STOA
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SCIENCE AND TECHNOLOGY OPTIONS ASSESSMENT

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Study | Organic food and human health

Despite strong public interest in the subject, very few studies directly investigate the effect of organic food on human health. To help fill this gap, STOA commissioned a study to review scientific evidence regarding the impact of organic food on human health from an EU perspective. The study, presented to the STOA Panel in November 2016, will be available soon on the STOA website.

According to the study, there are indications that organic food may reduce the risk of allergies and obesity, but the evidence is not conclusive. Animal experiments suggest that identically composed feed has a different impact on the development of the animals, according to whether it comes from organic or conventional production. Moreover, epidemiological studies point to negative effects of certain insecticides on children's cognitive development at current levels of exposure.

Such risks can be minimised with organic food and by introducing non-pesticidal plant protection in conventional agriculture. The study also argues that there are few compositional differences between organic and conventional crops. Thus, there are indications that organic crops have a lower cadmium content than conventional crops, which is highly relevant from a public health perspective. On the other hand, while organic milk has a higher content of omega-3 fatty acids compared to conventional milk, the nutritional significance of this difference seems to be small.

Study | The future of farming in Europe

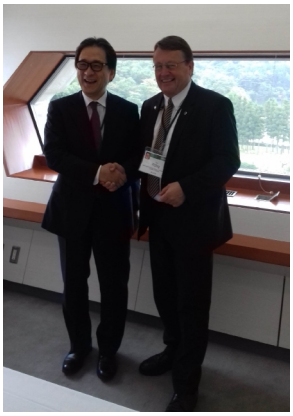
This study aims to identify the policy concerns and options for helping to stimulate a flourishing European agricultural sector, which offers jobs for young people and for the service industry and where farmers and the population benefit from the digitalisation linked to Precision Agriculture (PA). In addition, the study focused on European farming practices respecting the environment as well as animal welfare, and all this in a competitive economical setting on the world market.

The foresight approach applied in this case involved technical and social experts, the staff of MEPs working on the Common Agricultural Policy (CAP), and a diverse set of stakeholders. They analysed possible future impacts of PA and related opportunities and concerns based upon the technical analysis. The study identified the following main future opportunities and concerns regarding PA in the EU, on which the EP could take anticipatory action: (1) PA can actively contribute to food security and safety; (2) PA supports sustainable farming; (3) PA will trigger societal changes along with its uptake; and (4) PA requires new skills to be acquired.

The wide diversity of agriculture across the EU, particularly regarding farm size, types of farming, farming practices, output and employment, presents a challenge for the European policy-makers. European policy measures should therefore differentiate between the Member States, taking into account that the opportunities and concerns highly vary from one country to another. The main conclusions of the first phase of the study were presented to the STOA Panel in October 2016.

Visit | STOA at the STS *forum*

The 13th Annual Meeting of the STS (Science and Technology in Society) *forum*, held in Kyoto from 2 to 4 October 2016, was attended by some 1200 delegates of nearly 100 nationalities, and was opened by the Prime Ministers of Japan and Slovenia. The 2016 edition of this Davos-type meeting devoted to global trends in Science, Technology and Innovation was a very successful high-level gathering of major stakeholders and academia from all over the world.



Paul Rübig with Hiroyuki Ishige, CEO of the Japan External Trade Organisation

Paul Rübig MEP, Chair of the STOA Panel and member of the STS *forum* Council, attended on behalf of the EP. In addition to bilateral meetings with the heads of the major Japanese research and Science and Technology (S&T) policy bodies, he was speaker in a concurrent session on *'Competition and Cooperation among Global Industries'* and in the 7th EU-Japan Science Policy Forum organised in Kyoto by the EU Delegation to Japan and the (Japanese) National Graduate Institute for Policy Studies (GRIPS), on the sidelines of the forum.

The final statement of the 2016 meeting recalls that the world recently adopted three major agreements: the Sendai Framework for Disaster Risk Reduction; the UN's Sustainable Development Goals (SDGs) to promote a balanced and inclusive growth; and the Paris Agreement to limit the emissions of greenhouse gases. It then points to the need for a coalition of the public and private sectors and academia to nurture industrial innovation driven by new manufacturing technologies, robotics, nanotechnology and new materials. The statement calls for a global consensus on universal ICT rules, acknowledging that the use of ICT is primordial in creating 'smart cities'. It further foresees that breakthroughs in the life sciences will encourage further progress in personalised and pre-emptive medicine and emphasises the importance of S&T cooperation at all levels.

Event | Parliaments meet scientists to improve communication between the two worlds

The MEP-Scientist Pairing Scheme aims at fostering better connections between MEPs and the scientific community, with a view to improving the interaction between science and policy-making. To achieve this goal, which is part of STOA's mission, ensuring that MEPs have regular access to reliable information is essential. For this reason the fifth round of this project was organised in November 2016.

The European Parliament must "produce results which are evidence-based" - said Paul Rübig, Chair of the STOA Panel

The launch event, '*Science meets Parliaments*', was jointly organised by STOA and the European Commission's Joint Research Centre (JRC) on 8 November 2016. Two sessions were moderated by Vladimír Šucha, Director-General of the JRC, and Eva Kaili, First STOA Vice-Chair, respectively. The sessions featured statements by high-level representatives of major stakeholders (Tibor Navracsics, Commissioner for Education, Culture, Youth and Sport; Jerzy Buzek, Chair of the EP Committee on Industry, Research and Energy (ITRE); Henrik Wegener, Chair of the High Level Group of the Commission's Scientific Advice Mechanism (SAM); and Markku Markkula, President of the Committee of the Regions), and a number of personalities from the public S&T sector and academia. The discussion focused on how best to build bridges between the scientific and the political community.

Given the huge interest, demonstrated during and after the event, in creating a forum for scientists and policy-makers within the EP, participants and organisers agreed to continue with the tradition of 'Science meets Parliaments' events next year, and to involve even more stakeholders and institutions.

The Pairing Scheme itself ran from 8 to 10 November, with 15 scientists from across Europe engaging with MEPs. At the end of their visit, the scientists described their experience as 'fascinating', 'insightful' and 'a pleasure'. They will hopefully apply what they have learned and share their experiences with their colleagues.

Event | Towards a space-enabled future for Europe

Paul Rübig and Kai-Uwe Schrogl, ESA Chief Strategy Officer

Outer Space is hugely important for technologies that we use every day, such as mobile phones, live TV broadcasting and weather forecasting. The number of Space-faring nations and Space commercialisation are increasing, and Space research and exploration push the boundaries of science and engineering and drive innovation.

Space was the theme chosen by STOA for this year's Annual Lecture, held on 16 November 2016 and co-organised with the European Space Agency (ESA). The event was chaired by Paul Rübig, STOA Chair, and moderated by Kai-Uwe Schrogl, ESA Chief Strategy Officer. Mairéad McGuinness, EP Vice-President responsible for STOA, Eva Kaili, First STOA Vice-Chair, and STOA Panel members Clare Moody and Georgi Pirinski also featured in the programme.

The recently announced Space Strategy for Europe outlines EU's approach for exploiting the potential for further advances in this domain. ESA is the EU's partner in working towards using space as an enabler of knowledge, jobs and growth, strengthening security and fostering prosperity – 'Space 4.0 for a United Space in Europe', as described by Jan Woerner, ESA Director General.

Sir Martin Sweeting, Founder and Executive Chairman of Surrey Satellite Technology Ltd and Director of the Surrey Space Centre, gave a keynote speech about 'micro-satellites', which have enabled small countries and companies to utilise Space due to the relatively low launch cost. Representatives from Blue Origin and Airbus Defence and Space presented some of their innovations in the field, such as developing a reusable rocket, providing global wireless Internet access and developing the first reprogrammable satellite. The assembly of satellites in orbit, Space traffic control, debris mitigation and possible domination of Space by non-state players were among the opportunities and challenges mentioned.

Pointing out projects that have been "brought along by stamina, ambition, and long-planning", such as Rosetta, Voyager and the International Space Station, Reinhold Ewald, ESA astronaut, said that, to make further achievements of the same magnitude, we will need to exhibit these same attributes in the future.

Event | Understanding the human brain: A new era of big neuroscience

Decoding the human brain remains one of the greatest scientific challenges of our time. On 29 November 2016, STOA hosted a workshop at which representatives from some of the world's leading brain initiatives presented their work and discussed the future of neuroscience projects across the globe.

The event put the spotlight on three major initiatives: (1) the EU Future and Emerging Technologies Flagship Human Brain Project (HBP), which focuses on developing a European Research Infrastructure for advancing brain research; (2) the US Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative, which focuses on the development of new technologies for recording brain circuit activity; and (3) the Japan Brain/MINDS Project, whose aim is to understand the cellular and circuit basis of behaviour. Representatives from each initiative gave an overview of their project, its status, achievements and cooperation opportunities.

The event, chaired by Second STOA Vice-Chair Evžen Tošenovský, and moderated by Maurizio Corbetta from the University of Padova, began with an introduction by Roberto Viola, Director-General of the European Commission's DG CONNECT.

The STOA workshop added momentum and ideas to the ongoing discussions about strengthening collaboration among the international brain initiatives in neuroscience research, as a way of enhancing the benefits that such research could bring to individual citizens and society as a whole.

STOA (Science and Technology Options Assessment), as an integral part of the European Parliament's structure, has the task to carry out expert, independent assessments of the impact of new technologies and identify long-term, strategic policy options useful to the Parliament's committees in their policy-making role.

STOA Panel

The STOA Panel is composed of 25 MEPs, including the EP Vice-President responsible for STOA and 24 MEPs appointed by nine parliamentary committees. With the input of committees and individual Members, the STOA Panel, on the recommendation of its Bureau, decides on projects and other activities in this field. Each STOA project is overseen by one or more Panel members.

STOA Panel

The STOA Panel includes Members from the following committees:
Industry, Research and Energy (ITRE): six Members
Agriculture and Rural Development (AGRI): three Members
Employment and Social Affairs (EMPL): three Members
Environment, Public Health & Food Safety (ENVI): three Members
Internal Market and Consumer Protection (IMCO): three Members
Transport and Tourism (TRAN): three Members
Culture and Education (CULT): one Member
Legal Affairs (JURI): one Member
Civil Liberties, Justice and Home Affairs (LIBE): one Member

STOA Bureau

The STOA Bureau is comprised of four Members:
Mairead McGuinness, EP Vice-President responsible for STOA
Paul Rübig, STOA Chair
Eva Kaili, 1st STOA Vice-Chair
Evžen Tošenovský, 2nd STOA Vice-Chair.

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