EFSA-ECHA workshop on the implementation of the EC roadmap for Pesticides and Biocides
21/10/2026

ENVIRONMENTAL SAFETY ASSESSMENT

Parallel session

Maria Arena, Tomasz Sobanski

Session 2.1

Reflections from stakeholders

ENVIRONMENT (ENV)

Roadmap-specific technical opportunities and challenges for pesticides and biocides



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Session 2.1

ENVIRONMENT (ENV)

Reflections from stakeholders

Roadmap-specific technical opportunities and challenges for pesticides and biocides



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THREE PRESENTATIONS POINT TO INTEGRATED, PREDICTIVE ERA

The sequence moves from method readiness, to evidence integration, to the science needed for cross-species prediction.

01 ADAM LILLICRAP

Map readiness

- 4,275 studies screened; 1,310 reviewed using 18 metadata fields.
- Priority: standardisation, regulatory confidence and IATA-level integration.

02 BRUNO CAMPOS

Integrate evidence

- Framework combines exposure, fate, ADME/TK, mode of action, target conservation, modelling and NAM data.
- Three case studies indicate mechanistic evidence can identify susceptible species.

03 STEPHEN SHORT

Build prediction

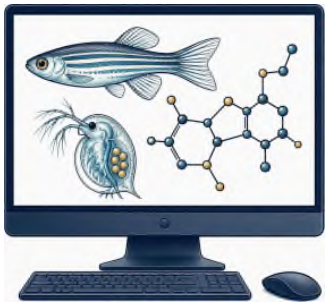
- Omics can explain cross-species sensitivity and support predictions for untested species.
- Key gaps: genomes, life stages, receptors, detoxification and bioinformatics.

Shared direction: fit-for-purpose NAM frameworks—not one-for-one animal-test replacement.

Source: Session 2.1 Presentation Summaries and Questions

NAMS FOR ERA: CURRENT METHODS

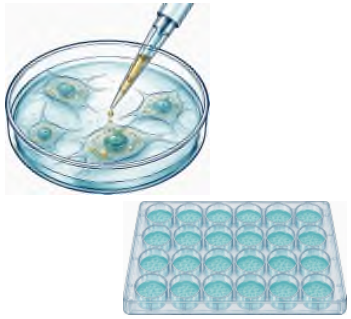
Current more frequent alternative methods for environmental risk assessment (ERA)



In silico methods

Curated datasets

QSAR models for fish, aquatic invertebrates and bioaccumulation



In vitro methods

Bioaccumulation OECD 319A/B

Fish acute toxicity OECD 249

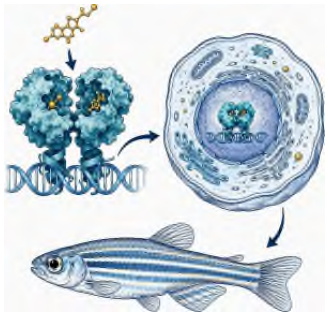


Non protected life stages/invertebrates

Acute toxicity data FET (OECD 236)

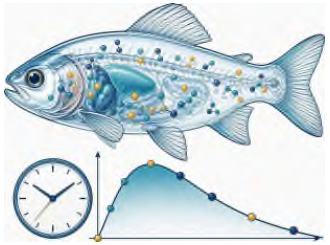
Chronic fish E-FET

Bioaccumulation HYBIT (OECD 321)



AOP-like frameworks

Adverse outcome pathways to arrange the evidence form mechanistic to in vivo data



Mechanistic effect models

Support environmental effects assessment

NAMs: new approach methodologies. Acceptance depends on the context of use.

Commission Roadmap context: SWD(2026) 144 final, Section 3 (environmental safety assessments).

WHAT'S NEXT

Topic	Current position and open questions
In silico methods	Available and used mainly to replace acute toxicity and bioaccumulation studies. For PPPs, submissions mainly concern metabolites. QAF should be used to assess the reliability of the prediction https://www.oecd.org/en/publications/q-sar-assessment-framework-guidance-for-the-regulatory-assessment-of-quantitative-structure-activity-relationship-models-and-predictions_d96118f6-en.html.
In vitro methods	Bioaccumulation methods (OECD TG 319A and B) are complementary tools, not yet fit for risk assessment. What else is needed? Is testing bioaccumulative potential in liver cells of a cold species sufficient to extrapolate to other species?
Acute toxicity on fish	Methods available, however work still needed on the domain of applicability. How to make sure more data become available and the knowledge on the coverage expanded?
AOPs	Useful, but still demanding in terms of in vivo data. Quantitative AOPs could help but require substantial development effort.
Mechanistic effect models	Reduce the need for animal data but still require in vivo data for model calibration and validation.
Exposure	Should exposure play a greater role in designing fit-for-purpose risk assessments, focusing on organisms at risk because of higher exposure?
Scope of the roadmap	What about invertebrates and terrestrial compartments, which the roadmap has not specifically addressed?

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