

Research Proposal Summary

There is a growing consensus in the scientific literature that expert-driven decision-making approaches on their own are not adequate for dealing with 'wicked' problems common in the environmental field. Jurisdictions such as Australia, Canada and the United Kingdom, have concluded that wicked problems are a significant challenge to normal decision-making processes because they have the following characteristics:

- Complex, uncertain, or ambiguous information;
- No clear end point;
- Competing stakeholder interests;
- 'Quasi-scientific', because more than scientific knowledge is required; and
- Risk of an adverse outcome.

A new approach has been proposed for solving wicked problems – one which brings together experts and stakeholders to share scientific and stakeholder knowledge, and incorporates societal values, to create a common or 'vernacular' knowledge. The need for such an approach was recognized by Justice O'Connor in the Part Two Walkerton Inquiry recommendation for an inclusive watershed-based approach to source water protection (SWP) in Ontario.

The Province of Ontario is developing and implementing a SWP program, known as Source Protection Planning (SPP), through the Clean Water Act (CWA). SPP is a local decision-making approach that is structured around locally-organized, multi-stakeholder Source Protection Committees (SPCs) that are coordinated by watershed-scale Source Protection Authorities. The watershed-based SPP process is innovative for at least four reasons:

- Local source protection plan policies concerning land and water management practices are developed within a broader context of financial, institutional, political, social and technical concerns;
- Participation of stakeholders in the environmental decision-making process is encouraged through the required representation of municipalities, environmental and industry groups, and the public on SPCs;
- The contribution of partnerships and stakeholder networks is promoted to foster broader collaboration, trust and exchange of information to solve wicked problems; and
- There is a commitment to an ongoing cycle of continuous improvement through periodic review of local source protection plans.

As such, the local SPP process is an example of an innovative decision-making model for addressing wicked problems. In particular, SPCs provide a foundation for the involvement of stakeholder networks. Thus, they are built on trust and involve collaborative partnerships. These are key ingredients of a new decision-making approach that integrates risk analysis and environmental governance – something the literature terms 'risk governance'.

Although risk governance has received increasing attention in the theoretical literature over the past decade, there have been few if any contributions to the empirical literature concerning the application of this emergent approach. The SPP process is an important example because it appears to embody the following key components of a risk governance approach:

- Acknowledging the importance of societal context;
- Understanding the characteristics of the problem (complexity, uncertainty, ambiguity);
- Recognizing the different ways that parts of society perceive and react to risk; and
- Incorporating the important role that stakeholders have in analyzing and making decisions involving the environment and risk.

The proposed research will evaluate key challenges that may be faced during the development and implementation of environmental decision-making processes involving wicked problems. Specifically, SPP efforts provide an opportunity to identify and evaluate the challenges of using a risk governance approach in the context of an important wicked problem. In that context, two key challenges described in the theoretical and empirical literature will be examined:

- How is expert science and stakeholder knowledge integrated within the risk analysis process? and
- Does promoting a decentralized environmental governance process encourage information exchange and knowledge building between experts and stakeholders?

The agricultural community, which includes farmers and associated organizations, will be emphasized during the study. This sector is important for five reasons:

- It is a key sector that will be involved in developing and implementing source water protection plans in Ontario and elsewhere;
- It involves a coalition of voluntary organizations that encompasses most if not all commodity groups that have an interest in agri-environmental issues, and which form a network that ranges in scale from the local to the national;
- It has a lengthy history of participating in extension education and stewardship activities to optimize agricultural production while also protecting natural resources such as water;
- It has experience engaging and working with government, agencies, and non-governmental organizations to address competing concerns (e.g., economic and environmental risk) that are important to its members, such as SPP; and
- It provides an example of a network that has worked actively to democratize the risk analysis process by participating in decision-making involving wicked problems in order to reduce the vulnerability of its members.

The SPP program provides an excellent opportunity for conducting research concerning the application of an environmental decision-making process that embodies the risk governance approach. It is anticipated that the proposed research will provide insight concerning the way stakeholders and networks interact, share information, and participate and collaborate in the decision-making process. This will contribute to the empirical literature concerning the SWP decision-making process in general and SPP in Ontario in particular. The lessons learned from the research should inform other environmental decision-making processes, both in Ontario and elsewhere.

Findings from the proposed research should also contribute to the ongoing continuous improvement efforts mandated by the CWA that will be undertaken during the review of local source protection plans. To help optimize the contribution of the research to continuous process, the MOE and other partners in the SPP process are invited to participate in the research design process. In particular, additional research questions will be welcomed from these partners that would contribute to the continuous improvement of SPP.

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