Position paper of Hungary on the next EU Framework Programme for Research and Innovation

Summary

Research, development and innovation are key drivers of economic development and growth by playing a significant role in improving competitiveness and addressing societal challenges. To achieve scientific breakthroughs with substantial economic, societal and environmental impact, transnational cooperation of excellent research teams, industry actors and innovators is inevitable. The EU framework programme (FP) for research, development and innovation (RDI) has to be the right instrument to generate groundbreaking discoveries in science, to inspire significant innovations via creating and maintaining mission oriented teams and networks, and to contribute to the circulation of knowledge and ideas through the cooperation of different stakeholders.

The National Research, Development and Innovation Office of Hungary, with the active involvement of stakeholders from the Hungarian research and innovation community, elaborated a joint position paper with key recommendations for the next research and innovation framework programme. This paper sums up the lessons learned from the Hungarian participation in the previous and current framework programmes and identifies the priorities for Hungary.

Key recommendations for the next FP

- **Include research, development and innovation as a priority amongst EU policies with a significant increase of the budget at EU and national level, and increase the efficiency through more coordination between EU and national RDI policies and programmes**
- **Follow the principles of excellence, cooperation, impact, sustainability, European added value and openness in implementation of the FP**
- **Keep a strong focus on scientific and technological excellence but at the same time contribute to the competitiveness of the EU and respond to societal challenges of European relevance**
- **Preserve the European Research Area as a core concept and exploit the full potential and capacities of the EU Member States and regions to complete it**
- **European Research Council programmes, Marie Skłodowska-Curie Actions and Future and Emerging Technologies initiatives to be continued and strengthened with substantial budget increase**
- **Reinforce the key role of the European Strategy Forum on Research Infrastructures (ESFRI) in strategic planning and coordination of research infrastructures in Europe and offer stronger support for transnational access to research infrastructures**
- **Keep the right balance between funding exploratory and applied research and close to market activities inspiring both breakthrough and incremental innovation**
- **Preserve key enabling technologies (KETs) as a dedicated part of the FP**

- **Provide further support to the European Institute of Innovation and Technology (EIT) and its Knowledge and Innovation Communities (KICs) to improve innovation capacities and skills throughout Europe**
- **Involve key stakeholders and the wider public in identifying the most relevant missions within societal challenges combined with strategic programming strongly supported by scientific evidence**
- **Integrate social sciences and humanities (SSH) better throughout the FP and keep a dedicated programme part for SSH**
- **Continue and strengthen the „Spreading excellence and widening participation" actions and introduce „Widening" as a horizontal aspect in all actions aiming to achieve wider societal and economic impact**
- **Simplify the implementation further with more flexibility from users' perspective and enable real synergies between EU framework programme, European Structural and Investment Funds (ESIF) and national RDI programmes**
- **Maintain and amplify open access efforts**

Objectives and guiding principles

Hungary supports **RDI policy as a priority amongst EU policies**; however, this can only be achieved with an effective EU framework programme complementing strong and supportive national RDI systems and integrated horizontally with smart sectoral EU policies. The **significant increase of the RDI budget** has to be a priority both **at EU and national level**. Furthermore, **enhanced coordination** is needed **between EU and Member States' RDI policies and programmes** to improve the efficiency and produce impact for the benefit of the whole economy and society of Europe.

We agree that ensuring **cooperation, excellence, impact, sustainability and European added value** are the basic principles of the programme together with **openness** which should also mean inclusiveness towards all actors.

The FP should remain the major tool at EU level to strengthen the scientific and technological bases of the European Union with **a strong focus on excellence**, while at the same time to **increase the competitiveness of the EU** by contributing to sustainable economic growth, increase of productivity and creation of new knowledge intensive jobs. All interventions are to **bring about real European added value created through open and fair competition across Europe.**

We support to develop an EU innovation policy that creates new markets and puts more emphasis on coordinating with Member States' initiatives to build coherent innovation ecosystems promoting and investing in innovative ideas. However, the balance should be maintained between calls financing basic and applied research and calls focusing on close to market activities **inspiring both breakthrough and incremental innovation.**

The FP should play an essential role in **addressing and responding to societal challenges of European relevance** both in a top-down and a bottom-up manner in partnership with Member States and global partners. Key **stakeholders and the wider public** need to be **involved** in identifying and selecting the most relevant missions within societal challenges. The process should be combined with **strategic programming** and strongly **supported by scientific evidence.**

The European Research Area (ERA) is to remain the core concept for the FP aiming to **exploit the full potential and capacities of the EU Member States and regions**. We propose to take measures for **better inclusion of the macro-regional aspects** in the FP – as a step towards widening participation - in order to build a better functioning ERA.

Openness should also be ensured for research institutions and SMEs from countries with weaker RDI performance. Excellence is everywhere. The FP should pursue the inclusion of excellent research teams and high potential innovators by offering more attractive opportunities than our global competitors. Failing this, our best will seek opportunities elsewhere, outside the framework programme. Brain drain hurts Europe as a whole, and the harm it instills has multiplicative effects on passing on knowledge and inspiring innovation in future generations of potential young talents.

In the implementation of the programme the principles of **flexibility and simplification** should play a key role, and rules should be established to **enable real synergies** between EU framework programmes, European Structural and Investment Funds (ESIF) and national RDI programmes.

Excellent science is the key to future success

- **ERC programmes are to be continued with a substantially increased budget**
- **Further significant support to Marie Skłodowska-Curie Actions**
- **Adequate funding is needed for Future and Emerging Technologies (FET) to seed foundational technologies through multidisciplinary collaborations**
- **Linkages should be strengthened between exploratory and applied research where relevant**
- **Reinforce the key role of ESFRI in strategic planning and coordination of research infrastructures in Europe and offer stronger support for transnational access to research infrastructures.**

A strong and creative human resource base is fundamental in creating and increasing scientific excellence in Europe therefore nurturing research talents by offering high-quality trainings, attractive career prospects and top-level working conditions are to remain key features in the next FP.

The programmes of the **European Research Council (ERC)** which have already achieved significant impact in supporting scientific excellence by creating Europe-wide competition for best scientists and in inspiring national programmes at the same time are to be continued in the next framework programme with a **substantially increased budget**.

The **Marie Skłodowska-Curie Actions** have proven track records in providing high-quality, transnational and intersectoral research trainings and serve as prefect preparatory tools for researchers to step further to ERC programmes. Therefore we propose these actions also **to be continued** with further support to **inter/multi/transdisciplinary research** activities and cooperation between researchers, and to give preference to projects with **clear European relevance** and exploitation potential in Europe.

Future and Emerging Technologies (FET) programme part sows the seeds for foundational technologies based on breakthrough multidisciplinary approaches. The enthusiasm of the research community towards this bottom-up approach has rendered FET Open as one of the most oversubscribed areas in the current framework programme, therefore **sufficient funding should be dedicated** to this in the FP, and the nurturing of promising new technologies and their communities through pro-active actions.

We are convinced that a strong research base paves the way for breakthroughs in innovation. Therefore **linkages** should be strengthened **between** the actions in the field of **exploratory research and applied research where it is possible and relevant** (in particular in key enabling

technologies) without setting any limitation to the bottom-up approach of frontier research. **Sufficient funding** opportunities should be made available **for lower Technology Readiness Levels (TRL) in specific key enabling technology areas**, to ensure they are funded throughout the research-innovation continuum and no future European knowledge gaps are encountered. **Economic, social and environmental impact** of research activities shall also be taken into account **in case of excellent science**, however, it shall not be detrimental to the quality of research.

Strategic coordination of the development of research infrastructures of European significance through the **European Strategy Forum on Research Infrastructures (ESFRI)** is highly appreciated and widely accepted by Member States. In order to create even stronger European added value in this area, the **transnational access to research infrastructures** should be further facilitated. The capacity building, networking activities, of research facility nodes operated by Member States have to be more strongly linked to ESFRI. Among the evaluation criteria used for assessing research infrastructure development projects, **long-term sustainability and socio-economic impacts** on the wider and local environment should be considered.

Stimulating and supporting innovation is the basis for economic growth

- **Setting a framework where all types of innovation have to get attention and support, uptake of results should be enhanced**
- **Creating favourable regulatory environment for innovation within the FP and beyond**
- **Key enabling technologies (KETs) are fundamental for competitiveness and underpin solutions to societal challenges therefore, a significant, dedicated support is needed for KETs in the next FP**
- **A good balance of roadmap-based large initiatives and smaller collaborative projects that introduce innovative new approaches is needed**
- **The dominance of collaborative projects (financed through grants) is strongly recommended to inspire cooperation between key actors of the innovation ecosystem.**

The entrepreneurial attitude lacks momentum in Europe and it is still a challenge for Europe in general how to turn scientific results into economic benefits, better products and services. Although Horizon 2020 is continuously addressing this issue by making a remarkable shift towards innovation and market-oriented approach, there is still a lot to be done. First, by **creating favourable regulatory environment for innovation** within the FP and beyond. Secondly, by **setting a framework** where **all types of innovation** - from incremental to breakthrough, from lower to higher TRL levels and including non-technological innovation such as social, transformative or policy innovation, – have to **get attention and support**. The **uptake of RDI results** in particular those generated by FP projects need be facilitated. The European Innovation Council may become a key player and facilitator in this process.

The strategic importance of **KETs** for European competitiveness underlines the necessity for a **significant, dedicated programme part** for their support. Furthermore, to gain a competitive edge through the rapid digitalisation of European industry and the digital transformation of science, it is essential to enable the development of strong technological foundations as inputs for addressing societal challenges as well.

Maximum **flexibility is needed for an efficient implementation**: bottom-up approach, non-prescriptive calls, **fast and easy administration**, possibility to **choose between mono- or multi-beneficiary instruments**. However, preserving the **dominance of collaborative projects is strongly recommended** especially those facilitating the **cooperation between different actors of the innovation ecosystem**: research organizations, universities and businesses (Fast Track to Innovation action could be mentioned as a good practice for that). Both large-scale strategic programmes generating new types of knowledge and smaller scale projects (including pilots) focusing on local, regional applications of the results are to be supported in a complementary way. Financial instruments are relevant in case of close-to market activities, but **grants should remain the major format of support** throughout the innovation chain.

Partnership instruments mobilizing key players from industry (such as Joint Technology Initiatives, contractual Public-Private Partnerships) **should be continued** with a revised coordination mechanism and more coherence between the different instruments. **Eurostars2** which successfully addresses the specific needs of **innovative SMEs** and inspire their collaboration at international level **should also be integral part of the innovation related portfolio of the next FP.**

Science tackling societal challenges, involving relevant stakeholders and the wider public

- **Identifying the major challenges with the support of relevant stakeholders and the wider public**
- **Better communication of the impact of research results**
- **Stakeholder and public consultations shall be based on careful strategic planning strongly supported by scientific evidence**
- **Better integration of social sciences and humanities and a dedicated programme under the FP**

One of the major policy objectives of the FP is to address societal challenges. For **identifying the major challenges** which affect European societies and for selecting the most appropriate tools to tackle them, we need **relevant stakeholders and the wider public to get involved**. Raising citizens' awareness highlighting that the primary goal of the EU RDI programme is to serve their benefit can create better public support for science. We welcome further efforts aiming to better inform, involve and mobilize the public in science and innovation policy issues via consultations and by better communicating the impacts of the projects' results. However, consultations with key stakeholders and with the public shall be based on **careful strategic planning strongly supported by scientific evidence** to achieve meaningful outcomes.

Interdisciplinary approach is strongly encouraged in order to ensure impact across more scientific and technological areas. Project activities need to be proposed and implemented as a joint work of researchers with backgrounds of natural sciences, engineering, social sciences and industrial research, where relevant.

Information and communication technologies, nanotechnologies, advanced materials, biotechnologies, as well as manufacturing and processing **(KETs)** bear key roles in addressing societal challenges and their cross-cutting involvement in missions will reduce the risk of creating mission oriented silos.

There shall be more efforts devoted to the **better integration of social sciences and humanities** (SSH) in projects addressing socio-economic, technological and environmental challenges. Research and innovation activities often have strong social, economic, environmental and cultural impacts and happen to face legal, regulatory barriers or exploitation-related issues. Therefore the involvement of SSH teams in the research and innovation projects of many disciplines is essential and shall be encouraged starting already by involving interdisciplinary teams in the call topic preparation.
Apart from that we support to **have social sciences and humanities (SSH) as a separate programme** under the FP. SSH as a cross-cutting issue cannot adequately address typically SSH research topics (like migration, governance) which shall be approached and investigated from the SSH side first with the involvement of other disciplines at a later stage.

Closing the innovation divide

- **Introducing „Widening" as a horizontal aspect in all actions aiming to achieve wider societal and economic impact; evaluating the potential for growth and generating impact at a wider scale**
- **Continuing and strengthening the „Spreading excellence and widening participation" actions**
- **Facilitate optimal brain circulation within the ERA (adequate working conditions including competitive researchers' salaries)**
- **Creation of real synergies between ESIF and FP funding**

We strongly recommend considering **„Widening" as a horizontal aspect in all actions** supported by the FP **aiming to achieve wider societal and economic impact**. Having in mind that further development and completion of the real European Research Area is one of the main policy goals of the FP, when assessing the long-term benefits of an investment its **potential for growth** and **impact at a wider scale** shall be considered.

We agree with the need to **continue and strengthen the „Spreading excellence and widening participation" actions**, and in this vein, we would propose to consider the **introduction** of possible **new dedicated actions** related to e.g. **research infrastructures**. A special measure may **facilitate transnational access to research infrastructures** operated **in widening countries** in order to attract scientists from countries with stronger RDI performance, create long-term partnerships and contribute to the financial sustainability of these infrastructures.

The principles and implementation modalities of the **widening actions** need to be reconsidered based on the experience gained in H2020 in order to make sure that these initiatives become viable and sustainable in the long run (e.g. financing research and innovation related activities should be part of the system).

Actions dedicated to **strengthen research administration capacities** and support **embedding** widening research teams in excellent European scientific **networks** should also be supported. **COST has proved its value** in improving these areas through dedicated measures therefore its role in addressing challenges related to widening should be strengthened in the future FP.

In order to facilitate **optimal brain circulation** within the ERA **adequate working conditions including competitive researchers' salaries** need to be established: the legal framework regulating the calculation of personnel costs in FP projects should be **flexible and open to Member States' accounting practices**.

Strong research capacities are necessary to get fully integrated into the FP activities which is a major bottleneck in countries with lower RDI performance. National funding and ESIF are essential for establishing a solid RDI basis. The creation of **real synergies between these funds and FP funding is therefore highly recommended**.

Simplifying the RDI landscape – Partnership instruments

- **Rationalization of the partnership landscape, carried out jointly by the European Commission and Member States**
- **Contributing better to EU RDI strategic goals in clearly identified and measurable ways**
- **Focus on instruments which show clear added value and sustainability**
- **Participation of SMEs and EU-13 countries should be fostered in partnership programmes also with facilitating the use of ESIF**
- **Calling for a stronger coordination role of EIT in terms of selecting, supporting and monitoring of KICs under the FP**
- **Better coordination of EIT activities with the relevant programme parts of the FP and national programmes**

From the very beginning the main rationale behind having research and innovation partnerships have been to harmonize and coordinate national and EU programmes, having a multiplying effect, creating and strengthening RDI cooperation, reducing fragmentation and reaching critical mass.

Partnerships are important building blocks of the European Research Area contributing strongly to the coordinated RDI programming in Europe striving for more consistency amongst RDI programmes at EU, national and regional level. We support the rationalization of the partnership landscape, carried out jointly by the European Commission and Member States. The process has to enable both the European Commission and Member States to decide (where appropriate and based on evidence) on the introduction of new or phasing out old partnerships and ensure coordinated priority setting.

Partnerships should better **contribute to EU RDI strategic goals in clearly identified and measurable ways** and Member States should have a key role in strategic monitoring of the partnerships.

The landscape of the partnerships should be streamlined and more coherence and connections should be created between different instrument targeting similar challenges or technological areas. The focus should be on those which **clearly show added value. New initiatives can be created only in very limited cases based on strong argumentation and after having in-depth discussions with Member States and interested parties.** Sustainability is a key aspect: critical mass should be achieved and clear commitment of stakeholders need to be ensured. In case of Art. 185 initiatives **substantial number of Members States** are to be involved.

Transparency of the operation of the partnerships should be improved especially in terms of financial aspects of the different instruments.

Participation of SMEs and **EU-13 countries should be fostered** in all kinds of partnership programmes and the bottlenecks hindering their participation need to be identified.

Synergies between the different sources of funding need to be improved: use of ESIFs in partnership programmes should be facilitated as it may also have a positive impact on the participation of countries with lower RDI performance.

Role of EIT under the next FP

The **European Institute of Innovation and Technology (**EIT) and its Knowledge Innovation Communities (KICs) play a significant role in improving innovation capacities and effectively linking the actors of the knowledge triangle. We call for a stronger coordination role of EIT in terms of selecting, supporting and monitoring of KICs under the FP.

The operation of EIT and its KICs shall be more transparent, more visible and better coordinated with the relevant programme parts of the FP and national programmes.

Implementation

- **Fine tuning the evaluation processes and criteria (in particular impact) according to specificities of different pillars and action types**
- **Diversifying the composition of evaluation expert panels**
- **Encourage the Commission to progress with simplification in the next FP**
- **Acceptance (validation) of the usual cost accounting practices of the beneficiary organisations**
- **Revised personnel cost reimbursement rules - optional introduction of a minimum salary or the of unit cost model**
- **Open access efforts need to be maintained and amplified**

Increasing the added value of evaluation

High-quality and transparent evaluation process using **clear and adequate assessment criteria** is essential in building trust in the FP procedures, therefore **further improvement of the evaluation system** is highly recommended. Providing **more comprehensive feedback to applicants**, especially for SMEs, fine tuning the **processes and criteria according to specificities of different pillars and action types**, taking measures to **address oversubscription of FP calls** (introducing two-phase evaluation where appropriate) and **diversifying the composition of expert panels** to be more balanced (based on gender, age, sector (academia/industry), scientific discipline, nationality, geographic location) are to be part of this development.

When assessing **impact: sustainability** of the envisaged project should be a significant evaluation aspect along with **potential for growth and the principle of best value for money**

which should also be taken into account. SSH integration shall also be an aspect in the evaluation of impact where relevant.

Simplification of the financial and administrative rules

We appreciate that several measures of simplification in the administrative and financial rules of Horizon 2020 were introduced by the European Commission in order to adapt to the needs of beneficiaries. We encourage the Commission to **progress with simplification in the next FP** to speed up the process of the grant preparation and payments. Especially for innovation related projects with beneficiaries operating under market conditions (SMEs), timing is one of the vital factors.

Overwhelming majority of beneficiaries has expressed a need for enhancing the so called 'level of trust' between fund providers and recipients. This indicates that there is still room for improvement with regard to the approach on the **acceptance (validation) of the usual cost accounting practices of the beneficiary organisations.**

Personnel cost reimbursement rules constitute a crucial factor in the implementation of the European Research Area. The **optional introduction of a minimum salary (i.e. reimbursement of a minimum salary where the personnel cost is below a certain threshold)** or a **unit cost model** under the new FP could counteract the brain drain attributable to the differences in the salary level of researchers working within the same project. It will support the efforts for retaining and attracting skilled workforce and contribute to the simplification of the programme and prevention of financial errors at the same time.

In addition, Hungary encourages the **wider use of lump-sum based funding model** to reduce the reporting burden of the beneficiaries and make the next FP a more user-friendly programme.

Open Access, Open Science, Open Data and Open Innovation

The open access **efforts need to be maintained and amplified**. Applicants' **past performances in openness** and especially honouring their previous contractual obligations to openness should be **included amongst the evaluation criteria**, preference being offered to those whose results are easily findable and openly available to society. Furthermore, applicants should be encouraged and incentivized to develop Data Management Plans within their projects.

To improve the translation of scientific results to wider economical and societal benefits the Findability, Accessibility, Interoperability, and Reusability (FAIR principles) of the Open Access need to be applied. Europe-wide (and later world-wide) tools of discovery of **open access** scientific publications need to be developed, and **facilities/infrastructure for open access of scientific publications further developed, including amplified role for existing facilities** (including the initiative of the European Open Science Cloud) under the control of the European research community.