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Editorial: Special Issue on EFSA's third Scientific Conference 'Science, Food, Society'

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From 18–21 September 2018, the European Food Safety Authority (EFSA) hosted its third Scientific Conference on Science, Food and Society (<http://www.efsa.europa.eu/en/events/event/180918>) in Parma, Italy. Capturing all the diverse elements of the total 92 formal platform presentations to EFSA's third Scientific Conference is challenging. This special issue of the EFSA Journal dedicated to the Conference brings together selected invited papers that were presented at the Conference together with multiauthor papers that summarise the different sessions of the extensive programme.

Exponential growth in the volume and complexity of information including data, the use and variety of social media and other platforms for communication, and questions about the authenticity and reliability of scientific expertise all provide a common and ever challenging backdrop to the major discussions of the conference. Is the current practice of food safety risk assessment fit for the demands ahead, and if not, how can it be realigned for the future of food safety decision-making? An important and repeated theme is the need for better engagement with society while remaining scientifically robust (Devos et al., 2019b). Risk assessment should address value-laden judgements transparently, reflecting social and ethical priorities and by engagement with interested and affected parties (Elliott, 2019). Social context requires trustworthy and open communication that acknowledges the importance of epistemic uncertainty, and societal views ought to be included in the evidence base for decision-making (Patel, 2019). The question is: how can these goals best be achieved?

Focussing on advancing the science in each sector reveals differing requirements. The traditional human health risk assessment paradigm is based on the identification of apical endpoints and is currently heavily reliant on animal testing. Promising new tools and technology enable better understanding of the mechanisms that lead to adverse effects and the more accurate prediction of the

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biological response to establish causality (Hougaard Bennekou, 2019; Lanzoni et al., 2019). The background to challenges for nutritional advice, include the evident switch from diseases of nutrient deficiencies to diseases of excess, which is the predominant public health concern in 'Western-like' countries. Most dietary interventions are relatively ineffective and personalised approaches that customise intervention to the individual may be more acceptable and effective (Mathers, 2019). How can societal and technological developments impact and change for the better future food choices and diets (Woodside et al., 2019)? Risk assessment of biological hazards is fundamentally challenged by the global movements of infectious agents and vectors facilitated by trade, human mobility and environmental change (Messens et al., 2019). Such complexity, which may actually impact most food safety risk assessments, requires risk assessment to be reframed as post-normal science for which facts are uncertain, values are in dispute, stakes are high and decisions are urgent (Waltner-Toews, 2019). Equally, informative problem formulation is key to frame premarket (prospective) environmental risk assessments of regulated stressors, though this effort is often hindered by the absence of clear policy goals and decision-making criteria. Greater discussion and interaction between risk assessors and regulators is essential to clarify such policy goals and decision-making criteria (Devos et al., 2019a). Using an ecosystem services framework can strongly enhance the ecological and societal relevance of environmental risk assessment and facilitate more holistic assessments that integrate assessments across multiple stressors, geographical/temporal scales and policies/legal frames (Devos et al., 2019c). Acknowledging the exponential explosion of data in recent years which undoubtedly increases the evidence base available for risk assessment, in combination with new technologies and methodologies have great potential to access and analyse the 'right' data for regulatory driven science (Cavalli et al., 2019; Hartung, 2019).

In order to make effective use of new scientific approaches and advances, engagement between experts and other stakeholders is needed (Smith et al., 2019). As more science is pushed in 'real time' into the public domain without being filtered by professional mediators, greater responsibilities fall on researchers, institutions, and the users of information to develop productive forms of communication (Bucchi, 2019). Creative strategies for alleviating polarisation and confirmation bias are needed, especially on social media (Zollo, 2019). In order to foster effective communication and engagement in the future, regulatory agencies will need to work across disciplines and grapple with cutting edge developments in artificial intelligence and citizen science (Naydenova et al., 2019; Noel-Storr, 2019).

Drivers to make food cheaper and more available, through promoting productivity and global trade, have resulted in a food system that is unsustainable. For the future, tools like scenario analysis can help us envision more sustainable and secure ways of developing our food system by changing patterns of trade and diet (Benton, 2019). Globally humanity needs sustainable, safe and nutritious food. EFSA's challenge is to deliver better and more visionary regulatory/scientific advice incorporating societal views using state of the art developments in science (Verhagen et al., 2019).

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