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Editorial

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Dear friends of HEROIC,

In the previous newsletter we shared with you some outcomes of our work: we provided an overview of the analysis of existing gaps and needs of current risk assessment (RA) processes and we introduced the Tox-Hub platform through which HEROIC intends to close some of the gaps and remove impediments linked to the accessibility of the data.

In this issue we provide some information on integrated risk assessment of chemical mixture and an update on existing approaches and methodologies to assess mixture toxicology

Most importantly, we would like once again to encourage all interested parties to support us in our endeavour and to constructively collaborate in achieving our objective for the benefit of society as a whole.

We hope that you find this information useful, and we are looking forward to hearing your feedback.

Prof Martin F Wilks
Project Coordinator

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Integrated risk assessment of chemical mixtures.



The integration of human risk assessment (HRA) and environmental risk assessment (ERA) in a single process, could also be extended from hazard and exposure assessments for single chemicals to realistic situations of exposure to multi-component mixtures of chemicals.

An updated inventory of existing approaches and methodologies for assessing the toxicity of chemical mixtures and cumulative risks was prepared within the framework of WP3, taking into account recent reviews and discussion papers on methodological and regulatory aspects of the subject, proposals for novel approaches, new comprehensive books on mixture toxicology, new proposals for tiered regulatory approaches for mixture risk assessment and the recent Communication from the European Commission on the issue.

Regulatory approaches to the problem of mixture toxicity fall into three basic categories: experimental whole mixture testing, component-based mixture toxicity modelling, and safeguarding against unwanted mixture effects by means of assessment factors. As an update of the state-of-the art report on mixture toxicity that was prepared in 2009 for the European Commission, we examined all new scientific concepts and models, as well all current regulatory approaches to the issue. On occasion of the first HEROIC workshop, the resulting inventory was discussed with a panel of invited experts, with the aim to identify those new approaches that may become fit for regulatory purposes in the near future, and more specifically to identify those methodologies that lend themselves for an integrated approach that combines human and environmental risk assessment of chemical mixtures in a coherent procedure.

During recent years, several European, American and internal organisation have proposed different generic frameworks for assessing the risks from exposure of humans or wildlife to multi-component chemical mixtures. These are important steps forward, but the experts agreed that none of the proposals already fits all regulatory needs. A number of developing methodologies were considered to be potentially helpful for improving the process, such as the TTC approach (Threshold of Toxicological Concern) for human risk assessments or the SSD concept (Species Sensitivity Distribution) for ecotoxicological mixture risk assessments. Other novel approaches appear to be promising from a scientific perspective but were considered to be far away from being fit for regulatory purposes, such as the application of the so-called omics-approaches or the DEB theory (Dynamic Energy Budget), for instance.

For more detailed information please contact: Michael Faust (faust@fb-envico.com).

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Focus On Heroic Partners

Our newsletter also gives us the opportunity to introduce the HEROIC partners.

We started in the first issue with the Swiss Centre for Applied Human Toxicology which coordinates the HEROIC project. In the following issues we presented the Catholic University of Sacred Heart (UCSC), Italy, the Spanish Council for Scientific Research (CSIC), the French Institute National de l'Environnement et des RISques (INERIS) and the Benaki Phytopathological Institute (BPI) in Greece.

In this issue we take the opportunity to introduce Faust and Backhaus Environmental Consulting (F+B).

	<p>Faust und Backhaus Environmental Consulting GbR (F+B) is an SME founded in 2001 as a spin-off from the University of Bremen, Germany (www.fb-envico.com).</p> <p>F+B provides scientific consultancy, contract research, and project management services in the fields of (eco)toxicology, chemicals risk assessment, and environmental management. Mixture toxicology and chemicals regulation are thematic priorities of F+B research work.</p> <p>F+B contributes to HEROIC WPs 2, 3 and 4 by specifically addressing the aspects of mixture toxicity and cumulative risk assessments.</p>
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F+B is specialised in working at the interface between environmental sciences and chemicals regulation, in particular in the fields of chemical mixtures, endocrine disruptors and engineered nanoparticles (ENPs). F+B explores options for translating new scientific findings into adequate regulatory approaches. F+B contributed to the state-of-the-art reports on risk assessments of chemical mixtures and on endocrine disruptors, both commissioned by DG Environment of the European Commission. F+B also participates in contract studies on the hazard and risk assessment of pesticides and biocides commissioned by the European Food Standard Agency (EFSA), the German Federal Environment Agency (UBA), and DG SANCO of the European Commission. In addition to HEROIC, F+B currently participates in the ongoing FP7 project NanoFATE on the environmental risks of ENPs and F+B was also a member of the recently finished FP7 project CONTAMED on the human health risks of mixtures of endocrine disruptors.

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News

HEROIC ToxHub: training session with EU Joint Research Centre from Ispra

In Barcelona, on the 3th of July CSIC organized a training session with EU Joint Research Centre from Ispra.

The training session "How to migrate an adequate third party data source into an appropriate OECD Harmonised Template (OHT)" is focused on the databases mapping and will contribute to harmonize the technical feasibility of combining these two platforms. The IUCLID/OHT format is validated and well recognized for regulatory acceptance so it could increase the likelihood for Tox-Hub maintenance and durability after the end of the HEROIC project by possible connection with eChemPortal.

Events

3rd HEROIC Consortium meeting

The 3rd HEROIC Consortium meeting took place in Glasgow, Scotland, on 13th May 2013 as a side event to the 23rd Annual Meeting of the Society of Environmental Toxicology and Chemistry (SETAC Europe).

While HEROIC has entered the second part of the Project (2011-2014), it was a great opportunity for the Consortium partners to stop and reflect on the work that has been done so far and to discuss the upcoming challenges. In particular, results and work progress for WP 4, 5 and 6 were evaluated and discussed in more depth.

All participants are grateful to Martin Wilks, Barbara Intelmann, Lothar Aicher and Nicolas Roth of the Swiss Centre for Applied Human Toxicology (SCAHT) for the successful organisation of the meeting.

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Potential socio-behaviour factors influencing the effectiveness of the actual risk analysis procedure survey

The web-based stakeholders survey to identify how socio-behavioural factors impact risk analysis procedure is launched.

If you would like to offer your valuable opinion, you can find the survey in the event section of heroic website (<http://heroic-fp7.eu/en/events/surveys/>)

The HEROIC team will consolidate and evaluate all contributions to prepare for a roundtable discussion with selected experts that will take place in Bruxelles. The insights gained from this process will help to improve the integration, where possible, of the human and environmental RA in a manner suitable for its coupling with Socio Economics Analysis.

EUROTOX 2013



HEROIC will participate in a symposium at the 49th congress of the European Societies of toxicology (EUROTOX) on 'Integration of human and environmental risk assessment – is it the future?' that will be held in Interlaken, Switzerland from September 1 to 4, 2013

Visit : <http://www.eurotox2013.com/>

Publication

The position paper "***Perspectives for integrating human and environmental risk assessment and synergies with socio-economic analysis***" is now published on *Science of the Total Environment*, 456-457 (2013) 307–316

This paper describes the scope and prospects of the integrated assessment and of including socio-economic analysis in this risk assessment. From this analysis a number of recommendations for the next research steps can be derived

The abstract is downloadable from the website in documents section <http://www.heroic-fp7.eu>. For further info please contact alexander.pery@ineris.fr

Contact us

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