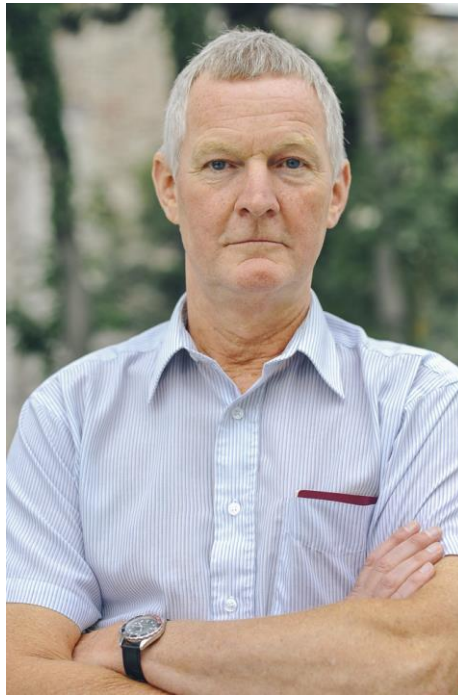


Opportunities and challenges for research on food and nutrition security and agriculture in Europe - Dr. Robin Fears

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EASAC, the European Academies Science Advisory Council, has recently produced a [report](#) as a contribution to a worldwide project initiated by the global network of science academies. Their report combines analysis of the current challenges for food and nutrition security and agriculture in Europe and an exploration of innovative solutions, such as NBTs and transdisciplinary research, as ways forward.

Against the background of the recently published EASAC report, in your view, what are the key elements of the report you have recently published?

Firstly, an important feature of the report is that we take a very broad perspective on the issues of nutrition security and agriculture, emphasizing a food system approach. From growing crops, to consumption and from retail to recycling: it encompasses the whole food system. This requires an equally broad front of scientific evidence to fill knowledge gaps, support innovation, inform policy makers or engage the public.

Secondly, we focus a lot on the importance of basic research. It is a fundamental prerequisite for developments throughout the entire food system and essential to the numerous interfaces between agriculture, environment, nutrition and health. Our report identifies priorities for the scientific community and stresses to educate the next generation of scientists.

Thirdly, we propose to build on the successes of the Horizon 2020 approach to stimulate scientific exchange between the public and private sector. A model which should be expanded by technology platforms or collaborative activity to develop coherence of research among member states and to use the available R&D budget efficiently. We must not underestimate the

importance of this challenge since research can only result in added value if its outputs are used to support innovation.

What are the benefits of aligning the various stakeholders in our food system like academia, private companies and the public?

The connection between the public and private sectors is very important. To harness the potential of innovation and facilitate transdisciplinary knowledge exchange, building public-private partnerships is imperative. This requires support in different ways. For instance, plant sciences and genomics have experienced a negative feedback surrounding their innovations like NBTs in most EU countries. This acts as a deterrent for scientists to enter this field and a subsequent loss of skills, as well as difficulties to commercialize innovation and take advantage of its potential. This paradoxical intersection of the public and private sector within the EU essentially leads to the export of exciting research and crucial knowledge. At the same time, we at EASAC understand that the private sector has its own needs, but it is important to incorporate public well-being as a primary objective to tackle social challenges effectively.

What role does clear information provision play concerning the differences between the scientific and public debate?

It is an important role and responsibility for the scientific community, using public funding, to explain the research, the discoveries and its potential outcomes. However, public engagement means having a dialogue rather than simply being transparent. We witness progress in these regards. Yet, what might be exciting novelties for scientists, can be seen in a more sceptical light by the public who demands the precautionary principle to be enforced very stringently. Hence, the public and private sector need to work together to develop clear communication and the scientific community has to convey the excitement to stimulate public engagement.

“One of the messages we must convey as Europeans is our awareness that we can contribute to the mitigation of social challenges through research and innovation, but also that policy decision can have inadvertent consequences on a global scale.”

Dr. Robin Fears - EASAC Biosciences Programme Director

How can the adoption of plant breeding innovations contribute to addressing environmental and social issues of food safety, agriculture and public health?

The impact of climate change has already had effects on agriculture in Europe and the use of pesticides and other agrochemical is under continuous scrutiny. Innovations like NBTs can be used to contribute to solving these and other issues. NBTs can be used to develop new plant varieties which can better cope with droughts, rising temperatures and emerging pathogens. Science thus has an important role to play to prepare farming for the future. Climate and agriculture inevitably affect each other, and possible improvements depend heavily on research. Additionally, also consumer behaviour has detrimental influences on the environment, thus highlighting the importance of collaboration with social sciences to holistically understand and successfully tackle social challenges in the food system.

Advocate General Bobek stated that “organisms obtained by mutagenesis are, in principle, exempted from the obligations in the Genetically Modified Organisms Directive”. Could you, as Biosciences Programme Director, elaborate on EASAC’s position regarding this [preliminary ruling](#)?

EASAC has essentially been interested in agricultural innovation and emerging technologies. Throughout the last 10 years we have published reports on the potential opportunities of genome editing in plant biotechnology from a scientific perspective. We at EASAC realize the complexity of the regulatory framework regarding breeding innovations, and thus, are looking forward to hearing how the ECJ, the European Court of Justice, will take account of that opinion. In our previous reports we have argued for a proportionate and standardized approach, meaning that new plant varieties which do not contain foreign DNA, should not be regulated as GMOs. Furthermore, as a long-term objective, regulation should rather focus on the product than the technology itself.

[Dr. Robin Fears](#), EASAC Bioscience Programme Director, has 29 years of experience in the pharmaceutical industry in the UK of which 9 years were occupied in setting up and leading a policy group for R&D in Europe. Since leaving the pharmaceutical sector, he has worked as advisor to various bodies including academies, universities, businesses and parliamentary groups on issues relating to biomedical science and innovation within the European policy environment. He has provided biosciences support to EASAC since 2002. EASAC mobilises Europe's leading scientists to independently guide EU policy for the benefit of society.

What is plant breeding?

Plant breeding is the art and science of changing the traits of plants in order to produce desired characteristics to improve the overall function of various plants and crop systems.

With the predicted growth in the global population and the effects of climate change, varieties with increased yields and resistance to drought and disease are critical if we are to provide enough food for future generations. Plant breeding is one of the tools that will help us achieve sustainable crop production in the long term.

About the NBT Platform

The NBT Platform is a coalition of SMEs, large industry representatives and members of prominent academic and research institutes. Its aim is to provide policy makers and stakeholders with clear and precise information on NBTs and to generate awareness about their benefits for the European economy and society.

More information on www.nbtplatform.org, or contact us via info@nbtplatform.org.