
UBC/ACARN PARTNERSHIP DEVELOPMENT GRANT

**PRELIMINARY
FINDINGS**

JANUARY 2021

DATA COLLECTION SUMMARY

This research project examines agricultural resilience to climate change in two diverse regions in BC: the Cariboo and the Okanagan.

An initial set of 15 interviews were completed between April 1 and May 30 2020 focused on the relationships between the organizations involved in agriculture and climate change, and how policies and regulations are developed. A meeting was held with the PDG Advisory Committee and Partners to discuss these initial interviews and results (July 2020). Based on this discussion, we determined that it was necessary to further refine the research focus to ensure that the results are specific, pragmatic, and novel. The PDG team agreed that narrowing the research scope to how water access is essential to agricultural resilience to climate change and BC's regulatory environment that governs water, would be the best way to focus the project.

The revised research objective is to explore how the regulatory environment in BC affects agricultural resilience to changes in water supply resulting from climate change. We have defined the following research questions:

- 1) What are the goals of existing water supply regulation and policies in BC?*
- 2) How do these regulations and policies apply to agricultural activities?*
- 3) How was agriculture considered in the development of these regulations and policies?*
- 4) How does the implementation of these regulations and policies affect the resilience of agriculture producers to climate change in the two study regions?*
- 5) What key challenges and what key opportunities exist for agricultural resilience to changing water supply in the two study regions?*

Questions 1-3 are explored primarily through a review of existing regulations and policies in BC related to water supply, such as the Water Sustainability Act including submissions from agricultural stakeholders during the formation of the Act. Semi-structured interviews are used to follow-up on this analysis and to explore questions 4 and 5. A total of 55 interviews have now been completed. Please note this document provides an update on preliminary findings, but a full analysis of results has not yet been completed.

KEY CONCERNS FOR CLIMATE CHANGE AND WATER SUPPLY

- Increasing dry conditions and **water scarcity** in both study regions
- **Extreme water events**, such as flooding in the Cariboo Region
- **Increased demand** for water and uncertainty about supply for agriculture in both regions
- **Maintaining flexibility** in the face of water changes and **preparing for the unknown**. This might include adapting to new conditions, shifting to new crops and varieties, and responding to extreme events, new conditions, and new pests/stressors
- A key challenge for managing and responding to the above challenges is a **lack of data**. For many watersheds in BC there is not adequate data to understand current water supply, this is particularly the case in northern watersheds in the Cariboo.
- Establishing a **unified voice for agriculture** to advocate for their interests and water use among other industries and ensuring agriculture is prioritized as a water use in the context of other industries
 - Water Sustainability Regulation
 - Water Sustainability Fees, Rentals, and Charges Tariff Regulation
 - Groundwater Protection Regulation
 - Dam Safety Regulation
 - Water District Regulation
 - Violation Ticket and Fines Regulation

In addition to interviews, we conducted an analysis of the WSA and regulations including the submissions of agricultural stakeholders during the revitalization process and relevant regional management frameworks.

The revised WSA is intended to regulate water resources and use in a sustainable and equitable way and interviewees almost unanimously agreed that these intentions are vital and that change was needed. But there are certainly complexities, unintended outcomes, and challenges in translating these goals into actions.

How is water managed in BC?

Key regulations and policies that affect water use for agriculture producers in the Okanagan and Cariboo Regions:

- Provincial Water Sustainability Act (WSA) 2016, and associated regulations:

A key aim of this project is to explore what the act and water use regulations mean for the agriculture industry in practice and make recommendations that will help to improve implementation and the effectiveness of water management.

CHALLENGES FOR THE IMPLEMENTATION OF WSA AND WATER USE REGULATIONS

What are the barriers/challenges for implementation?

a) How do they affect agriculture in practice?

b) What has worked, what has not worked, and why?

Key Challenges/barriers:

Policy "on paper" vs. policy "in practice"

- The WSA and regulations look very clear and specific on paper. However, what they mean on the ground for an individual producer is context specific and complex
- For example, according to regulations each individual well requires a licence. But, if a producer has 10 wells all used to feed livestock, they might question why they cannot have one license for all 10 wells. It is these kinds of situations that have significantly delayed the implementation of these regulations

Communication and trust between government and producers

- For example, water applications are exclusively online, which may not work well for producers in remote areas or of all demographics
- There is a perception among some producers that the WSA and regulations are a "tax grab", and put an unreasonable burden on their operations
- Some producers are reluctant to share information about their operations out of fear of being told how to run their operations, that they will be subject to increased cost/expectations, or that their water may even be "taken away" and given to other users in the future

- There has not been enough effective communication from government to producers about the intentions of the WSA, and why it is in the "best interest" of the agriculture industry
- There is a perception that regulations are not reflective of regional context (rural regions) and a lack of representation from all regions in policy development

Resources/cost

- The financial burden of compliance with regulations, such as dam safety, falls on producers who own the dams
- In addition, the time burden in order to understand regulations and applications is often significant
- There is also an information burden on producers, particularly where existing data about water resources and management is limited

Examples of Barriers in Action

Dam Safety

- The cost and maintenance of existing dams and complying with safety standard, including storage and use fees, fall to a producer dam owner, but who should be responsible? Particularly if the dam is contributing to other public benefits such as fishing, ecosystem function, urban use, fire fighting.
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WHAT WE HEARD

- There is a significant information barrier in terms of existing dams

Groundwater licenses

- This is a new requirement under the WSA. However, only about 1/10 of the expected licenses have been received. Why?
 - Skepticism of government and uncertainty about requirements
 - Lack of effective communication about the intentions and process
 - Financial burden and disincentive to apply. There is no fee to apply for a license, but when you do you are required to back pay to the WSA implementation date in 2016
 - The information and technical burden is also on the applicant to determine how much water is in the watershed, and if there is enough supply. The cost of determining this information can be significant

Big Picture Questions: Water Regulations and Sustainability?

- In the context of climate change and uncertainty, a strong voice is needed for the agriculture industry to advocate for producer interests and agriculture water use among other industries and ensure that agriculture is prioritized in the future
- While there is agreement in terms of the broad goals of the WSA, the realization of its intended role in contributing to a sustainable future and facilitating resilience to climate change

within the agriculture industry is contested and is unclear to some producers since it does not clearly take into account future climate changes to water supply and drought

- The lack of information in terms of the current water supply is a fundamental barrier to effective management. How can water be managed sustainably in the face of climate change without a clear picture of the current condition of resources and use?
 - Does the WSA encourage efficient water use? Does it result in fair and equitable allocations? Does it protect agriculture as a vital industry for food security/society?
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NEXT STEPS

- Complete remaining interviews by end of Feb. 2021
- Complete qualitative analysis of interview transcripts (ongoing)
- Synthesis of key results (spring 2021)
- Presentation of early results to Advisory Committee (spring 2021)
- Key project deliverables:
 - Final report to be posted on ACARN website
 - Short articles highlighting results distributed to agencies and producer organizations
 - Presentations and online webinar to be held in spring/summer 2021
 - academic articles
 - summary of future research priorities and mandates and lessons learned from partnership development

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