



FARM ADAPTATION INNOVATOR PROGRAM | PROJECT SUMMARY

Delta Drainage Study Lays Groundwork for Climate Adaptation

DELTA IS ONE OF BRITISH COLUMBIA'S most productive agricultural regions, but its proximity to the ocean and the Fraser River, coupled with fine textured soils and low lying topography, make it particularly vulnerable to climate change-related flooding and the associated crop damage.

According to climate projections, seasonal precipitation patterns are expected to shift, winter rainfall will increase, and extreme rainfall events in Delta are anticipated to at least double in frequency by the 2050s. Depending on when the rain falls, it can prevent farmers from getting into waterlogged fields to plant or harvest, increase soil erosion and nutrient runoff, and result in damage to crops.

Researchers at UBC, in collaboration with the Delta Farmers' Institute, the Delta Farmland & Wildlife Trust and local farmers, are working to evaluate practices for improving on-farm drainage management to reduce the impacts of climate change.

PROJECT	<i>Improving On-Farm Drainage Management to Reduce the Impacts of Climate Change in Delta, BC</i>
LOCATION	<i>Lower Mainland / Fraser River Delta</i>
COMPLETION	<i>July 2017</i>
PROJECT LEAD	<i>UBC Faculty of Land & Food Systems</i>
FUNDING PARTNERS	<i>Agriculture and Agri-Food Canada, BC Ministry of Agriculture, agriculture producers</i>
OTHER PARTNERS	<i>Delta Farmers' Institute, Delta Farmland & Wildlife Trust</i>

Sean Smukler, assistant professor of Applied Biology & Soil Science at UBC, is leading the study with an aim to demonstrate approaches and provide planning tools that will help farmers make decisions about their drainage options.

“Getting a sense of the costs and benefits of various drainage management options will enable farmers to better make decisions for the anticipated changes in precipitation,” says Smukler. “Right now there’s a large percentage of Delta

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farmland that has drainage issues. The question is whether it's worth the cost of putting in additional drainage to deal with the cost of precipitation changes.”

Demonstration sites have been set up on two fields in Delta using different spacing configurations of drainage tile to assess below ground drainage options. The surface of the soil is also receiving treatments, with farmers planting vegetation in the forms of cover crops and grassland set-asides. They are looking for the best way to get the water off the fields to prevent lost working days, or worse, lost crops.

In total, 30 fields will be sampled for soil type, and monitored and assessed for the efficacy of a range of drainage management practices, including cleaning and maintenance of drainage tile systems. One of the main outcomes of the project will be a cost-benefit analysis, and a set of tools to support more informed decisions about drainage management.

Brent Harris owns and farms the fields where the demonstration sites have been established. He suffered significant crop losses in 2010 as a result of heavy rains during harvest.

“It definitely seems like we are getting more extreme weather situations, and it's something we have to factor into our business plans,” he says. “The problem is beyond the scope

of an individual farm to deal with. It takes a project like this to be able to look at the area as a whole and be able to assess the bigger picture and then to provide information back to individuals.”

Projects like this are part of the work being delivered by the BC Agriculture & Food Climate Action Initiative (CAI). CAI develops tools and resources to assist BC farmers and ranchers with adapting to impacts of climate change. CAI's Farm Adaptation Innovator Program engages directly with producers and local partners, providing funding for piloting, demonstration and knowledge transfer around farm level adaptation.

www.BCAGClimateAction.ca

The BC Agriculture & Food Climate Action Initiative was launched in 2008 by the BC Agriculture Council to enable a proactive and pan-agriculture approach to climate change issues. The Climate Action Initiative is currently supported by the BC Agricultural Research & Development Corporation and the Investment Agriculture Foundation of BC with funding provided by Agriculture and Agri-Food Canada and the BC Ministry of Agriculture through Growing Forward 2, a federal-provincial-territorial initiative.

Photos in this handout are courtesy of Sean Smukler.

