Worldwide perspectives on emerging technologies - NAMS Roadmap (2023)

In this guide

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The focus of the 7th annual Global Summit on Regulatory Science (GSRS17) was Emerging Technologies for Food and Drug Safety and the summit publication stated that “Moving forward toward greater integration of emerging data and novel methodologies for chemicals risk assessment will need continuous efforts on capacity building” (Slikkler et al., 2018).

Furthermore, in the recent EU Farm to Fork strategy and the EU Green Deal Food 2030 Pathways for Action (Food Systems and Data 2020) it states: “to valorise emerging technologies, tools, standards and infrastructure for use in food systems”.

The Royal Society of Chemistry recently published a Drivers and scope for a UK chemicals framework (2021) which recommends under regulation: “Be a world leader in the development of New Approach Methods (NAMs) for safety evaluation without the use of animals and devise new risk assessment frameworks to support decision-making using NAMs”.

The future direction of safety assessment science will depend heavily on the evolution of the regulatory landscape. A key challenge, though, is whether the regulatory framework can keep pace with the increasing speed of scientific and technological developments (Worth et al., 2019).

Food authorities should strive to incorporate the best scientific methods available (Kavlock et al., 2018) into chemical risk assessment. The future of food safety assessment depends on adaptability, flexibility and revolutionary principles in order to respond to the accelerating developments in science and technology.

This implies that close collaboration will be needed between chemists, toxicologists, informaticians, risk assessors and others to develop, maintain and utilise appropriate models. Not only must the different disciplines come together, but also those scientists from industry, academia and regulatory agencies must recognise the commonalities (Cronin et al., 2019). The challenge is to respond to the growing need for adaptable, flexible and even bespoke computational workflows that meet the demands of industry and regulators, by exploiting the emerging methodologies of Tox21 and risk assessment.