

## CEFIC Long-range Research Initiative Request for Proposals (RfP)

### ***Title and Code Number:***

Implementing an ecosystem services-based approach to chemical risk assessment: A proof of concept study – **LRI ECO45**

### ***Background***

The ecosystem services concept is gaining broad interest in regulatory and policy groups for use in landscape management and environmental risk assessment. The approach has potential to bring greater ecological relevance to setting and assessing environmental protection goals compared to current regulatory frameworks such as REACH and EC 1107/2009. The Cefic LRI CARES project (ECO27) organised a series of three workshops that brought together key stakeholders from the chemical industry, regulatory agencies and academia to evaluate the use of an ecosystem services approach in guiding chemical environmental risk assessment schemes and to reach consensus on a roadmap for implementing such an approach. Workshop 1 identified clear advantages of using an ecosystem services approach, but also highlighted a number of challenges related to its implementation. Workshop 2 evaluated research needed to effectively implement an ecosystem services approach into both prospective and retrospective risk assessment, and prioritized four areas for further work: linking measurement endpoints to ecosystem services; evaluation/development of mechanistic models, in particular ecological production functions; development of environmental scenarios; an integrated decision making framework for risk managers and risk assessors. Workshop 3 discussed the development of an implementation plan that expanded on these research needs. It concluded that a 'proof of concept' project was required to assess the feasibility of evaluating the impact of chemical exposure to ecosystem services delivery based on current knowledge and integrating this approach within existing regulatory risk assessment frameworks.

### ***Objectives***

To evaluate the practical applicability of an ecosystem services approach to prospective and retrospective chemical risk assessment.

### ***Scope***

- A multidisciplinary team with expertise in regulatory chemical risk assessment and ecosystem services.
- Assessment of the relevance of existing methodologies to the assessment of the impact of chemical exposure to ecosystem service delivery.
- Evaluation of the applicability of currently available ecological production functions to chemical risk assessment.
- Use of existing information to undertake a tiered prospective risk assessment of the effect of two different case study chemicals on multiple ecosystem services within a multifunctional, multi-compartment landscape.
- Use of existing information to undertake a retrospective risk assessment of a case study chemical on multiple ecosystem services.

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- For each case study, identification and evaluation of ecosystem service trade-offs and development of risk assessment options to inform risk management decisions.
- Comparison of the outcome of an ecosystem services-based risk assessment with the outcome of current relevant regulatory risk assessment approaches, including an evaluation of the advantages and disadvantages of an ecosystem services approach.
- Active involvement of risk managers and key regulatory agencies.

### ***Deliverables***

1. Tiered prospective risk assessment of the effect of two different case study chemicals on multiple ecosystem services within a multifunctional, multi-compartment landscape.
2. Retrospective risk assessment of a case study chemical on multiple ecosystem services.
3. Comparison of the outcome of an ecosystem services-based risk assessment with the outcome of current relevant regulatory risk assessment approaches.

The final report shall contain an executive summary (2 pages max), a main part (max. 50 pages) and a detailed bibliography.

It is expected that the findings will be developed into at least one peer reviewed publication, following poster and platform presentations at suitable scientific conferences.

### ***Cost and Timing***

Start in January 2018

Duration: 2 years

Budget in the order of €400K

### ***Partnering/Co-funding***

Applicants should provide an indication of additional partners and funding opportunities that can be appropriately leveraged as part of their proposal. Partners can include, but are not limited to industry, government/regulatory organizations, research institutes, etc. Statements from potential partners should be included in the proposal package.

### ***Fit with LRI objectives/Possible regulatory and policy impact involvements/ Dissemination***

Applicants should provide information on the fit of their proposal with LRI objectives and an indication on how and where they could play a role in the regulatory and policy areas. Dissemination plans should also be laid down.

**DEADLINE FOR SUBMISSIONS: 31 August 2017**

Please see [www.cefic-lri.org](http://www.cefic-lri.org) for general LRI objectives information, project proposal form and further guidance for grant applications.