



Benefit Frameworks for Decision Support - Risk and Vulnerability Case Study

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There is growing expectation that research output, being open, standardised, and managed in formal research data infrastructures, will be useful to policy and decision makers without additional intervention and modification (Chen et al., 2017, OECD, 2012). We believe this unlikely in most cases (Hugo & Rogers, 2017).

There are reasons why improved access to scientific evidence does not directly lead to improved decision and policy support (Reid et al., 2004; Hugo et al., 2017), including semantic differences and the transdisciplinary nature of decision support questions, in contrast to the disciplinary focus of scientific evidence.

Previously, we reported the development of a Semantic Framework for Risk and Vulnerability (Hugo & Rogers, 2017). Here, we propose innovations to develop what we term a 'Benefit Framework': mechanisms whereby semantic coupling between evidence and decision support are operationalised for societal benefit. We derive requirements for successful benefit frameworks:

- * Semantics based on clear vocabulary or ontology in respect of the sources of evidence and the application of such evidence for societal benefit;
- * Semantic mapping between evidence and applications, supported by encoding and persistence of the value chain;
- * Interoperable services for data and applications, utilised with confidence and trust for the synthesis of new value chains, based on adequate metadata that can be annotated and extended;
- * Scalability - ideally allowing community contributions and maintenance;
- * Extensibility, since the complexity of applications will grow over time, and a need to develop schema-agnostic software that serves multiple benefit frameworks.

We report in the session on progress towards implementation of benefit frameworks and supporting software at SAEON, with Global Change Risk and Vulnerability as a case study.

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