

### Overcoming innovation gaps in the EU-13 Member States

The purpose of this Options Brief is to provide the Members of the European Parliament with policy options regarding the effective realisation of research and innovation potential in the EU, specifically through the stronger integration of the EU-13<sup>1</sup> countries within the European Research Area (ERA) and their improved future performance in Horizon 2020 (H2020) and the ninth framework programme (FP9).

The issue of the EU-13's low participation in the framework programme (FP) is a many-headed, persistent problem. Generally speaking, the EU-13 countries lack top level researchers, and research organisations that operate in national contexts have insufficient resources and incentives. A detailed study of participation shows that the participation of the EU-13 Member States varies by FP funding scheme as well as by country. With respect to the variation among the EU-13 Member States, three groups can be discerned based on the analysis:

Group 1: CY, MT, EE, and SI are consistently among the strongest performers in Horizon 2020, including in the schemes aimed at excellence and innovation, with the exception of EE and SI's participation in the European Research Council (ERC).

Group 2: CZ and HU do well in some aspects of performance and their research and innovation systems have similar features to the first group. However, this potential is not reflected in the level of participation in the schemes aimed at excellence and innovation, which may be also due to lack of incentives to participate.

Group 3: BG, HR, LT, LV, PL, RO, and SK have the most unfavourable starting conditions given the size and funding of their national research and innovation systems, and generally make up the lower end of the FP participation ranking, barring the occasional exception.

Our policy options are primarily aimed at improving the participation rate of the Group 3 and 2 countries mentioned above.

It is clear from the evidence and the combination of barriers that any strategy to stop patterns of persistent, low participation in the FP requires action at three levels: (1) the local level of research and innovation organisations, (2) the national level of research and innovation systems, and (3) European level. Policy options will be most successful if they address the situation at all levels. The satisfactory participation rate of some EU-13 countries suggests that it is possible to align the characteristics of national R&I systems to the opportunities of the FP.

The policy options formulated below reflect the logic of the Research, Innovation and Science Policy Experts (RISE) group report '[Europe's future: Open innovation, open science, open to the world](#)' published in 2017, that within an open innovation system, competitiveness depends on knowledge flows between different actors and at different geographical levels. The options are formulated at a general level, but of course, the degree of urgency varies greatly by country.

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<sup>1</sup> The EU-13 group of countries: Bulgaria (BG), Croatia (HR), Cyprus (CY), Czech Republic (CZ), Estonia (EE), Hungary (HU), Latvia (LV), Lithuania (LT), Malta (MT), Poland (PL), Romania (RO), Slovakia (SK) and Slovenia (SI).

## **Option No 1: Creating and exploiting the existence of pockets of excellence**

To increase the opportunities for researchers and research groups from the countries with the lowest level of participation, it is vital to create or develop pockets of excellence within these countries. Such pockets of excellence can act as regional or national hubs within European research and innovation programmes, and become drivers of change within their own country.

This requires long-term planning and a well-balanced interaction between EU Structural Funds, FP instruments and national funding (RISE group, 2017).

The following steps will encourage the development of pockets of excellence and European hubs:

1. Organisational capabilities to organise and administer research projects and programmes, as well as network relationships, should be improved.
2. The visibility and attractiveness of new research centres and infrastructures to research communities in the EU-15<sup>2</sup> countries should be raised.
3. Funding available at national level or through the European structural and investment funds (ESIF) should be used as leverage to attract FP funding, as part of improving the governance of research and innovation systems.
4. Governance of these pockets of excellence, including priority setting, evaluation and monitoring, and funding conditions should take the European hub function into account in order to reduce cognitive and technological distances.
5. Research teams from EU-15 countries should be encouraged to use new research infrastructures established in EU-13 countries for their research activities.

## **Option No 2: Improving the governance of national research and innovation systems**

The differences between EU-13 countries in the participation rate and several of the barriers identified indicate that improving the governance of national research and innovation systems is a key factor in raising participation rates. To sufficiently motivate researchers or managers of research organisations to participate in H2020/subsequent FPs, national governments can make the following specific improvements:

6. include the European research and innovation priorities as well as networking and market opportunities for national actors when setting priorities and smart strategies for national R&I;
7. use national funding for research organisations more explicitly as leverage to increase participation in the FP;
8. establish a system for the periodical evaluation of research organisations, which would also look at international collaboration and research management; such schemes will reward excellence and improve the readiness of research organisations to take part in FP projects;
9. reinforce smart specialisation processes and activities, evaluate their implementation, and use various funding resources (national, ESIF, H2020 and others) in a synergistic way to strengthen the position of regions in areas that are to their competitive advantage.

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<sup>2</sup> The EU-15 group of countries: Austria (AT), Belgium (BE), Denmark (DK), Finland (FI), France (FR), Germany (DE), Greece (EL), Ireland (IE), Italy (IT), Luxembourg (LU), Netherlands (NL), Portugal (PT), Spain (ES), Sweden (SE) and United Kingdom (UK).

### **Option No 3: Improving the use and exploitation of FP research and development projects**

Firms, and especially small and medium sized enterprises, will be more motivated to participate in the FP if there are clear opportunities to follow up on successful projects. The European Commission, in cooperation with Member States, can take the following measures:

10. strengthen opportunities for effective use of research and development outputs resulting from FP projects, for example by introducing a proof of concept (PoC) scheme (similar to the ERC PoC) that would enable follow-up activities leading to successful implementation of research and development results achieved in FP projects;
11. create national funding schemes, from ESIF or otherwise, for national or regional 'exploitation projects' in which FP participants collaborate with other national and regional actors to exploit results from EU projects;
12. rationalise, simplify and strengthen FP support for the close-to-market innovation activities of SMEs (in particular the SME Instrument and the Fast Track to Innovation mechanism). It is useful in this respect to reinforce mechanisms that combine grants with equity financing. Better understanding of the structure of support mechanisms by innovative SMEs and a higher success rate in these funding schemes may remove type A barriers (i.e. barriers to submitting proposals related to motivation).

### **Option No 4: Strengthening the role and use of national contact points (NCPs)**

Several of the barriers identified arise from insufficient understanding within low participating EU-13 countries of FP opportunities and insufficient capabilities to develop eligible and high-quality proposals. Specific measures relating to these barriers that NCPs could take or strengthen include:

13. building good case material about successful use of FP instruments by EU-13 research and innovation actors that can serve as exemplars for new entrants. Case material should be sufficiently diverse as to attract the attention of a wide range of research and innovation actors, including new entrants and incremental innovators;
14. providing clear guidance and support on the administrative aspects of FP instruments, and counter-attacking myths about bureaucratic overload; such guidance will increase readiness to submit;
15. developing programmes to improve the managerial and administrative capabilities within research and innovation organisations to manage FP projects;
16. developing regional and national communities of practice consisting of actors responsible for the management and administration of FP projects;
17. using the experiences and capabilities of pockets of excellence to support other regional and national actors in their attempts to participate in the FP.
18. supporting and facilitating national actors involved in the management of FP instruments (including preparation, lobbying, and selection of proposals).

## **Option No 5: Expanding the Spreading Excellence and Widening Participation programme**

The ultimate goal of the FP is to secure and increase Europe's global competitiveness by producing world-class science, removing barriers to innovation and facilitating collaboration between the public and private sectors in delivering innovation. From the evidence reported in this study it is clear that existing relationships with participating research organisations improve the chance of success in the FP considerably, and that within Europe a limited number of national research organisations have core positions in the overall network of EU research and innovation collaborations.

The Spreading Excellence and Widening Participation programme, though in the early stages of implementation, has introduced a fresh impetus to strengthen the research and innovation potential of the EU-13 countries and their better integration into the ERA. The following additional options might be considered for further implementation of this programme:

19. enlarging the budget for the programme to ensure that sufficient research and innovation actors are reached through the programme so that a critical mass of FP participants develops;
20. taking into account the quality of organisational strategic management as a criterion for evaluating the research capacities of consortia members; the aim is to encourage research organisations in the EU-13 to improve their strategic management, including the management of human resources;
21. emphasising the excellence of EU-13 partners as a criterion for evaluating project proposals; the aim here is to avoid projects being dominated by EU-15 partners and the cognitive and technological distance of EU-13 partners becoming too large to profit fully from the collaboration. Although this may place further pressure on EU-13 organisations, in the long term it ensures that the FP participation of EU-13 countries is effective and has spin-off effects at regional level;
22. specifically encouraging collaboration between national research organisations and TOP European research organisations. Collaboration with the TOP 15 in the FP7 and/or TOP 20 in the H2020 has considerably increased the participation success rate of EU-13 organisations and may increase future participation opportunities in the FP for the EU-13 partners.

Each of the above-mentioned options aims to address one or several existing barriers to the participation of the EU-13 in the FP. They need to be implemented at institutional, national or European levels. In this respect, it should be emphasised that the effect of each of these options can be maximised if their implementation is connected to the implementation of options at other levels. Open science and open innovation require that successful organisations be part of regional hubs and well-connected within European innovation dynamics.

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