

Report

“Food and Nutritional Security”

2nd workshop of the series

“Sustainable Growth: Unlocking the Potential of Plants”

European Parliament, Brussels, 02.06.2016



Food and nutritional security is one of the major societal challenges for Europe and developing countries. Constantly increasing world population demands intensifying crop productivity but new challenges are arising that in addition call for improving nutritional quality and assuring safety at the point of consumption. On 2 June 2016, the European Technology Platform ‘Plants for the Future’ (Plant ETP) in collaboration with MEP Jasenko Selimović organised a workshop to discuss the contribution of plant research and plant breeding to address the challenges of food and nutritional security. This was the second event of the workshop series “Sustainable growth: Unlocking the potential of plants”, which follows a report by former MEP Marit Paulsen on [“Plant breeding: what options to increase quality and yields”](#) published in 2014. A total of 44 representatives of the European Commission, the European Parliament, the Member States and experts from the stakeholder groups of the Plant ETP (industry, academia and farmers) gathered at the European Parliament to discuss examples of technologies and innovations in the plant sector that address the challenge of food and nutritional security.



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In his opening speech, **MEP Jasenko Selimović** stressed that “*food security is a bigger challenge than ever, with a global population expected to reach 9.6 billion people by 2050 and the need to adapt to climate change. World food systems will have to increase in efficiency and productivity to ensure that people have access to the food they need, in quantity and improved nutritional quality*”. Mr Selimović stressed that “*innovation is the key to sustainable food security,*” and acknowledged the role of plant science and breeding that can contribute “*by improving the nutritional quality of food*



products, tailoring plants for specific health benefits, and eliminating harmful compounds to improve food safety". "Me, as a member of AGRI and ENVI Committees, I have recently posed a question to the Commission urging to accelerate the process and clarify the legal status of New Breeding Techniques to ensure we have an innovative agriculture sector in the future capable of meeting growing demand," continued Mr Jasenko Selimović.

Joachim Schneider from Bayer explained how the concept of food security evolved shifting from focus on caloric supply (quantity) to more complex definition including quality aspects. He pointed out several examples of technology advancement crucial for agriculture, such as:

- digital farming and robotics to customize treatment to every sqm of field/greenhouse;
- big data gathering and analysis to learn more, and faster;
- urban farming to increase healthiness, freshness, and local production;
- LED lights to use energy more sustainably and more targeted (light recipes);
- digital breeding/phenotyping, NBTs to make progress faster and more targeted.



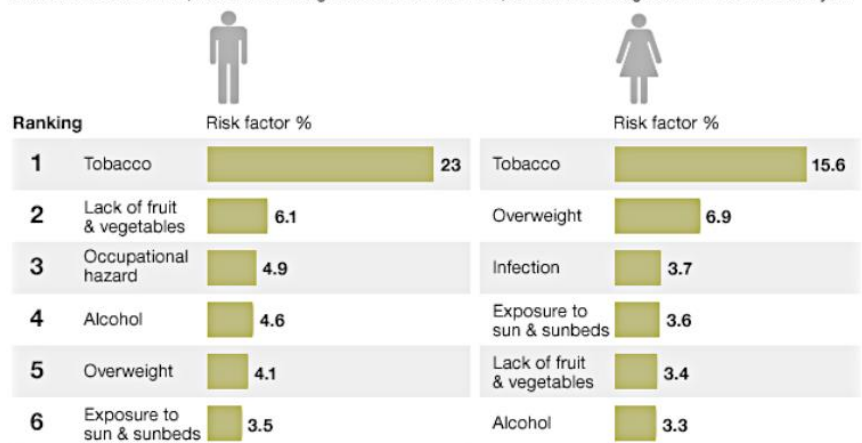
Dr. Schneider explained the concept of hydroponic cultivation that uses water-based medium with bare root. Hydroponics can reduce the water use significantly in comparison to conventional irrigation fed systems. He explained how technology is influencing our ability to personalize diets in line with phenotypic and genetic difference between individuals. He pointed out that advancement in personalized nutrition will allow consumers to make more conscious nutritional choices and regulators to make targeted and individual nutritional recommendations. He finished by drawing

the attention to the role of society and politics to create "enabling environment to lift the great potential of improved nutrition for public health".

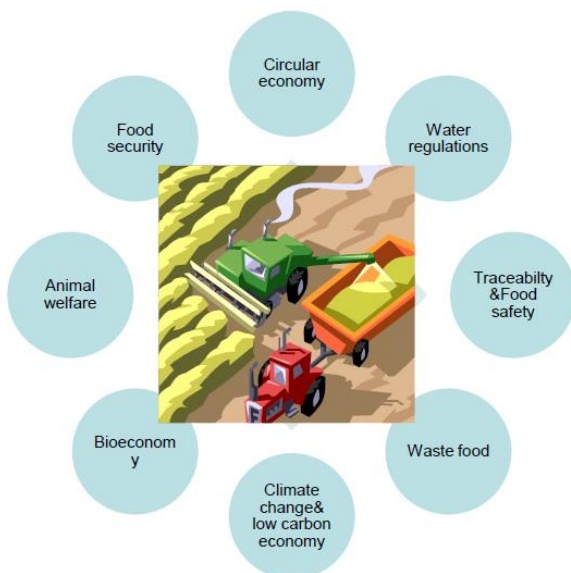
Eugenio Butelli from the John Innes Centre in Norwich alerted to the worrying trend of obesity increase globally, and pointed out that overweight is currently one of the top six causes of all cancers in men and women. He then discussed how crops with enhanced levels of specific compounds can improve diets and address the global challenge of escalating chronic disease, as for instance purple, high anthocyanin tomatoes. Another example pointed out by Dr. Butelli was the blood orange, which has a major impact when compared with the orange fruit on arterial plaque levels in a mouse model. Together, these approaches showed how plant science can potentially have a positive role in developing fruits and vegetable with preventative properties for chronic diseases.

Top six causes of all cancers in men and women

Risk factors of the 158,700 cancers diagnosed in men and 155,600 cancers diagnosed in women each year



Source: Cancer Research UK



Juan Sagarna García from Cooperativas Agro-Alimentarias explained how technology can be used in the farm setting for smart agriculture and that *“in the future, data and information will be as relevant for the farmer as fertilizers, seeds or energy”*. He pointed out the important role of several technologies including: drones, advanced geographical information, robotics and sensors, new breeding techniques, smart phones and social media. However he stressed that their potential is still not fully exploited in farming systems in Europe. *“Farmer cooperatives will be the key driver for introducing the BIG DATA within a smarter agriculture, especially in the small and medium size farms. They will allow the farmers to reap the benefits and the added value of the new technologies”* Mr. Sagarna concluded.

In his concluding speech, **MEP Jan Huitema** emphasized that it is of outmost importance to close the gap between consumers and the agri-food and to increase cooperation between policy makers, the private sector and research institutes. *“The agricultural sector should not be seen as a problem but rather as a solution. The plant breeding sector in Europe is enormously ambitious and innovative and can have huge advantages. We should make more use of the potential and knowledge that is available, like new breeding techniques. However, the public debate is more and more based upon emotions instead of scientific facts. It’s upon the different stakeholders in the food chain to act together in order to turn the tide and close the gap between consumers.”*



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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 such as BayerCropScience, Keygene, Limagrain, KWS, Céréales-Vallée, SESVanderHave and two food processing companies Nestlé and Südzucker. The academic sector is represented by the European Plant Science Organisation (EPSO), an independent academic organisation with over 220 research institutes, departments and universities from 28 European countries, Australia, Japan and New Zealand 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.