

EPSO input to the EC Horizon 2020 Interim Evaluation

Brussels, 28.12.2016

Horizon 2020 is a unique opportunity to bring European scientists and societies closer together to help build an inclusive, collaborative Europe and world.

Excellent science pillar

The European Research Council (ERC) as well as the Marie-Curie programmes are a major success supporting and attracting excellent frontier scientists and training the next generation of scientists and entrepreneurs and should be continued.

- There is an opportunity to improve the Marie-Curie Actions by increasing the flexibility for students to choose the training institute / university among the network members (in the ITN scheme) according to their real needs. Current rules require this to be fixed in the proposal / contract with minute flexibility.

Societal Challenges pillar:

Collaborative basic research: Work by ISE, LERU and Science Europe suggests that due to the focus on higher technology readiness levels, the societal challenges part of Horizon 2020 misses out the potential from projects that include or focus on basic research and would likely lead to ground breaking solutions for today's 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 is in contrast to the legal text of Horizon 2020 which stresses in Part III, Priority 'Social challenges' that "activities shall cover the full cycle from basic research to market".

- Recommendation: Future Societal Challenges Work Programmes should give more equal consideration to basic research in relation to the other components (applied research, demonstration and innovation actions) of the research and innovation cycle. This could be achieved in various ways, such as:
 - Include in the Societal Challenges pillar projects that include or focus on collaborative basic research and
 - Broaden the scope of ERA-Nets again (by addressing several related goals, thereby reducing the number of ERA-nets).

All these will at the same time widen participation incl. from underrepresented countries, increase mobilisation of national and EU resources and contribute to resolving gaps on collaborative research. It will create a translational bridge between the scientific excellence and the industrial leadership pillars.

Incentivise outreach activities of scientists across Europe and above: stakeholders should be encouraged to initiate and coordinate snowball-principle bottom up activities at European or even global scale, incentivised by competitive European funding to support the central coordination and core resources provided then through open and free access for anybody across Europe and beyond to utilise and hold an event.

For innovative solutions, define goals and objectives, not the path there: Innovative research that equally utilises all technologies and cross-disciplinary approaches must be strengthened to develop solutions for societal challenges that we face now and in future. While FP6 fostered high tech research, this changed to increasingly tacit knowledge development in FP7, which is now peaking in H20, thus going from one extreme to the other. This urgently needs to be changed by a truly balanced support of all technologies and practices. The ultimately best benefit for the environment, human health etc. will only come from an open-minded combination of all available solutions. Therefore, goals should be identified, approaches to reach these should be kept open to the applicants as mentioned in the H2020 Regulation of establishment.

Increase success rates and improve evaluation to attract the best proposals:

EPSO would like to acknowledge the efforts of the European Commission to reduce the administrative burdens of participating in Horizon 2020 and the efforts to establish a participant portal which allows for increased involvement of stakeholders and for improvement in transparency

Likewise we appreciate the adoption of the suggestion by the scientific community to invite only very few of the above-threshold proposals to 2nd stage submission leading to 33-50% success rates in 2nd stage. This should be applied to all SC proposals to motivate the best scientists and companies to apply. Themes oversubscribed by many above threshold proposals should be repeated.

It is necessary to further improve the quality of evaluations to attract the best applicants. The evaluation feedback is relevant and unbiased.

ESFRI:

Facilitate advancement of and access to state of the art research infrastructure in the plant sector highly relevant to e.g. Food and Nutritional Security: Perform a gap analysis on research infrastructure in the plant sector (build on the example of phenotyping via the EMPASIS project) and advance the issues of data management and standardisation (as recently initiated by ERA-CAPS).

Strengthen Europe as a strong contributor to global actions and lead some of these as appropriate, implementing the 'Open to the world' concept of Commissioner Moedas:

- Achieving nutritional security for Developing countries and Europe (through supplements, biofortification, underutilised fruit and vegetable crops)
- Capturing the past and present diversity of our crop plants in a global public "Digital Seed Bank" database populated with state-of-the-art genomic and phenotyping information to facilitate innovative public and private breeding of climate and pest-resilient crops for sustainable agriculture and food security. Europe can be a leader in building such a crop diversity database for truly global impact.

Further comments to the EC questions of the questionnaire

About EPSO and EPSO members

Main reason for not participating: In the Societal Challenges part

- Involving multi actors without increasing grant sizes allows less scientists to contribute
 - Recommendation: Increase grant sizes and fully apply the Multi actor requirement only in the 2nd proposals as it is unrealistic to engage end-users/producers and research groups from different countries in the 1st phase. It is too laborious and the money allocated for the requirement does not reflect the challenge. It currently distracts companies with strong innovation capacities from participation.
- The calls restrict the technologies invited to reach a goal.

Main reason to participate: Advance frontier research; Generate knowledge and enable technology transfer for step changes in application; Science needs collaboration across borders; Train the future scientists and entrepreneurs.

New partners: from other science disciplines / company sectors, from social sciences, farmers, extension services, citizens

Priorities and objectives

Define the goals and objectives, not the path to reach these (see above)

Improve Horizon 2020 contribution to:

- Health
- Food and Nutritional Security
- Knowledge based economy / society
- Building the European Research Area – this is by far not achieved yet
- Science with and for society – a major gap are outreach activities of scientists themselves with society

Relevance and implementation

Relevance of Horizon 2020 priorities and forms of funding: The collaboration programme needs equal consideration to basic research in relation to applied research, demonstration and innovation actions to close the research and innovation cycle and improve impact of H20: Include projects that include or focus on collaborative basic research and broaden the scope of ERA-Nets again (by addressing several related goals, thereby reducing the number of ERA-Nets). This will at the same time widen participation and better mobilise national and EU resources.

Implementation of Horizon 2020: Better involve science and industry associations in developing the Work programmes through open dialogue and not one way input submission. For innovative solutions, the call text should specify the goal and objectives to achieve, not prescribe or restrict the way to get there. Increase the budget when various stakeholders need to be involved to ensure good science and technology transfer and not “Sudoku” consortia with limited impact. Improve feedback from pre-proposal evaluation.

Efficiency and added value

EU added value of Horizon 2020: 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.

Impact for your organisation if the EU support to research and innovation were to be discontinued? A European effort in science and innovation would become rare, we would rely mainly on national and bilateral efforts, which would reverse the ongoing development of the European Research and Innovation Area, dilute human and financial resources and ultimately the impact achieved for society. It would reduce European competitiveness at a global scale - across Europe and drastically in countries which invest less in research and innovation. Young people and society at large would lose out.

Synergy, complementarity and/or overlaps within Horizon 2020 and with other funding programmes: Member States should be more encouraged to use Structural Funds 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 and European Science Organisations to improve networking and active participation from all European countries equally.

Internal structure of Horizon 2020 and synergy with other EU programmes

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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

Forward looking:

[Sustainable Development Goals](#) on which future FP R&I should focus:

	Our choice
End poverty in all its forms everywhere	
End hunger, achieve food security and improved nutrition and promote sustainable agriculture	x
Ensure healthy lives and promote well-being for all at all ages	
Ensure inclusive and quality education for all and promote lifelong learning	
Achieve gender equality and empower all women and girls	
Ensure access to water and sanitation for all	
Ensure access to affordable, reliable, sustainable and modern energy for all	x
Promote inclusive and sustainable economic growth, employment and decent work for all	
Build resilient infrastructure, promote sustainable industrialization and foster innovation	x
Reduce inequality within and among countries	
Make cities inclusive, safe, resilient and sustainable	
Ensure sustainable consumption and production patterns	
Take urgent action to combat climate change and its impacts	x
Conserve and sustainably use the oceans, seas and marine resources	
Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss	x
Promote just, peaceful and inclusive societies	x
Revitalize the global partnership for sustainable development	

Most important issue/problem/opportunity to be addressed by the EU framework programmes for research and innovation?

- Building the European Research and Innovation area for a knowledge based economy to benefit society at large: better support the research component in there for a truly knowledge based economy and improve the participation of Eastern and some southern countries to achieve real integration, collaboration and improvements in all European countries
- Content-wise “Food and nutritional security”

Successor programme to Horizon 2020:

- Continue the successful ERC.
- Societal Challenges programme: Support equally basic research, applied research, demonstration and innovation actions to close the research and innovation cycle: i) Include projects that include or focus on collaborative basic research and ii) broaden the scope of ERA-Nets again (addressing related goals, reduce their number). This will improve impact, widen participation, increase mobilisation of resources.
- Define the goals and objectives, not the way to reach these.

The EPSO input to the European Commission’s interim evaluation of Horizon 2020 was discussed at the EPSO General Meetings in 2015 and 2016 and followed up the EPSO Board.

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Useful links

- EPSO: [Submission to EC consultation on PRIMA](#) (Partnership for Research and Innovation in the Mediterranean Area) in Horizon 2020 (summary reply 23.5.2016), [completed online questionnaire](#) 22.4.2016
- EPSO: Biorefineries Working Group [Submission to the EC consultation 'A sustainable bioenergy policy](#) for the period after 2020', 10.5.2016
- EPSO: [Submission to EC consultation on SC5](#) - Potential priorities for research and innovation in the 2018-20 Work Programme of Horizon 2020 Societal Challenge "Climate action, Environment, Resource efficiency and Raw materials", 8.4.2016
- EPSO: [Fact sheets on New Breeding Technologies](#), 21.3.2016. Including: [Site-Directed Nucleases](#) (e.g. genome editing), [Oligonucleotide-Directed Mutagenesis](#), [RNA-directed DNA-Methylation](#), [Cisgenesis](#), [Grafting using GM plants](#), [Reverse breeding](#), and [Agroinfiltration](#).
- EPSO: [Fascination of Plants Day Success Stories 2015](#), From Bosnia to Bolivia, from South Africa to South Korea, FoPD 2015 truly united a global research community and engaged the public with plant science on an unprecedented scale. Read Success Stories and social media highlights from just some of the 965 events across 56 countries, 29.2.2016
- EPSO: [EPSO Young Plant Scientist Award – winners](#) Ruie LIU and Malaika K EBERT presented their research at the [Plant Biology Europe EPSO/FESPB congress](#) in Prague 26th-30th June, 18.1.2016.
- EPSO: [Updated Statement: Crop Genetic Improvement Technologies](#), 18.12.2015;
- EPSO: Submission to EC consultation on the [Draft "Strategic approach to agricultural research and innovation"](#), 15.12.2015 [Submission summary](#) and [completed questionnaire](#), calling to urgently strengthen collaborative basic research in the Societal Challenges, supporting all technologies equally, including improvement of yield and yield stability and plant compounds for human nutrition and health
- EPSO breaking news: www.epsoweb.org
- EPSO publications: www.epsoweb.org/archive-epsoweb-publications-and-statements?981448774=1
- EPSO member institutes and universities: www.epsoweb.org/membership/members
- EPSO representatives: www.epsoweb.org/membership/representatives

About EPSO

EPSO, the European Plant Science Organisation, is an independent academic organisation that represents more than 220 research institutes, departments and universities from 28 European countries, Australia, Japan and New Zealand, and 3.200 individuals Personal Members, representing over 28 000 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, 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