



Heading towards an integrated life cycle impact assessment method quantifying biodiversity damages from water use

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POLYTECHNIQUE
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WORLD-CLASS
ENGINEERING



Application recommendations for practitioners given current state-of-the-art (Kounina et al. 2012)

Midpoint level assessment

- Use all midpoint methods and perform a sensitivity analysis to interpret results
- Interpret results in parallel with damage oriented impact assessment indicators

Endpoint level assessment

- Human health: combine indicators of all cause-effect chains, i.e., malnutrition or infectious diseases related to water deprivation of a defined quality class for agriculture, fisheries and domestic use for human health
- **Ecosystem quality: the scope of methods developed so far is complementary → use all ecosystem quality indicators simultaneously**
- Resources: not sufficiently developed to provide significant results

Problem setting and objectives

Problem setting:

- To which extent are current characterization models and indicators towards ecosystem quality AoP compatible and can simply be added?
- Are there any overlaps?
- Are there any gaps?

Objectives :

- Refine the framework allowing consistent comparison of methods along the cause-effect chain to ecosystem quality.
- Review of models to highlight and understand individual structural hypotheses.
- Identify potential overlaps to avoid inconsistencies and missing pathways
- Analyze the magnitude of differences between similar pathways and propose solutions to extend modeling capabilities to global modeling.