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Understanding food safety risks and uncertainties and meeting citizens' expectations as food systems become more complex

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1. The big picture

Scientific and technological developments in the agri-food sector have led to a very high degree of complexity in global food systems. The dynamism of such systems and the continuous evolution of food safety sciences, together with the availability of new communication tools, magnify the complexity of food safety-related messages. For example, analytical techniques reveal minute traces of previously undetected contaminants; combined exposure to multiple chemicals or chemical mixtures pose many yet unanswered questions; the impact of climate change on food safety causes changes in mycotoxin profiles or the appearance of uncommon marine biotoxins in new parts of the world; the distribution of microplastics in the food chain and their effect on ecosystems are not yet fully understood.

In this context, risk assessors find themselves in the difficult but necessary role of having to quantify and explain the uncertainties associated with knowledge gaps in regulatory science. At the same time, citizens are exposed to a multitude of information messages, of varying degrees of credibility. It is not uncommon for such messages to be conflicting rather than aligned and for public controversies about science to be openly debated without any expert mediation.

Another aspect to be considered is that many citizens take great interest in food safety matters and there is a legitimate expectation that different views should be listened to. As experts and consumers can have differing perceptions of risk, it is important for policies to be based on science and evidence, and for food safety authorities to enable transparent participation by anyone with an interest.

2. The strategic issues that need attention

2.1 *Communications at the interface between science and society*

An important theme that emerged from discussions at EFSA's 3rd Scientific Conference, held in Italy in September 2018, is the need to carefully consider the interface between science and society in terms of reciprocal expectations. Scientists and science communicators need to be more aware of how context, language and cognitive biases can influence the communication process.

2.2 *Good science is not enough*

Producing good science is not enough on its own. In order for citizens to trust scientific assessments, risk assessors should be more aware and also more explicit about the value judgements underpinning regulatory science and about scientific uncertainties. Evidence and data used by risk assessors, as well as methodologies and protocols, should be accessible and effectively communicated.

2.3 Open data

Openness and transparency are fundamental values that can translate into open repositories of risk assessment data, such as data on foodborne zoonotic diseases, antibiotic resistance and the presence of chemicals in food. Huge amounts of data on pathogens, chemicals and other hazards in the food chain can be made available to the public through web reporting tools, such as tables, reports, graphs, maps and dashboards. Data visualisation and/or interactive tools can be used to improve the accessibility and usability of enormous datasets.

2.4 Harmonisation of risk assessment terminology

Notions such as hazard, risk and uncertainty can be perceived very differently across various audiences. Risk assessment terminology, in particular around uncertainties, is not always used consistently across different disciplines, legislative frameworks and geographical regions. Clear, accurate and consistent communications enable risk managers and consumers to access to the most up-to-date risk assessments and to make informed choices about policies, foods and diets.

2.5 Clear communications

Clear communications rely on understanding the needs of target audiences and ensuring consistent messages across different channels and organisations. Dedicated Communication Experts Networks can be set up at regional level to help align messages which can then be tailored to local audiences. For example, EFSA facilitates an International Liaison Group for Risk Communication, which enables its members to discuss challenges, identify solutions and exchange best practices on communication approaches.

2.6 Creative use of different communication tools

There are many different communication tools available, from the more traditional news stories on the internet, to multimedia-rich content and interactive online tools, to social media and professional networking channels. Organisations and their staff can share information about their work, through many communication channels and networks, thus amplifying food safety messages.

2.7 Engagement with stakeholders

Experts and risk assessors need to listen to the views of interested parties and to foster active and constructive engagement with stakeholders. A successful example in this regard was the establishment of the EU Bee Partnership, designed to improve data sharing on bee health. The partnership was an outcome of a symposium organised by EFSA as part of the 2017 Bee Week. Since then, a stakeholder group representing beekeepers, farmers, NGOs, veterinarians, academia, industry, producers and scientists has worked on the terms of reference that will guide the work of the partnership.

Next steps

As a global community of risk assessors and risk managers, we need to work together and to make the best possible use of all available traditional, modern and emerging communication tools and approaches to counteract misinformation. In a world of increasing complexity, it is important to create and support transparent and accessible risk assessment mechanisms as well as clear and engaging communications. These are prerequisites for the functioning of a modern and trustworthy food safety system responding to citizens' needs and expectations.

References

- Guidance on Uncertainty Analysis in Scientific Assessments
<https://www.efsa.europa.eu/en/efsajournal/pub/5123>

Keywords

Risk communication; Uncertainties in Risk Assessment; Communication tools