. smart specialisation strategies and operational programmes, included limited references to Horizon 2020 priorities. Moreover, the priorities set out in these documents were rather broad, and so limited the possibility for creating synergies.

VII The ESIF managing authorities did not implement all the synergy-promoting measures envisaged in the strategic documents. In particular, measures to create downstream synergies to further exploit the results of H2020 projects were implemented only to a very limited extent. There were two main reasons for this: (i) beneficiaries of Horizon 2020 grants rarely envisaged downstream synergies with the ESIFs; and (ii) managing authorities did not know how to establish downstream synergies or how to find Horizon 2020 project results. Furthermore, managing authorities' participation in the Commission's capacity-building actions was limited, and they did not sufficiently promote the concept of synergies.

VIII Lastly, certain project proposals that were positively evaluated under Horizon 2020 but not funded due to a lack of Horizon 2020 resources had received a quality label – the Seal of Excellence – to make it easier for them to receive ESIF or any other funding. However, in our sampled operational programmes only a limited number of them ultimately received funding from the ESIFs.

IX We recommend ways in which the Commission can:

- improve cooperation between stakeholders active in research and innovation;
- exploit the potential of databases to foster synergies;
- increase the use of downstream synergies; and
- improve information flows about projects awarded the Seal of Excellence.

Introduction

Horizon 2020 and Structural Funds for research and innovation

01 In the [Europe 2020 Strategy](#), the Commission highlighted the role of research and innovation (R&I) as a key driver of social and economic prosperity and environmental sustainability in the EU. The [Commission's priorities for 2019-2024](#) reflect the continued importance of R&I at EU level, as it plays a key role in at least four of the six priorities: a European Green Deal, an economy that works for people, a Europe fit for the digital age, and a stronger Europe in the world.

02 The 2014-2020 period saw greater investment in R&I from the EU budget than ever before. The two main funds supporting R&I were the eighth framework programme (FP) for R&I, called Horizon 2020 (H2020), and the European Structural and Investment Funds (ESIFs), 95 % of which were allocated from the European Regional Development Fund (ERDF). The total budget allocation for H2020 was €76.4 billion, and the EU funding committed to R&I activities under the ERDF was close to €41 billion. Altogether, this represented 12 % of the EU budget for the 2014-2020 period. For the 2021-2027 period, the EU budget on R&I has increased further (for example, the budget for the new FP is €95.5 billion, the estimated amount from ERDF for R&I is €56 billion and the budget for R&I included in the approved recovery and resilience plans as of March 2022 was [€44.4 billion](#)).

03 The Commission fosters the creation of synergies. These are defined in this report as the coordination of EU research funding under the ESIFs and Horizon 2020 to increase the effectiveness and efficiency of both, thereby achieving greater impact in terms of innovation results.

04 Synergies were first mentioned in a 2007 [Commission Communication](#), and have become increasingly important ever since. For the first time, the 2014-2020 legal frameworks of both [H2020](#)¹ and the [ESIFs](#)² included a specific request for implementing bodies to create synergies between the two programmes. The legal frameworks for the 2021-2027 period for [Horizon Europe](#) (H2020's successor) and the funds implementing cohesion policy (the ESIFs' successor) place even more importance on synergies. In particular:

- o the [Horizon Europe](#) Regulation, which gives special attention to coordination and complementarity between cohesion and R&I policies. Annex IV of the Regulation is fully dedicated to synergies;
- o the [Common Provisions Regulation](#) governing the funds implementing cohesion policy, which underlines the importance for Member States and the Commission of strengthening coordination and establishing synergies and complementarities with Horizon Europe.

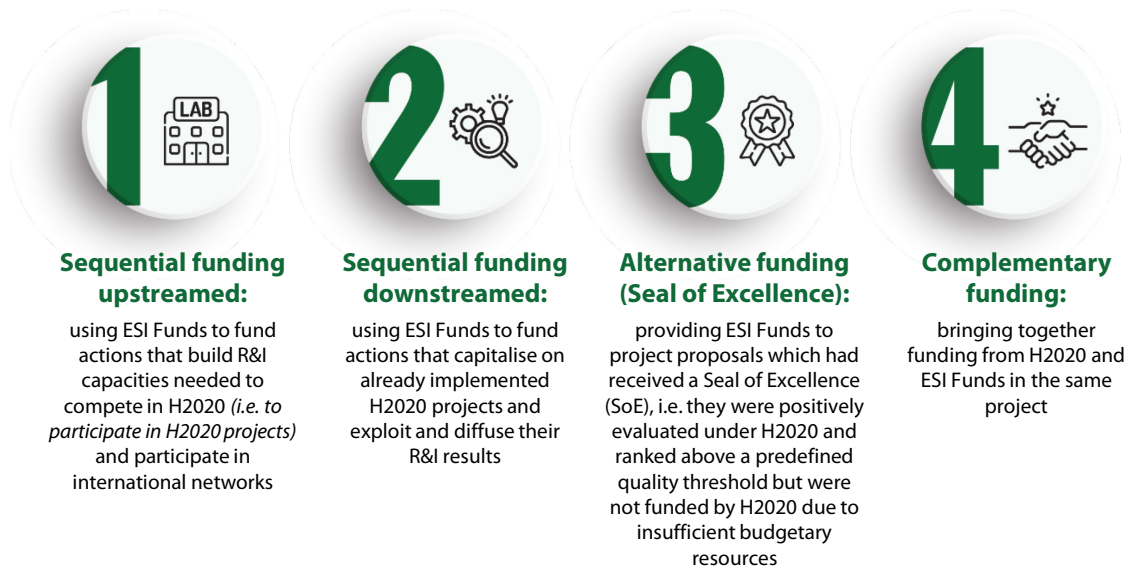
05 A 2014 Commission [guidance document](#)³ on synergies describes different types of possible synergies between H2020 and the ESIFs (see [Figure 1](#)).

¹ Regulation (EU) No 1291/2013, Indent 33 and Article 21.

² Regulation (EU) No 1303/2013, Annex I - 4.3.

³ Enabling synergies between the ESIFs, H2020 and other research, innovation and competitiveness-related Union programmes.

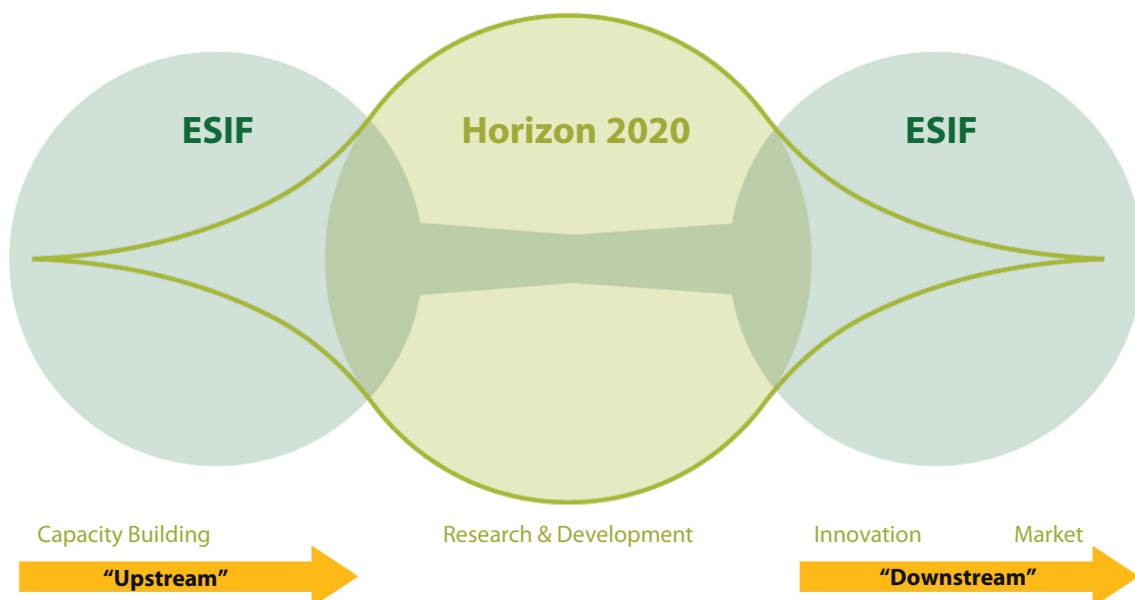
Figure 1 – Types of synergies



Source: ECA.

06 Figure 2 shows the logic of upstream and downstream synergies between H2020 and the ESIFs.

Figure 2 – Upstream and downstream synergies between Horizon 2020 and ESIF Funds



Source: ECA.

07 Although both the ESIFs and H2020 provide significant support for R&I, planning and implementing synergies is complex because both funds differ in several respects (for further details, see [Annex I](#)):

- **Objectives:** H2020 funds target excellence, while the ESIFs aim to strengthen economic and social cohesion by reducing disparities between regions. This is also reflected by the differences in the distribution by Member State of H2020 funds compared to the ESIFs committed to R&I (see [Annex II](#));
- **Management:** The Commission directly managed H2020 (i.e. through calls for projects at EU level), while the ESIFs were implemented under shared management between the Commission and Member States (i.e. through calls for projects at national/regional level);
- **Implementation:** H2020 was implemented via multi-annual work programmes prepared by the Commission, whilst the ESIFs were implemented on the basis of operational programmes (OPs) prepared by national/regional authorities and approved by the Commission;
- **Priority setting:** In the 2014-2020 period, the ESIFs for R&I were to be spent according to “Smart Specialisation Strategies” (S3s), developed by Member States or regions. S3s are “innovation strategies which set priorities in order to build competitive advantage by developing and matching R&I own strengths to business needs [...] while avoiding duplication and fragmentation of efforts”⁴. H2020 funds were spent according to main priority areas as defined by the Regulation, and topics within those areas as defined in the work programmes which the Commission adopted through the comitology procedure (i.e. involving a committee of representatives from all Member States).

08 Synergies are particularly relevant for those countries that are performing less well in R&I and consequently participating less in H2020 (see [special report 15/2022](#)). These countries are among those with the largest R&I funding available from the ESIFs (see [Annex II](#)).

⁴ Regulation (EU) No 1303/2013.

Roles and responsibilities

09 *Table 1* describes the main stakeholders involved in designing, implementing, and monitoring H2020 and the ESIFs. *Annex I* provides further details.

Table 1 – Authorities responsible for and involved in designing and managing the ESIFs and H2020

	ESIFs	H2020
Main European Commission Directorate-General (DG) responsible	Directorate-General for Regional and Urban Policy (DG REGIO)	Directorate-General for Research & Innovation (DG RTD)
Policy design	DG REGIO, Member State bodies, incl. managing authorities DG REGIO, among others, assessed and approved the OPs	DG RTD and other DGs, depending on the priority area DG RTD prepared the work programmes and related calls for project proposals
Implementation	Managing authorities (design and implementation of the OPs, incl. project selection, project approval, and grant award) Intermediary bodies (implementation of specific measures of an OP) The grant award is generally formalised through a grant agreement	More than 20 different implementing bodies, incl. Executive Agencies. Six of the latter implemented more than 65 % of the H2020 budget under the supervision of the parent DG The grant award is formalised through a grant agreement
Support for project proposers and beneficiaries	Managing authorities	National Contact Points (NCPs)

Source: ECA.

Audit scope and approach

10 Considering that the relevant legal bases requested the establishment of synergies between H2020 and the ESIFs for the first time for the 2014-2020 period (see paragraph [04](#)), the audit sought to shed light on the extent to which this happened. We decided to carry out the audit in view of the increasing importance of synergies and the missed opportunities by not creating them, and to complement our recently published [special report 15/2022](#) which focused on measures to widen the participation of low-performing countries in Horizon 2020. In fact, the H2020 regulation stipulates that synergies with the ESIFs and measures to widen participation in H2020 shall help close the R&I divide in Europe.

11 We asked whether the Commission and national/regional implementing authorities had taken appropriate measures to establish synergies between H2020 and the ESIFs. To that end, we assessed whether:

- the Commission and national/regional implementing authorities had attributed due importance to factors that were instrumental in creating synergies;
- the Commission and national/regional implementing authorities had planned and implemented synergies effectively.

12 Our audit work covered the implementation of synergies in the 2014-2020 period and we examined evidence from a range of sources (for further details on methodology, see [Annex III](#)):

- a desk review of relevant documents from the Commission, as well as questionnaires completed by and interviews held with Commission staff;
- a review of analytical data;
- text-mining analysis of H2020 work programmes and grant agreements;
- analysis of relevant documents for a sample of five Member States (Portugal, Poland, Slovenia, Croatia and Romania), as well as interviews with their managing authorities and NCPs. We selected these countries on the basis of their R&I performance, the availability of the ESIFs for R&I, and participation in H2020;
- surveys sent to the managing authorities of 27 OPs (response rate: 64 %) and 78 National Contact Points (NCPs), (response rate: 67 %) in all Member States;
- interviews with experts in the field.

Observations

Not all factors instrumental in creating synergies were given due attention

13 Creating synergies is complex, as EU funding under the ESIFs and Horizon 2020 differ in many respects (see paragraph 06). We reviewed documentation and obtained feedback from the Commission and national stakeholders which pointed to a number of factors which can determine success or failure in establishing synergies: the degree of alignment of rules and regulations, cooperation between relevant players at EU and Member State level, the availability of relevant data, and administrative capacity at national and regional level.

14 We therefore assessed whether:

- o rules and regulations facilitated the creation of synergies;
- o cooperation at both EU and national level was appropriate for the creation of synergies;
- o the Commission had appropriate data and monitoring tools to identify and foster potential synergies;
- o the Commission appropriately supported national/regional administrations' capacity building.

The Commission reacted to shortcomings in rules and regulations that hampered the creation of synergies

15 Several studies⁵ carried out for the Commission pointed to a lack of alignment between regulatory provisions governing [Horizon 2020](#), the [ESIF Common Provision Regulation](#) and the related [General Block Exemption Regulation](#) under State aid rules, and saw this as an obstacle for synergies. Our audit work, in particular our surveys and the interviews with experts, managing authorities and national contact points,

⁵ “MLE on National Practices in Widening Participation and Strengthening Synergies”, European Commission, 2018; “Synergies between FPs for Research and Innovation and European Structural and Investment Funds”, European Commission, 2017.

confirmed this conclusion, thereby highlighting the importance of aligning regulatory provisions.

16 The Commission reacted by proposing several adjustments, taken over in the relevant regulations for the 2021-2027 period (see [Annex IV](#)). Examples of the changes made are:

- funds implementing cohesion policy having to accept conditions already assessed under Horizon Europe, either relating to projects co-funded under Horizon Europe or awarded the SoE;
- aligning criteria about what are considered to be eligible activities, methods for calculating eligible costs, and State aid rules for projects co-funded by the two programmes or SoE projects;
- the possibility of using grants from the ESIFs as national contributions to [European partnerships](#) established under Horizon Europe (partnerships between the Commission and private or public partners in concerted R&I initiatives);
- the possibility of transferring up to 5 % of the initial national allocation of each Cohesion Fund to any other instrument under direct or indirect management (including [Horizon Europe](#)).

17 As these changes were only made for the 2021-2027 period, it remains to be seen in practice whether or to what extent they live up to the expectation of having a positive impact on synergies.

There was little cooperation between bodies involved in the management of the ESIF and H2020

18 The [Common Provisions Regulation](#)⁶ and the [H2020 Regulation](#)⁷ stressed the importance of coordination and close interaction between the two programmes. As mentioned in [Table 1](#), the ESIFs and the R&I FP have distinct governance structures at both EU and national/regional level. In 2016, the European Parliamentary Research

⁶ Annex I, 4.3.

⁷ Recital 33.

Service⁸ underlined the role of coordination between Commission DGs in order to overcome compartmentalised approaches, at EU as well as Member State level. This coordination can be achieved through a regular and structured exchange of information.

19 A 2018 report⁹ published by the Commission concluded that “silo-based” approaches were still present at the Commission and in Member States. It stated that “ministries or departments deal with different EC bodies with different and sometimes conflicting tasks, priorities and operating cultures”, and recommended that structured dialogue in the form of a forum with “synergy-seeking” agendas be set up and institutionalised.

20 Despite this recommendation, we found that some of the weaknesses identified back in 2016 still persisted in 2021. We note that the two main DGs involved (DG RTD and DG REGIO) cooperated well when preparing the 2021-2027 regulations. However, the Commission did not put in place a regular and structured dialogue process involving relevant Commission DGs and national players responsible for designing and implementing the two programmes.

21 Specifically, we found only a limited number of examples of structured dialogue between Commission DGs and national/regional stakeholders on specific themes. One example that was viewed positively by stakeholders was the “Seal of Excellence (SoE) community of practice” (see [Box 1](#)).

⁸ “Maximisation of synergies between the European Structural and Investment Funds and other EU Instruments to attain Europe 2020 Goals”, European Parliament Research Service, 2016.

⁹ “Widening Participation and Strengthening Synergies – Challenge paper topic 5” - Mutual Learning Exercise, European Commission, 2018.

Box 1**The “Seal of Excellence community of practice”: a positive example of multilevel cooperation**

The “Seal of Excellence community of practice” is a platform the Commission created for exchanging information, gathering data, and sharing good practices. It brings together representatives from DG REGIO, DG RTD, managing authorities, NCPs and other stakeholders at both EU and Member State level, i.e. representatives of the Joint Research Centre (JRC), the European Institute of Technology, and ministries and agencies at national and regional level. The network has 250 members.

In our survey of NCPs, we asked about the level of satisfaction with different initiatives launched by the European Commission to promote synergies. 60 % of respondents were highly or very highly satisfied with the “Seal of Excellence community of practice”.

22 With regard to national bodies, the [Common Provisions Regulation](#) for the 2014-2020 period and the [minimum standards and guiding principles for setting up networks of NCPs under Horizon 2020](#) required more communication and cooperation between ESIF managing authorities and Horizon 2020 NCPs.

23 We found that for two of the five Member States in our sample, namely Portugal and Slovenia, the NCPs and managing authorities cooperated well. For the other three cooperation and exchanges of information were limited. Our surveys confirmed that the majority of those managing authorities and NCPs which replied continued to work using a compartmentalised approach, meaning that there was little cooperation between the managing authorities (ESIFs) and the NCPs (Horizon 2020) (for further details of these surveys, see [Annex III](#)):

- 41 % of the managing authorities that replied to our survey said that there was no structured collaboration with NCPs. In addition, 59 % replied they did not organise or rarely organised events bringing together relevant stakeholders from the two communities (beneficiaries of H2020 and the ESIFs, and other stakeholders);
- 85 % of the NCPs that replied to our survey said that the level of cooperation with managing authorities was either low to very low, or that there was no cooperation at all. Moreover, 75 % of NCPs reported that their level of knowledge of the ESIF programmes’ support for R&I was low or very low, or even stated that knowing about the ESIFs was not part of their remit.

24 The 2020 report¹⁰ on lessons learned from an experimental call for projects financed by the ESIFs under the [Interreg Central Europe](#) programme also revealed a greater need for cooperation between H2020 and ESIF stakeholders (see [Box 2](#)). The experimental call was carried out as knowledge created by EU-funded projects was not fully utilised on the ground, and R&I results often failed to reach relevant stakeholders in EU regions. This was due to a lack of communication, coordination and cooperation between researchers and regional stakeholders.

Box 2

Experimental Interreg call: “[Capitalisation through coordination](#)”

This experimental call aimed to increase the impact of transnational cooperation in central European regions by testing new ways to coordinate different EU-funded projects. The 2020 report on lessons learned concluded, among other things, that:

- (1) H2020 and Interreg stakeholders are very interested in working together and combining results in order to increase their take-up at policy level, and their roll-out to new target groups and territories. However, stakeholders need a deliberate “push” to actively seek and make use of synergies between funds.
- (2) Increasing the impact of H2020 and Interreg project results requires active support for project beneficiaries. Capacity-building measures and matchmaking opportunities can increase stakeholders’ knowledge of existing H2020 and Interreg results that could match the specific needs of certain regions and target groups.

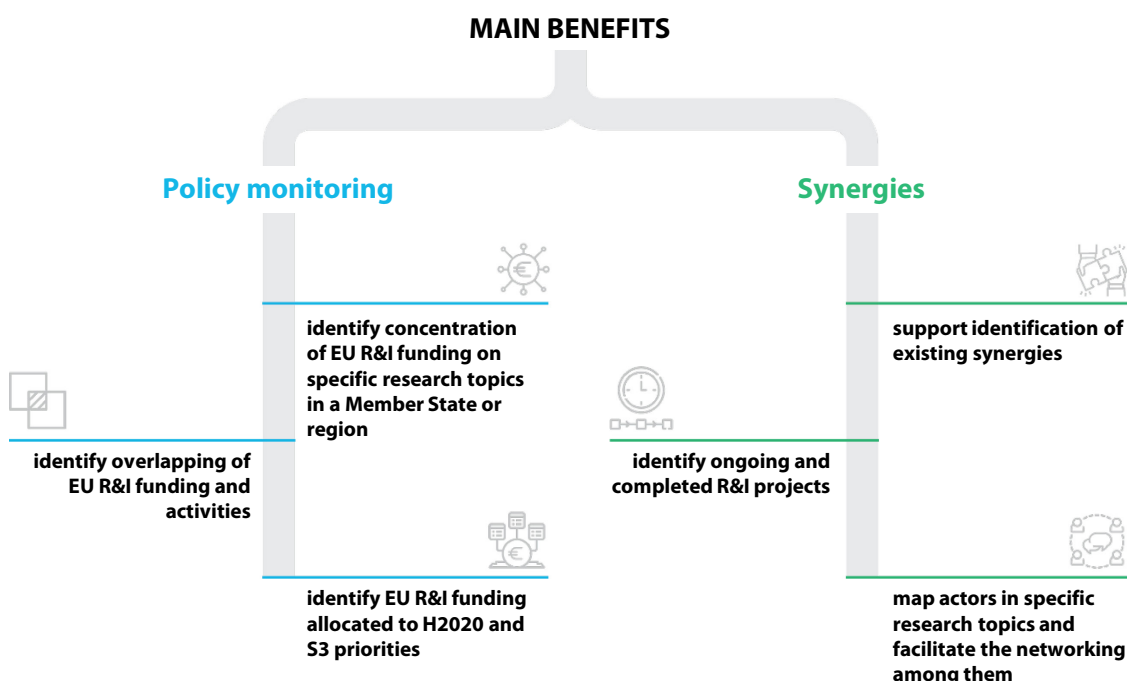
¹⁰ “[Capitalisation through coordination across EU funds](#)”, European Commission, 2020.

Identification and monitoring of synergies were hampered by a lack of suitable data

25 A report published by the Commission’s Joint Research Centre stated that making Horizon 2020 and ESIF databases interoperable would greatly benefit policy monitoring and evaluation, and the identification and creation of synergies¹¹.

26 Based on a review of documentation and feedback from Commission staff, we identified benefits of interoperable databases (covering projects from H2020 and the ESIFs) for (i) policy monitoring and evaluation, and (ii) synergies (see [Figure 3](#)).

Figure 3 – Benefits of interoperable databases



Source: ECA.

27 We analysed whether the Commission had taken steps to set up interoperable databases of Horizon 2020 and ESIF projects, and whether the Commission and Member States had identified (i) areas with potential for the creation of synergies, and (ii) existing synergies to identify examples of best practice.

¹¹ “Dataset of projects co-funded by the ERDF during the multi-annual financial framework 2014-2020”, Joint Research Centre, 2019.

28 In the 2014-2020 period, separate databases provided information on projects funded not only by H2020 but also by the ESIFs:

- For H2020 projects, the Commission only had an internal database until the open [H2020 dashboard](#) was launched in 2018. The new dashboard includes data on funded projects and their beneficiaries, broken down by countries and regions, organisation type, and priority area (e.g. energy, health, and space);
- For projects co-financed by the ESIFs, an integrated database did not exist until March 2022. Instead, managing authorities recorded and published information on projects co-financed by the ESIFs on webpages linked to their OPs, in line with their legal obligations¹². In March 2022, the Commission launched Kohesio, an integrated database of the projects co-financed by the ESIFs. [Kohesio](#) currently includes projects from the 2014-2020 period, but the Commission aims to extend it to the 2021-2027 period. However, Kohesio is not interoperable with the H2020 database.

29 Using these disparate databases to identify projects addressing similar priority areas under H2020 and ESIFs, and which were thus suitable for creating synergies, was challenging as:

- There was no common categorisation (taxonomy) of H2020 and S3 priorities;
- ESIF data recorded by managing authorities were not fully standardised and were mostly in national languages;
- Managing authorities did not systematically record a project's S3 priorities. This is likely to remain a challenge, as the [Common Provisions Regulation governing the period 2021-2027](#) does not require Member States to report on the S3 priority areas addressed by the projects.

30 Consequently, the existing databases did not allow for mapping of the main EU-funded R&I projects and related investments (e.g. by providing information about geographical spread, or which priorities are more prone to synergies). This hampered the creation of synergies and policy monitoring in the sense described in [Figure 3](#).

¹² Regulation (EU) No 1303/2013, Article 46(2).

31 Moreover, in spite of the benefits of monitoring synergies between the ESIFs and H2020 (see paragraph 25), we found that neither the Commission nor the managing authorities in charge of the OPs which we analysed systematically monitored them.

32 In addition, we identified the following limitations at Commission level in identifying synergies and monitoring their implementation:

- Information for identifying upstream synergies: although the Commission has a text mining tool (CORTEX) which is theoretically able to identify existing upstream synergies, it cannot be used in practice as there is no specific field in the H2020 project proposals for flagging links to previous projects co-financed by the ESIFs;
- Follow-up to H2020 projects: although data on the use of research results from completed H2020 projects may support the identification of existing downstream synergies, the Commission does not collect such information;
- Information available at national level: information on SoE-labelled projects co-financed by the ESIFs is not systematically collected and reported to the Commission.

Little uptake of capacity building actions by managing authorities

33 As H2020 and the ESIFs each had their own rules, implementation mechanisms and stakeholders, appropriate managerial and administrative capacities were crucial in order to design and implement R&I actions with synergies at national and regional level. This is even more relevant for the 2021-2027 period, where EU funding for R&I has increased.

34 We analysed:

- the Commission's support for national stakeholders, particularly managing authorities, to increase their expertise in the area of synergies, and
- the receptiveness of national stakeholders.

35 The Commission took different actions to support national stakeholders to increase their knowledge in the area of synergies. In particular:

- In 2014, the Commission published a [guidance document](#) on the various actions (including promotion and training activities, coordination practices, and monitoring) that Commission departments, managing authorities and NCPs

should take in order to create synergies. The managing authorities in the five selected Member States acknowledged that the guidance document contributed to raising awareness about synergies but that they had made limited use of it. In July 2022 the Commission published a new guidance document on synergies between Horizon Europe and ERDF;

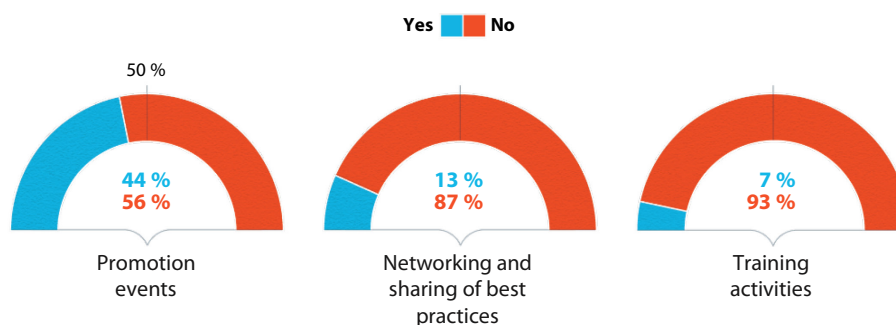
- o As part of the [Policy Support Facility](#) (an H2020 instrument used to foster reforms in national R&I ecosystems), the Commission ran an [activity](#) that involved promoting exchange of best practices in the area of synergies. In particular, participants shared experiences on (i) how to support national participation in the FPs, and (ii) how to maximise synergies between H2020 and the ESIFs¹³. However, we found that representatives of only 11 Member States (Belgium, Bulgaria, Cyprus, Spain, Croatia, Hungary, Latvia, Poland, Portugal, Slovenia and Sweden, plus Germany as observer), participated in this activity;
- o The Commission promoted the concept of synergies at conferences (e.g. the Week of Innovative Regions in Europe, and the European Week of Regions and Cities) and specific events organised by third parties.

36 Lastly, it was the European Parliament that launched and financed the main initiative – the “Stairway to Excellence” project (S2E) – to support the creation of synergies in the 2014-2020 period. The Commission’s JRC implemented the [S2E project](#) in collaboration with DG REGIO, which assisted Member States and regions in (i) harnessing synergies between the ESIFs and H2020, and (ii) effectively implementing national and regional S3s, and pursuing innovative excellence in general. The project ended in 2020, and will not continue in the 2021-2027 period. National stakeholders of three of the five Member States in our sample stated they had taken part in this project’s activities and expressed a high level of satisfaction.

37 We also note that participation in capacity-building activities organised by the Commission was limited. According to our survey, it ranged from 44 % for promotion events to 7 % for training activities (see [Figure 4](#)).

¹³ “MLE on National Practices in Widening Participation and Strengthening Synergies”, European Commission, 2018.

Figure 4 – Managing authorities’ participation in Commission support activities

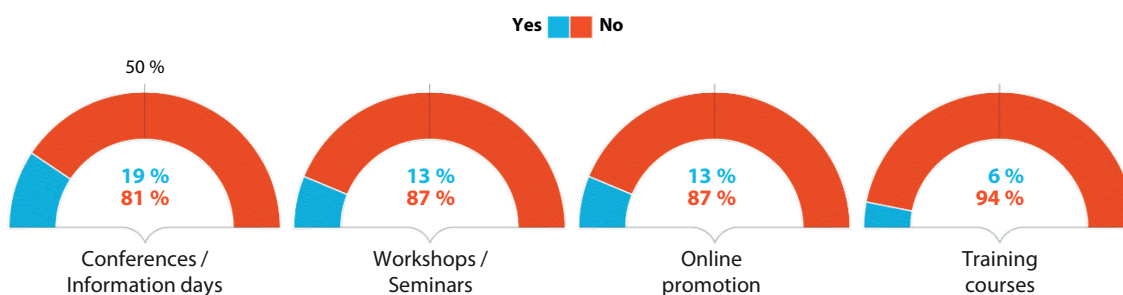


Source: ECA survey of managing authorities.

38 Despite this limited participation, the managing authorities and NCPs we visited during the audit expressed a need for more training, coaching activities and sharing of best practices.

39 Lastly, according to our survey, managing authorities said that they themselves had only taken very limited action to support the creation of synergies between the two programmes (see [Figure 5](#)).

Figure 5 – Organisation of promotional activities by managing authorities to support the creation of synergies between the ESIFs and H2020



Source: ECA survey of managing authorities.

Synergies envisaged in strategic documents were implemented to varying degrees

40 The 2014 Commission guidance on synergies (see paragraph [35](#)) stated that “it is of utmost importance to ensure optimal synergies between the funds [...] and maximise impact and efficiency of public funding. The European Parliament and Council made it clear that this approach is no more a ‘nice to have’ but a ‘need to implement’”. This required a systematic approach to synergies by all relevant

stakeholders, and meant that the scope for synergies set out in the S3s and OPs had to be matched by concerted efforts on the ground to ensure they were implemented.

41 We therefore assessed whether:

- o S3s and related OPs included measures to create synergies with H2020;
- o the different types of synergies were actually implemented, in particular:
 - (a) downstream synergies;
 - (b) upstream synergies;
 - (c) alternative funding for projects that were awarded the SoE label.

42 In addition, complementary funding (see paragraph **05**) was provided by all sampled managing authorities for a specific type of project (“Teaming” or “ERA Chairs” projects) under the H2020 “spreading excellence and widening participation” strand. Of the managing authorities that replied to our survey, 44 % (7 out of 16) declared that their OPs included such measures, and 31 % (5 out of 16) said they had implemented them. However, as complementary funding was already addressed in our recent special report on widening measures ([special report 15/2022](#)), we do not provide any further analysis of the subject here.

Synergies were envisaged in the ESIFs’ strategic documents, but the level of detail varied

43 In order for synergies to materialise, they need to be appropriately planned for in the strategic documents, in particular the S3s (see paragraph **06**) and the OPs within the ESIFs.

44 The [2012 Commission guide for S3s](#) states that S3s should focus national/regional R&I investments in a few globally competitive areas, and avoid dispersed use of resources. Focusing on a limited number of priority economic activities and specific technological fields at national/regional level was meant to facilitate the strategic planning of R&I investments. The guide also states that priority setting in the context of S3s entails an effective match between (i) the identification of broad objectives aligned with EU policies, and (ii) the definition of the priorities (or niches) for smart specialisation.

45 With regard to S3 prioritisation, various study papers¹⁴ concluded that S3s “display a proliferation of objectives”. In particular, the 2021 Commission study on S3 prioritisation¹⁵ found that the thematic bandwidth of S3 priority areas in several Member States was broad. The study also analysed 2 324 calls for project proposals launched by managing authorities, and noted that a substantial majority of calls (74 %) addressed all S3 priorities simultaneously.

46 The S3 priorities’ lack of focus, and the fact that calls for proposals were generally open to any S3 priority rather than considering “sectoral and technological specificities, as the very logic of smart specialisation would advocate”¹⁶, decreases the scope for achieving critical mass and thus creating synergies.

47 We therefore analysed whether the S3s and related OPs in our five sampled Member States included measures to create synergies. We also analysed whether the S3s included specific references to [European partnerships](#) promoted under H2020. These partnerships seek to bring together the Commission and private and/or public partners (including those managing the ESIFs) through concerted R&I initiatives addressing EU policy priorities.

48 We found that:

- Only one of the sampled S3s (Romania) mentioned specific [European partnerships](#) with which it intended to create synergies by providing national entities with grants that would allow them to participate in these partnerships;
- Three of the five sampled OPs (Portugal, Romania and Slovenia) mentioned that (some of) their priorities were linked to H2020 priorities. Awareness of this link puts national/regional authorities in a position to approach their stakeholders proactively in order to make them aware of the possibilities H2020 offered for research and to foster links with European partnerships (e.g. by providing grants);
- All S3s and the respective OPs did include measures to create synergies. However, the level of detail of the references made in the S3s and OPs varied considerably

¹⁴ “[Smart Specialisation: what gets lost in translation from concept to practice?](#)”, Regional Studies Association, 2020; “[How ‘smart’ are smart specialisation strategies?](#)”, University Association for Contemporary European Studies, 2020.

¹⁵ “[Study on prioritisation in Smart Specialisation Strategies in the EU](#)”, European Commission, 2021.

¹⁶ See previous footnote.

between the sampled Member States: in some countries references to actions addressing synergies were rather limited and/or very general (Croatia and Poland), while others (Slovenia, Romania and Portugal) included detailed descriptions of several measures.

49 **Box 3** provides examples of synergies planned in the OPs.

Box 3

Examples of measures in the operational programmes that aim at creating synergies

Croatia, included three measures to set up synergies in its “Competitiveness and Cohesion” OP:

- (a) alternative funding for European Research Council proposals;
- (b) complementary funding for H2020 Teaming projects;
- (c) complementary funding for other widening measures.

However, the OP did not include specific references to H2020 priorities or European Partnerships. Moreover, the budget made available for each measure was insufficient to finance a single project under (a) or (b). Ultimately, the Croatian managing authority implemented only (c).

The **Romanian** Competitiveness OP planned eight concrete measures targeting three types of synergies (upstream, alternative funding and complementary funding). The OP also included specific references to Horizon 2020 priorities and European partnerships. The budget allocated was fully used but the implementation suffered from significant delays: the majority of the grants were only awarded in 2020.

Planned upstream synergies were generally implemented

50 Upstream actions (see paragraph **05**) typically include developing research infrastructure and support to help R&I stakeholders to prepare project proposals for submission to the competitive H2020 calls for projects. This support was particularly relevant for Member States that have a persistently low rate of participation in the FPs, especially in terms of approved projects. Although there are many variables that influence a country’s degree of participation in the FP (see [special report 15/2022](#)), the availability of funding to support the application process is one of the key factors affecting participation.

51 Our survey of managing authorities showed that 50 % of the respondents (8 out of 16) envisaged measures to create upstream synergies, while 44 % (7 out of 16) actually implemented them.

52 Our analysis of the sampled OPs found that all of them envisaged and implemented actions to develop R&I infrastructure, such as centres of excellence. Examples of such actions include investment in infrastructure in the field of [photonuclear physics](#) in Romania, and investment in centres of excellence and in a [national supercomputing centre](#) in Slovenia.

53 We also found that four of the five sampled OPs (Poland, Portugal, Romania and Slovenia) envisaged and implemented actions directly aimed at helping national R&I stakeholders to participate in H2020. However, in two of these four Member States (Poland and Romania), this support was only provided several years after H2020 started (five years for Poland and seven years for Romania).

54 A [2016 research paper](#)¹⁷ and the [final report of a project](#)¹⁸ financed by the EU budget identified such support schemes as key to enhance participation in the framework programme and thus the likelihood of creating upstream synergies. We found that these Member States that were late in implementing their support schemes under the ESIFs, were also among those countries with the lowest degree of participation in H2020 (see [special report 15/2022](#), Figure 6):

- in terms of per capita H2020 funding, Poland and Romania were the Member States that received the least;
- in terms of H2020 funding by full-time equivalents of researchers, Poland was at the bottom of the scale.

There was a lack of downstream synergies

55 According to the [Common Provisions Regulation](#), S3s shall include “downstream actions to provide the means to exploit and diffuse R&I results, stemming from H2020

¹⁷ “Who gets Horizon 2020 research grants? Propensity to apply and probability to succeed in a two-step analysis”, Enger, S.G., Castellacci, F., *Scientometrics* 109, 1611–1638, 2016.

¹⁸ [Final report of the project MIRRIS](#) (Mobilizing institutional reforms for better R&I systems/institutions in Europe), June 2016.

and preceding programmes, into the market with particular emphasis on creating an innovation-friendly environment for business and industry [...]”.

56 Moreover, according to the 2014 Commission guidance on synergies (see paragraph 35), when implementing H2020 the Commission should encourage the downstream use of H2020 project results (and project results from previous research framework programmes) for projects co-financed by the ESIFs.

57 The Commission staff we interviewed highlighted the importance of exploiting H2020 results irrespective of the country where the technology was developed in order to increase the impact of the FP and the circulation of knowledge in the EU. The cross-border exploitation of R&I results is also particularly useful for countries and regions with low FP participation levels (see [special report 15/2022](#)), as in doing so they could access and use state-of-the-art technologies.

58 Not pursuing downstream synergies is a missed opportunity for translating R&I results into practice and applying them to solve territorial challenges, thereby ensuring the impact of EU funding.

59 We therefore analysed whether:

- the managing authorities implemented the OP measures that aimed to create downstream synergies;
- the Commission promoted the creation of downstream synergies by means of its H2020 work programmes (including calls for proposals);
- H2020 project beneficiaries actually envisaged downstream synergies.

60 Despite the Commission’s emphasis on downstream synergies, our survey of managing authorities showed that only 44 % of the respondents (7 out of 15) envisaged measures that aimed to create them. Moreover, only 13 % (2 out of 15) eventually implemented them. Indeed, of all the measures addressing synergies, those addressing downstream synergies were by far the least implemented.

61 The picture was similar for the five OPs from the Member States we sampled, as none had launched measures to address downstream synergies with H2020. Furthermore, none had considered the possibility of using the ESIFs to create downstream synergies with R&I results developed in other Member States or regions under H2020.

62 We also found that four of the five sampled OPs included references to public procurement for innovation, which is an instrument with the potential to create downstream synergies. In this case, the procurer acts as a launch customer for innovative solutions (products or services) that are not yet available on a large-scale commercial basis. However, of the four OPs, only one (Poland) actually implemented public procurement for innovation actions, albeit without specific reference to using the results of H2020 projects.

63 We found that a lack of knowledge and information was the main reason for managing authorities not pursuing downstream synergies as they:

- o did not always understand the concept of downstream synergies and the related benefits;
- o had limited knowledge about the creation of synergies and identifying relevant H2020 results. Moreover, the absence of a matchmaking tool (such as an interoperable database) between H2020 and the ESIFs hampered the identification of potential projects for creating synergies. The [report on lessons learned from the Interreg experimental call](#) (see paragraph 24) reached similar conclusions;
- o were often unfamiliar with [CORDIS](#), the H2020 database for disseminating and using H2020 project results.

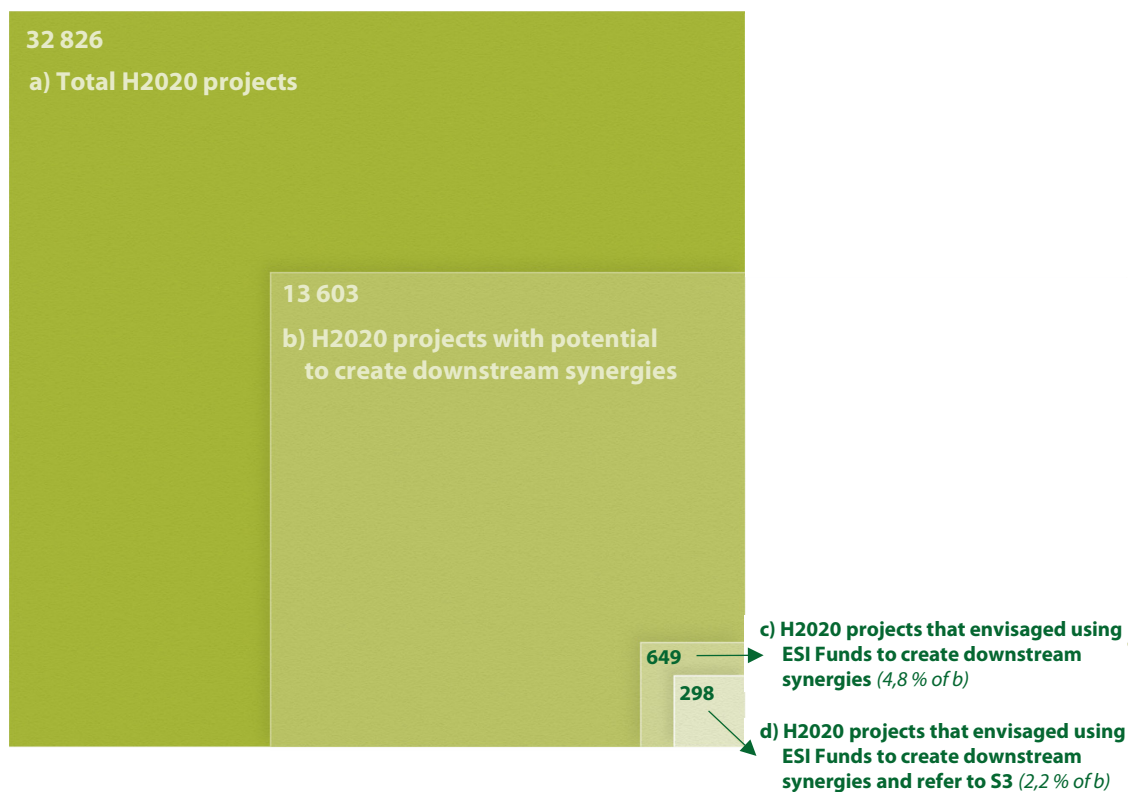
64 We performed a text-mining analysis of H2020 work programmes related to actions with the potential to create downstream synergies. We selected those that were published at the end of H2020 (2018-2020 period). We found that all included at least one reference to downstream synergies with the ESIFs.

65 However, these references were generally only included in the introduction, which provides very general information for applicants, and not in the individual calls for project proposals, which provide more detailed information. Our analysis of 632 calls for proposals showed that only 2 % of them actually included references to downstream synergies.

66 We also performed a text-mining analysis of 13 603 grant agreements from the H2020 actions we had identified as having potential for downstream synergies. They represent 38 % of all H2020 grant agreements and 63 % of all H2020 funds committed. We complemented this analysis with a detailed review of a sample of 100 projects. We found that only 4.8 % of the 13 603 projects considered creating such synergies (see

Figure 6). Furthermore, only 2.2 % included specific references to S3s in their proposals.

Figure 6 – H2020 projects envisaging downstream synergies



Source: ECA.

67 In addition, we carried out a detailed analysis of the projects under one H2020 instrument, the “European Research Council (ERC) proof of concept”. Its objective is particularly suitable for establishing downstream synergies, as it aims to facilitate the exploration of the commercial and social innovation potential of ideas generated by ERC grants. We found that the possibility of creating downstream synergies was only considered in 0.5 % of the “ERC proof of concept” projects.

The Seal of Excellence has potential, but was only used to a limited extent

68 The SoE is a quality label awarded to project proposals submitted for the EU’s R&I FPs (see paragraph 05). It was launched under H2020, with the aim of helping SoE holders to obtain funds for their proposals from sources other than H2020, including the ESIFs. It also entailed giving other funding bodies the opportunity to take advantage of the Commission’s project evaluation process.

69 The Commission launched the SoE in 2015 for projects submitted by [small and medium sized enterprises](#) (SMEs) under the H2020 “SME Instrument”, later known as the “European Innovation Council (EIC) Accelerator”. It was subsequently applied to three more H2020 instruments, namely: “[Marie Skłodowska-Curie Actions](#)”, the H2020 programme for doctoral education and postdoctoral training; “Teaming” (see [special report 15/2022](#)); and the “ERC proof of concept” grants (see paragraph [67](#)).

70 We assessed whether managing authorities had made good use of the SoE label, and had funded such projects. Our survey of managing authorities showed that providing alternative funding for SoE projects was the most common type of synergy envisaged under the OPs of those that replied: 63 % (10 out of 16) of OPs considered such measures, and 50 % (8 out of 16) eventually implemented them. The Commission itself does not have complete information on the number of projects awarded the SoE that were funded by the ESIFs.

71 However, based on our analysis of the sampled OPs, we found that the level of implementation of measures supporting SoE projects varied:

- all but one OP (Croatia) included measures to provide alternative funding for SoE projects under the “SME Instrument”/“EIC Accelerator”. As [Table 2](#) shows, three OPs (Poland, Portugal and Slovenia) eventually provided such funding, and one (Romania) launched a call, but only received a small number of proposals and did not fund any of them;
- two OPs (Poland and Slovenia) included and implemented measures to provide alternative funding for the “Marie Skłodowska-Curie” projects that had been awarded the SoE;
- none of the sampled OPs included measures supporting “Teaming” or “ERC proof of concept” projects that had received the SoE label. We note that for the “ERC proof of concept”, the SoE initiative began in 2018 but ceased again in 2019 due to problems related to the information technology systems. According to the Commission, it is supposed to be relaunched in 2023.

Table 2 – “SME Instrument” / “EIC Accelerator” projects awarded the SoE label, co-financed by the ESIFs (as of 30.6.2021)

Member State	Number of projects awarded the SoE	Number of SoE projects co-financed by the ESIF	%	Funding allocated to the co-financed SoE projects (million euros)
Croatia	9	0	0 %	0.0
Poland	77	20	26 %	17.9
Portugal	108	35	32 %	27.8
Romania	16	0	0 %	0.0
Slovenia	54	15	28 %	15.7
Total	264	70	26 %	61.4

Source: ECA, based on data from the European Commission and managing authorities.

72 We identified two main administrative barriers to effective support for SoE projects under the “SME Instrument” / “EIC Accelerator” in the 2014-2020 period: (i) divergent State aid rules, and (ii) managing authorities having limited information on projects that had received the SoE label.

73 The misalignment of State aid rules led to a large discrepancy between the funding intensities of H2020 and the ESIFs, with H2020 being able to provide significantly higher grant rates for beneficiaries. The Commission reacted to this and, in July 2021 (six years after the SoE was launched), amended the relevant State aid regulation (the [General Block Exemption Regulation](#)) to resolve this issue for SMEs. Under Horizon Europe, small mid-cap enterprises may, in exceptional cases, also become SoE holders. The difference in funding intensity will remain for such cases.

74 Before approving grants for SoE-labelled projects, managing authorities still have to ensure compliance with the following criteria when deciding on the eligibility of projects:

- Compliance with State aid rules: beneficiary enterprises must (i) be an SME according to the Commission’s [SME definition](#), and (ii) not be an undertaking in difficulty. The project proposer submits a self-declaration, which is not verified by the Commission for SoE projects;

- o Compliance with the cohesion policy regulation: the proposed project needs to be in line with national/regional S3 priorities comply with the ERDF programme and fall within the scope of the ERDF¹⁹.

75 During our interviews, four managing authorities out of the five sampled Member States noted the lack of an automatic notification mechanism for providing structured and comprehensive information on the national/regional projects awarded the SoE, including the contact details of the SoE holder.

76 In actual fact, the Commission provided only aggregated information; detailed information was provided upon request. For the 2021-2027 period, the Commission intends to make the information on projects awarded an SoE label more easily available.

77 Portugal provides an example of the benefits of putting a system in place to ensure this information flow. Portugal financed the highest share of SoE projects (32 %), thanks in particular to an efficient arrangement for obtaining, processing and transmitting such information (see **Box 4**) and to specific calls targeting these projects. We did not find any similar arrangements in the other countries we sampled.

¹⁹ Regulation 1060/2021, Article 73.

Box 4

Example of proactive national authorities

Portugal has financed SoE projects since 2018, using an existing measure in its various OPs. After internal analysis, the Portuguese authorities considered the Commission's evaluation as valid, and there was therefore no need for additional technical evaluations at national level.

The national innovation agency (*Agência Nacional de Inovação*) systematically requested information from the Commission on Portuguese projects awarded the SoE. The fact that the Agency was part of the "Seal of Excellence community of practice" (see [Box 1](#)), and that the NCP for SMEs was part of the Agency, facilitated this process.

The agency passed on the information to the national OP managing authority, which in turn informed the managing authorities of regional OPs. It suggested organising calls for projects, and asked each regional authority to provide information on the budget they would provide for the call. The Agency also searched for, identified and contacted SoE holders to inform them about the calls being launched.

Conclusions and recommendations

78 Our overall conclusion is that the implementation of synergies between Horizon 2020 and the European Structural and Investment Funds (ESIFs) varied between the different types of synergies: for example, while planned measures to create upstream synergies were well implemented, measures to create downstream synergies were hardly implemented. This is due to a number of reasons: the lack of alignment between rules and regulations, limited cooperation between the two programmes' research and innovation stakeholders, and the absence of interoperability between their databases limited the scope for the Commission and national/regional authorities to create synergies. In addition, there was no system for monitoring synergies, meaning that the Commission was not in a position to systematically identify and promote examples of good practice.

79 We identified several factors that are instrumental in creating synergies between Horizon 2020 and the ESIFs. The first relates to rules and regulations. These were not well aligned in the 2014-2020 period, but the Commission reacted to these shortcomings and made changes that would take effect in the 2021-2027 period. The outcome of the changes introduced for the 2021-2027 period remain to be seen in practice (see paragraphs [15-17](#)).

80 Cooperation within the Commission and with Member States, as well as at Member State level – a second instrumental factor – was only partly in place. We found that the Commission's main Directorates-General cooperated well during the preparation of the 2021-2027 regulatory framework. However, the Commission did not organise regular and structured dialogue bringing together DG REGIO, DG RTD and the stakeholders responsible for designing and implementing the programmes at national level. At Member State level, a "silo-based" approach also applied, meaning that managing authorities (ESIFs) and the national contact points (H2020) did not systematically join forces to create synergies (see paragraphs [18-24](#)).

Recommendation 1 – Improve cooperation between bodies involved in the management of the ESIF and the framework programmes

To improve coordination and the exchange of information, the Commission should:

- (a) set up regular structured dialogue bringing together the relevant bodies from the Commission and Member States at policy level (research policy and cohesion policy) and at implementation level (Horizon Europe and European Regional Development Fund);
- (b) work with Member States to foster such cooperation on a national/regional level.

Target implementation date: end of 2023

81 The third factor relates to data availability and monitoring. In order to be in a position to create synergies between projects or between different research communities (those co-financed by the ESIFs and those funded by Horizon 2020), it is essential to have information not only about projects but also about beneficiaries (see paragraphs [25-26](#)).

82 However, for the ESIFs there was no integrated database for gathering together all co-financed projects across the EU. Such an integrated database became operational in March 2022 after our audit work concluded. However, the databases for the new framework programme and the ESIFs are still not fully interoperable (see paragraphs [27-29](#)).

83 We found that the Commission has not monitored synergies systematically. As a result, the Commission was not in a position to systematically identify examples of good practice and promote them to Member State authorities. We identified several potentially successful ways of supporting this monitoring activity, but these are not currently used by the Commission: (i) a Commission text mining tool with potential to identify upstream synergies; (ii) follow-up to Horizon 2020 projects to identify downstream synergies or (iii) information available at national level on Seal of Excellence labelled projects co-financed by the ESIFs which is not systematically collected and reported to the Commission (see paragraphs [30-31](#)).

Recommendation 2 – Exploit the potential of data to foster synergies

In order to improve the availability of project data and so facilitate the creation and monitoring of synergies, the Commission should:

- (a) use the databases for the framework programme and the funds implementing cohesion policy (the successor to the ESIFs) to map policy or thematic domains so as to allow easier matchmaking between projects and beneficiaries;
- (b) use existing tools (such as CORTEX or the “Seal of Excellence community of practice”) to monitor existing synergies and identify and promote examples of good practice.

Target implementation date: end of 2024

84 A fourth factor is the expertise and managerial capacities of national stakeholders. The Commission provided a number of support measures for Member States to enhance the capacity of national stakeholders. The most intense support was provided by the Stairway to Excellence project, which was managed by the Commission but financed by the European Parliament. This was also the support measure most appreciated by the stakeholders in the five sampled Member States. This measure will not continue in the 2021-2027 period (see paragraphs [33-36](#)).

85 Although managing authorities clearly expressed the need for further capacity building, they only participated to a limited extent in the promotional and training events organised by the Commission. Moreover, they themselves did not actively promote the concept of synergies (see paragraphs [37-39](#)).

86 For synergies to materialise in a systematic way, they need to be included in strategic planning from an early stage. The priorities set in the smart specialisation strategies were often rather broad, which limited their potential to focus investments. In addition, in some cases there was no link to H2020 priorities or European partnerships. We found that the measures for creating synergies that were planned in the smart specialisation strategies were reflected in the relevant operational programmes, but that the related measures were only partly implemented (see paragraphs [43-49](#)).

87 The implementation of synergies varied, depending on the type of synergy. Whereas upstream synergies were generally implemented, this was much less the case for downstream synergies. The main reasons for managing authorities’ limited

implementation of downstream synergies were a lack of knowledge about the concept itself, how to implement such measures, or how to find Horizon 2020 project results (see paragraphs 55-61 and 63).

88 Moreover, only one of the five operational programmes we sampled implemented public procurement for innovation, which is an instrument with the potential to create downstream synergies, while four planned to implement it (see paragraph 62).

89 Although the Commission's Horizon 2020 work programmes included a general reference to downstream synergies, the specific Horizon 2020 calls for project proposals rarely included such references. Similarly, only a small number of Horizon 2020 projects envisaged the possibility of creating downstream synergies with ESIFs (see paragraphs 64-67).

Recommendation 3 – Increase the use of downstream synergies

In order to increase the use of downstream synergies, the Commission should:

- (a) support managing authorities in designing and implementing actions to create downstream synergies with Horizon 2020 and Horizon Europe projects;
- (b) promote public procurement for innovation based on the results of research projects financed by the framework programme among national and regional authorities (managing authorities and others);
- (c) promote among Horizon Europe beneficiaries the European Regional Development Fund's potential for deployment and commercialisation of their project results in line with smart specialisation strategies when appropriate.

Target implementation date: end of 2024

90 We found that for the five sampled OPs the implementation of schemes supporting projects that had been awarded the Seal of Excellence label was limited. This was partly due to the fact that operational programmes did not always include schemes supporting Seal of Excellence projects, and to a lack of alignment of State aid rules. In addition, structured and comprehensive information on the projects awarded the Seal of Excellence was not systematically made available to managing authorities. The Commission itself does not have complete information on the number of projects awarded the SoE that were funded by the ESIFs (see paragraphs 68-77).

Recommendation 4 – Improve the information flow about projects that have received the Seal of Excellence

The Commission should regularly provide all managing authorities with data on project proposals that have received the Seal of Excellence in their Member State or region.

Target implementation date: end of 2023

This Report was adopted by Chamber IV, headed by Mr Mihails Kozlovs, Member of the Court of Auditors, in Luxembourg at its meeting of 11 October 2022.

For the Court of Auditors

Tony Murphy
President

Annexes

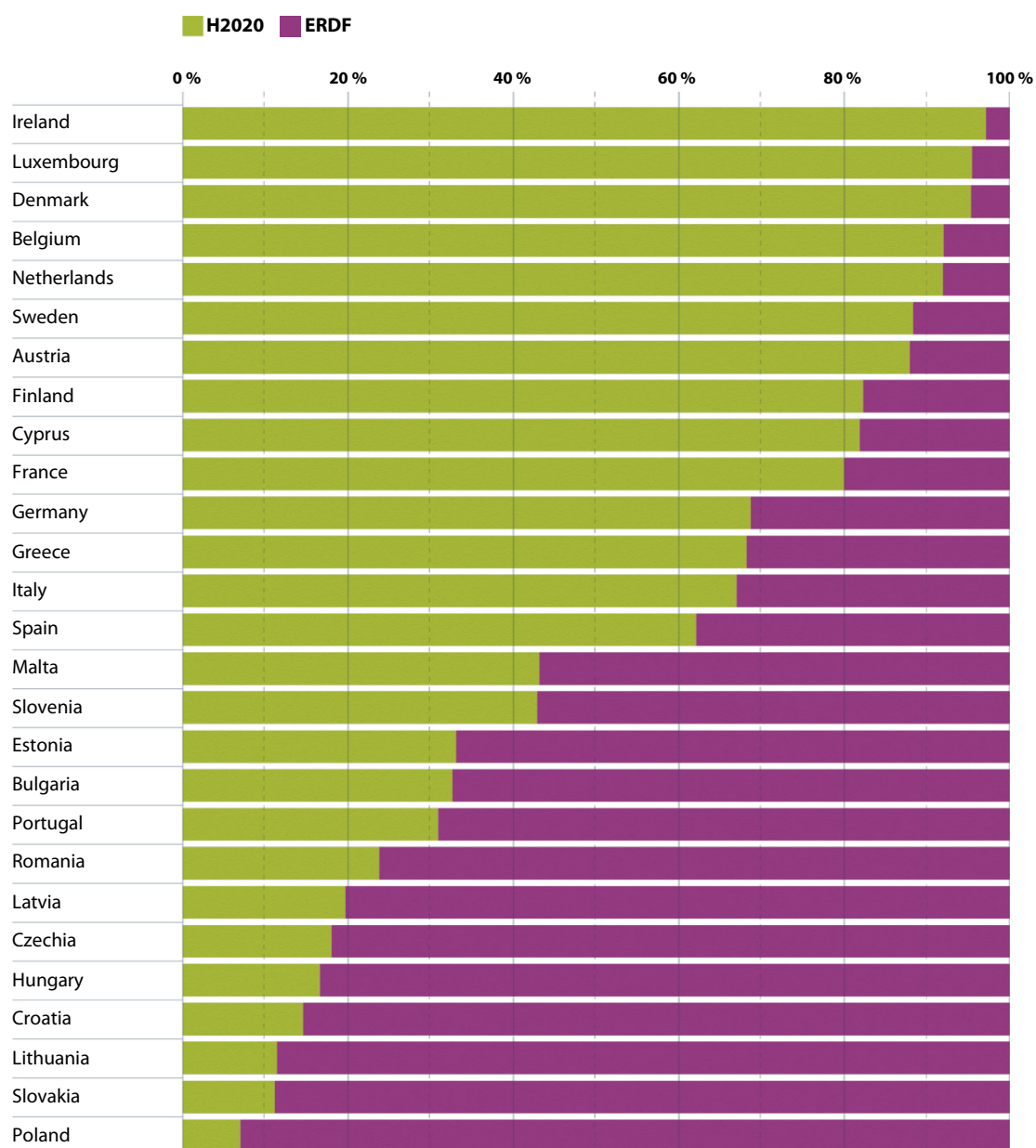
Annex I – Differences between H2020 and funds implementing cohesion policy

Criteria	H2020	Funds implementing cohesion policy (EARDF and ERDF)
Focus	R&I excellence	Regional relevance and economic transformation, based on S3 developed by national/regional authorities.
Management	Centralised management – though an annual call by the Commission	Shared management In the OPs, Member States set out how money from the ESIFs has to be spent during the programming period. OPs can be drawn up for a specific region or a country-wide thematic goal. For each OP, the Member State designates a managing authority, which is responsible for management and implementation.
Allocation of funds	Quality-based competition for funds	Focus support on where it is needed most within the EU: the financial allocation per Member State depends on each region's position in relation to average EU GDP per capita, i.e. less-developed regions receive more funds than the others. Once funds have been allocated to the regions, their OPs and their priorities, the submitted projects need to meet eligibility criteria, including project quality.
Type of projects and beneficiaries	Predominantly transnational projects and consortia	Predominantly single beneficiaries or stakeholders in the same country/region (exception: projects under cross-border or interregional OPs, drawn up for the European Territorial Cooperation goal).

Source: ECA, based on Commission information.

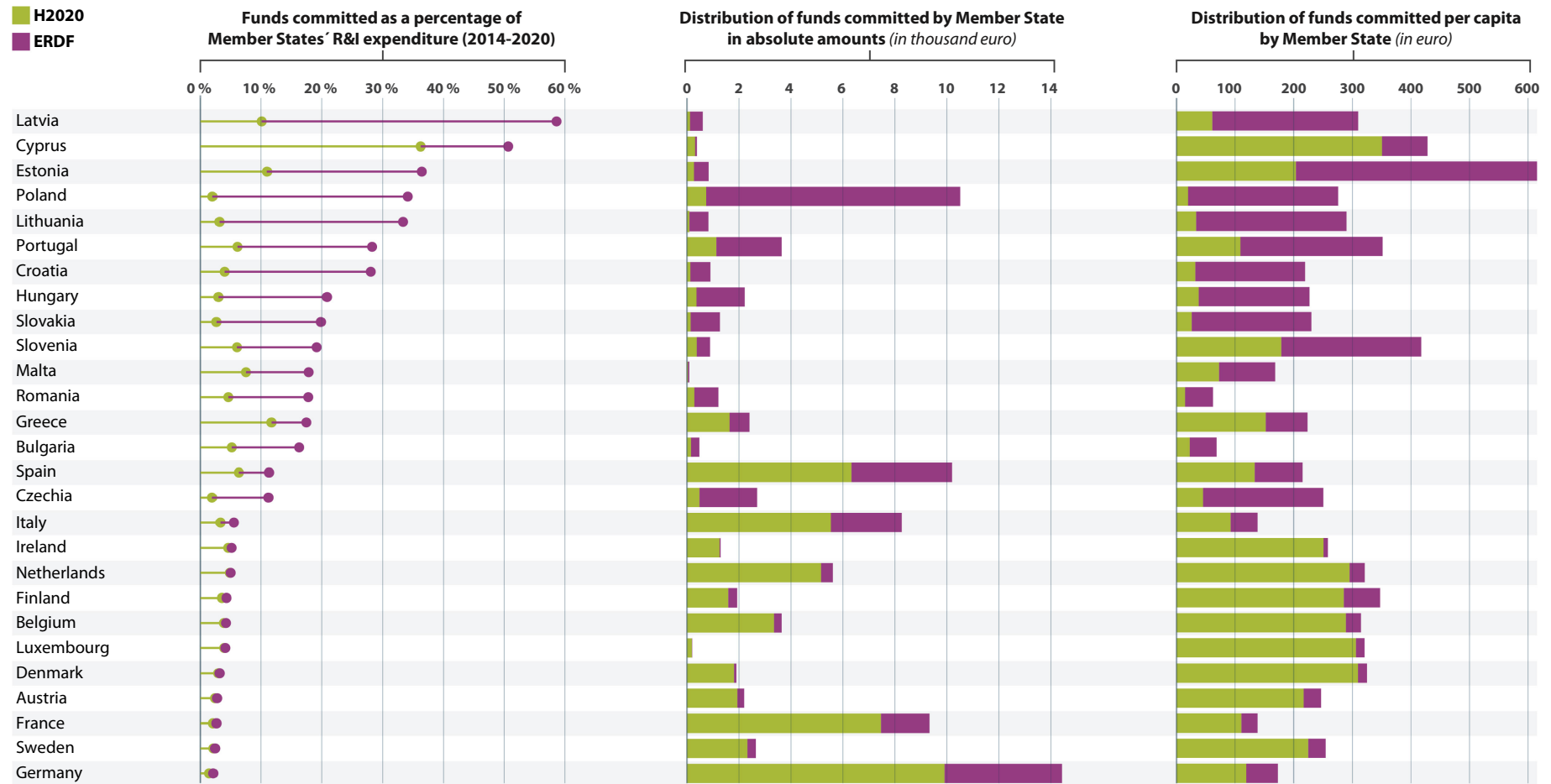
Annex II – Statistics

Figure 7 – Distribution of H2020 and ESIFs committed to R&I (2014-2020) by Member State in % terms (as of 31.12.2021)



Source: ECA, based on Commission data.

Figure 8 – H2020 and ESIF funds committed (as of 31.12.2021)



Source: ECA, based on Commission data.

Annex III – Methodology

Our audit was based on the following methodology:

- (1) Desk review of publicly available documents and internal Commission documents such as legal texts, guidelines and evaluations;
- (2) Statistical analysis of data from a range of sources: CORDA, H2020 dashboard, Eurostat and data on projects co-financed by the ESIFs;
- (3) Text mining analysis , consisting of:
 - (i) Identification of parameters (words and expressions) to be used in the text mining analysis, such as smart specialisation strategy; ESIF or Interreg;
 - (ii) Analysis of the latest H2020 work programmes (2018-2020) using the words and expressions indicated in (i);
 - (iii) Detailed analysis of a randomly selected sample of H2020 work programmes (11 work programmes) to identify specific references to synergies in the hits obtained under (ii).
- (4) Text mining analysis of H2020 grant agreements, consisting of:
 - (i) Identification of H2020 projects with potential to create downstream synergies, i.e. projects falling under European Research Council Proof of Concept, H2020 pillar 2 and H2020 pillar 3 (excluding common support actions). The result was 13 603 grant agreements representing 38 % of all H2020 projects and amounting to 63 % of all H2020 funds committed.
 - (ii) Identification, in cooperation with Commission staff, of parameters (words and expressions) to be used in the text mining analysis, such as cohesion policy; smart specialisation strategy; operational programme; ESIF; managing authority etc.;
 - (iii) A CORTEX (European Commission text mining tool) text mining analysis of H2020 grant agreements obtained under (i) using the words and expressions indicated under (ii) to identify projects which included references to the ESIFs.
 - (iv) A detailed analysis based on a randomly selected statistically representative sample of the population (100 projects) identified as result of step (iii), to distinguish the projects seeking downstream synergies from those which had

other references to the ESIFs (e.g. participants' prior experiences of projects supported by the ESIFs);

- (v) A detailed analysis of the “ERC proof of concept” projects (16 projects) identified in step (iii) to distinguish the projects seeking downstream synergies from those which had other references to the ESIFs (e.g. participants' prior experiences of projects supported by the ESIFs).

- (5) Online surveys to gather opinions from national stakeholders, sent to:
 - 27 managing authorities (one per Member State) managing the OPs with the largest investments in R&I per Member State, with a 64 % response rate. The OPs represented around 63 % of the total EU R&I expenditure committed under the ERDF (2014-2020 period);
 - 78 NCPs, a representative sample of NCPs randomly selected, with a 67 % response rate;
- (6) Questionnaires and interviews with the Commission;
- (7) Questionnaires and interviews with experts in the field;
- (8) Questionnaires and fact-checking videoconferences with managing authorities and NCPs, as well as analysis of a sample of S3 and related OPs from five Member States (Croatia, Portugal, Poland, Romania and Slovenia). We selected these countries on the basis of their R&I performance, the availability of the ESIFs for R&I, and participation in H2020.

Table 3 – Sample of OPs

Member State	Operational Programme	ERDF amount of planned R&I (million euros)	ERDF commitments to R&I at the end of 2021 (million euros)
Croatia	2014HR16M1OP001	760	984
Poland	2014PL16RFOP001	7 476	11 545
Portugal	2014PT16M3OP001	1 512	3 475
Romania	2014RO16RFOP001	780	1 011
Slovenia	2014SI16MAOP001	500	843
	Total	11 027	17 858

Source: ECA, based on Commission data.

The selected OPs amount to 34 % of ERDF investments in R&I (2014-2020). The relevant intervention codes, as indicated by DG REGIO, are:

- 002-Research and Innovation process in large enterprises;
- 056-Investment in SMEs directly linked to R&I activities;
- 057-Investment in large companies linked to R&I activities;
- 058-Research and innovation infrastructure (public);
- 059-R&I infrastructure (private);
- 060-R&I activities in public research centres;
- 061-R&I activities in private research centres;
- 062-Tech-transfer & university-SME cooperation;
- 063-Cluster support & business networks;
- 064-R&I processes in SMEs;
- 065-R&I processes, tech-transfer and cooperation.

Annex IV – Synergies in EU regulations: 2014-2020 vs 2021-2027

Table 4 – Synergy mechanisms in the Common Provisions Regulation, 2014-2020 and 2021-2027 periods

Synergy mechanisms	Common Provisions Regulation 2014-2020	Common Provisions Regulation MFF 2021-2027
[general]	<p><u><i>Content of the Partnership Agreement (PA):</i></u></p> <p>The PA must contain arrangements to ensure effective implementation of the ESIFs. These arrangements must ensure coordination between the ESIFs and other EU and national funding instruments, and with the EIB. (Article 15(1)b(i))</p> <p><u><i>Eligibility:</i></u></p> <p>An operation may receive support from one or more ESIFs/programmes and from other EU instruments, on condition that the expenditure does not receive support from another programme/Fund/EU instrument. (CPR Article 65(11))</p> <p>The alignment of cost models (scales of unit costs, lump sums and flat rates) for corresponding costs and similar types of</p>	<p><u><i>EU budget investments:</i></u></p> <p>To optimise the added value from investments funded through the EU budget, synergies should be sought between EU Funds and other relevant instruments, [...]. These synergies should be achieved through user-friendly key mechanisms (e.g. recognition of flat rates for eligible costs from Horizon Europe and combined funding from different EU instruments in the same operation if financing is avoided). This Regulation must set out rules for complementary financing from EU Funds (Recital 49).</p>

Synergy mechanisms	Common Provisions Regulation 2014-2020	Common Provisions Regulation MFF 2021-2027
	operations and beneficiaries under H2020 and other EU programmes is possible (Article 67(5) b and 68(1)c).	
Seal of Excellence		<p>The synergies between the EU Funds and directly managed instruments should be optimised. The provision of support for operations that have already received an SoE/co-funded by Horizon Europe with a contribution from the EU Funds should be facilitated. Conditions already assessed at EU level should not be assessed again if the operations comply with requirements set in the CPR Regulation (Recital 61).</p> <p>SoE means ‘the quality label attributed by the Commission in respect of a proposal, which shows that the proposal which has been assessed in a call for proposals under a Union instrument is deemed to comply with the minimum quality requirements of that Union instrument, but could not be funded due to lack of budget available for that call for proposals, and might receive support from other Union or national sources of funding’ (Article 2(45)).</p> <p>For operations attributed an SoE, or operations selected under a programme co-funded by Horizon Europe, the managing authority may:</p> <ul style="list-style-type: none"> ○ decide to grant support from the ERDF or the ESF+ directly, if such operations meet the requirements set out in the CPR Regulation;

Synergy mechanisms	Common Provisions Regulation 2014-2020	Common Provisions Regulation MFF 2021-2027
		<ul style="list-style-type: none"> ○ apply to these operations maximum amounts and methods of calculation of eligible costs established under the relevant Union instrument (CPR Article 73(4)).
Transfers		<p>Member States should have sufficient flexibility in the implementation of their shared management allocations; it should be possible to transfer certain levels of funding between the Funds and between shared management and direct and indirectly managed instruments (Recital 19).</p> <p><i><u>Transfer of resources (CPR Article 26 (1)-(9))</u></i></p> <ul style="list-style-type: none"> ○ Member States may request the transfer of up to 5 % of the initial national allocation of each Fund <u>to any other instrument under direct or indirect management</u>. <p>Member States may also request in the PA or in the request for an amendment of a programme the transfer of up to 5 % of the initial national allocation from each <u>Fund to another Fund or Funds</u>.</p> <p>Member States may also request an additional transfer of up to 20 % of the initial national allocation by Fund <u>between the ERDF, the ESF+ or the Cohesion Fund</u> within the Member State's global resources under the Investment for Jobs and Growth goal. The Member States whose average</p>

Synergy mechanisms	Common Provisions Regulation 2014-2020	Common Provisions Regulation MFF 2021-2027
		<p>total unemployment rate for the 2017-2019 period is under 3 % may request such an additional transfer of up to 25 %.</p> <ul style="list-style-type: none"> ○ After consultation with the Member State concerned, the Commission will object to a request for transfer in the related programme amendment: (i) if such a transfer would undermine the achievement of the objectives of the programme from which the resources are to be transferred; and (ii) if the Member State has not provided an adequate justification for the transfer. ○ Where the Commission has not entered into a legal commitment under direct or indirect management, the corresponding uncommitted resources can be transferred back to the Fund from which they were initially transferred and allocated to one or more programmes.
Cumulative funding		<p>An operation may receive support from <u>one or more</u> Funds/programmes/EU instruments. In such cases, expenditure declared in a payment application for one of the Funds will not be declared for either:</p> <ul style="list-style-type: none"> (a) support from <u>another</u> Fund or Union instrument; or (b) support from the same Fund under another programme. <p>(Article 63(9)).</p>

Synergy mechanisms	Common Provisions Regulation 2014-2020	Common Provisions Regulation MFF 2021-2027
Combined funding / Partnerships		<p><u><i>Programme Authorities – intermediate body</i></u></p> <p>Where support from the ERDF or the ESF+ is provided to a programme co-funded by Horizon Europe, the managing authority of the relevant programme should identify the intermediate body (the body implementing the programme co-funded by Horizon Europe) (Article 71(5)).</p> <p><u><i>Selection of operations by the managing authority</i></u></p> <p>For operations attributed an SoE or operations selected under a programme co-funded by Horizon Europe, the managing authority may decide to grant support from the ERDF or the ESF+ directly, if such operations meet the requirements set out in the CPR Regulation.</p> <p>Managing authorities may apply to these operations maximum amounts and methods of calculation of eligible costs established under the relevant Union instrument.</p>

Source: ECA.

Table 5 – Synergy mechanisms in the Framework Programmes: 2014-2020 and 2021-2027 periods

Synergies mechanisms	H2020 Regulation 2014-2020	Horizon Europe Regulation 2021-2027
Synergies with other programmes	<p>Synergies need to be developed and increased between H2020 and other EU programmes and cohesion policy. This may also take the form of public partnerships with regional, national and international programmes that support R&I (Recitals 18, 32, 33, 39, 41).</p> <p>Synergies with the ESIFs</p> <p>H2020 will contribute to closing the R&I divide within the EU, by promoting synergies with the ESIFs. Where possible, cumulative funding should be used (Article 21).</p>	<p>Need to develop more and concrete synergies between different Union funding instruments (Recital 33).</p> <p>Horizon Europe should seek synergies with other Union programmes, from their design and strategic planning, to project selection, management, communication, dissemination and exploitation of results, monitoring, auditing and governance. Synergies should allow for the harmonisation of rules, including cost eligibility rules, as much as possible. Synergies should be promoted in particular by alternative, combined, cumulative funding and transfers of resources (Recital 34).</p>
General		<p><u>Strategic planning and implementation and forms of EU funding</u></p> <p>Strategic planning should ensure alignment with other relevant Union programmes, and consistency with Union priorities and commitments, and increase complementarity and synergies with national and regional funding programmes and priorities, thereby strengthening the European Research Area (ERA) (Article 6).</p>

Synergies mechanisms	H2020 Regulation 2014-2020	Horizon Europe Regulation 2021-2027
		<p><u>Principles of the Horizon Europe Programme</u></p> <p>The Horizon Europe programme should be implemented in synergy with other Union programmes while aiming for maximal administrative simplification (Article 7(7)).</p> <p><u>Missions</u></p> <p>Missions should benefit from synergies with other Union programmes in a transparent manner as well as with national and, where relevant, regional innovation ecosystems (Article 8(4)).</p> <p><u>Alternative, combined and cumulative funding and transfers of resources</u></p> <p>Horizon Europe will be implemented in synergy with other Union programmes, in accordance with the principle set out in Article 7(7) and (Article 15(1)).</p>
Activities	<p>Objectives and activities</p> <p>Part I to III: Specific objectives</p> <p><u>Widening participation:</u> Activities should help close the R&I divide in Europe by promoting synergies with the ESIFs and by specific measures to unlock excellence in low-performing RDI regions, thereby widening participation in H2020 and contributing to the implementation of the ERA.</p>	<p><u>ANNEX I – Broad lines of activities</u></p> <p>European innovation ecosystems: The implementation of activities should be in synergy with areas such as ERDF support for innovation eco-systems and interregional partnerships around smart specialisation topics.</p> <p><u>ANNEX III – European Partnership</u></p> <p>Ensuring coherence and synergies of the European Partnership within the Union R&I landscape, following the Programme's rules to the largest extent possible – in selection and implementation.</p> <p><u>ANNEX IV – Synergies with other EU Programmes</u></p>

Synergies mechanisms	H2020 Regulation 2014-2020	Horizon Europe Regulation 2021-2027
	<p><u>Industrial leadership</u>: the H2020 implementation structure supporting Key Emerging Technologies (KETs) and cross-cutting KET activities should ensure synergies and effective coordination with aspects such as societal challenges. In addition, synergies will be sought, where appropriate, between KET activities and the activities under the cohesion policy for 2014-2020</p> <p>Part IV – Specific objective: Spreading Excellence and Widening Participation (SEWP)</p>	<p>A non-exhaustive list of synergies with other Union programmes, including cohesion funds, is contained in Annex IV.</p>

Source: ECA.

Table 6 – General Block Exemption Regulation for research and development projects 2014 compared to 2021

Synergy mechanisms	2014 General Block Exemption Regulation	2021 General Block Exemption Regulation
	Article 25 GBER on aid for R&D projects	New Articles 25a to 25d GBER
General		<p>Extension of the scope of the exemptions that will allow Member States to implement certain aid measures without prior notification and Commission scrutiny.</p> <p>Aid granted by national authorities for projects funded via certain EU centrally managed programmes under the new MFF:</p>
SoE		<p><u>Aid for RD&I projects awarded an ‘SoE’ quality label under H2020 or Horizon Europe (Article 25a)</u></p> <p>Aid for SMEs for R&D projects, as well as feasibility studies awarded an SoE under the H2020 or the Horizon Europe programme, are compatible with the internal market and exempted from prior notification.</p> <p>The eligible activities of the aided research and development project or feasibility study will be those defined as eligible under the Horizon 2020 or the Horizon Europe programme rules, excluding activities going beyond experimental development activities.</p> <p>The categories, maximum amounts and methods of calculation of eligible costs of the aided research and development project or</p>

Synergy mechanisms	2014 General Block Exemption Regulation	2021 General Block Exemption Regulation
		<p>feasibility study will be those defined as eligible under the Horizon 2020 or Horizon Europe programme rules.</p> <p>The maximum aid amount should not exceed €2.5 million per SME per R&D project or feasibility study.</p> <p>The total public funding provided for each R&D project or feasibility study should not exceed the funding rate set out for that R&D project or feasibility study under the H2020 or under the Horizon Europe programme rules (Article 25a GBER).</p>
Marie Skłodowska-Curie and “ERC proof of concept” actions awarded the SoE		<p><u>Aid for Marie Skłodowska-Curie actions and “ERC proof of concept” actions (Article 25b)</u></p> <p>The categories, maximum amounts and methods of calculation of eligible costs of the aided action will be those defined as eligible under the Horizon 2020 or Horizon Europe programme rules. The total public funding provided for each aided action must not exceed the maximum level of support provided for in the Horizon 2020 or the Horizon Europe programme.</p>
Aid involved in co-funded research projects		<p>Aid provided for a co-funded research and development project or a feasibility study (including research and development projects implemented under an Institutionalised European Partnership based on Article 185 or Article 187 of the Treaty or a programme co-fund action, as defined in the Horizon Europe programme rules). This is implemented by at least three Member States, or alternatively two Member States and at least one</p>

Synergy mechanisms	2014 General Block Exemption Regulation	2021 General Block Exemption Regulation
		<p>associated country, and selected on the basis of the evaluation and ranking made by independent experts following trans-national calls in line with the Horizon 2020 or Horizon Europe programme rules. It must be compatible with the internal market [...] provided that the conditions laid down in the Regulation are fulfilled.</p> <p>The eligible activities of the aided research and development project or feasibility study will be those defined as eligible under the Horizon 2020 or the Horizon Europe programme rules, excluding activities going beyond experimental development activities.</p> <p>The categories, maximum amounts, and methods of calculation of eligible costs will be those defined as eligible under the Horizon 2020 or the Horizon Europe programme rules.</p> <p>The total public funding provided must not exceed the funding rate established for the research and development project or feasibility study following the selection, ranking and evaluation under the Horizon 2020 or Horizon Europe programme rules.</p>

Synergy mechanisms	2014 General Block Exemption Regulation	2021 General Block Exemption Regulation
Teaming actions		<p>Aid provided for co-funded Teaming actions, involving at least two Member States and selected on the basis of the evaluation and ranking made by independent experts following transnational calls under the H2020 or the Horizon Europe programme rules, is compatible with the internal market.</p> <p>The eligible activities of the co-funded Teaming action will be those defined as eligible under the Horizon 2020 or Horizon Europe programme rules. Activities going beyond experimental development activities are excluded.</p> <p>The categories, maximum amounts and methods of calculation of eligible costs will be those defined as eligible under the Horizon 2020 or the Horizon Europe programme rules. In addition, investment costs in project-related tangible and intangible assets will be eligible.</p> <p>The total public funding provided should not exceed the funding rate established for the Teaming action following the selection, ranking and evaluation under the H2020 or the Horizon Europe programme rules.</p>

Source: ECA.

Acronyms and abbreviations

CORDIS: Community Research and Development Information Service

CORTEX: Core Text Mining

DG REGIO: The Commission's Directorate-General for Regional and Urban Policy

DG RTD: The Commission's Directorate-General for Research and Innovation

EIC: European Innovation Council

ERC: European Research Council

ERDF: European Regional Development Fund

FP: Framework programme

H2020: Horizon 2020

JRC: Joint Research Centre

NCPS: national contact points

OPs: Operational programmes

R&I: Research and innovation

S3: smart specialisation strategies

SME: Small and medium-sized enterprises

SoE: Seal of Excellence

Glossary

Allocation of funding on the basis of excellence: Allocation on the basis of competitive calls for proposals and through independent and merit-based peer review, selecting only the best projects without any consideration of geographical distribution.

Commitment: Amount earmarked in the budget to finance a specific item of expenditure, such as a contract or grant agreement.

Direct management: Management of an EU fund or programme by the Commission alone, as opposed to shared management or indirect management.

Europe 2020 strategy: The EU's ten-year strategy, launched in 2010, to boost growth and create jobs.

European Innovation Council: The EU's flagship innovation programme for identifying, developing and scaling up groundbreaking technologies and innovations.

European Partnerships: Initiative through which the European Commission works with private and/or institutional partners from the Member States to provide concerted support for research and innovation activities.

European Regional Development Fund: EU fund that strengthens economic and social cohesion in the EU by financing investments that reduce imbalances between regions.

European Research Council: EU body established to support innovative research driven by the scientific community across all fields.

European Structural and Investment Funds: The five main EU funds which together support economic development across the EU: the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development, and the European Maritime and Fisheries Fund.

Interreg: Framework for interregional, cross-border and transnational cooperation guiding policy exchanges and the implementation of joint action.

Joint Research Centre: The Commission's science and knowledge service, providing scientific advice and support for EU policy.

Managing authority: The national, regional or local public (or private) authority designated by a Member State to manage an EU-funded programme.

National contact point: Entity established and financed by the government of an EU Member State or other participating country to provide in-country support and guidance for applicants and beneficiaries under Horizon 2020 or Horizon Europe.

Operational programme: Framework for implementing EU-funded cohesion projects in a set period, reflecting the priorities and objectives laid down in partnership agreements between the Commission and individual Member States.

Smart specialisation strategy: National or regional strategy setting priorities for building competitive advantage by developing and matching research and innovation strengths to business needs and bringing convergence in innovation performance.

Teaming: Widening measure connecting leading scientific institutions with Member States and regions performing less well in research and innovation by creating or upgrading centres of excellence in host regions.

Widening measure: Specific measure to help with capacity-building, create links between leading research institutions and EU regions performing less well in research and innovation, and provide expert policy support.

Replies of the Commission

<https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=62446>

Timeline

<https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=62446>

Audit team

The ECA's special reports set out the results of its audits of EU policies and programmes, or of management-related topics from specific budgetary areas. The ECA selects and designs these audit tasks to be of maximum impact by considering the risks to performance or compliance, the level of income or spending involved, forthcoming developments and political and public interest.

This performance audit was carried out by Audit Chamber IV Regulation of markets and competitive economy, headed by ECA Member Mihails Kozlovs. The audit was led by ECA Member Ivana Maletić, supported by Sandra Diering, Head of Private Office and Tea Vlainić, Private Office Attaché; Marion Colonerus, Principal Manager; Juan Antonio Vazquez Rivera, Head of Task; Marco Montorio and Katja Mravlak, Auditors. Laura Mcmillan provided linguistic support.



From left to right: Katja Mravlak, Ivana Maletić, Tea Vlainić, Juan Antonio Vazquez Rivera, Marco Montorio, Sandra Diering, Marion Colonerus.

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According to the 2014-2020 legal frameworks of the main EU programmes supporting research and innovation (Horizon 2020 and the European Structural and Investments Funds), the Commission and national authorities are legally required to establish synergies between them.

We assessed the degree of implementation of four types of synergies and concluded that it varied by type. In particular, while measures to create upstream synergies (e.g. support for research centres) were well implemented, measures to create downstream synergies (e.g. funding the exploitation of research results) were hardly implemented.

Differences in the legal frameworks, limited cooperation between the programmes' research and innovation stakeholders and the absence of interoperability between their projects' databases limited the scope for creating synergies. We make recommendations to address these issues to increase the use of synergies.

ECA special report pursuant to Article 287(4), second subparagraph, TFEU.



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