



Input to the European Commission Consultation

European Plant Science Organisation
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Modernising and Simplifying the Common Agricultural Policy (CAP)

Brussels, 2.5.2017

1. EU Common Agricultural, Food and Nutrition Policy (CAP+)

The five major challenges – food and nutrition security, climate change, the environment, healthy and safe food and inequality – must shape the future broader Common Agricultural, Food and Nutrition Policy. These challenges cannot only be solved by the farmers, but also need the commitment and behavioural change of all the other players in the food chain, ranging from farmers, to scientists, companies and citizens. Therefore objectives should not only be defined on the level of farmers and should also address the role of other players in the food chain by modifying the first objective into ” to increase agricultural productivity and food security by promoting technical progress ...” and by adding a new objective “to achieve and improve nutritional security”.

Agricultural productivity and Food security by increasing yield and yield stability

To address the modified objective of increasing agricultural productivity and improving food security, the goal of ‘Improving yield and yield stability’ needs to be added which is of utmost importance to achieve agricultural productivity and sustainability (as in the title of the European Innovation Partnership-AGRI [EIP-AGRI] and elaborated in its Strategic Implementation Plan (*Ref. R1*)). This relates to the quantitative aspect of food security addressing a growing population and increasing environmental changes (including those due to climate change), reduced land availability (due to urbanisation) while increasing sustainability. An important concept to tackle this in future is that of diverse crops with diverse microbiomes for resilient production.

This will be a major contribution towards the first objective of the Common Agricultural, Food and Nutrition Policy – productivity and food security – and contribute as well to standard of living, stable markets, supplies and reasonable prices.

Nutritional security through improving food crops for better nutrition and health

To tackle the new objective of nutritional security, the goal of ‘Improving plant compounds beneficial for human and animal nutrition and health’ needs to be added which will be crucial for our future societies in the developed as well as developing countries to better understand the links between plant composition, processing, bioavailability during nutrition and effects on health, and to utilize this knowledge for innovation improving human and animal health (as elaborated in the EIP-AGRI Strategic Implementation Plan (*Ref. R1*)). An important concept to tackle this in future is that of diverse crops for diverse diets and human health.

This will be a major contribution towards this new objective of the Common Agricultural, Food and Nutrition Policy and contribute as well to standard of living, stable markets, supplies and reasonable prices.

2. Research and innovation driven agriculture - by boosting the Research and Innovation Cycle in agriculture

Europe urgently needs to better address societal challenges we face through a balanced support of all components of the research and innovation cycle being composed of collaborations across basic research, applied research, demonstration and innovation actions.

This requires efficient linkages between different actors - farmers, researchers, industrialists and citizens and therefore the objective of "to build a research and innovation driven agriculture" should be added in the future CAP+.

Europe's competitiveness in research and innovation resulted from the balanced support of individual (European Research Council) as well collaborative (Collaboration Programme) basic as well applied research over the past decades in the European Framework Programmes as well as national programmes. From this system the component of the collaborative basic research has been removed which should be a major and intrinsic part of the Societal Challenges programmes, such as the one on sustainable agriculture, food and nutritional security, to complete the innovation cycle between basic and applied collaborative research, demonstration and innovation actions in agriculture as mentioned in the Horizon 2020 Regulation of establishment (*Ref. R2*). Addressing this with the Future and Emerging Technologies instrument (FETs) only would uncouple collaborative basic research from the R&I cycle. Respective themes for collaborative basic research were submitted and added here under *reference R4*.

In addition, the participation of scientists from not only the more applied research, but as well the basic research in the Operation Groups under the European Innovation Partnership for Agriculture should be encouraged as a cross-fertilisation through the entire research and innovation cycle applies there as well.

Support for the research and innovation actions needs to have an intrinsic component of involving farmers and citizens together with scientist and industrialists – this needs a major resource increase of the research and innovation actions for agriculture, food and nutritional security which should be a priority under the renewed CAP.

This will be a major contribution towards all objectives of the Common Agricultural, Food and Nutrition Policy – productivity and food security, nutritional security, standard of living, stable markets, supplies and reasonable prices.

3. New / high tech research AND low tech tacit knowledge will equally contribute - when defining goals, leaving the way to reach these open, AND combining different approaches for better impact

Within the current policy the differences between biological, conventional and new technology agriculture are very dogmatic. More sustainability of agriculture and protection of the environment can be achieved by bridging the gap between and ultimately combining these approaches and incorporating innovations from research that stimulate sustainable production in a healthy environment. The support of new / high tech research and applications supporting all technologies equally has to be strengthened compared to low tech/ input research and applications and tacit knowledge to achieve a balanced approach for all solutions that can help addressing the societal challenges we face today and in future. Europe supported the high tech path until Framework Programme 6 more, changing towards tacit knowledge preference in the course of CAP 2020 and FP7, peaking now in the first years of the Horizon 2020 programme and CAP 2020. This was a development from one extreme to the other, which urgently needs to be resolved by a truly balanced support of all technologies and practices. The ultimate best benefit for the environment, human health etc. will emerge from an open minded combination of the advantages 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 (*Ref. R2*).

A recent example is that of uncertainty regarding the **regulations on New Breeding Technologies** (NBTs), which are not in place and thus hinder a further development of sustainable agriculture. A process AND product based interpretation of the existing legislation should be applied to exempt some of the NBTs from regulation as practiced for e.g. chemical (EMS) mutagenesis in traditional breeding (*Ref R3*)

This will be a major contribution towards all objectives of the Common Agricultural, Food and Nutrition Policy – productivity and food security, nutritional security, standard of living, stable markets, supplies and reasonable prices.

4. Link of policies and decentralisation

The five major challenges – food and nutrition security, climate change, the environment, healthy and safe food and inequality – must shape the agricultural, food and nutrition policy of the future. It is hard to imagine that this can all be realised by only addressing farmers who are merely part of a food chain in which most of the power lies with the retail, food industry and input industry. All partners in the food chain (industries, farmers and scientists) must participate in order to address the low incomes of farmers (fair trade), their environmental performance and the need to offer healthy choices for consumers. Dealing with the negative effects of the food chain, organisation cannot be left to farmers and tax payers. It is also important that the various policies related to food, agriculture, the environment, climate change and competition will be better aligned at European and national levels. A European Common Agricultural, Food and Nutrition policy will need local and regional know-how to deal with the diversity of ecosystem services, farming traditions, food and nutrition cultures. Decentralisation is therefore an important condition of such an agricultural, food and nutrition policy. However, such decentralisation should not create barriers in our common market.

The EPSO input to the European Commission's consultation on Modernising and Simplifying the CAP was discussed by the EPSO Board, based on the discussions of the EPSO members on former consultations on the European Agricultural Research and Innovation strategy in 2015 and 2016.

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Useful links

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EPSO member institutes and universities: [www.epsoweb.org/membership/members](http://www.epsoweb.org/epsoweb/membership/members)

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- (R1) EIP AGRI Strategic Implementation Plan, published 2013
<http://ec.europa.eu/eip/agriculture/en/content/strategic-implementation-plan-european-innovation-partnership-agricultural-productivity-and> (conclusions 4 ...” .. Increasing yield and yield stability in dynamic environments, increasing resilience and the adaptability of farming systems will have to go hand in hand with more efficient input use. The improvement of productivity must go hand in hand with sustainable consumption...) (Nutrition and quality issues: "... Beneficial health effects of plant primary and secondary components need to be studied and enhanced in cereal, fruit and vegetable crops. Further on these compounds need to be preserved and in some cases also enriched during processing so that their bioavailability in human nutrition is increased. ... Consumer-driven demand can act as a driver for industry to improve the nutritional value of foodstuff and to reduce potentially unhealthy substances...".)
- (R2) [Horizon 2020 - Regulation of Establishment](#), published 20.12.2013: "...All the activities shall take a challenge-based approach, which may include basic research, applied research, knowledge transfer or innovation, focusing on policy priorities without predetermining the precise choice of technologies or solutions that should be developed....".
- (R3) EPSO: [Updated Statement: Crop Genetic Improvement Technologies](#), 12.01.2017, supporting the interpretation of the EU GMO legislation as both process and product based and considering that this could help to clarify the legal status of the NPBTs. In its update EPSO includes recently published reports from Belgium, Germany and Italy).
- (R4) EPSO Submission to EC consultation 'Towards a Long-term strategy for European research and innovation until 2020 and beyond', [submission summary](#) and [completed questionnaire](#), 3.7.2015
Areas of basic research to the five priority areas should include e.g.:
 - 2.3.1.1. Resource management: Plant development and physiology; from annual to perennial plants; adaptive strategies in wild species; Landscape genomics; Plant-soil-micro- biome. Limited natural resources
 - 2.3.1.2. Healthier plants and animals: Understand pest and pathogen biology, evolution and ecology (natural and farmed habitats) to develop strategies for limiting effects of pests/pathogens on agri-productivity. Screen a wide range of cultivated and wild varieties for resistance genes. Deep science in molecular and physiological signalling between organisms. Crop plant/organismic interactions including plant/plant, plant/microbes and

plant/insect interaction.

- 2.3.1.3 Integrated ecological approaches from farm to landscape level: Use robust science and evidence to identify the molecular and mechanistic basis for designing crop ideotypes, cropping systems and landscapes for sustainable intensification. Minimize the inputs and nutrient losses and understand trade-offs. Ecological weed control. Plant microbe interactions, e.g. effect of altered plant metabolism on taste.
- 2.3.2.1 New openings for rural growth: Secondary metabolites and pathways, bioactive metabolites, primary metabolism (e.g. cellulose conversion for biogas generation). C4 metabolism/secondary metabolism; efficient conversion of biomass to biofuel (cellulose conversion).

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, 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