

HEROIC Project

HEALTH AND ENVIRONMENTAL RISKS: ORGANISATION, INTEGRATION
AND CROSS-FERTILISATION OF SCIENTIFIC KNOWLEDGE



THE CHALLENGE

At present, human health and environmental risk assessments are typically conducted independently of each other. This means that data from toxicological and ecotoxicological studies are not readily accessible by risk assessors in the other discipline, and possibilities for synergies are not exploited. Risk assessors in both disciplines are facing challenges due to the increasing need for risk assessments (e.g. REACH, toxicity of mixtures), public and legislative pressure to reduce the amount of animal testing, and budget restrictions. It is clear that better coordination and exploitation of existing data is needed to optimise resource use in human and environmental risk assessment. To this direction the concept of Integrated Risk Assessment (IRA) has been developed as an advance in current risk assessment practice.

THE OBJECTIVES

- Contribute to the harmonisation of tools and methods in human and environmental risk assessment by exploring how hazard characterisation and exposure assessment data can be used across disciplines.
- Develop a framework for integrated approaches and methodologies for human and environmental risk assessment (for all chemical classes, also including mixtures).
- Facilitate better understanding and co-operation between stakeholders involved in human and environmental risk assessment, in order to improve the quality, perceived value, and acceptance of IRA, thereby helping to improve risk management decisions.

THE APPROACH

- Produce a comprehensive map of key stakeholders, risk assessment processes and legal frameworks, to identify current approaches in risk assessment and priorities for future harmonisation and improvement.
- Examine human and environmental data and models available for hazard characterisation and exposure assessment.
- Evaluate whether these test data and models can be used for extrapolation between human and environmental risk assessment (examining species homologies, relevance of endpoints and modes of action).
- Propose an integrated decision-making framework, using a weight-of-evidence approach, and develop novel integrated testing strategies for substances with limited data.
- Communicate the knowledge produced by the project to the relevant audiences, using dedicated newsletters, peer-reviewed journal articles, workshop proceedings, etc. on the purpose-built open-access website www.heroic-fp7.eu.
- Set up a dedicated data and training platform "Tox-Hub" on the project website (publicly accessible, also after the conclusion of the project).

THE FIRST HEROIC EXPERT WORKSHOP

In April 2012 the first HEROIC workshop was held. More than 60 representatives from public institutes, academia and industry discussed how an integrated approach to risk assessment (IRA) could improve the efficiency and accuracy of current risk assessment procedures.

The potential benefits of IRA have been recognized for more than a decade. Several projects have been carried out including a joint WHO-IPCS/US-EPA project (2001) and a range of EU FP6 and EU FP7 projects.

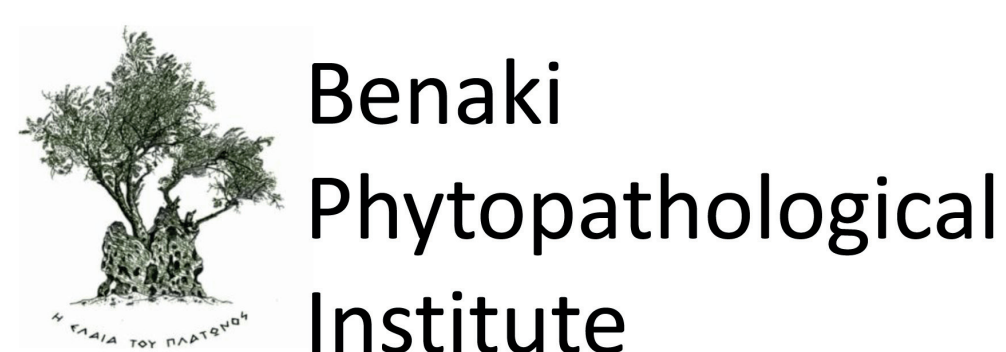
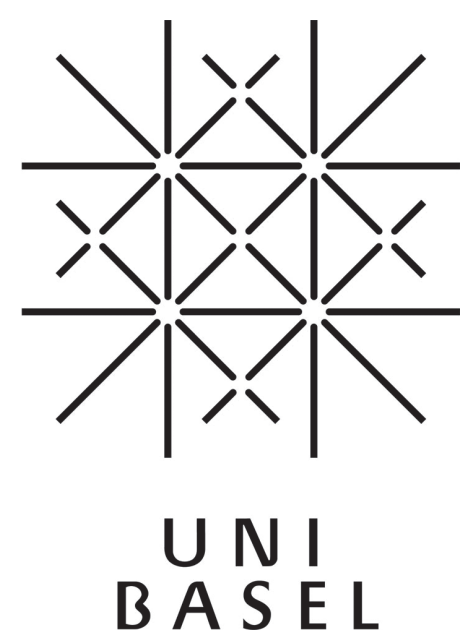
The impact of those initiatives has been limited. In the absence of explicit legal mandates, some IRA is conducted today but there is no consensus about the scale of integration. This is partly because there is no harmonized definition and understanding of what IRA means in practice.

The HEROIC approach differs from previous projects because it focuses on the integration of human health and environmental risk assessment including socio-economic analysis. It is anticipated that the accessibility of new data sets generated under REACH will facilitate the cross-comparability of human and environmental risk assessment data.

The HEROIC team will develop real life case studies to better demonstrate the potential of IRA.

A complete executive summary of the workshop will soon be available on the HEROIC website.

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