

CANADIAN WATER SECURITY ASSESSMENT FRAMEWORK: TOOLS FOR ASSESSING WATER SECURITY AND IMPROVING WATERSHED GOVERNANCE

KAREN BAKKER, UNIVERSITY OF BRITISH COLUMBIA
DIANA ALLEN, SIMON FRASER UNIVERSITY

Published April 2015

KEY MESSAGES FOR DECISION MAKERS

- Setting a goal of water security could enable decision-makers to effectively mediate conflicting demands for water use and minimize potentially adverse impacts from land and water management practices.
- This research led to the development of the *Water Security Assessment Framework* with 6 practical 'step-by-step' tools that enable communities to assess water and manage water security



WHO IS THIS INFORMATION RELEVANT FOR?

- Water managers
- Municipal water policy and decision makers
- Community watershed groups
- Provincial water planners
- Source water protection groups

WHAT WAS THE RESEARCH FOCUS?

Current approaches to water management fail to link water quality and quantity together, both in terms of human health and aquatic ecosystem health. In addition, often there is inadequate consideration and assessment of risks to water - comprehensive risk assessments are seldom applied to water-related issues. These disparate water management challenges demand a broad, integrative approach that accounts for multiple stressors and cumulative effects. Water security is a promising approach that looks at all the demands placed upon a watershed, including water quality, quantity (including climate change and allocation), aquatic ecosystem health, human health, risk and adaptive governance.

WHAT WAS THE RESEARCH METHOD?

Between 2008-2012, our team of researchers from 8 Canadian universities worked with 20 project partners (including two case-study communities) to develop 6 practical step-by-step tools that enable communities to assess and manage water security in their watershed.

To access all the tools listed in this report, please visit the project website: www.watersecurity.ca

WHAT WERE THE RESEARCH RESULTS?

The *Water Security Assessment Framework* involves:

1. Evaluation of **current status** of water quality & quantity through the use of indicators
2. Determination of **thresholds** (above which water is insecure)
3. Assessment of **risks** to water
4. Integration of results into **policy & decision-making**

WHAT ARE THE IMPLICATIONS FOR DECISION MAKERS?

Water security demands a greater priority for water. The *Water Security Assessment Framework* can assist communities in planning and decision-making on land use projects that may impact watersheds. Our research highlights the need for a broad and integrative approach to water quality and quantity that examines the watershed as a whole, incorporating both human and aquatic ecosystem health. The assessment of current water security status through indicators needs to be combined with the assessment of future risks over time (ideally through continuous assessment) to determine improvements, or declines against baselines or thresholds. We recommend a "learning by doing" approach; integrating the results from monitoring and assessment into the decision-making process using an adaptive management approach. The engagement of stakeholders is also an essential component of the *Water Security Assessment Framework* as general awareness of water-related issues is critical for linking assessment to change.