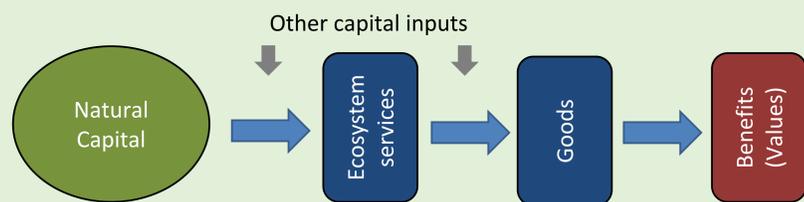


## Aim and approach

- To facilitate engagement of the chemical industry, academia and regulators to help develop and evaluate the ecosystem service approach in guiding risk assessment schemes for any type of xenobiotic chemical.
- Use workshops to facilitate engagement, dialogue and consensus building.
- Establish a core group of key stakeholders from the chemical industry, regulatory agencies and academia to participate in a series of 3 workshops.
- Produce discussion papers reviewing the current state of knowledge and case studies to illustrate possible novel approaches and development needs.

## Background

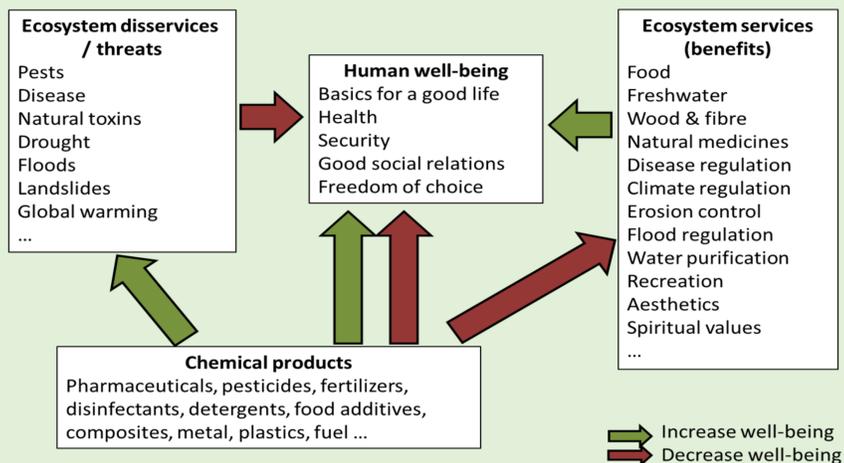
### What are ecosystem services (ES)?



- Ecosystem Services are the benefits people get from nature, such as clean air and water, food and fibre, disease suppression and climate regulation.
- ES are the flows from natural capital stocks. Natural Capital includes ecosystems, species, freshwater, land, minerals, the air and oceans.

### What is the relevance of ES to chemical ERA?

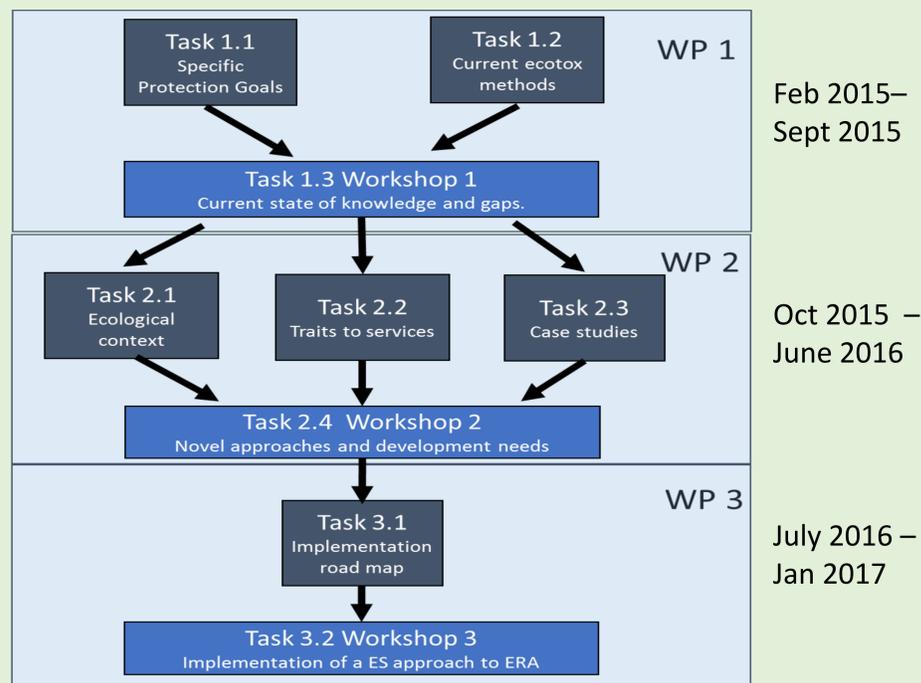
- Long-term survival and well-being of humans depend on the sustainable use of ecosystems.
- Sustaining benefit flows requires a good understanding of how ecosystems provide services and how they are likely to be affected by pressures (e.g. chemicals)
- Many chemicals in the environment are generated during the production or use of products that benefit human wellbeing.
- The challenge is how to balance the wellbeing benefits provided by the use of chemicals with the potential wellbeing costs via habitat degradation and loss of ES provision.
- Aligning chemical risk assessment to address this challenge requires the establishment of specific protection goals and approaches for translating ecotoxicological exposure and effects information into risks for ecosystem service delivery.



### What is the regulatory context?

- EU biodiversity strategy for 2020 – *Our life insurance, our natural capital*
  - “Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.”
- EC joint Scientific Committees *Making Risk Assessment more Relevant for Risk Management*
  - need for the outputs of risk assessment to be amenable to socio-economic assessments and that risks be “expressed in terms of impacts or entities that matter to people ... such as changes in ecosystem services.”
- EFSA /ECHA
  - scientific opinion outlining how an ES framework could be used to develop specific protection goals for the environmental risk assessment of PPP.
  - Draft guidance extending ES approach to invasive species, feed additives and GMOs.
  - Joint EFSA/ECHA workshop (2015) considered merits of an ES framework for setting protection goals for soil organisms.

## Project structure



## Progress

- Core stakeholder group established:
  - Regulators/policy: DG Santé, DG Enterprise, DG Environment, EFSA, JRC, MS regulators
  - Industry: BASF, Bayer, L’Oreal, RIFM, Shell, Syngenta, Unilever
- WP 1 completed
  - Two discussion papers: *Ecosystem services and their use in the development of specific protection goals for environmental risk assessment*; *Current ecotoxicity methods*
  - Workshop 1 held 15-16 July, Brussels.

## 1<sup>st</sup> workshop

Breakout groups addressed the following:

- What are the pros and cons of using an ecosystem service framework in prospective and retrospective risk assessment?
- What approaches could we use to account for heterogeneity in landscapes and ecosystem service delivery when undertaking prospective risk assessment?
- To what extent is the ecosystem service approach universally applicable (i.e. across different habitats, chemicals, emission/exposure scenarios, legislations etc.)?
- Assuming ecosystem service-based protection goals, how can we assess the impacts of chemicals on ecosystem services?
- To what extent do standardised test methods and approaches provide the necessary information?
- What are the challenges/disadvantages/gaps in the current tests(methods), and which methods are needed to assess the impacts of chemicals on ES; may non-standardised approaches for assessing ecotoxicity help address them?

## Outcome from 1<sup>st</sup> workshop

- Clear advantages of using an ES approach in chemical RA were identified (e.g. spatially explicit/relevant RA – what to protect where; transparency in communicating risks and trade-offs, integrating stressors, consistent with tiered approach) but also a number of challenges (e.g. complexity in assessment, data hungry, limitations in current ecotoxicity testing).
- Agreed that a tiered approach was necessary (lower tier – exposure and/or effect based triggers based on conservative assumptions; higher tier - standard scenarios accounting for temporal and spatial heterogeneity) and whereas approach was widely applicable in principle, it was not compatible with hazard-based legislation. ES-based RA should be based on magnitude of impact not thresholds (e.g. PEC/PNEC). The scale of the challenge of applying an ES approach to general chemicals with widespread and dispersive uses was highlighted.
- The possible need for more bioassays/tests with functional endpoints was recognized as was the role of modelling in linking measurement endpoints to assessment endpoints.
- The potential to develop environmental scenarios (species or trait-based) that can be combined with spatial information on exposure, ES delivery and service providing unit vulnerability was recognized.