

Impact Outlook

- ‘The Plants for the Future Vision paper was signed by 21 stakeholder organisations representing academia, farmers, industry and consumers – a clear indication of the broad impact and recognition of plant science in Europe’
- ‘Fostering mutual support between stakeholders requires securing conditions for knowledge sharing and open dialogue’

A pathway for agricultural innovation

Aleksandra Malyska, Executive Manager of Plants for the Future, discusses the important role of this European Technology Platform (ETP) and how its work is stimulating research and innovation in Europe’s plant science and agriculture sector

Can you briefly explain what the drivers were behind setting up Plants for the Future, and what your key goals are?

The Plants for the Future ETP (Plant ETP) is a stakeholder forum for the plant sector that was initiated by the European Commission in 2003. It was supported by the European Commission via a Specific Support Action under Framework Programme Six until July 2007 and by the major public and private stakeholders in the field. From June 2008 it has been a membership-based ETP where all members agree on the aim, main tasks, structure and budget.

Plant ETP was officially launched as one of the first ETPs by then Commissioner Philippe Busquin in June 2004 with the publication of *2025: A European Vision for Plant Genomics and Biotechnology*. The Plant ETP Vision paper was signed by 21 stakeholder organisations representing academia, farmers, industry and consumers – a clear indication of the broad impact and recognition of plant science in Europe. It provides a 20-year plan including a short-, medium- and long-term Strategic Research Agenda for Europe’s plant sector. Since 2010, Plant ETP has broadened its scope from Research to Research, Innovation and Education. In addition, the platform brings key issues to the attention of European bodies such as the European Commission and the European Parliament. These issues include the growing importance of plants and plant sciences in tackling the future challenges for our societies and crucial need to give plants an adequate standing and importance in the eyes of both the public and politicians.

The strategic goal of Plant ETP is to enable the path of agricultural innovation in Europe using an annually set agenda, as a joint basis between industry, farmers and academia. In representing the entire plant innovation chain from fundamental research to plant production and food processing, Plant ETP is committed to stimulating research and innovation in plant science and agriculture.

From your perspective, what steps does Europe need to take to tackle some of the main research challenges currently facing the world’s crop production?

Europe urgently needs to support development and implementation of enabling technologies, such as next-generation plant breeding techniques to drive innovation for a wide range of plant species. The important challenge is also to promote equitable use of prebreeding. For Europe to be successful and competitive the multi-actor approach and close collaboration of different stakeholders across the entire agrifood/nonfood value chain is needed. It is crucial to support basic collaborative research as well as the research and innovation interface. In addition we must not forget about the role of facilitating advancement of and access to state-of-the-art infrastructure for research.

In your opinion, what role does innovation in plant breeding play in sustainable agriculture?

Since the turn of the millennium, genetic crop improvements on average increased yields by 16 per cent across all major arable crops cultivated in the EU. Producing more from one unit of arable land has many environmental benefits. Thanks to innovation in plant breeding, we have been able to avoid significant biodiversity losses, save 55 million cubic metres of water that would be needed to achieve the same productivity, and reduce emission of CO₂ by 3.4 billion tons.

There must be significant challenges involved in managing and coordinating the large number and variety of stakeholders involved in your network. How do you address these?

The most important challenge is to create mutual trust between stakeholders and provide a space that facilitates reflection on the common goals and priorities for the plant sector. Supporting interaction

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ABOUT PLANTS FOR THE FUTURE

The European Technology Platform Plants for the Future is a stakeholder forum for the plant sector with members from industry, academia and the farming community. It serves as a platform for all stakeholders concerned with plants to express their views and represent their interests in an open discussion process.

with and between members and a wide variety of stakeholders is the key. Fostering mutual support between the Plant ETP stakeholders requires securing conditions for knowledge sharing and open dialogue. This allowed for developing three Action Plans jointly by all Plant ETP stakeholders. Those Action Plans are the guidance for all activities taken within the ETP.

What actions have you identified as being critical for education in the plant sector?

In our Education Action Plan we identified three key actions. First, building a sustainable workforce for the plant sector, which involves clustering of plant sciences and agricultural disciplines to maximise education and training a future well-skilled workforce. Second, fostering the future of the plant sector through research, education and training, which includes the need for public funding, public-private cooperation and greater engagement with agricultural production chain. Finally, increasing public appreciation of the plant sector through outreach activities to raise essential public awareness of its importance.

What tools are you using to support capacity building and the exchange of technologies within the plant sector?

Plant ETP is a multistakeholder platform that brings together industry, academia and the farming community. It creates a space for public-private collaboration and interaction that might result in project development and supports capacity building and knowledge exchange. Plant ETP is a member of the Stakeholders' Advisory Board of the Joint Programming Initiative on Agriculture, Food Security and Climate Change (FACCE JPI), as well as the JPI on Healthy Diet for a Healthy Life, and is continuously providing inputs towards their Strategic Research Agendas, Implementation Plans and future actions. Plant ETP is also member of the Stakeholders Advisory Board of two current EU-funded projects: WHEALBI (WHEAt and barley Legacy for Breeding Improvement, 2014–2019) and LEGATO (LEGumes for the Agriculture of TOMorrow, 2014–2017).

What do you consider are the emerging trends for research into plant production and what developments will they lead to?

There are a number that we will see, including new breeding technologies such as genome editing tools (e.g. Crispr/Cas9) that can significantly accelerate breeding process; pre-breeding activities which bridge conservation and use of plant genetic resources and thus offer additional access to new and desirable genes to generate useful materials for breeders; high-throughput plant phenotyping where the interactions between genotype and environment determine plant performance and productivity; improved data management and modelling, as there is a need for optimisation and standardisation of data handling processes (e.g. for supporting digital farming); and improved consumer research, including better communication and outreach to society at large.

To find out more about the recent scientific study commissioned by the Platform visit <http://www.plantetp.org/economic-social-and-environmental-value-plant-breeding-european-union>.

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