



REGIONAL DISTRICT OF BULKLEY-NECHAKO

AGRICULTURE COMMITTEE AGENDA

THURSDAY, JANUARY 11, 2018

<u>PAGE NO.</u>		<u>ACTION</u>
	<u>AGENDA – January 11, 2018</u>	Approve
	<u>Supplementary Agenda</u>	Receive
	<u>MINUTES</u>	
3-6	Agriculture Committee Meeting Minutes - November 9, 2017	Receive
	<u>POWERPOINT PRESENTATION</u>	Receive
	Debbie Evans, Agriculture Coordinator "Seeds Planted in 2 Months 2017!"	
	<u>REPORTS</u>	
7-9	Debbie Evans, Agriculture Coordinator - Canada's Agriculture Day - Tuesday, February 13, 2018	Direction
10-18	Debbie Evans, Agriculture Coordinator - Fraser Lake Biomass Ash Project	Recommendation (Page 10)
19	Debbie Evans, Agriculture Coordinator - Regional Beef Producers Strategic Planning Workshop – March 2, 2018	Recommendation (Page 19)
20-38	Debbie Evans, Agriculture Coordinator - Agriculture More Than Ever	Recommendation (Page 20)
39-53	Debbie Evans, Agriculture Coordinator - Climate Change Regional Adaptation Program	Recommendation (Page 40)
54-55	Debbie Evans, Agriculture Coordinator - BC Ministry of Agriculture – Agricultural Advisory Committee Workshops	Recommendation (Page 54)
56	Debbie Evans, Agriculture Coordinator - Columbia Basin Agriculture Forum	Receive

<u>PAGE NO.</u>	<u>CORRESPONDENCE</u>	<u>ACTION</u>
57-59	Ministry of Forests, Lands, Natural Resource Operations and Rural Development – Zero-Energy Hydraulic Ram Pump for Off-Grid Irrigation	Receive
60	Northern Development Initiative Trust - 2017 Q4 Newsletter	Receive

SUPPLEMENTARY AGENDA

NEW BUSINESS

IN-CAMERA MOTION

In accordance with Section 90 of the *Community Charter*, it is the opinion of the Board of Directors that matters pertaining to Section 90 (1)(a), personal information about an identifiable individual who is being considered for a position as an officer, employee or agent of the municipality or another position appointed by the municipality (Solid Waste Management Plan Advisory Committee), may be closed to the public therefore exercise their option of excluding the public for this meeting.

ADJOURNMENT

REGIONAL DISTRICT OF BULKLEY-NECHAKO**AGRICULTURE COMMITTEE MEETING**
(Committee Of The Whole)**Thursday, November 9, 2017**

PRESENT: Chair Mark Parker

Directors Taylor Bachrach
Chris Beach – left at 2:53 p.m.
Eileen Benedict
Mark Fisher
Dwayne Lindstrom
Thomas Liversidge
Rob MacDougall – left at 2:55 p.m.
Bill Miller
Rob Newell
Jerry Petersen
Darcy Repen
Gerry Thiessen – left at 2:44 p.m.

Directors Shane Brienen, District of Houston
Absent Tom Greenaway, Electoral Area "C" (Fort St. James)

Staff Melany de Weerd, Chief Administrative Officer
Cheryl Anderson, Manager of Administrative Services
John Illes, Chief Financial Officer
Debbie Evans, Agriculture Coordinator
Jason Llewellyn, Director of Planning
Wendy Wainwright, Executive Assistant

CALL TO ORDER

Chair Parker called the meeting to order at 2:38 p.m.

AGENDAMoved by Director Repen
Seconded by Director Beach**AG.2017-7-1**

"That the Agriculture Committee Agenda of November 9, 2017 be adopted."

(All/Directors/Majority)

CARRIED UNANIMOUSLY**MINUTES****Agriculture Committee**
Meeting Minutes
-October 26, 2017Moved by Director Benedict
Seconded by Director Newell**AG.2017-7-2**

"That the Minutes of the Agriculture Committee Meeting of October 7, 2017 be received."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

DISCUSSION ITEMS

1. Introduction of Regional Agriculture Coordinator

Chair Parker thanked staff and the Agriculture Committee and introduced Debbie Evans, Agriculture Coordinator.

Ms. Evans provided a brief outline of her agriculture experience:

- Grew up in the north Okanagan
- Degree in Agriculture from the University of B.C.
- Worked with a show herd in Richmond, B.C.
- Dairy farm background
- Joined Ministry of Agriculture – Youth Development Specialist
 - o Worked with 4-H, Cattlemen's Okanagan
 - o Youth, First Nations and women in agriculture programs
 - o Workshops
- Four years as Executive Director, BC 4-H
 - o 17.5 years with the 4-H program
- Managed a dairy farm in Wainwright, Alberta
 - o Milked 450 cows
 - o 1500 Holstein cows
 - o 75% of Alberta's calf/cow population is in the area
 - o \$96,000 in cull cow sales in last year in Wainwright, AB
 - o Feed mill/mineral mill
 - o Three broiler barns
 - 39,000 birds per barn
 - o Farmed 20 sections of land
 - o Amazing opportunity
- Salmon Arm Fair Coordinator for 2 years

Chair Parker welcomed Ms. Evans to the Regional District of Bulkley-Nechako.

2. Development of Agriculture Coordinator Work Plan for 2018

2018 Agriculture Coordinator Work Plan

- RDBN SWOT (Strategic Workforce Opportunities Team) participation
- Coast Field and Forest Cooperative
 - o Putting forward an application for proposed usage of Lake Kathlyn School:
 - Agriculture research component
 - Intensive fruits and vegetable growing
 - Folk school proposal
 - Tech hub proposal
 - French immersion component
- Youth engagement - Priority
 - o Assist agriculture groups to build youth and aboriginal youth engagement
 - o Support youth engagement programs
 - o Support/assist in senior levels of high school and college agriculture education initiatives
 - Need young people for succession into farming and agriculture
- Allow time to assist community groups and provide support
- Promotion of the Agriculture Coordinator position
 - o Make connections and contact with all the community agriculture groups and individuals across the region
 - Determine the needs of the agriculture sector
 - o Skeena Cattlemen's representative would also like to connect with the Agriculture Coordinator

2. Development of Agriculture Coordinator Work Plan for 2018 (CONT'D)

- o How to initiate contacts and connections?
 - Social media
 - Meetings/Delegation with municipalities within the region
 - Newspapers and radio advertising
 - RDBN Newsletter
 - Directors to promote the Agriculture Coordinator
 - Local media/radio contacts
- Assist in bringing local farm products to market
 - o Eg. mobile (beef) inspection programs to assist in bringing products to market
- Roles and contribution of local government in regard to the agriculture sector
- Coordination of workshops and forums
 - o Agriculture Forum – February 2018 - Priority
 - o Some grant funding options – dates for submission – November 14, 2017
 - o Agriculture Forum potential Topics for Discussion:
 - Premise ID's – Emergency Events
 - Succession planning
 - Youth component
 - Farmers Markets
 - BC Association of Farmers' Markets
 - Webinar series
 - Coffee Table Workshops – Training Opportunities
 - o Staff to determine grant funding opportunities and possible dates to be brought forward for consideration by the Agriculture Committee
- Agriculture Land Commission – Agriculture Land Reserve

Water Sustainability Act – Water Licensing Regulations and Ground Water Registration

Chair Parker received an e-mail November 8, 2017 from the Ministry of Environment to arrange a teleconference to discuss the *Water Sustainability Act* - Water Licensing regulations and process. Chair Parker will bring forward the information at a future meeting.

Ms. Evans noted that she has made contact with the Ministry of Agriculture and Ministry of Forests, Lands, Natural Resource Operations and Rural Development in regard to emergency planning for livestock. Discussion took place in regard to existing youth programs in the region: Nechako Senior Secondary School Greenhouse Living Classroom – School District 91 Nechako Lakes, Hazelton Farm School, Groundbreakers Collective, School District 54 Bulkley Valley – Geodome project.

Ms. Evans mentioned that on February 23, 2018 Farm Credit Canada is hosting a free Trends and Trades Opportunity in the Beef Market and Communicating for.... Workshop in Vanderhoof.

Agriculture Grant Funding Opportunities

Moved by Director Repen
 Seconded by Director Newell

AG.2017-7-3

"That the Agriculture Committee recommend that the Regional District of Bulkley-Nechako Board of Directors direct staff to submit relevant grant funding opportunities for an agriculture forum in early 2018."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

6

2. Development of Agriculture Coordinator Work Plan for 2018 (CONT'D)

2018 Agriculture Coordinator
Work Plan

Moved by Director Miller
Seconded by Director Newell

AG.2017-7-4

"That the Agriculture Committee recommend that the Regional District of Bulkley-Nechako Board of Directors direct staff to bring forward a 2018 Agriculture Coordinator Work Plan for review."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

**SPECIAL IN CAMERA
MEETING MOTION**

Moved by Director Miller
Seconded by Director Newell

AG.2017-7-5

"In accordance with Sections (1)(c) of the *Community Charter*, it is the opinion of the Regional District of Bulkley-Nechako Board of Directors that matters pertaining to labour relations or other employee relations (Agriculture Coordinator) be held in confidence, and therefore exercise their option of excluding the public for this meeting."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

ADJOURNMENT

Moved by Director Benedict
Seconded by Director Repen

AG.2017-7-6

"That the meeting be adjourned at 3:02 pm."

(All/Directors/Majority)

CARRIED UNANIMOUSLY

Mark Parker, Chair

Wendy Wainwright, Executive Assistant



REGIONAL DISTRICT OF BULKLEY-NECHAKO

Memorandum

TO: Chair Parker and Agriculture Committee
FROM: Debbie Evans, Agriculture Coordinator
DATE: January 2, 2018
SUBJECT: Canada's Agriculture Day, Tuesday, February 13, 2018

Purpose

The purpose of this memorandum is to provide information to the Agriculture Committee regarding Canada's Agriculture Day and RDBN possible participation.

Background Information

On February 13, 2018 Canada will celebrate its second Agriculture Day. Canada's Agriculture Day is an opportunity to showcase what is happening in the industry and create a closer connection with consumers about where their food comes from and the people who produce it.

Created by Ag More Than Ever, an industry-driven cause made up of hundreds of partners and advocates from across the country, all committed to improving perceptions, dispelling myths and creating positive dialogue about Canadian agriculture.

A formal all-day event for Canada's Agriculture Day will be held in Ottawa, but Canadian agriculture supporters are encouraged to be a part of the day at local levels. The "Quick Tips to get you started" offers ideas to celebrate the day.

The RDBN supports agriculture and Canada's Agriculture Day is a chance to promote agriculture. The next step is for the Agriculture Committee of the Bulkley-Nechako Board of Directors is to provide direction for staff regarding the following:

- 1. RDBN participation in Canada's Agriculture Day
- 2. Ideas for celebration for a report for January 25, 2018 meeting.

I would be pleased to answer any questions.

RECOMMENDATION:	(All/Directors/Majority)
Direction:	

CANADA'S AGRICULTURE DAY | February 13, 2018

What will you do to celebrate?

Here are some ideas to get you started:



1

Take a pic of your farm or family, say why you love ag
#AgProud #CdnAgDay



2

Share a pic of your favourite Canadian foods
#Foodie #CdnAgDay



3

Host an event at work, school or in your community
#AgProud #CdnAgDay

Visit AgDay.ca for more ideas

Let's celebrate the food we love
AgDay.ca | #CdnAgDay



CANADA'S AGRICULTURE DAY | Quick tips to get you started

Get involved on Feb. 13

Canada's Agriculture Day is the perfect time to come together as an industry. Let's showcase our ag pride and create a closer connection with consumers about where food comes from and the people who produce it.

What a start!

The first-ever Canada's Agriculture Day was amazing:

- one of the top trends in Canada on Twitter
- hundreds of events and thousands of people participating across the country
- renowned speakers and hundreds at our national event in Ottawa

Don't miss out in 2018

More events, more conversations, more connections. How will you celebrate this year? It's up to you – go as big as you'd like!

Here's how you can celebrate:

- **Individual activities:** Encourage friends or colleagues to celebrate the day in their own way. Invite them to check out AgDay.ca for personal ag challenges and inspiration.
- **Community outreach:** Host an open house, farm crawl or Canadian food cook-off. Invite the media and use social media to showcase your event.
- **Advertising:** Promote Canada's Agriculture Day on your website, blog or company newsletter. Visit the resources section of AgDay.ca for material to use in your marketing pieces.
- **Merchandise:** Everyone loves swag. **Shop online** for Canada's Agriculture Day or Ag More Than Ever merch for your event. Hurry, inventory's limited.
- **Promote your event:** Register your event at AgDay.ca. Show you're part of the celebration.

- **Reuse existing content:** You're already promoting agriculture and speaking positively about the industry. Just repurpose what you're doing to celebrate the day.
- **Social media:** Include hashtags like #CdnAgDay, #AgMoreThanEver, #RealDirt, #IWorkInAg and #FarmLife. To reach a non-ag audience, use #Foodie, #LoveYourFood, #instafood #shareameal or #yummy.

Sample tweets:

Excited to celebrate #food and #CdnAg on Canada's Agriculture Day, Feb. 13, 2018!

Find out more at www.AgDay.ca #CdnAgDay

Canadian farmers are producing safe, healthy and affordable #food for your table #CdnAgDay #LoveYourFood

Key messages

- Canada's Agriculture Day is for everyone to come together and celebrate Canadian agriculture and have conversations about agriculture and food.
- Canadian agriculture is an innovative, vibrant and forward-thinking industry, which plays a significant role in our economy.
 - 1 in 8 Canadian jobs are in the agriculture sector.
 - Canada ranks #1 in global food safety.
 - Canada is the world's fifth largest agricultural exporter.

You can also find more ag facts and resources at Ag More Than Ever, Farm & Food Care and Agriculture in the Classroom Canada.

Let's celebrate the food we love
AgDay.ca | [#CdnAgDay](https://twitter.com/CdnAgDay)





REGIONAL DISTRICT OF BULKLEY-NECHAKO

Memorandum

TO: Chair Parker and Agriculture Committee
FROM: Debbie Evans, Agriculture Coordinator
DATE: January 3, 2018
SUBJECT: Fraser Lake Biomass Ash Project

Purpose

The purpose of this memorandum is to provide information to the Agriculture Committee regarding the Fraser Lake Biomass Ash Project and RDBN possible letter of support.

Background Information

On December 13, 2017 Chair Mark Parker was contacted by Dave Christie of the Village of Fraser Lake requesting a letter of support from the Regional District of Bulkley-Nechako (RDBN) to support the Biomass Ash Project's Rural Dividend application.

The attached copy of the original email and the proposal outline explains the project which initially was approved for 100 Mile House, however due to the wildfires FP Innovations has requested to move this to West Fraser in Fraser Lake and do all the testing locally.

Chair Parker would be pleased to answer any questions.

RECOMMENDATION:

(All/Directors/Majority)

"That the Agriculture Committee recommend that the Regional District of Bulkley-Nechako Board of Directors write a letter of support for the Fraser Lake Biomass Ash Project's application to the Rural Dividend Application."

Debbie Evans

From: Mark.Parker
Sent: December 13, 2017 10:57 AM
To: Debbie Evans
Subject: Fwd: Biomass Ash Utilization in Fraser Lake
Attachments: Proposal Outline_Biomass Ash_Fraser Lake.docx; FPI Support Letter_Biomass Ash_Dec 12.docx; rural_dividend_budget_Fraser Lake Ash.xlsx

Sent from my Samsung Galaxy smartphone.

----- Original message -----

From: Dave Christie <dchristie@fraserlake.ca>
Date: 2017-12-13 9:22 AM (GMT-08:00)
To: "Mark.Parker" <Mark.Parker@rdbn.bc.ca>
Subject: FW: Biomass Ash Utilization in Fraser Lake

Good morning Director Parker thank you for taking my call today. Attached is the information on FP Innovations and their biomass ash project. As mentioned this was approved for 100 Mile House, however due to the wildfires they have requested to move this to West Fraser in Fraser Lake, and do all the testing locally.

If possible a letter of support from the RDBN would help the Rural Dividend application. I am off from tomorrow at noon for the rest of the week, and would like to submit this application before I leave.

Thanks Director Parker, if you have any questions, please feel free to reach out.

Drive safe today,

Dave

From: Tim Caldecott [mailto:Tim.Caldecott@fpinnovations.ca]
Sent: Tuesday, December 12, 2017 5:40 PM
To: Rodney Holland <rjholland@fraserlake.ca>; Dave Christie <dchristie@fraserlake.ca>
Cc: David Belyea <David.Belyea@fpinnovations.ca>; Shannon Huntley <Shannon.Huntley@fpinnovations.ca>
Subject: FW: Biomass Ash Utilization in Fraser Lake

Apologies –third time is a charm!

Trust all email addresses and attachments are correct on this one...please ignore any others

From: Tim Caldecott
Sent: December-12-17 5:37 PM
To: 'rdholland@fraserlake.ca'; 'dchristie@fraserlake.ca'
Cc: David Belyea; Shannon Huntley
Subject: Biomass Ash Utilization in Fraser Lake

Greetings Rod/Dave,

Thanks for discussion and support this afternoon regarding the opportunity to process and test biomass ash from Fraser Lake as a value-added product. As follow-up, please find attached:

1. The draft application – let me know if you have any comments/questions/additions.
2. Attached to this note are Dave Belyea and Shannon Huntley from FPInnovations. Shannon was the key contact for the work we initiated with 100 Mile House and Dave Belyea will likely lead the work going forward.
 - a. Dave will coordinate a letter of support from West Fraser
3. Support letter from FPI
4. The original budget sheet. I will need to update this into their current budget sheet, but this is effectively what was used to budget for the \$500k. If you have thoughts on this, please share.
5. Blurb about the project below:

The economic development project involves the assessment, handling and production of value-added products from biomass ash produced by local companies. Results from a comprehensive FPI survey in 2016 identified 235,000 tonnes of biomass ash produced in BC, with less than 5% re-used beneficially – the remainder is deposited in landfills. Clean biomass ash produced from bioenergy facilities throughout BC contain valuable elements for soil fertilization, such as potassium and phosphorus, which are beneficial to growth and yield on BC land. Developing an expertise for biomass ash handling and value-added products would position companies in Fraser Lake to develop business locally at first and across the province in the long term. The goal of the project is to test several technologies for converting biomass ash into value-added soil amendment products (for example through simple pelletizing to possible proprietary technology application from Ecolan), collaborate with interested commercial partners in Fraser Lake, trial the value-added ash products on local agriculture/forest lands and roads, develop a viable business case and engage in first equipment purchases (pelletizer and/or spreading equipment) to support the testing and viability of a start-up the business.

On your side, the Rural dividend folks are being lenient with council resolutions and will accept them until the end of January...however if you can obtain one this week, we would be best positioned for a quick turnaround.

Other than this, please don't hesitate to ask any questions or seek clarification.

When all is in order, if you can begin the process of getting a login etc to the Rural Dividend system, we can begin completing the sections.

Best regards, Tim



Tim Caldecott
 BC Provincial Leader
 2665 East Mall, Vancouver, BC V6T 1W5
 ☎ 604 224-3221 Cel: 778.868.7735
 📞 604 222-5627
 ✉ tim.caldecott@fpinnovations.ca

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- **Project Details:**
- **Project Title:** Applying technology and innovation to direct biomass ash away from landfills and into value added products.
- Provide a brief project description:
 - A survey of biomass ash production in 2014 identified 235,000 tonnes of ash produced in BC, the majority of which is landfilled. Less than 5% of biomass ash is used productively even though it contains many elements and nutrients desired by agriculture and soils in BC, such as potassium and phosphorus. This project aims to test and apply up to three technologies in partnership with local entrepreneurs in 100 Mile House to process the locally produced biomass ash and trial the products produced. The technologies to be trialed include a pre-commercial ash separation technology developed by FPInnovations and ash pelletizing, while the products to be tested are activated carbon and soil amendments.
- Describe the community need that the project is addressing. Demonstrate the degree of community need. Include any need tied to loss or reduction in the community's key economic drivers:
 - Fraser Lake is identified as a forest dependent community producing a significant quantity of biomass ash. This project supports the existing, local forest sector businesses and seeks to increase local employment by supporting the deployment of technology while reducing pressure on the local landfill.
- Describe how the project supports the community/communities increased resiliency, and increases the community/communities strength. Include the breadth of the project's impact across the community or multiple communities:
 - Biomass ash disposal is a cost to local businesses and an unnecessary burden to municipal landfills. Expertise developed in Fraser Lake will be employable in regions to the West, East and to the South with other biomass ash producers. The benefit of finding applications for biomass ash will alleviate landfill issues in communities with significant biomass ash producing operations. On a positive note, turning biomass ash from waste into a viable product would also support producers of clean biomass ash and local businesses seeking natural soil amendment products to enhance agricultural productivity.
- Describe how the project supports innovation in the community to facilitate business, growth, economic development or diversification:
 - Several new technologies are in early commercial or pre-commercial stages and ready for application in a BC context. In addition to the potential for a small business to employ one or several of these technologies to process biomass ash, the products produced will provide for additional income generating opportunities in growing markets for organic soil amendments and activated carbon. The supply of biomass ash is large in the Fraser Lake area and in communities along highway 16, which represents the opportunity for a small company to operate locally and grow into the neighboring regions.

- Describe how the project creates shared prosperity or further develops partnerships within communities, between communities and/or between First Nations and non-First Nations communities:
 - A number of communities have similar issues with biomass ash. The growth of bioenergy opportunities increased the production of biomass ash and resulting economic development, but the production of biomass ash is generally destined for landfills. If successful in Fraser Lake, the processing technology and resulting products could service neighboring communities and eventually many communities throughout BC.
- Will the project create jobs? (Yes/No)
 - If yes: Provide below anticipated employment numbers created by the project. Enter each potential job only once:
 - Direct full time jobs: 2
 - Direct part time jobs: 0
 - Direct temporary/seasonal jobs: 2
- Describe in detail the above positions and how the project helps create employment:
 - Full time employment will be generated at the biomass ash processing station.
 - Seasonal jobs – the application of the soil amendment product would be applied seasonally – but these could be seasonally in winter for forest-based applications and spring-summer for agriculture based applications.
- Describe potential indirect employment created as a result of this project (during and after the project):
 - Indirect employment from the forest sector is estimated to be 2.5 times the number of direct jobs when using the Council of Forest Industries multipliers.
- Does the project increase or provide economic opportunities for youth? (Yes/No)
 - If yes: Describe in detail the impact of the project on youth:
 - Due to the demographics of forest sector workers retiring, the conference board of Canada estimates a strong demand for new employees through 2018. In the forest sector as a whole, 75% of employees are over the age of 45, and 14,000 new employees will be needed by 2018 to replace retired workers and support new economic development. Anecdotal evidence suggests younger generations are intrigued by the sustainability and renewable sectors – this work supports both low-carbon bioenergy and organic soil amendment products.
- Describe the successful outcome(s) for the project:
 - Successful outcomes for the project include:
 - At least one successful business start-up focused on processing biomass ash.
 - Two trials of new processes to process biomass ash
 - Two trials to support the application of biomass ash
 - Investment up to \$125,000 in either harvesting or processing equipment to kick-start the most promising business opportunity

- For each “outcome”: What measurable indicator(s) will determine that you have been successful in achieving the above-described outcome?
 - A new business is registered and employing local people
 - A report on processing technology and product application results
 - Prototypes of new products to be utilized in marketing material
 - Capital equipment purchased
- Does the community/communities in which the project will be implemented have a current community and/or economic development plan? (Yes/No) –
 - If yes: Please note the section(s) in the plan which relate directly to the project and describe how the project supports the plan(s):
 - Fraser Lake has an Economic Development Strategy designed to sustain the economy of Fraser Lake while at the same time help to increase opportunities and the competitiveness of the community. Of the four of the community plans, three are related to this project – economic development capacity, community & land development , and small business and entrepreneurship. This project is targeting the diversion of a product that is currently landfilled, processing it locally to support existing businesses and a new business, and producing products beneficial to the local agriculture and forest sectors.
- Describe the existing community support for the project. Indicate how support has been demonstrated within the community/communities:
 - The community engaged with FPInnovations to be the host for the biomass ash technology processing and products. In collaboration with FPInnovations, the project idea was formulated to support the needs and aspirations of 100 Mile House.

Budget & Planning:

- Questions regarding the project cost, funding request and financial and in-kind contribution amounts should reflect the information on the applicant’s completed budget template (found here).
 - What is the total project cost: \$500,000
 - What is the total funding request: \$500,000
 - What is total financial contribution from applicant and/or partners: \$150,000
 - What is the total in-kind contribution from applicant and/or partners: \$50,000
 - Are other organizations providing funds or lending money regarding this project? (Yes/No) - No
 - If yes: Please enter the other funders for this project. Include the organization name, contact person details (phone # and email), and amount of funding:
 - If yes: What is the total amount of funding from other sources:
- Indicate the estimated start and end dates of the project (maximum project duration is two years):
 - Estimated start date: January 2018
 - Estimated end date: January 2019

- Full project duration (months): 12
- Is the project ready to commence immediately upon receipt of funding? (Yes/No) – yes
 - If no: List the steps (e.g. obtaining permits, completing consultation, securing additional funding) that must be completed before the project can proceed. Please explain what steps, how they will be undertaken, and associated timelines:
- Indicate the key milestones and dates leading to the completion of the project:
 - Testing of biomass ash if no recent testing has been completed - January
 - Pelleting trial using 2 independent pelletizers – February - March
 - Manufacturing of pelleted ash – April
 - Trial of distributing biomass ash with agriculture attachment to a tractor
 - Trial of treated vs not-treated agriculture over the summer – May/June – September
 - Trial of ash spreading in forested property – mature and recently replanted. October
 - Long term trial recording set-up for annual test. November
 - Trials conclude – December.
- Will project activities be ongoing after the estimated end date? (Yes/No) – No
 - If yes: Describe how the project will be sustained long-term (ex. financially, socially and/or environmentally):
- Describe the resources and skills of the applicant to manage and complete the project, including project management experience and/or implementing similar projects:
 - Rod Holland (CAO) and Dave Christy (Economic Development Officer) are employed by and residents of Fraser Lake.
 - FPIInnovations is a national not-for-profit research, development and innovation company that has many years of experience supporting forest sector economic development.
- Outline the role(s) of any project partners identified (Required for Partnership Projects):
 - Rod Holland is the lead manager for Fraser Lake.
 - FPIInnovations is the technical leads for fibre and technology application and product prototype testing.
 - West Fraser is the commercial partner providing the biomass ash.
- Outline project risks to completion and describe risk mitigation measures to ensure project success:
 - Market conditions will determine the uptake of new products developed from the biomass ash resource.
 - BC Ministry of Environment has policies related to the use and application of biomass ash in BC and is currently reviewing its policies.
 - Softwood Lumber Agreement expiry will influence the role of the commercial partner in the region.
- Will the project include physical infrastructure? (Yes/No)
 - If yes: Please explain how the infrastructure will support economic development and diversification initiatives, in alignment with other community plans and priorities. If the

program contribution is required to leverage other funding for infrastructure, please outline here:

- One goal of the project is the purchase of key capital equipment to support the start-up and viability of a local business start-up.
- Who will own the infrastructure: the local business start-up
- Who will be responsible for any ongoing associated costs (maintenance/operational) after project completion: the local business start-up

December 11, 2017

Rural Dividend Initiative

Re; Partnership Letter of Commitment to the Proposal “Applying technology and innovation to direct biomass ash away from landfills and into value added products”

To Whom It May Concern,

Please accept this letter confirming FPIInnovations’ partnership for the Rural Dividend Initiative proposal entitled “Applying technology and innovation to direct biomass ash away from landfills and into value added products”.

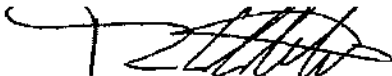
FPIInnovations is a not-for-profit world leader that specializes in the creation of scientific solutions in support of the Canadian forest sector’s innovation needs and responds to the priorities of its industry members and government partners.

The economic development project involves the assessment, handling and production of value-added products from biomass ash produced by local companies. Results from a comprehensive FPI survey in 2016 identified 235,000 tonnes of biomass ash produced in BC, with less than 5% re-used beneficially – the remainder is deposited in landfills. Clean biomass ash produced from bioenergy facilities throughout BC contain valuable elements for soil fertilization, such as potassium and phosphorus, which are beneficial to growth and yield on BC land. Developing an expertise for biomass ash handling and value-added products would position companies in Fraser Lake to develop business locally at first and across the province in the long term.

The goal of the project is to test several technologies for converting biomass ash into value-added soil amendment products (for example through simple pelletizing to proprietary technology application from Ecolan), identify interested commercial partners in Fraser Lake, trial the value-added ash products on local agriculture/forest lands and roads, develop a viable business case and engage in first equipment purchases to start-up the business. FPIInnovations is committed to applying our expertise in biomass ash analysis and process to support the testing and trialing of suitable systems for ash processing and application. FPIInnovations is investing \$150,000 to leverage the Rural Dividend Initiative funds to achieve the desired economic development.

The proposal “Applying technology and innovation to direct biomass ash away from landfills and into value added products” will greatly improve the ability of the Fraser Lake and FPIInnovations’ ability to deliver successfully on the vision of enhancing economic development opportunities from the local, underutilized forest resource.

Sincerely,



Tim Caldecott
BC Provincial Leader
FPIInnovations



REGIONAL DISTRICT OF BULKLEY-NECHAKO

Memorandum

TO: Chair Parker and Agriculture Committee
FROM: Debbie Evans, Agriculture Coordinator
DATE: January 2, 2018
SUBJECT: Regional Beef Producers Strategic Planning Workshop – March 2, 2018

Purpose

The purpose of this memorandum is to provide information to the Agriculture Committee regarding a Regional Beef Producers Strategic Planning Workshop.

Background Information

The Regional District of Bulkley-Nechako 2011 Census of Agriculture reported that there are 386 Beef Farms with 21,542 Beef Cows within the region.

Beef producers have questioned the Agriculture Coordinator on how the position can support regional beef producers. A strategic planning workshop was suggested. The workshop fits within the 2018 workplan.

A workshop is proposed for Friday, March 2, 2018 in Burns Lake, 10:00 a.m. – 3:30 p.m. Producer registration would be at a cost of \$5 which would go towards cost of facility and lunch.

An Agriculture Consultant would facilitate producers in discussion from markets, processing, backgrounding, shavings, etc.

Northern Development Initiative Trust and the Agriculture Coordinator have been in discussion about supporting the workshop through the Competitiveness Consulting Rebate program.

Workshop details will be shared at Cattlemen's Association meetings that Agriculture Coordinator is attending in January and February.

I would be pleased to answer any questions.

RECOMMENDATION:

(All/Directors/Majority)

"That the Agriculture Committee recommend that the Regional District of Bulkley-Nechako Board of Directors direct staff to proceed with the planning of the Regional Beef Producers Strategic Planning Workshop for March 2, 2018 and that the Regional District of Bulkley-Nechako authorize applying for grant opportunities to contribute funding toward the cost of this event."



REGIONAL DISTRICT OF BULKLEY-NECHAKO

Memorandum

TO: Chair Parker and Agriculture Committee
FROM: Debbie Evans, Agriculture Coordinator
DATE: January 2, 2018
SUBJECT: Agriculture More Than Ever

Purpose

The purpose of this memorandum is to provide information about Agriculture More Than Ever and to get direction on RDBN participation in the Agriculture More Than Ever community.

Background Information

In 2012 Farm Credit Canada (FCC) formed Agriculture More Than Ever which is an industry-driven cause to improve perceptions, dispel myths and create positive dialogue about Canadian agriculture and food production.

Agriculture More Than Ever guiding principles are:

- We believe agriculture is an amazing industry that needs to be better understood, recognized and advanced, and we're committed to do something about it.
- We believe in profiling a realistic picture of ag. There will always be challenges, but let's also talk about our optimism, the opportunities available and our positive impact.
- We believe ag needs more champions. Improving perceptions of Canadian ag will take time and active participation by those who live and love it every day. We encourage contributions – large and small – from like-minded individuals and groups across the country.
- We believe that to change perceptions, everyone in ag needs to engage in positive conversation, fill in information gaps, respond to misguided perceptions and tell success stories about Canadian ag with pride, passion and accuracy.

Agriculture More Than Ever has hundreds of partners and thousands of "advocates" from across the country telling the real story of Canadian agriculture. The RDBN supports agriculture and forming a partnership with Agriculture More Than Ever would be beneficial. The Agriculture More Than Ever Partnership Agreement is attached.

The next step is for the Agriculture Committee of the Bulkley-Nechako Board of Directors is to provide direction for staff regarding the registering RDBN as a partner with Agriculture More Than Ever. Registration is free of charge.

I would be pleased to answer any questions.

RECOMMENDATION:

(All/Directors/Majority)

"That the Agriculture Committee recommend that the Regional District of Bulkley-Nechako Board of Directors direct staff to proceed with registering the RDBN as a Partner with Agriculture More Than Ever."

Agriculture More Than Ever

Partnership Agreement

Welcome to **Agriculture More Than Ever**. Farm Credit Canada (FCC) manages the Agriculture More Than Ever cause. Each Partner relationship is managed by a **Partnership Agreement** that describes what you can expect from us and what we expect from you.

1. Partner agrees to the Agriculture More Than Ever Guiding Principles.

2. Partner benefits. Partners are encouraged to take advantage of these benefits:

(a) **Initial Partner Kit.** Promotional materials and resources that you can reorder as often as you need. Many items are at a significantly reduced price or at no cost.

(b) **Monthly e-communications.** Emails filled with ideas and resources to make the most of our partnership.

(c) **Social media sharing.** When sharing your positive messages and stories about agriculture, use the **#AgMoreThanEver** hashtag and we will reshare (at our discretion).

(d) **Event planning resources.** Contact us to request a speaker for events with a large industry audience like your AGM or conference (speakers dependent on availability). Plus, you can access great event resources to share with your audience.

(e) **Partner profile.** We will share examples of Partner advocacy in action both online and offline.

(f) **Partner resources.** The Partner resources page on the Agriculture More Than Ever website offers tools to promote Canadian agriculture.

3. You agree to promote your partnership. We encourage you to promote your partnership in these ways:

(a) Place this statement on your internal and external communications: <Your Name> is a proud partner of Agriculture More Than Ever.

(b) Prominently place the Agriculture More Than Ever logo on your website(s). We recommend you post the logo no smaller than 225 pixels wide by 66 pixels high on-screen and include a hyperlink to the Agriculture More Than Ever website (AgricultureMoreThanEver.ca).

4. You agree to share Agriculture More Than Ever messages. Shine a spotlight on the facts, stories and people that show Canadian ag as the modern, vital industry it is. We encourage you

to regularly share Agriculture More Than Ever messages with your members, employees and customers in these ways:

- (a) Visit our resources page regularly to find communication tools you can incorporate into your organization's event.
- (b) "Like" Agriculture More Than Ever on Facebook and follow Agriculture More Than Ever on Twitter, YouTube and Instagram.
- (c) Share Agriculture More Than Ever articles, webinars, videos, photos, ad placements, emails and facts in your communications and on your online channels.
- (d) Include the #AgMoreThanEver hashtag on the positive messages you share about agriculture on social media.

5. Copyright and intellectual property. The "Agriculture More Than Ever" and "Ag More Than Ever" name, logos and all content posted on Agriculture More Than Ever websites and social media channels (including, but not limited to, text, graphics, logos, button icons, images, audio clips, digital downloads, data compilations, and software) is the property of FCC or its content suppliers and licensors and is protected by Canadian and international copyright and intellectual property laws. The permitted uses described in this agreement provide a limited licence to the Partner to use and repost names, logos or content (as the case may be) but no ownership rights are transferred to the Partner.

6. You agree not to disparage the Agriculture More Than Ever cause. By agreeing to the partnership, you are confirming: (a) You see no reason why your partnership would negatively impact the reputation of Agriculture More Than Ever, and (b) You operate or carry on business in a manner consistent with the Agriculture More Than Ever cause.

As long as you are a Partner, you agree to take no action intended to, or that would reasonably be expected to, harm the Agriculture More Than Ever cause, its reputation, or would reasonably be expected to lead to unwanted or unfavorable publicity to Agriculture More Than Ever. This may include, but is not limited to, a physical action or negative statement, written or oral, about or directed at Agriculture More Than Ever. Your compliance with this non-disparagement provision is a material term of this Agreement, the absence of which would have resulted in FCC refusing to enter into this Agreement with you.

7. Your Partner contact. Your Agriculture More Than Ever contact is Debbie Bailey. You can also contact Agriculture More Than Ever by phone at 306-780-7771 or through email at info@AgricultureMoreThanEver.ca.

8. Term. This Agriculture More Than Ever Partnership Agreement will continue until it is terminated by the Partner or by FCC. Either party may terminate the Agreement, for any reason or for no reason, upon written notice to the other party of its intention to terminate this Agreement. Such notice may be delivered by email or other electronic delivery at the option of the terminating party. Upon termination any licence afforded to the Partner to use and share Agriculture More Than Ever names, logos, and content as described in this Agreement is terminated.



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Get involved with Agriculture More Than Ever



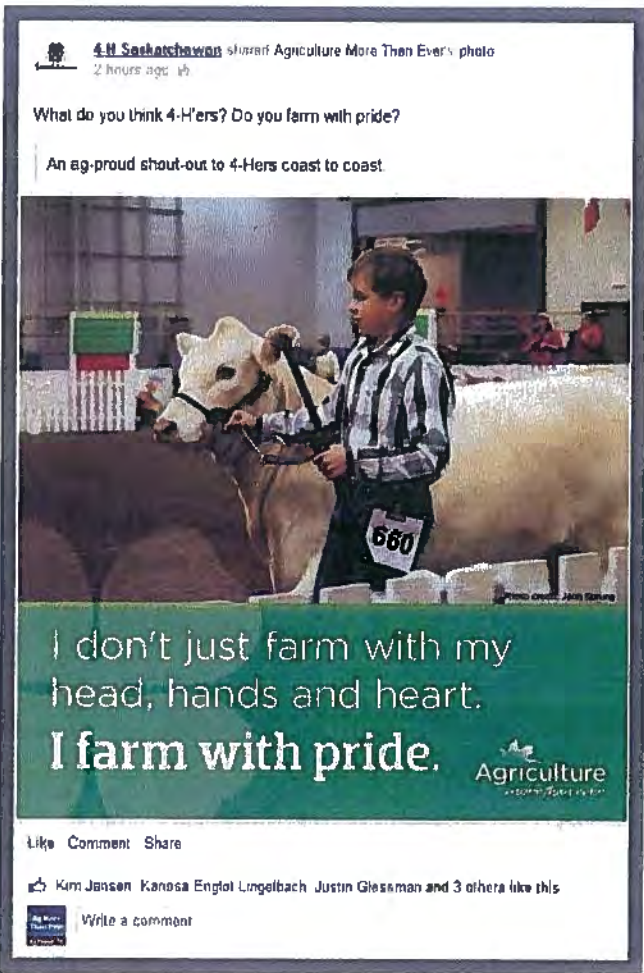
Agriculture
more than ever

Table of Contents

- 1.** Promote our partnership on your website
- 2.** Follow us on Twitter and join the conversation
- 3.** Like us on Facebook and share ag-proud content
- 4.** Watch our videos and subscribe to our YouTube channel
- 5.** Visit AgMoreThanEver.ca and share content
- 6.** Share your content with us so we can share it with others
- 7.** Buy or promote ag swag
- 8.** Show your support at trade shows and events
- 9.** Add an Ag More Than Ever article to your publication
- 10.** Promote the Ag More Than Ever cause at your events

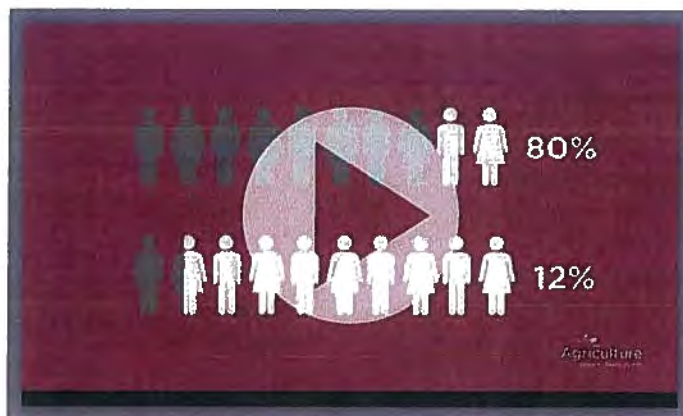
3. Like us on Facebook and share ag-proud content

Are you on Facebook? Like our **Facebook page**. We share lots of ag-proud content and you can help get the word out by liking, sharing and commenting on it. And, don't forget to send us your Facebook page so we can like it.



4. Watch our videos and subscribe to our YouTube channel

Check out the great ag-proud videos on our **YouTube channel**. Share our videos with your network and subscribe to our channel to stay updated on new videos. If your organization is on YouTube, let us know so we can subscribe to your channel.



Check out our **Join the Conversation video**.



Watch and share the **Ag Matters video** to help tell the real story of Canadian ag.

5. Visit AgMoreThanEver.ca and share content

Our online hub for advocates makes it easier for you tell the real, positive story of Canadian ag.

On Instagram | Facebook | Twitter | LinkedIn | YouTube

Join the 476 people and groups on our AgMoreThanEver.ca | [Become an advocate](#)

Agriculture
more than ever

Resources
A place to take a deep dive on agriculture

Ag Conversations
Blog, social, podcasts, and more

Partners
AgMoreThanEver.ca is the hub for over 100

Shop
SAGS, BSA, CAPP, and other ag items

A positive voice for Canadian agriculture

Agriculture More Than Ever's community-driven content focuses on experiences and the stories that inspire about Canadian agriculture. It's a place where you can share your own story and people that make the industry special.

[Learn more about us](#)

Tools to build ag awareness

Check out our resources to help

[Visit Resources](#)

Featured

Giving thanks
Racine Beck, a busy and full-time entrepreneur from Quebec sent us the following note: Thank you, continues several off

[Continue](#)

OPPORTUNITY

Video encourages students to choose a career in agriculture
It's no secret that there is a growing world demand for food. But what does the future hold beyond the farm? [Read more](#)

[Watch video](#)

Why I Write
Agriculture & ranching is a passion for some of the most proud feelings we have. & we'd all do something about it. [Read more](#)

[Read more](#)

Are you an advocate?
Everyone in ag needs to speak up for their industry. Changing perceptions about anything is often a hard people being there. [Read more](#)

[Read more](#)

Here are a few ways to get involved and make the most of the site:

1. Encourage employees to join our advocate list

Let your people know that adding their name to our **advocate list** is a great way to show support for the industry. They will join a community of like-minded people and receive an email from us every month with advocate tips to help them speak up for ag.



2. Use our resources

We've made our **resources** easier to navigate and added new content to help you tell ag's real, positive story. The section is filled with easy-to-share facts, photos, infographics and more.

3. Enjoy partner exclusives

Check out our exclusive **partner resources**, including merchandise, articles, PowerPoint presentations, videos, ads and more to help you spread the word.

The screenshot shows the 'Partner resources' page on the Agriculture website. At the top, there is a navigation bar with the Agriculture logo and links for 'Resources', 'Ag Organizations', 'Partners', and 'Shop'. Below this, the main heading is 'Partner resources'. The page is organized into several sections:

- Partner badges:** This section features two 'Proud partner of' badges for Agriculture, each with the organization's logo and name.
- Merchandise:** This section lists various branded items:
 - T-shirt:** A red t-shirt with the Agriculture logo and name.
 - Paper cup:** A white paper cup with the Agriculture logo and name.
 - Pen:** A silver pen with the Agriculture logo and name.
 - Sign:** A white sign with the Agriculture logo and name.
 - Truck decal:** A white decal for a truck with the Agriculture logo and name.
 - Pen:** A silver pen with the Agriculture logo and name.
- Articles, presentations and videos:** This section lists various articles, presentations, and videos related to agriculture.
- PowerPoint presentations:** This section lists various PowerPoint presentations related to agriculture.

6. Share your content with us so we can share it with others

You've got facts, articles, stories and more to help tell the real story of Canadian ag and we want to help you do it! Email us links to facts, articles or other information that tells the real story of Canadian ag so we can share it. And, when you're sharing good ag stories, photos and facts on Facebook, Twitter or Instagram, let us know by using **#AgMoreThanEver**.

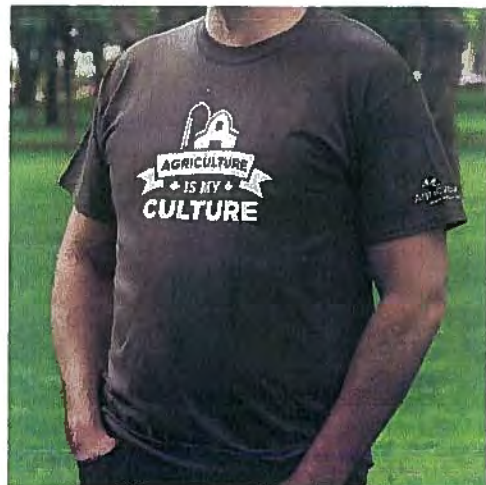


7. Buy or promote ag swag

A variety of Ag More Than Ever merchandise is available – everything from t-shirts and ball caps, to tote bags and field signs, with new items being added all the time. These items offer a simple way to show support for the industry and start conversations about the cause.

They are offered below cost to producers to make them as accessible as possible. Some items – like our infographics – are available at no cost.

Visit [our Shop](#) to see all the items and shop online. And be sure to check our [exclusive partner merchandise](#). There are also co-branding opportunities on many of our items. [Contact us](#) for more details.



8. Show your support at trade shows and events

Trade shows and events are a great opportunity to speak directly to producers and others involved in Canadian ag about the Ag More Than Ever cause. Our partners play a valuable role in helping staff the Ag More Than Ever booth at these trade shows and events. If you, or someone else in your organization, love talking about the importance of Canadian ag, have an outgoing personality and a few hours to spare, volunteering may be for you. It's a lot of fun to get others excited about the cause. (And the free t-shirt isn't too shabby either!)

We'll send out an email to partners in the region in advance of the show to call for volunteers. Stay tuned.

Contact us if there's a show you want to volunteer at.

Display Ag More Than Ever material at your booth

We have flags and other items that you can use to help create conversations about your Ag More Than Ever partnership at trade shows and events. You can also buy banner stands, hanging banners and other materials to showcase your partnership. **Contact us** to see what's available



9. Add an Ag More Than Ever article to your publication

You can help tell people in your networks about the importance of speaking up for our industry by adding an article in your communications. Sharing messages and articles with your employees is also a great way to inject some advocacy into your internal communications.

We have short, simple articles and messages you can use in online and print communications. Together, we can get the message out! **Visit our website** to request an article.

You can also add images - like our **fact photos** - to publications, online blogs and e-newsletters as a simple way to provide readers with ag facts they can use to speak up for the industry.

ACCHI Partners with Agriculture More Than Ever
It's Time to Tell the Real Story
 Agriculture
 more than ever

Thank you for supporting the World's Largest Family Farm!
 To see the full Field of Cereals, please visit the AC & CC website
www.ark6.com/fieldofcereals.php

Speak up. Speak positively.
 Agriculture
 more than ever

Proud partner of Agriculture
 more than ever

98% of Canadian farms are family owned and operated

ONE ACRE OF WHEAT makes enough bread to feed a family of four for 10 years

Canada is the world's largest canola producer

10. Promote the Ag More Than Ever cause at your events

Consider incorporating Ag More Than Ever into the events, meetings, conferences or celebrations you host for customers, employees or members. You can use Ag More Than Ever **merchandise** to theme your event and spread the word about the cause.



We can also provide you with a **presentation** about Ag More Than Ever that you can deliver at events and meetings to help get the word out. And our videos, like the **Ag Matters video**, can add a nice ag-proud touch to your events.

Questions? Ideas? Want to know more?

We're here for you! Contact us at info@agriculturemorethanever.ca or **1-306-780-7771**.

Thank you for helping tell the real story of Canadian ag. Together, we're building a brighter future for the industry we love. Let's keep it growing!



REGIONAL DISTRICT OF BULKLEY-NECHAKO

Memorandum

TO: Chair Parker and Agriculture Committee
FROM: Debbie Evans, Agriculture Coordinator
DATE: January 2, 2018
SUBJECT: Climate Change Regional Adaptation Program

Purpose

The purpose of this memorandum is to provide information to the Agriculture Committee regarding the Climate Change Regional Adaptation Program and RDBN Expression of Interest for April 1, 2018. Funding for the program will be available in the Canadian Agricultural Partnership, the renamed phase of Growing Forward funding.

Background Information

April 28, 2016 the RDBN Agriculture Committee received a webinar presentation from the BC Ag Climate Action Initiative. Minutes show discussion about the future funding to complete a Regional Adaptation Program, but no actionable item was attached.

The Regional Agrologist, Brent Barclay, from Prince George has suggested that the RDBN prepare an expression of interest to submit on April 1, 2018 to access the funding to proceed with the Regional Climate Change Adaptation Program.

The ability of agricultural producers to adapt to climate change is often linked to physical resources and decision-making processes that are beyond the individual farm. Some of the most significant issues affecting future food production in BC include: water management (water supply and storage, drainage and ditching); emergency planning; land use practices; and regional infrastructure). The planning process for developing Regional Adaptation Strategies brings local governments and agricultural producers together to identify strategies and actions for addressing climate change impacts. Building collaboration to address agricultural adaptation issues is an important underlying goal of the process.

The types of strategies and actions identified reflect the specifics of local climate change impacts, as well as the adaptive capacity and adaptation challenges and opportunities facing local agriculture. Several Regional Adaptation Strategies plans have been completed to date:

- Cariboo
- Cowichan
- Delta
- Fraser Valley
- Okanagan
- Peace

The proposed planning process would be as follows:

1. Form Local Advisory Committee consisting of commodity organizations, Ministry of Agriculture, Agriculture & Agri-Food Canada, Regional Government and other/non-government organizations.
2. Background research of previous work in the RDBN, e.g. RDBN Ag Plan 2012, Research & Synthesis of Weather Station Data – Vanderhoof Region. Documents and data will be reviewed as well as industry and local government interviews.
3. Workshop #1 will generate actions and ideas for workshop #2 and will included Impacts ratings and gaps/assets.
4. Workshop #2 will have discussion and develop adaptation strategies. Goal is to generate specific actions and beginning of action strategy.
5. Implementation meeting will be held to generate project priorities and discuss implementation plans.
6. Final regional adaptation strategies will have a written strategy document with implementation plans and will be reviewed by the Advisory Committee and then distributed for communication.

I would be pleased to answer any questions.

RECOMMENDATION:

(All/Directors/Majority)

“That the Agriculture Committee recommend that the Regional District of Bulkley-Nechako Board of Directors direct staff to prepare an RDBN Expression of Interest for the Climate Change Regional Adaptation Program for the April 1, 2018 funding intake for Canadian Agricultural Partnership program funding.”

REPORT

RDBN Agriculture Presentation Moved by Director Benedict
Seconded by Director Greenaway

AG.2016-4-3 "That the Agriculture Committee receive the Manager of Administrative Services' April 19, 2016 memo titled "RDBN Agriculture Presentation."

(All/Directors/Majority) CARRIED UNANIMOUSLY

Director Miller provided an overview of the RDBN Agriculture Presentation that Chair Parker, Director Fisher and he provided to the Northern Development Initiative Trust Board of Directors. The presentation was well received and NDI staff indicated support for agriculture throughout the region.

Director MacDougall mentioned that as a member of the NDIT Board of Directors there was further discussion and there will be action moving forward.

CORRESPONDENCE

PIBC Webinar – Climate Action Initiative – Climate Change & BC Agriculture: Regional Adaptation Strategies Moved by Director Miller
Seconded by Director Greenaway

AG.2016-4-4 "That the Agriculture Committee receive the correspondence titled "PIBC Webinar – Climate Action Initiative – Climate Change & BC Agriculture: Regional Adaptation Strategies" and examples "Cariboo Region" and "Peace Regions"."

(All/Directors/Majority) CARRIED UNANIMOUSLY

Chair Parker noted that there may be another opportunity in the future for funding for the RDBN to complete a study similar to the Cariboo and Peace Regions. Director MacDougall commented that there may be an opportunity for a collaborative approach with other industries such as forestry.

March 30, 2016 letter from Ministry of Environment -Water Sustainability Act Moved by Director MacDougall
Seconded by Director Thiessen

AG.2016-4-5 "That the Agriculture Committee receive the March 30, 2016 letter from the Ministry of Environment titled "Water Sustainability Act."

(All/Directors/Majority) CARRIED UNANIMOUSLY

Chair Parker spoke of the letter from the Ministry of Environment indicating that they were going to hold teleconferences in regard to the *Water Sustainability Act* in April, 2016. He has contacted MoE to request a teleconference.



Climate Change Adaptation Programming for BC Agriculture

Partnering for success



A resilient agriculture sector in a changing climate

AGRICULTURE IS VULNERABLE to changes in climatic conditions and even small shifts can have significant consequences for food production, the livelihoods of farmers, and the future of the agri-food sector in BC.

Changes in the climate are already underway and climate projections indicate that warmer and drier summers, wetter winters, and increased variability and extreme conditions such as droughts, floods, and wildfires, will all become more common. There will also be the potential for longer growing seasons and different crops. For the agriculture industry to manage the risks and take advantage of the opportunities, it must be able to adapt.

The Climate Action Initiative is doing a great job of reaching out to producers and supporting projects that are helping farmers today as well as strengthening our viability in the future.

Lydia Ryall, Crophorne Farm

The BC Agriculture & Food Climate Action Initiative (CAI) is delivering industry-led climate adaptation programs funded by the Governments of Canada and British Columbia through *Growing Forward 2*, a federal-provincial-territorial initiative. This programming is part of the BC Ministry of Agriculture's on-going commitment to climate change adaptation in the agriculture sector. The CAI was set up in 2008 with the support of the BC Agriculture Council and the Investment Agriculture Foundation of BC, to develop tools and resources to help make the BC agriculture sector more resilient and successful in dealing with climate change.

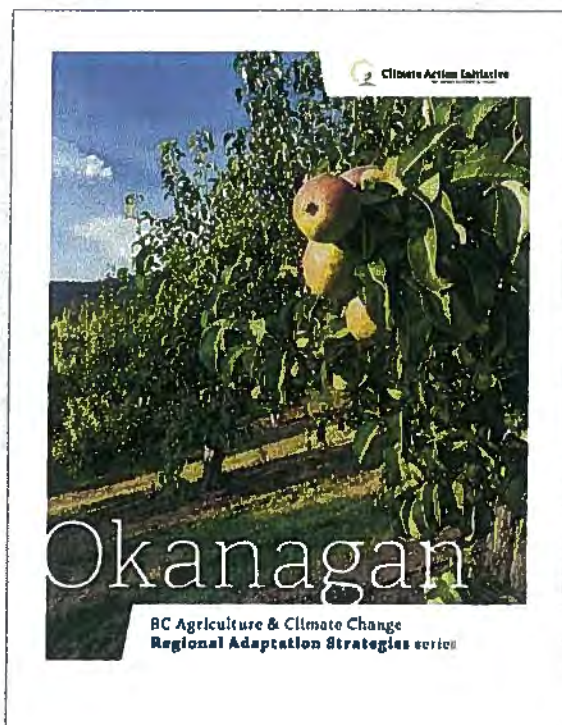
The CAI is guided by an industry advisory committee, and works in close collaboration with local, provincial, and federal government partners. CAI's work has attracted national attention for its collaborative approach to sector engagement, which has become a model for other provinces as they develop their own adaptation programming for agriculture. The following is a sample of the projects that the CAI has been involved with, and the work that has been accomplished to further climate change adaptation in BC agriculture.

www.BCAgClimateAction.ca



Climate Action Initiative
BC AGRICULTURE & FOOD





Collaboration is the cornerstone of CAI's adaptation programming.

Close to 100 different partners have collaborated to bring these adaptation projects to life across BC.

Browse our full list of partners at www.BCAgClimateAction.ca/partners

Regional Adaptation Strategies

THE DIVERSITY OF BC's geography and its agriculture sector means that the impacts associated with climate change vary across regions. Since 2013, the CAI has led adaptation planning through the development of *Regional Adaptation Strategies* for six key agricultural areas of the province: Fraser Valley, Okanagan, Cariboo, Peace, Cowichan Valley, and Delta. Following plan completion, the program then provides up to \$300,000 to implement priority projects identified in each regional adaptation plan.

Collaboration is a key element to developing the *Regional Adaptation Strategies* and to their implementation on the ground. To date more than 400 participants have taken part in these planning processes, including agricultural producers and specialists, local government representatives, and staff from the Ministry of Agriculture and other provincial agencies. Forty-one locally led projects have turned the strategies into action, and more than 50 agricultural organizations and local government partners across the province have been engaged in the process.

Farm Practices & Climate Change Adaptation

WHILE THE REGIONAL Adaptation Strategies address cross-commodity and broadly shared issues, the *Farm Adaptation Innovator Program (FAIP)* supports applied research projects that demonstrate and evaluate practices, approaches and technologies for farm level adaptation. In addition to reducing weather-related risks, the 15 projects funded through FAIP focus on knowledge sharing and building capacity in the agriculture community. The degree of collaboration fostered by FAIP is reflected in its 60 project partners, which include agricultural organizations, universities and research consultants, and over 80 individual producer co-operators. FAIP projects are focused on strengthening BC agriculture's resilience and ensuring that the sector remains vibrant, productive, and competitive into the future.

The CAI is supporting proactive efforts underway across BC to address some of agriculture's most significant climate change-related issues, including adapting water management and infrastructure, preparing for extreme weather events, addressing emerging pest issues, and managing for farm-level resilience.



Adapting to agriculture's water future

M AINTAINING AND ENHANCING agricultural water in the changing climate is a challenge shared by the sector across the province. Warmer and drier summers are expected to create more pressure on water supply and infrastructure during the growing season when agricultural operations need water the most. Water sources, production needs, and suitable adaptations vary widely across BC. The challenges around agricultural water supply and management demonstrate the importance of regional-level adaptation.

Agricultural Water Storage

FOR MANY CATTLE operations in the province's interior, the water sources on Crown rangelands provide critical water for livestock (this water is also important to range health and ecology). However, with more intense hot and dry periods in summer and reduced snowpack, some of these important water sources for livestock and wildlife are at risk of drying up.

Along with various partners, the *Cariboo Cattlemen's Association* initiated a project to assess the risk to surface water sources on grazing ranges, and to identify options to improve resilience. Using climate projections as a basis for its analysis, the resulting risk assessment tool takes an integrated approach to evaluating water and forage resources. This tool can now be applied to inform range management, and particularly water developments, to help ensure that there is water available for livestock now and into the future. [PROJECT [CBO6](#) — see the table at the end of this document for a list of all projects.]

Throughout BC's interior, agricultural dams store water for irrigation and livestock. With climate change, the role of these dams in ensuring a sustainable water supply for agriculture is increasingly vital. The Cariboo Cattlemen's Association, CAI and BC government agencies have partnered to assess the key issues and solutions, and to deliver improved dam safety guidance resources to dam owners.

[PROJECTS [CBO2](#), [CBO5](#), [CBO8](#)]



A lot of us rely on these dams for watering our cattle and irrigation, and a lot of members of the public rely on the water sources they create for fishing and recreation.

.....
Brian Thomas, rancher

Sustainable Irrigation & Water Management

IN MANY AREAS of the province, farmers depend on irrigation to grow their crops and irrigation requirements will increase with hotter, drier, and longer summers. In Delta, where producers rely on irrigation water from the lower Fraser River, reduced volumes of water flowing downstream in late summer, combined with rising sea levels, may result in salt water pushing further upstream, reducing the availability of fresh water at irrigation intakes.

To better understand the potential impacts of these changes, the *Delta Farmers' Institute*, in partnership with the *Corporation of Delta*, commissioned a modelling study that profiles the salt wedge in the Fraser River and how it is expected to shift with climate change. This analysis has resulted in a multi-year monitoring program on the lower Fraser River, to provide improved real-time data and to better understand shifts occurring in the river. [PROJECT [DL10](#)]

In the Okanagan, the wine grape sector is taking leadership in strengthening water management practices, both to adapt to changing conditions and to improve grape quality. The *BC Wine Grape Council's Sustainable Winegrowing BC Initiative* is leading a project to provide new information resources for water management to the sector including fact sheets, field days, and a new water use tracking tool. [PROJECT [OK04](#)]

Through the Farm Adaptation Innovator Program, *Enoteca Wineries* are using technology and careful management to reduce water use at two of their vineyard operations. The project is evaluating precision irrigation techniques to tailor the delivery of water and nutrients for each type of soil and grape in the vineyard with the goal of reducing water use, while also improving grape quality. [PROJECT [E116](#)]



Preparing for extreme weather events

Proactive Planning for Wildfire Risk

WITH THE HOTTER and drier summers, wildfires are expected to become more frequent and intense. In the Cowichan Valley, Cariboo, and Okanagan, pilot projects have been undertaken to better understand the nature of the risks related to wildfire, and to develop agriculture-specific resources for wildfire preparedness and mitigation of potential impacts. In all three regions, there has been a focus on individual farm or ranch planning and also on the specific vulnerabilities and needs for agriculture to mitigate the harm associated with wildfire events.

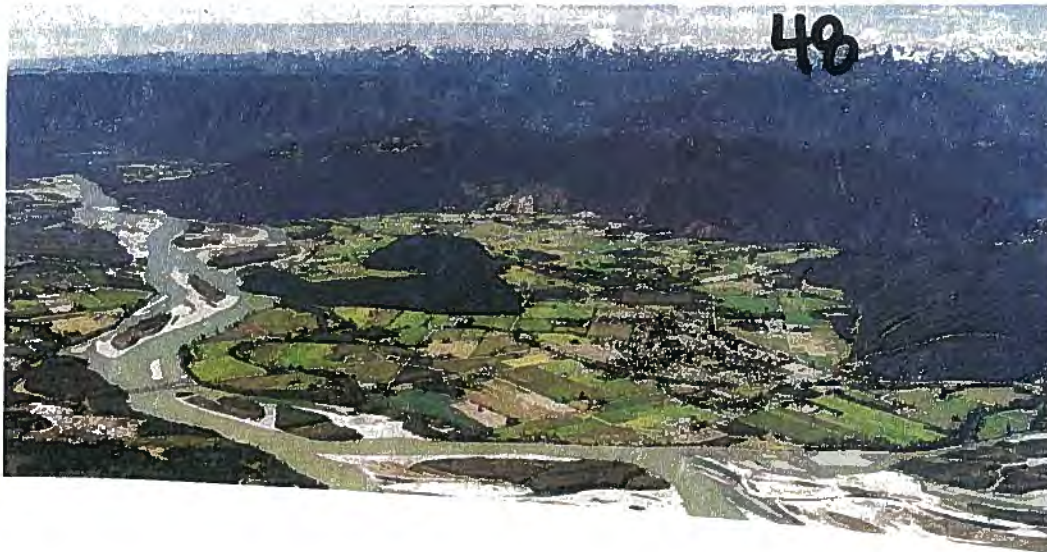
In the Cariboo, an evaluation was undertaken to better understand the shared issues and needs of ranchers to address wildfire risks. Support with fuel management and protecting assets were the highest priorities for reducing wildfire impacts. Led by the *Cariboo Cattlemen's Association*, the

project also piloted a ranch-level preparedness planning template to walk ranchers through the process of identifying where wildfire presents a risk to ranch assets, and planning for protection strategies like sprinkler protection units to help reduce risk. The work done in the Cariboo, along with the emergency livestock protection planning tools piloted in the Cowichan, led to additional testing and refining of preparedness and mitigation resources in the Okanagan.

[PROJECTS [CBO1](#), [CW10](#), [OK05](#)]

Reducing Vulnerabilities to Extreme Precipitation & Flooding

ACCORDING TO CLIMATE projections, seasonal precipitation patterns are shifting. In the Lower Mainland, rainfall is expected to increase in winter, and potentially spring and fall, with extreme rainfall events becoming more common.



When I saw the work that the CAI was doing in the Cariboo, I asked them if that fire plan and some of the other projects they were doing would be applicable in the Okanagan. I see this project as being very valuable to the ranching community here.

Linda Allison, president of the Southern Interior Stockmen's Association

The potential for flooding associated with extreme precipitation events, spring freshet, and/or coastal floods (resulting from the combined impacts of sea level rise and storm surges) is likely the most significant threat to agriculture in the Lower Mainland. Both localized and more extensive flooding have the potential to increase with climate change, putting crop production and livestock at risk, and potentially damaging agricultural infrastructure, soil productivity, and supply lines.

Two flooding impact assessments have been completed, one for the Fraser delta area and one for the Fraser Valley Regional District. The two studies evaluate the extent of the agricultural land base at risk of flooding and use scenarios to evaluate the potential economic and production impacts of specific flooding events. The Fraser Valley study—undertaken in partnership with the Fraser Valley Regional District—also proposes actions that could reduce damage and

losses, improve resilience and/or speed recovery for agriculture in the case of a spring freshet flood. [PROJECTS [EVO2](#), [DLO3/DLO7](#)]

One of the ways to help manage the impacts associated with extreme precipitation, and prevent the loss of workable days in the field, is to improve regional and on-farm drainage systems. The Farm Adaptation Innovator Program is providing support for researchers at the *University of British Columbia* to evaluate practices for improving on-farm drainage management. In collaboration with the *Delta Farmers' Institute*, *Delta Farmland & Wildlife Trust*, and local farmers, the project demonstrates and evaluates on-farm strategies for addressing drainage and salinity problems. The study provides information to growers on drainage design criteria, as well as recommendations and cost-benefit estimates for different approaches. [PROJECT [F113](#)]



Addressing emerging pest challenges

Monitoring & Managing Changing Pest Populations

A WARMER CLIMATE DOESN'T just create opportunities to extend the season or to grow new crops, it also opens the door to more pressure from insect pests, pathogens, weeds, and invasive species. Existing pest populations are likely to increase and new pests are likely to arrive.

Addressing these challenges requires effective monitoring and management tools. Across the province, the CAI is supporting regional partners with strengthening monitoring, as well as creating new tools and information to assist producers with management decisions.

In the Peace region, the *BC Grain Producers Association*, in partnership with local agricultural organizations, developed a two-year collaborative pilot project to address a significant gap in monitoring for insect pests, pathogens, and weeds identified as current or emerging threats. Monitoring was undertaken at producer cooperator sites across the region and, during the production season, monitoring updates and alerts were provided to producers, along with information about management options including crop rotation, bio-control agents and variety selection. [PROJECT [PCO3](#)]

In the Fraser Valley, a comprehensive inventory — including consultation with 30 agricultural commodity associations — was undertaken to support an evaluation of shared pest issues and priorities. The completed inventory documents current and recent pest-related activities for crops and livestock, as well as needs, gaps, and priorities. A second phase of project activity is focused on engaging with industry on collaborative planning, and creating a fact sheet series for priority “emerging” pests in the region.

[PROJECTS [FVO4](#), [FVO5](#)]

Led by the *Okanagan-Kootenay Sterile Insect Release Program*, tree fruit organizations in the Okanagan are partnering to adapt a technology developed at Washington State University to help their industry make better-informed decisions when managing orchard pests. The Decision Aid System (DAS) is a web-based platform designed to transfer time-sensitive information on pest management to orchardists, using real-time, local weather data and pest and disease models. DAS assists producers to manage the variability associated with climate change by predicting (based on real-time weather data) when a specific pest or disease is likely to emerge, and providing growers with a recommended treatment plan. [PROJECT [OKO1](#)]



Managing for farm-level resilience

Managing for Increasing Variability in Climate & Weather

CLIMATE CHANGE WILL create a new set of management challenges for producers as they strive to adapt to increasing variability and capitalize on emerging opportunities. Through the Farm Adaptation Innovator Program, CAI supports partnerships between researchers and producers to develop tools and technologies that will strengthen the ability of producers to anticipate climate change impacts, and to make informed decisions to help meet their goals.

Crop protection technologies provide one option for producers to minimize risk and extend their growing season but there is limited information available to help farmers identify the best product for their specific situation. In partnership with producer co-operators in Delta and the Cariboo, *University of British Columbia* researchers are leading a project to evaluate the effects of plastic mulches and tunnel technologies on how products might impact soil moisture and temperature, with a focus on increasing growing season length, conserving soil water and achieving improve yields and quality. The results are providing more specific information to producers to assist with managing the variability and extremes anticipated with climate change. [PROJECT F107]

A project led by the *BC Forage Council* puts the power to identify and test suitable on-farm adaptations in the hands of producers. The project developed an on-farm research manual that walks producers through the fundamentals of setting up and implementing a research plot on their own farm through to collecting data, and evaluating results. The manual was created by a research consultant with the help of four producer co-operators in the Central Interior who developed and evaluated independent research trials on their own farms. The *Guide to On-Farm Demonstration Research* is available online and in hard copy.

[PROJECT F108]

The [on-farm research] manual is a new tool and it can be just as important as your tractor, or field, or equipment you use. It's another tool in the toolbox to get better results and help you stay afloat.

Wayne Ray, Smith Creek Farms

Projects 2013–2017



drier conditions / drought



other water management



pests



excess moisture / flooding



wildfire

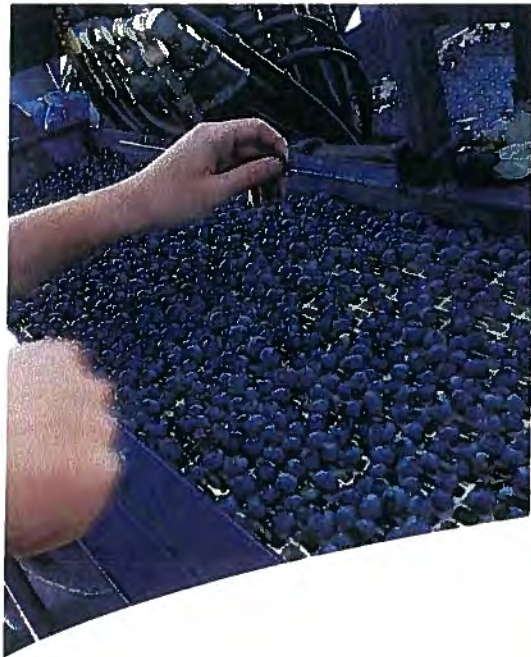


other climate resilience

Impact Area	ID	Regional Projects	Region
	CB01	Wildfire Preparedness and Mitigation Planning and Resources	Cariboo
	CB02	Cooperative Maintenance and Enhancement of Agriculturally Significant Dams	Cariboo
	CB05	Workshop: Maintaining and Enhancing Agricultural Dams	Cariboo
	CB06	Livestock Surface Water Assessment and Options	Cariboo
	CB07	Regional Agricultural Research Alliance	Cariboo
	CB08	Agricultural Dams Knowledge Transfer Resource	Cariboo
	CB09	Priority Pests: Scan, Consultation, and Action Plan	Cariboo
	CW01/ CW06	Integrated Farm Water Planning Pilot	Cowichan
	CW03	Business Case for Regional Agriculture Extension Services	Cowichan
	CW04	Extreme Weather Events Preparedness	Cowichan
	CW05	Enhancing Local Processing and Storage	Cowichan
	CW07	Pilot Drought Alert System	Cowichan
	CW08	Water Storage Knowledge Transfer Resources	Cowichan
	CW10	Livestock Relocation and Management Plan	Cowichan
	DL01	Potential Economic and Agricultural Production impacts of Climate Change Related Flooding in the Fraser Delta	Delta
	DL03/ DL07	Flooding Preparedness and Mitigation Pilot Project	Delta
	DL05	Collaborative Climate Change and Agriculture Communications Strategy	Delta
	DL06	Forum: Agricultural Vulnerabilities to Coastal Flooding	Delta
	DL08	Agriculture and Climate Change Outreach and Education Pilot Project	Delta
	DL09	Delta Drainage and Sub-Irrigation Project	Delta
	DL10	Fraser River Modelling and Monitoring	Delta
	FV01	Enhanced Collaboration for Agricultural Drainage and Ditch Management	Fraser Valley
	FV02	Freshet Flooding and Fraser Valley Agriculture: Evaluating Impacts and Options for Resilience	Fraser Valley
	FV03	Agricultural Water Workshop	Fraser Valley
	FV04	Agricultural Pest Assessment (Activities, Gaps, and Priorities)	Fraser Valley
	FV05	Enhancing Information and Collaboration for Managing Emerging Pests	Fraser Valley
	FV06	Climate Adaptive Drainage Management Forum	Fraser Valley

Impact Area	ID	Regional Projects	Region
	OK01	Decision Support Tool to Improve Local Tree Fruit Management	Okanagan
	OK02	Agriculture Sector Drought Outreach Program	Okanagan
	OK03	Integrated Farm Water Management Planning Pilot Project	Okanagan
	OK04	Vineyard Water Use Efficiency Knowledge and Technology Transfer Project	Okanagan
	OK05	Planning and Information Exchange for Wildfire Impact Reduction	Okanagan
	OK06	Invasive Species Digital Knowledge Transfer	Okanagan
	PC02	Increasing Availability of Agriculturally Relevant Weather Data	Peace
	PC03	Collaborative Monitoring Pilot Project in the BC Peace	Peace
	PC04	Feasibility Study: Defining a New Approach to the Agricultural Land Use Inventory in the BC Peace	Peace
	PC05	Evaluation of Irrigation Potential in the BC Peace Region	Peace
	PC06	Peace Agriculture Weather Monitoring and Decision Support Tools	Peace
	PC07	Knowledge Transfer Tools: Irrigation Feasibility and Weather Monitoring	Peace

Impact Area	ID	Farm Adaptation Innovator Projects	Region
	FI01	Using Management-Intensive Grazing for Adapting to and Mitigating Climate Change	Central Interior
	FI02	Vented Orchard Covers to Protect Cherries from Rain and Hail	Okanagan
	FI03	Demonstrating Innovative Forage Production Practices to Increase Climate Change Adaptation	Central Interior
	FI04	Evaluation of Thrips Damage to Potatoes in a Changing Climate	Fraser Valley
	FI05	Economic, Social and Environmental Benefits of Riparian Rehabilitation as a Climate Change Adaptation Strategy	North Okanagan
	FI06	Strategies to Improve Forage Yield and Quality While Adapting to Climate Change	Fraser Valley
	FI07	Adapting BC Horticulture Through Protected-Crop Research and Demonstration	Lower Mainland & Central Interior
	FI08	Innovative Management Practices for Resiliency	Peace
	FI09	Keyline Water Management: Field Research and Education in the Capital Region	CRD
	FI10	Climate Change Impact Risk Assessment Tool for Ponds used as Livestock Water Sources	Okanagan-Thompson, Cariboo, Boundary & Kootenay
	FI12	Expanding Cherry Production in BC Under Climate Change	Central Okanagan & North Okanagan
	FI13	Improving On-Farm Drainage Management to Reduce the Impacts of Climate Change In Delta, BC	Fraser Valley & Delta
	FI14	Adapting to Low Light Growing Conditions Using High Tunnel Structures	Revelstoke
	FI15	Climate Change Influence on Disease Control Patterns in the Okanagan Tree Fruit Industry	Okanagan
	FI16	Optimization of Water Use In Vineyards in the Okanagan Using Precision Irrigation	Okanagan



Preparing for BC agriculture's future

Sharing Knowledge & Building Capacity

THROUGH *GROWING FORWARD 2*, in partnership with the BC Ministry of Agriculture and Agri-Food Canada, the BC Agriculture & Food Climate Action Initiative has undertaken assessments and built knowledge of challenges facing the industry, as well as developed new tools and resources for producers to adapt to anticipated changes. The projects have brought partners together around complex issues to share knowledge, collaborate on solutions, and strengthen relationships among producers, agricultural organizations, and government staff and agencies. The partnerships, information, and tools resulting from adaptation projects are important to agriculture's ability to meet current challenges and to successfully adapt for future conditions.

The Future of Adaptation Programming

CLIMATE CHANGE IS a moving target, and we need to keep up. To prepare BC agriculture for the risks of climate change, the sector's adaptive capacity must continue to be strengthened over the longer term.

Our existing programming provides a strong base to build from, and we will continue to enhance climate adaptation programming under the *Canadian Agricultural Partnership*, a five-year \$3 billion federal-provincial-territorial funding initiative that runs from 2018 to 2023.

www.BCAgClimateAction.ca



Climate Action Initiative
BC AGRICULTURE & FOOD





REGIONAL DISTRICT OF BULKLEY-NECHAKO

Memorandum

TO: Chair Parker and Agriculture Committee
FROM: Debbie Evans, Agriculture Coordinator
DATE: January 2, 2018
SUBJECT: BC Ministry of Agriculture - Agricultural Advisory Committee Workshops

Purpose

The purpose of this memorandum is to provide information to the Agriculture Committee regarding the BC Ministry of Agriculture Agricultural Advisory Committee workshops and RDBN participation.

Background Information

On December 14, 2017, the attached letter from the BC Ministry of Agriculture, Strengthening Farming Program was received as an invite to attend the Agriculture Advisory Committee (AAC) Workshops. Full event and registration details will be arriving in early January.

The BC Ministry of Agriculture AAC workshops have been organized every two years since 2003. In 2003 there were only 10 Agriculture Advisory Committees. At the time of the 2013 workshop, there were 46 committees. The overall objective of the AAC workshop is to enable participants to gather ideas and information that can help them provide effective advice and support to local councils and boards.

RDBN has had an Agriculture Advisory Committee since 2016 and currently is the only region with a full-time Agriculture Coordinator.

The recommended 2018 RDBN attendees for the AAC workshop are Chair (if able to attend) and Agriculture Coordinator. The estimated total cost is \$570.00 per person for flights, parking, hotels and meals.

There are two workshop dates. Wednesday February 21, 2018 in Langley BC or Tuesday February 27, 2018 in Kelowna BC. Although Langley would mean less flight travel time, the RDBN meeting is on February 22nd and would not be a good time management fit.

I would be pleased to answer any questions.

RECOMMENDATION:

(All/Directors/Majority)

"That the Agriculture Committee recommend that the Regional District of Bulkley-Nechako Board of Directors authorize registering for the BC Ministry of Agriculture Agricultural Advisory Committee Kelowna Workshop and staff proceed with booking flights and hotels for the Chair and the Agriculture Coordinator."



December 14, 2017

Dear Agricultural Advisory Committee Chair,

Re: Save the date for
Agricultural Advisory Committee Workshops
Langley – Tuesday, February 21 2018 or
Kelowna – Wednesday, February 27 2018
(9:30 am to 4:00 pm)

The Ministry of Agriculture invites you to the eighth biennial Agricultural Advisory Committee (AAC) Workshops. For spring 2018, we are offering two regional events in Langley and Kelowna. Both are free and lunch is provided. Please choose only one to attend, depending on which is most convenient. Full event and registration details will be sent to you and your local government officials and staff in early January.

The workshops bring AAC members together from across the regions and the province to meet and discuss relevant agricultural issues. These sessions are useful to all communities, even those who do not yet have an AAC but are considering beginning an Agricultural Area Plan process.

A complete list of proceedings from AAC workshops held in recent years is available on our website:
<https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/agricultural-land-and-environment/strengthening-farming/agricultural-advisory-committees>.

Previous workshops have invigorated AAC members, generated new ideas, and helped AACs continue to offer effective advice and support to their councils, boards and local trust committees.

Please save the date and watch for complete details in the coming month. If you have any questions in the interim please contact our land use planner, Gregory Bartle directly at Gregory.Bartle@gov.bc.ca or 250.387.9687 (toll free 1.888.221.7141).

I look forward to seeing your representatives at the workshop.

Yours truly,

Corrine Roesler
Acting Director, Strengthening Farming Program

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REGIONAL DISTRICT OF BULKLEY-NECHAKO

Memorandum

TO: Chair Parker and Agriculture Committee
FROM: Debbie Evans, Agriculture Coordinator
DATE: January 2, 2018
SUBJECT: Columbia Basin Agriculture Forum

Purpose

The purpose of this memorandum is to provide information to the Agriculture Committee regarding Columbia Basin Agriculture Forum.

Background Information

On December 19, 2017, received an email invitation to speak at the Agriculture Forum hosted by the Columbia Basin Trust.

The Columbia Basin Trust had been in conversation with Northern Development Initiative Trust employees referring the announcement of the Agriculture Coordinator position in the RDBN.

Invite is to be a presenter to share information and ideas about the role of the Agriculture Coordinator in the RDBN.

The forum dates are February 27th & 28th, 2018 in Cranbrook BC.

Agriculture Coordinator travel would be from February 26 – March 1st for flights. Would be arriving back into Prince George airport at 12:30 a.m. on March 1st. With 2-nights in Cranbrook, flights, taxi and meals, the cost to the RDBN would be roughly \$750.00.

Agriculture Coordinator work is for the region and an opportunity to share with other Trusts, Regions, Municipalities and Cities will be at the UBCM conference in September 2018.

I would be pleased to answer any questions.

RECOMMENDATION:	(All/Directors/Majority)
Receive	

Debbie Evans

From: McRobert, Brad P FLNR:EX <Brad.McRobert@gov.bc.ca>
Sent: December 22, 2017 11:34 AM
To: 'Renata King'; 'Alana Wilson'; Jessica Taylor; Wayne Salewski; Dan Boudreau; Diamond, Julia AGRI:EX; Bisschop, Lindsay AGRI:EX; Corrine Swenson; Lindsey Larsen; 'bytes@nvfoodnetwork.org'; 'jkoche@kochel.ca'; graham.stanley@cf-sn.ca; dturner@sd91.bc.ca; 'Ben Zhang'; 'Eva Gulbranson'; Trevor Tapp; 'Elissa.Meiklem@nrc-cnrc.gc.ca'
Cc: 'Sorin Pasca (pascas1)'; shellie; Debra Montgomery (montgomeryd); Sagar Saxena; Debbie Evans
Subject: Introduction: Zero-energy hydraulic Ram pump for off-grid irrigation - interest?
Attachments: Zero-energy hydraulic Ram pump for off-grid irrigation.pdf

Hello everyone,

I'd like to introduce you to Sorin Pasca with the College of New Caledonia. Sorin's team has developed a water pumping system for agricultural or residential use that is low-cost, easy to install and requires no electrical power or fuel to operate (a brief introduction to the equipment is attached to this email). Sorin's team is looking to expand the use of these systems and this presents an opportunity for agricultural producers in our region.

Sorin's team is interested in working with ranches and farms in the Nechako valley and surrounding areas to pilot these pumps in a greater variety of settings and applications. This will provide valuable information on what is working well and what could be improved with the pump's design. Ideally we would like to see a variety of fruit/vegetable producers as well as ranchers install these pumps in the upcoming season for irrigation or livestock watering. If this pilot is successful then I expect we will find ways to scale up distribution further however we may look to limit the number of participants this coming season if the level interest is beyond the project team's capacity to install and monitor. We would also like to get a better sense of whether there may be any funding available to support the research and monitoring costs from government programs or other sources.

There would likely be a cost to the participants for installation however based on the parts and installations work on the prototype, the equipment is already very cost-competitive compared to powered systems. There are some requirements in terms of suitable geography and run/slope of stream in order to operate these pumps, and Sorin is happy to consult with interested adopters to determine if a property is a good fit.

If this is something that you would be interested in participating in, or if you know operators or organizations that might be, please let Sorin and I know and feel free to pass this along to interested parties. More detailed information is available if you have any questions.

Happy holidays!!

Brad

Brad McRobert

Regional Manager, Bulkley-Nechako
 Regional Economic Operations
 Ministry of Forests, Lands, Natural Resource Operations and Rural Development
 (250) 847-0856

From: Sorin Pasca (pascas1) [mailto:pascas1@cnc.bc.ca]
Sent: Tuesday, December 19, 2017 10:09 AM
To: McRobert, Brad P FLNR:EX
Cc: Debra Montgomery (montgomeryd); 'Sagar Saxena'
Subject: Re: Meeting request- Zero-energy hydraulic Ram pump for off-grid irrigation

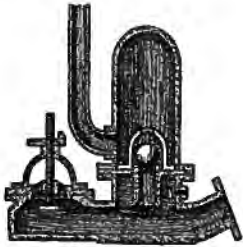
Hi Brad,

I have attached a copy of the poster on the Ram project which basically summarizes our presentation. However, I can provide more details on particular issues, if needed. Please feel free to share it with interested organizations. We'll be happy to partner in any form to move this project to large scale applications.

Thank you so much,

Sorin

Zero-energy hydraulic Ram pump for off-grid irrigation



Hydraulic Ram - Easton and Amos, 1851



Double 2" Ram at PRT nursery, Red Rock, BC



6 weeks irrigated willow vs non-irrigation at PRT nursery

History

- Ram pump was invented in 1796 in France and it has been improved continuously ever since
- modern versions are commercially available and in use today
- it does not require additional dam or reservoir construction

How does it work?

- it requires no external source of energy beyond that supplied by an existing water flow
- a check valve creates a water hammer effect and so it develops pressure that allows a fraction of the input water to be lifted at a higher elevation than where the water originally started

How much does it pump?

- it can lift water at elevations up to 10 times the original hydraulic head
- bigger the flow and the hydraulic head more water to be pumped
- a 2" Ram pump on a 7' (2 m) hydraulic head can deliver 2 gallons per minute at 50' (15 m) elevation (delivery head); this is more than 10,000 liters per day

What did we innovate?

- built with off-the-shelf, ordinary plumbing components and easy to replicate
- sturdy enough to operate for many years with basically no maintenance
- easy installation and increased stability (H-shape)
- high efficiency even at low hydraulic head (5' or 1.5 m)
- reduced noise operation and automatic filter backwashing

Applications

- off-grid irrigation
- drinking water supply projects, including farming
- pressurized water and compressed air
- power generation when integrated with other systems



Arshao Gasana, International student at CNC, enjoying the first run of the newly installed Ram at The Brew Creek Centre, Whistler, BC

SA

FARMERS GET A HELPING HAND



AGRICULTURE COORDINATOR ROLE FINDS THE RIGHT FIT

If you spend a few minutes speaking with Debbie Evans, you begin to understand that she is beyond just passionate about the agriculture industry — it's her life.

"I put myself through university by milking cows," said Evans. "I have a degree in agriculture because of it. I was always interested in agriculture and I wanted to learn about the dairy industry. When I was working I took advantage of my situation at the dairy farm and it paid for my university."

Charisma, understanding and compassion exude from the new Agriculture Coordinator for the Regional District of Bulkley-Nechako (RDBN). Evans, who has spent decades in the agriculture industry, fundamentally recognizes the importance of meeting the needs of the hundreds of farmers in the region and what it will take smaller farms to be economically successful.

"I like to look at agriculture from an A to Z perspective," said Evans. "I want to see where we can fit and where we can go as an industry. Looking at how we can tackle some of the issues surrounding agriculture, what areas can make it stronger and better, and where we can grow the economics of agriculture. In many cases it will take identifying niche markets for farmers to be economically successful."

Evans boasts a wide array of experience in the agriculture industry. She has worked with the Ministry of Agriculture for 13 years and under that portfolio was involved in many programs ranging from Women in Agriculture to First Nations Agriculture. She held the executive director position at 4-H B.C. for three years and continued her journey managing a large dairy farm in Alberta. She then moved to Salmon Arm to be with her father and coordinated the Fall Fair before arriving at her new position.

As part of her new role, Evans will be meeting with different organizations involved with the agriculture industry as well as with farmers across the region to better understand and meet individual needs.

"I look at myself as an enabler out there," said Evans. "Meeting with organizations like Northern Development and the B.C. Agriculture

Ministry, meeting farmers to connect all these entities in order to help strengthen each other. My aim is to go out and meet producers to build a rapport, I want to hear their individual issues, creating a database of my connections and hopefully linking them with each other to provide adequate information and support they need."

The need for an agriculture coordinator position was initially identified during an agriculture forum hosted by the RDBN in 2016. The two-year pilot project was brought to fruition through a partnership between Northern Development and the RDBN. Northern Development approved \$131,666 in funding to support the agriculture coordinator project, with additional funding from the RDBN exceeding \$65,000. The funds will help support the coordinator's position and agriculture related project costs over a two-year term.

Evans hopes that during her position she will be able to show the value of having an agriculture coordinator not only in B.C. but also across Canada.

"I say to people that I am giving 110 per cent," said Evans. "I would like to see this role become a full-time position. If I can show that this role is successful in this region and shows potential to be duplicated nationally, I would regard that as a huge success on my part. I want to see success for the RDBN but I also want to see it in other regions, which will help the agriculture industry across the country."

The RDBN currently has 840 farms operating within its boundaries, many of which are small-scale farms. The task of providing these farms with information on funding opportunities, identifying challenges, and advocating on behalf of the agriculture community falls on the regional coordinator. Evans is embracing these challenges and is looking forward to utilizing her experience to support the needs of the region.

"My mandate is to unite the smaller farms and farmers together," said Evans. "If I can get a whole bunch of smaller farms to come together, and if we can form co-operatives, we can become a larger enterprise and access resources that might not have been available to smaller groups. My hope is to continue to advocate food and agriculture security in the region, as I have done it my whole career and I will continue to do so in this role."