

**Citizen science, community-based monitoring and urban planning: *Exploring ideas to extend conceptual and theoretical implications of public participation***

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**Executive Summary**

Citizen science is a concept that advocates involving non-experts in scientific research by framing research potentially as a two-way street between researchers and civil society. Citizen science has produced a number of innovative approaches to participatory research, a prolific example of which in Canada is community-based monitoring. Citizen science is increasingly being recognized in the public policy arena, both domestically and internationally, as a legitimate and low-cost method to bolster the scientific basis of policy while also fostering buy-in through meaningful public participation. As of yet, citizen science methods are not widely used in the domain of land use planning. This report aimed to link citizen science and land use planning by producing a novel conceptual framework that extends the theoretical foundations of these two domains.

This report was motivated by the following research questions:

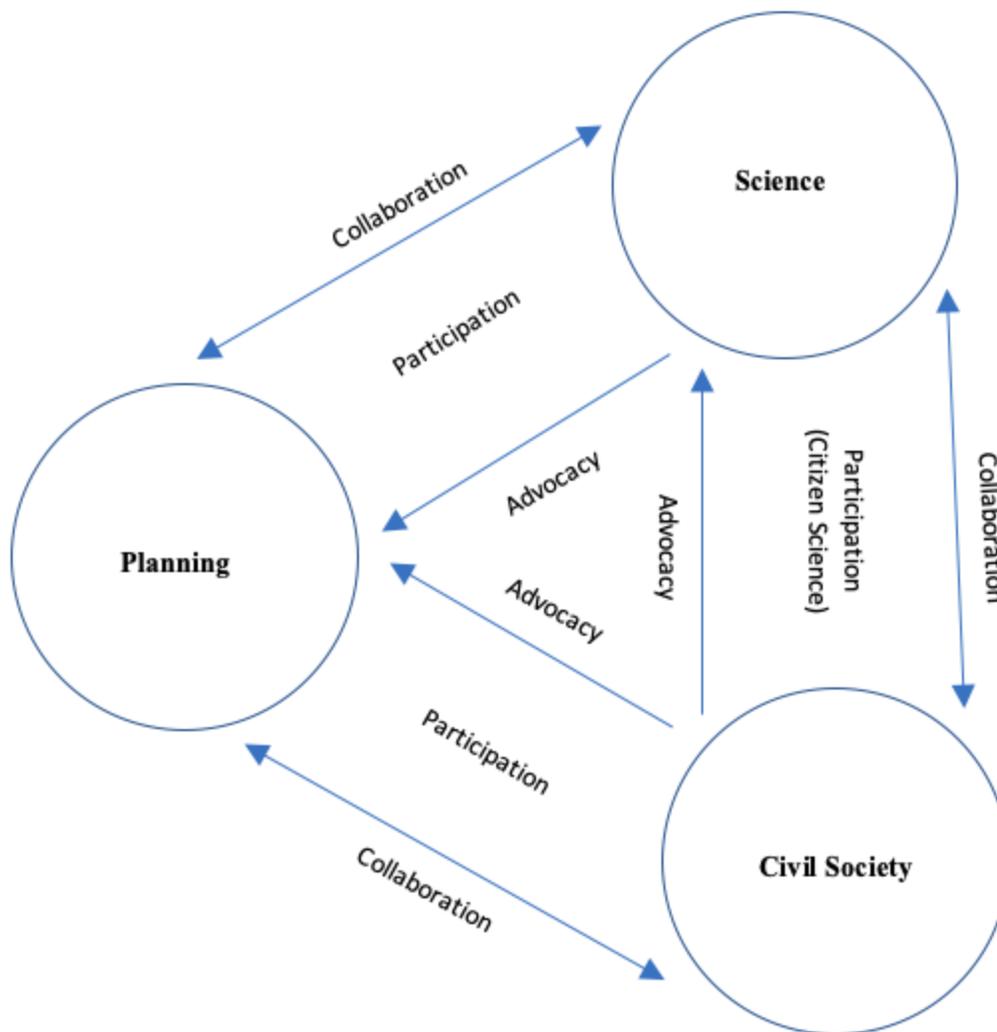
1. Can citizen science fill a theoretical gap in land use planning to extend the implications of public participation?
2. Are citizen science methods compatible with applied land use planning objectives?

**Methods:**

This report consists of two sections:

1. Literature reviews of citizen science, community-based monitoring and planning theories of public participation.
2. A case study of the Oak Ridges moraine.

The literature review was used as a basis to construct a novel conceptual framework linking citizen science to land use planning. This conceptual framework, below, depicts the hypothesized linkages between planning, science and civil society. The implication of this conceptual framework is that knowledge exchange between each of the three domains could form a feedback loop that expands knowledge in all three domains, and in so doing, improve the core activities associated with each domain. Furthermore, this framework shows how ‘participation’ is extended beyond the relationship between planners and civil society as traditionally conceived in planning theory.



A case study of the Oak Ridges Moraine was selected to test the fit of this conceptual model to applied planning. The Moraine was selected because civil society was the catalyst for its creation as a land use regime. A document analysis of Moraine civil society organizations and planning authorities was conducted using keywords generated from the conceptual framework and the literature review to determine if the conceptual framework aligned with land use planning objectives.

Outcomes:

There was limited coverage of citizen science and community-based monitoring concepts in the documents analyzed, reflecting that this is an emerging idea in the planning domain.

Nonetheless, several interesting patterns emerged:

- Scientists themselves may be a barrier to the uptake of citizen science by insisting on standard methods without considering viable citizen science alternatives
- Advocacy appears to be less commonplace than collaboration.
- The rational-comprehensive approach to planning continues to be prevalent.
- Planning authorities are interested in working with an active civil society
- Conceptualizations of civil society remain relatively unsophisticated, using low-resolution terminology such as ‘the public’ or ‘the community’.
- This framing hides the reality that civil society is also composed of scientific experts, many of whom volunteer their expertise to collective environmental action

This report recommends additional research as a next step. Qualitative research methods such as interviews with planning authorities and citizen science practitioners could help to ‘triangulate’ these linkages between citizen science and public participation in land use planning.