



## ***Input to the European Commission Consultation***

European Plant Science Organisation  
[www.epsoweb.org](http://www.epsoweb.org)

# **EPSO input to the EC consultation on EU funds in the area of investment, research and innovation, SMEs and single market**

---

*Brussels, 22.2.2018*

**Fostering research and innovation across the EU through the Framework Programmes (FPs) is a unique opportunity to bring European scientists and societies closer together to help build an inclusive, collaborative Europe and world and help achieving the UN Sustainable Development Goals (SDGs).**

**The EPSO recommendations to further strengthen research and innovation across the EU:**

**I – Improve links between various EU investments / programmes such as FP9, CAP+, ESIF and ESFRI programmes to maximise impact.**

◆ To enable all countries to participate in FP9 schemes, Member States should be allowed and more encouraged to **use the European Structural and Investment Funds (ESIF) as investment in research and innovation beyond infrastructures, by funding the actual scientists** – from PostDocs to senior levels - as obviously salary costs are the current bottleneck to attract (back) scientists to e.g. Eastern countries. This should include as well contributions to the ERA-Nets as an enhancer of European collaboration, and to European Science Organisations to improve networking and active participation from all European countries equally.

Synergies between Framework Programmes and Structural Funds are likely to be realized in the long term, spanning several funding periods (e.g. a new research facility the construction of which is funded by structural funds might not be operable and ready for carrying out research projects submitted during the same funding period in a Framework Programme). Yet using these funds synergistic will be eased by e.g.

- clear profile & aim of each programme
- trust based approach towards grantees (output orientation instead of “counting peas”)
- clear, easy to use rules for the reimbursement of costs, based on costs actually caused by the project, aligned between programmes that allow for reporting without undue administrative burden for grantees
- flexibility in the use of project budgets to allow reaction to unexpected developments without undue administrative burden for grantees

◆ **The Common Agricultural, Food and Nutrition Policy (CAP+)** has identified five major challenges: food and nutrition security, climate change, the environment, healthy and safe food and inequality. These issues can only be addressed by involving farmers, academic researchers and industrial partners in initiatives to address the low incomes of farmers (e.g. fair trade principles), the environmental performance of agriculture and the need to offer healthy

choices for consumers. The Framework Programme for R&I should be utilised to support basic and applied research demonstration and innovation actions focused on Societal Challenge. However, these activities would benefit substantially from connections with CAP+-supported field applications (e.g. CAP-EIP-Operational Groups [OGs]). Since farmers and extension services are already well-engaged in the OGs, EPSO recommends improving incentives for scientist involvement and better alignment between CAP-EIP and FP9.

◆ **Consider establishing and improving an instrument in FP9 feeding into the European Strategy Forum for Research Infrastructure (ESFRI)** to: (i) facilitate advancement of and access to state-of-the-art research infrastructure in the plant sector to address SDG2 (“*End hunger, achieve food security and improved nutrition and promote sustainable agriculture*”); (ii) perform a gap analysis on research infrastructure in the plant sector, building on the examples of phenotyping and managed and unmanaged ecosystems; and (iii) advance the issues of data management and standardisation, as recently initiated by ERA-CAPS.

**II - Added value of research and innovation (FPs) across the EU: Challenges are global, science is global and innovation too.** Therefore a joint programme at European level is well suited to reach critical mass efforts for Europe and globally. Europe needs to realise its potential and responsibility to contribute to and lead as appropriate global activities. E.g. European plant scientists and companies could contribute much more to European and global food and nutritional security, preventing and curing human diseases, addressing climate change.

**III - Welcome the great success of the FPs “Excellent Science” pillar – continue and strengthen the European Research Council (ERC) programmes as well as the Marie Skłodowska-Curie Actions (MSCA)** which have achieved major successes in terms of attracting, supporting and retaining excellent frontier scientists and training the next generation of scientists and entrepreneurs.

- There is an opportunity to improve the MSCA Innovative Training Network scheme by increasing the flexibility for students to choose the primary training institute / university among the network members according to their individual needs. Current rules require this to be fixed in the proposal / contract with minute flexibility.
- The success rate of ERC applications remains too low, leading to the exclusion of many excellent projects. This should be addressed by increasing the total budget for the ERC programme with the aim of increasing the total number of funded projects.

**IV - Improve the FPs “Societal / Global Challenges” mission based pillar addressing the Sustainable Development Goals (SDGs)**

◆ **Give more balanced consideration to basic research in relation to the other components (applied research, demonstration and innovation actions) of the research and innovation cycle:** Work by the Initiative for Science in Europe (ISE), the League of European Research Universities (LERU; *R4*) and Science Europe suggest that due to the increasing focus on higher Technology Readiness Levels (TRLs), the Societal Challenges aspect of Horizon 2020 misses out not only on the potential benefits from projects that include, or focus on, basic research, but also on linking basic research to applied solutions. It thus hinders ground-breaking solutions for current and future challenges. Compared with FP6 and FP7, there is a steady increase of support for applied research and demonstration actions and a steep increase of support for innovation actions. However, support for basic research has dropped dramatically, especially from FP7 to Horizon 2020.

This could be overcome by:

- Provisioning funding that addresses Societal Challenges through encouraging collaborative basic research as focus or intrinsic component of research and innovation projects.
- Encourage more cost-effective ERA-NETs which support fundamental research and its translation into applications, including transdisciplinary approaches, to broaden the scope of

the European Research Area Networks and their ability to address interlinking and related goals through basic as well as applied research.

Both approaches will widen participation, including from underrepresented countries (EU13), increase mobilisation of national and EU resources and contribute to resolving gaps in collaborative research. This will create a translational bridge between the scientific excellence and the industrial leadership pillars.

Increased funding for basic and strategic research will also meet the needs of private companies, who might have in-house capacity for applied research and innovation, but lack motivation, time and funding to do the explorative research which lays the ground for innovation activities.

◆ **Define the goals and objectives for innovative solutions, not the path to get there.**

Innovative research utilising a variety of technologies and cross-disciplinary approaches must be strengthened to develop solutions for Societal Challenges that we face now and in future. While FP6 fostered advanced technology research, this changed to increasingly tacit (traditional) knowledge development and application in FP7, which is now peaking in Horizon 2020, thus going from one extreme to the other. Prescriptive high-TRL, multi-actor, approaches can weaken the ability of fundamental and applied research and innovation to respond to specific challenges. To derive maximum benefit for the environment, human health, and the European economy, EPSO suggest that future programmes should be more flexible in their approach to encourage a truly balanced support to the use of diverse combinations of technologies and practices. Goals and objectives for innovative solutions should be identified while the approaches employed to reach these targets should be kept open to the applicants where possible, as mentioned in the Horizon 2020 Regulation of Establishment.

◆ **Incentivise outreach activities of researchers** across Europe and beyond by encouraging stakeholders to initiate and coordinate snowball-principle bottom-up activities at the European or even global scale. Competitive European funding could be used to provide central coordination support and core resources for outreach activities. The resulting tools such as websites, posters, flyers, images would then be made openly available for free use by researchers and other stakeholders across Europe and beyond. This will be an important contribution to engage the public, learning from concepts such as citizen science.

◆ **Increase participation of EU13** through incentives in the evaluation criteria, such as bonus points, or an obligation in some call topics to include participants across the (underrepresented) regions of Europe (including EU13). This will ensure that scientific excellence as well as potential impact of the project remain the main evaluation criteria while also encouraging the inclusion of academic and industrial partners from the EU13 in consortia assembled for European-funded competitions and collaborations.

◆ **Address the SDGs and incentivise the private sector to invest in R&I by supporting a public-private partnership on Integrated Crop Production**

The public and private sectors share a common interest in aligning future research and production activities with the SDGs. This provides opportunities for the inclusion of Public-Private-Partnerships (PPP) addressing SDGs within FP9. For instance, a PPP on Integrated Crop Production would support an interdisciplinary and multi-sector mission. By building a partnership between industry, farming, academia, the European Commission and the Member States, a critical mass of stakeholders could be reached and thus consortia would be well-positioned to achieve high impact. The establishment of PPPs directly addresses SDG9 (*“Industry, Innovation and Infrastructure”*), specifically target 9.5 (*“Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending”*).

◆ **Strengthen Europe as a strong leader of and contributor to global action** Implementing the ‘Open to the World’ concept of Commissioner Carlos Moedas: Addressing SDG2

“partnerships for the Goals” Targets 17.6,-17.8, SDG2 “End hunger” Targets 2.1-2.5, SDG13 “Climate action” Targets 13.1-13.3, SDG15 “Life on land” Targets 15.2, 15.5, etc.. EPSO encourages the provision of flexible resources for European-international collaborations, as successfully practised by the USA and China, for expanding nutritional security and development beyond Europe, particularly in Africa. Addressing the following challenges is a priority both in Europe and globally:

- Building capacity through application of new technologies (e.g. New Breeding Technologies) and methodological progresses (e.g. phenotyping) necessary for agile plant breeding towards improved traits, crops and farming and forestry systems.
- Developing biological resources with careful characterization, preservation and management protocols, and with shared grounds and fair rules for global access and distribution of benefits.
- Biofortification of staple crops of global importance and improving the economic performance of nutritious under-utilised crops, including fruits, vegetables and ‘orphan’ cereals.
- Promoting precision agriculture and forestry to enable sustainable resource management, including low-cost technologies for effective decision-making, open science solutions such as satellite-based crop surveys and autonomous unmanned vehicles.

Long-term global partnerships are necessary to achieve these goals and would substantially benefit from: i) the establishment of open technology hubs with the capacity to host researchers and contribute to programmes that are conceived and implemented collectively, and ii) the development of vibrant education programmes that encourage mobility for students, lecturers (including non-European partners) and early career researchers, and harmonize process, curricula and qualifications.

**◆ Include the plant research and innovation areas that can help addressing several SDGs in the mission-based collaborative approaches in FP9.** Most of the SDGs are directly or indirectly linked to plant and agricultural sciences:

- SDG 1: “No poverty” is closely linked to the development of an adequate and robust income for smallholder farmers.
- SDG 2: “Zero hunger” requires sufficient and sustainable production of plant for food.
- SDG 3: “Good health and well-being” requires a healthy diet balanced between carbohydrates, (micro)nutrients and healthy lipids (fats).
- SDG 4 “Quality education” is required to translate knowledge from science as fast as possible from the lab bench to farmers
- SDG 5 “Gender equality” is tightly linked to female farmers, who still provide most of the crop production in developing countries. Thus an important aspect is to enable female farmers.
- SDG 6 “Clean water and sanitation”. Water is essential to produce plants; thus increasing demand for water by agriculture will require higher water use efficiency of plants and agriculture production systems.
- SDG 7 “Affordable and clean energy”; plant biomass is a significant source for energy: this is not only the case in industrial countries, where bioenergy will play a role in the future, but also today still most of the energy consumption in developing countries comes from burning biomass.
- SDG 8: “Decent work and economic growth” farming-based societies will develop from today’s status into future economies while maintaining and improving their plan production sector.
- SDG 9: “Industry innovation and infrastructure” – bio-based solutions have long been inspiration for industrial processes and biomass is developed into a renewable resource for modern chemical and material industries.
- SDG 10 “Reduced inequalities”; inequalities today are strongly linked to the availability of food and non-food resources
- SDG 11 “Develop urban agriculture” with an increasing migration into cities the demand of urban megastructures needs to be maintained and the appreciation of urban population for their food basis needs to be (re-) established.

- SDG 12 “Responsible consumption and production” is urgently needed in order to reduce the environmental footprint of agriculture. This also requires scientific solutions to reduce food and non-food waste and.
- SDG 13 “Climate action” agriculture is a major source as well as significantly impacted by climate change.
- SDG 14 “life below water”; plant sciences can help to reduce overfishing by sustainable production of fish feed for aquaculture; and by that means also reduce the pollution of coastal areas.
- SDG 15 “Life on land” is an important target for biodiversity research and diversified landscape approaches.
- SDG 16 “Peace, justice and strong institutions” are the target and the basis to achieve the targets indicated in the SDGs
- SDG 17 “Partnership for the goals” Plant scientists are willing to contribute in inter- and transdisciplinary partnerships, but also require resilient institutions globally.

The EPSO input to the European Commission’s consultation on EU funds post 2020 was discussed at the EPSO [Board](#) Meeting, based on the EPSO General Meeting exchange of views and recommendations on future research and innovation across the EU (Framework Programmes).

EPSO publications most relevant to this consultation are:

- EPSO: [Position on the next EU Framework Programme for Research and Innovation, FP9, 19.9.2017](#)
- EPSO: [Submission to EC consultation “Modernising and simplifying the Common Agricultural Policy”, 2.5.2017](#)
- EPSO: [Submission to the EC consultation on Horizon 2020 Interim Evaluation, 28.12.2016,](#)

#### Contacts

Dr. Karin Metzloff  
EPSO Executive Director  
Brussels, BE  
T: +32-2213-6260  
[Karin.Metzloff@epsomail.org](mailto:Karin.Metzloff@epsomail.org)

Dr. Aldo Ceriotti  
EPSO President  
Director at CNR, Milano, IT  
T: +39 02 23699444  
[ceriotti@ibba.cnr.it](mailto:ceriotti@ibba.cnr.it)

Prof. Erkki Truve  
EPSO Representative Estonian cluster  
Tallinn University of Technology, EE  
T: +372-6204452  
[erkki.truve@ttu.ee](mailto:erkki.truve@ttu.ee)

#### Useful links

- EPSO breaking news: [www.epsoweb.org](http://www.epsoweb.org)
- EPSO publications: [www.epsoweb.org/archive-epsoweb-publications-and-statements?981448774=1](http://www.epsoweb.org/archive-epsoweb-publications-and-statements?981448774=1)
- EPSO member institutes and universities: [www.epsoweb.org/membership/members](http://www.epsoweb.org/membership/members)
- EPSO representatives: [www.epsoweb.org/membership/representatives](http://www.epsoweb.org/membership/representatives)

#### About EPSO

EPSO, the European Plant Science Organisation, is an independent academic organisation that represents more than 200 research institutes, departments and universities from 28 European countries, Australia and New Zealand, and 3.300 individuals Personal Members, representing over 27 000 people working in plant science. EPSO’s mission is to improve the impact and visibility of plant science in Europe, to provide authoritative source of independent information on plant science including science advice to policy, and to promote training of plant scientists to meet the 21st century challenges in breeding, agriculture, horticulture, forestry, plant ecology and sectors related to plant science. [www.epsoweb.org](http://www.epsoweb.org)