
Plants for the Future ETP input to the Food 2030 initiative

The Plant ETP welcomes the **"FOOD 2030" initiative** that focuses on the food system approach. Plant ETP is of the opinion that adopting a "whole food chain" approach with the involvement of a wide range of actors is crucial for overcoming the growing challenge of food and nutritional security and creating a sustainable and competitive agri-food sector in EU.

In the strategic orientation looking at the whole agri-food chain, the role of the plant sector must be clearly reflected, especially, as plant science and breeding has strongly contributed in the past to food and nutritional security. According to a recent study [1], since 2000 EU plant breeding has largely improved global food supply - enough to additionally feed 160 million people with kcal. Thanks to innovation in plant breeding over the last 15 years the EU's wheat harvests have grown by more than 22 million tons, which is enough for 64 loaves of bread for every person in EU. Additionally, it allowed EU farmers to grow an extra 10 million tons of potatoes every year, which is more than the annual potato output of the whole of Poland. Without the last 15 years of plant breeding, prices at international agricultural commodity markets would have been 3 to 10 % higher they are at present and the EU would have become a net importer in all major arable crops, including those that are currently exported – potatoes, wheat and other cereals.

In the future, European plant scientists and farmers hope to achieve even more, increasing the harvest of main crops by 76 million tons using plant breeding by 2030 [1]. The technological advances in the plant sector have the potential to enable further contributions towards food and nutrition security priorities:

1. Addressing climate: Building a climate and global change-resilient primary production system:

- Improving plant health by tackling ongoing diseases and resistance to pests with major impact in Europe and strengthening efforts anticipating emerging diseases;
- Improving yield and securing reliable harvests for increased resilience in dynamic environments;
- Improving the efficiency of plants for the use of nutrients.

[1] The economic, social and environmental value of plant breeding in the European Union. An ex post evaluation and ex ante assessment, HFFA Research GmbH (2016), <http://bit.do/plantetp-HFFAResearch>

2. Addressing nutrition: Reducing hunger, malnutrition, diet-related illnesses, fostering sustainable diets and healthy lives by:

- Developing plants with improved composition for human nutrition and health – increase understanding of which phytonutrients promote health and protect against chronic diseases; increasing (biofortification) or decreasing the content and bioavailability of certain ingredients in plants which can help fight obesity, allergies, cholesterol, diabetes and other chronic diseases. Examples are increasing the content of antioxidants (fruits, vegetables) or changing the fatty acid composition for healthier vegetable oils (oilseed rape, sunflower);
- Improving and promoting diverse crops for diverse diets: Improving the economic performance (incl. resistance to diseases) and value of underutilised and often nutritious crops in Europe and globally. Modern varieties have a better shelf life and in some cases they are designed to avoid discarding edible parts.

3. Addressing sustainability: Implementing sustainability and circular economy principles by:

- Improving resource use efficiency and resource stewardship - through new varieties with improved tolerance to extreme weather conditions or improve the nutrient and water use efficiency;
- Reduce the environmental footprint of agriculture by developing the use of digitalisation in creating, growing and harvesting of crops;
- Develop plants with improved composition for animal nutrition, animal husbandry and farmed fish production.

4. Addressing Innovation: Boosting market creating innovation and investment, while empowering communities by:

- Contractual Public Private Partnership for Integrated Crop Production in Europe (ICP-cPPP) to establish a collaborative, EU-wide Public-Private Partnership in the agri-food value chain, integrating all relevant research disciplines, technologies and farming management practices, aligning stakeholder agendas, company commercial goals and government policy objectives in order to define and deliver sustainable improvement of EU crop production systems.

As **horizontal** measures underpinning the contributions mentioned above, Europe urgently needs to:

- Incentivise outreach activities 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;
- Drive agricultural research and innovation with / for developing countries (reinforcing and strengthening the support started in WP 2016);
- Facilitate advancement of and access to state of the art infrastructure for research and innovation in the plant sector highly relevant to FNS: Perform a gap analysis (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);

- Support adequate regulatory framework enabling development, uptake and use of next-generation plant breeding techniques (smart breeding / NPBTs) to drive innovation for a wide range of plant species, including minor crops and speciality markets;
- Have the entire collaborative Research and Innovation Cycle in the Societal Challenges, composed of basic research, applied research, demonstration and innovation actions.

Currently SCs include applied research, demonstration and innovation actions. Missing are:

- Basic collaborative research which can be included through a combination of:
 - collaborative basic research as intrinsic part of R&I projects;
 - collaborative basic research as focus of collaborative projects: basic biological processes relevant to crop improvement e.g. on plants & microbiomes; plant health; photosynthesis; plants for human nutrition and health;
 - collaborative basic and applied research via broader ERA-Nets COFUND (e.g. like ERA-CAPS).
- Research-innovation interface (bi-directional) which can be included as virtual centre for translational research (slim form of current cPPPs) – e.g. on Integrated Crop Production.

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About ETP Plants for the Future - www.plantetp.org

The European Technology Platform 'Plants for the Future' (Plant ETP) is a stakeholder forum for the plant sector that brings together members from industry, academia and the farming community. The industrial sector is represented by the European Seed Association (ESA) which represents itself the totality of the European seed industry (more than 7000 companies, 90% of which are SMEs) active in research, breeding, production and seed marketing. A certain number of individual companies are also direct members of Plant ETP. The academic sector is represented by the European Plant Science Organisation (EPSO), an independent academic organisation with over 220 research institutes, departments and universities as institutional members and 3.200 Personal Members, representing over 28 000 people working in plant science. The farming sector is represented by Copa-Cogeca, the European organisation for farmers and their cooperatives. Copa represents over 13 million farmers whilst Cogeca represents the interests of 38,000 agricultural cooperatives.