

*The Building Regional Adaptation Capacity and
Expertise (BRACE) Program Presents:*

Building Adaptation Skills for a Changing Climate Webinar Series

**Building Adaptation Skills for Economic
Sectors**

December 1st, 2022

*Le programme Renforcer les capacités et l'expertise
régionales en adaptation (RCERA) présente:*

Série de webinaires sur le renforcement des compétences en matière d'adaptation aux changements climatiques

**Renforcement des compétences en
matière d'adaptation dans des secteurs
économiques**

1er décembre, 2022



WEBINAR SERIES / SÉRIE DE WÉBINAIRES

Building Adaptation Skills...

- **for Engineers** - September 15, 1-2 pm
- **for Planners** - October 3, 1-2 pm
- **Key Considerations for Upskilling the Workforce of Tomorrow** - October 11, 1-2 pm
- **for Water Management** – November 2, 1-2 pm
- **in Economic Sectors – December 1, 1-2 pm**
- **for Young Professionals** - December 7, 1-2 pm
- **for Indigenous Communities** - January, 2023

Renforcer les capacités d'adaptation...

- **des ingénieurs** - 15 septembre
- **des urbanistes** - 3 octobre
- **Considérations clés pour la mise à niveau des compétences de la main-d'œuvre de demain** - 11 octobre
- **pour la gestion de l'eau** – 2 novembre
- **dans les secteurs économiques – 1 décembre, 1-2 pm**
- **des jeunes professionnels** - 7 décembre, 1-2 pm
- **des communautés autochtones** - janvier 2023

BRACE PROGRAM / PROGRAMME RCERA

Overview

- \$18M over 5 years (2017-2022)
- Building adaptation capacity increase adaptation action and climate resilience
- 20 thematic projects targeting a broad range of audiences

Targeted approach

- Worked with all Provinces to scope out priorities and co-develop projects

Types of deliverables

- Webinars and workshops
- Courses and online modules
- Web platforms, videos, case studies
- Guidelines for practitioners
- Networks and communities of practice
- Internships and resources for educators
- ...

Aperçu

- 18M\$ sur 5 ans (2017-2022)
- Renforcer les capacités en matière d'adaptation pour accroître les mesures d'adaptation et la résilience climatique
- 20 projets thématiques ciblant un large éventail de publics

Approche ciblée

- Collaboration avec toutes les provinces pour définir les priorités et élaborer conjointement les projets.

Types de produits:

- Webinaires et ateliers
- Cours et modules en ligne
- Plateformes web, vidéos, études de cas
- Lignes directrices pour les praticiens
- Réseaux et communautés de pratique
- Stages et ressources pour les éducateurs
- ...



PRESENTATIONS / PRÉSENTATIONS

- 1) Building Climate Adaptation Capacities in Manitoba's Northern Business Sector: *Creating urgency and awareness under conditions of COVID, Wildfire, and Drought***

ROGER REMPEL, P. Eng., FEC, IRP, Climate Resilience Service Lead, Dillon Consulting

- 2) Building Adaptation Capacity in Key Economic Sectors: *Lessons Learned and Future Provincial Priorities for Newfoundland and Labrador***

JOSHUA BARRETT, Manager of Planning and Accountability, Department of Environment and Climate Change, Government of Newfoundland and Labrador

- 3) A sectoral approach to building adaptive capacity in 3 agricultural commodities in Nova Scotia**

JENNIFER GRAHAM, Manager of the Climate Adaptation Leadership Program, Nova Scotia Environment and Climate Change

- 1) Renforcer les capacités d'adaptation aux changements climatiques dans le secteur des entreprises du nord du Manitoba: *Créer un sentiment d'urgence et sensibiliser les gens dans un contexte de COVID, de feux de forêt et de sécheresse***

ROGER REMPEL, ing., FEC, Professionnel de la résilience des infrastructures (PRI), responsable du service de résilience climatique, Dillon Consulting

- 2) Renforcer la capacité d'adaptation dans des secteurs économiques clés : *Leçons retenues et priorités provinciales futures pour Terre-Neuve-et-Labrador***

JOSHUA BARRETT, gestionnaire de la planification et de l'imputabilité, ministère de l'Environnement et des Changements climatiques, gouvernement de Terre-Neuve-et-Labrador

- 3) Une approche sectorielle pour renforcer la capacité d'adaptation de trois sous-secteurs agricoles en Nouvelle-Écosse**

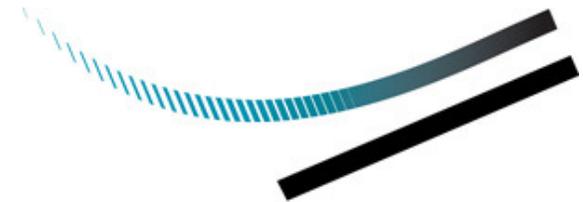
JENNIFER GRAHAM, gestionnaire du Programme de leadership en matière d'adaptation aux changements climatiques, ministère de l'Environnement et des Changements climatiques de la Nouvelle-Écosse

Building Climate Adaptation Capacities in Manitoba's Northern Business Sector:

Creating Urgency and Awareness Under Conditions of COVID, Wildfire and Drought

Roger Rempel, P. Eng., IRP, FEC
rrempel@dillon.ca

Building Adaptation Skills for Economic Sectors Webinar December 1, 2022



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with



MANITOBA CLIMATE
RESILIENCE TRAINING



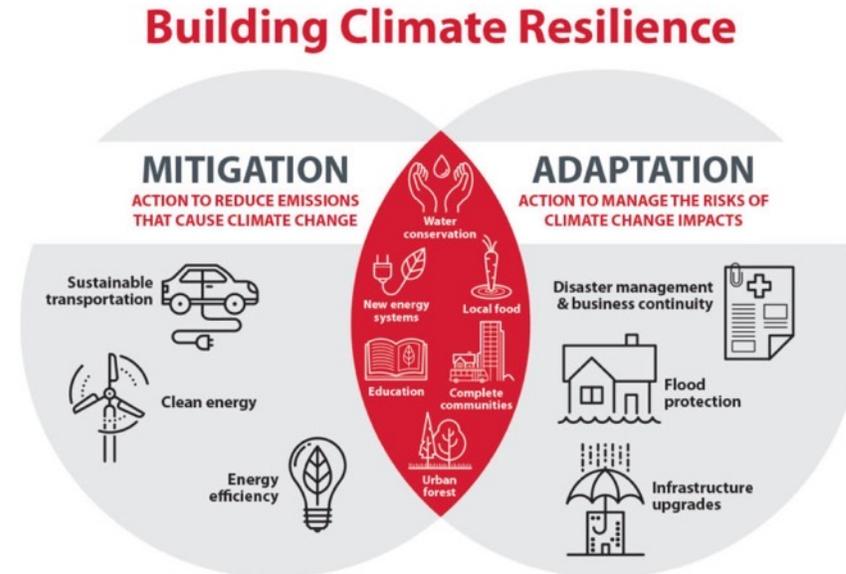
MANITOBA CLIMATE
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Introduction to MCRT



What was MCRT about?

- MCRT was part of the BRACE Initiative of the Pan-Canadian Framework on Climate Growth and Climate Change
- MCRT was considered foundational for progress in three Adaptation Pillars of the Province of Manitoba's *Climate Green Plan* :
 1. **Building the knowledge and capacity to take action**
 2. **Mainstreaming climate adaptation planning** into business decision-making
 3. Measuring results and **demonstrating value of higher resiliency** in Manitoba.



Adaptation = adjustments

Climate Resilience = equipped to successfully cope with climate-related shocks and stresses.



MRCT Objectives

1. Overall, to engage and consult with 4 economic sectors in Manitoba
2. To develop capacity-building training responsive to identified sector needs.



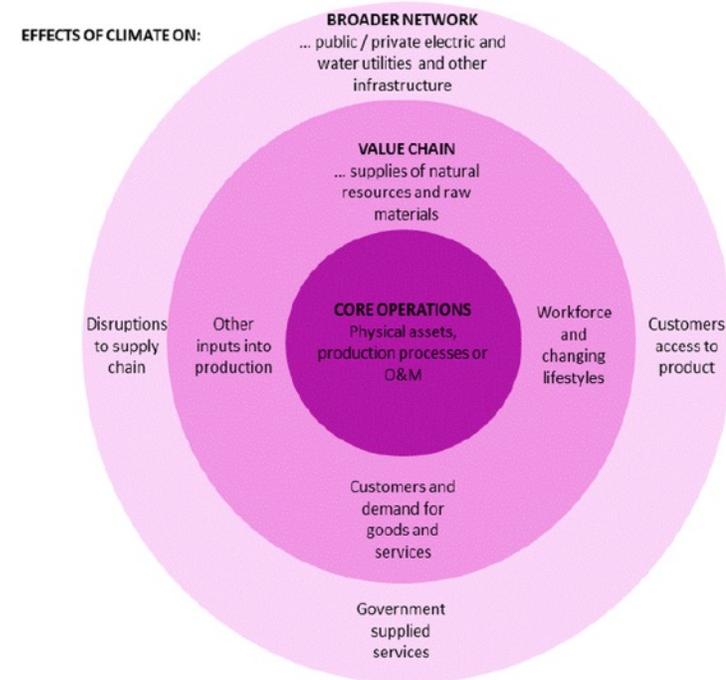
MB BRACE COMPONENT	KEY PARTNERS/SERVICE PROVIDERS	
Project Coordination and Community of Practice Development	ICLEI Canada	
Infrastructure Resiliency Training and Capacity Building	Engineers and Geoscientists Manitoba	
Climate Resiliency Planning Training for Professional Planners	University of Winnipeg, Prairie Climate Centre	
Northern Business Climate Readiness Training and Capacity Building	Dillon Consulting Limited	
Indigenous Climate Readiness Training and Capacity Building	Prairie Climate Centre, Turtle Lodge	





What Problem was MCRT Responding To?

- Strong and urgent need for new capacities in Climate Change Resilience in Manitoba.
- In particular, **climate risk hazard identification and assessment capacities.**
 - Prior messaging **almost exclusively about GHGs**
 - **Our Target Stakeholders:** challenges in climate impact awareness and extent of exposure to climate risk in their business:
 - **Core Operations:** Assets, Processes
 - **Value Chain:** Workforce, Production
 - **Broader Networks:** Supply Chains, Access to Market



Source: Victorian Centre for Climate Change Adaptation Research



Tackling the Problem:

Addressing a Lack of Existing Climate Resilience Training Content to Support Business Decision-Making

- **Engagement with Manitoba Northern Business stakeholders** to identify training needs
- **Market Analysis of Existing Climate Resilience Training content/courses** specific to Northern Business contexts.
- **Key Findings:**
 1. **Large gaps in climate change capacity training for business-specific applications** (supply chains, etc.).
 2. **Little to no climate change adaptation/resilience training materials specifically tailored to:**
 - **Regions of Northern Manitoba,**
 - **Northern Business in general.**
 3. **Pronounced gap exists in training content considered sufficient to support business decision-making and risk reduction planning.**





MANITOBA CLIMATE
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Developing Resources, Tools, Training



Key Factors to Consider When Developing Resilience Capacities

for Manitoba Northern Business

Has the sector been approached with climate resilience programs or messaging before?

- MCRT was the first systematic, organized climate resilience outreach to the Northern Manitoba Business Sector.
- Project context in Manitoba:
 - Climate change programming targeting the business sector focused exclusively on GHG emissions reductions and planning.

Adapting to Climate Change:
– Preparing for the Future

Climate Change Impacts and Adaption

The process of climate change has begun. The average temperature of the Earth has increased over the past 50 years and ecosystems have begun to change. In turn, they are affecting the economies and societies they sustain. Early impacts of climate change are already being witnessed in Manitoba.

Earlier, wetter springs, warmer, drier summers and shorter, milder winters are projected by climate models to be Manitoba's future. This will have implications for our economy, natural environment, health and well-being. Adapting to climate change will bring opportunities as well as challenges.

Assessing the Impacts of Climate Change in Manitoba

WATER AND ECOSYSTEMS

The Prairies face an increased probability of extreme conditions, including flooding and severe drought. The most serious climate change risk is increases in water scarcity. Even if rainfall increases in some areas, this may be offset by higher temperatures, which will result in increased evaporation from plants.

FORESTS AND GRASSLANDS

Forest is projected to shrink as climate conditions on its southern edge become less favorable. Expansion to the north is hampered by shorter growing seasons. In some areas, the availability of harvested timber may be reduced.

A Made-in-Manitoba Climate and Green Plan
Hearing from Manitobans
Manitoba Sustainable Development | 2017

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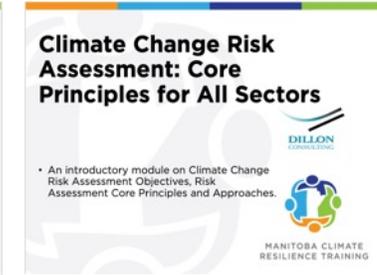
Manitoba



6 Courses Developed to Respond to Identified Capacity Building Needs

5 Training Modules specifically for Business Sector, with 1 Cross-Sectoral Module:

1. **Climate Change Impacts for Northern Manitoba Businesses** (Business Sector)
2. **Climate Change Risk Assessment: Core Principles** (Intended for all MRCT Sectors)
3. **Climate Change Risk Assessment for Manitoba Northern Business** (Business Sector)
4. **Business Continuity Planning and Climate Change for Northern Manitoba Business** (Business Sector)
5. **Introduction to Costs and Benefits of Climate Change Adaptation for Northern Manitoba Business** (Business Sector)
6. **Introduction to Climate Change Funding Programs for Manitoba Business** (Business Sector)





Accessing the Course Modules, Applicability Elsewhere...

MCRT partnered with the ClimateWest for long-term hosting of the full portfolio of MCRT Climate Resilience Capacity Building Courses.

- Asynchronous, free, “train-on your device” learning modules are hosted at ClimateWest’s website at:

<https://climatewest.ca/mcrt-sectors/>

- **MRCT’s sector-specific content** represents a strong, foundational library of free, train-at-your-pace capacity-building training in resilience.
 - **Concepts applicable for any business entity with operations in Manitoba.**
 - **Most content also relevant to regions outside Manitoba.**

The screenshot displays the ClimateWest website interface. At the top, the ClimateWest logo is visible on the left, and a hamburger menu icon is on the right. Below the logo, the heading "NORTHERN BUSINESS" is followed by a paragraph describing the modules' focus on capacity building and climate resilience training for northern businesses. A blue button labeled "Northern Business Modules" is positioned below the text, with a "Back to Top" link to its right. A horizontal line separates this section from the next. The second section features a dark header with the ClimateWest logo and the heading "FOUNDING PARTNERS". Below this, text describes the partnership with various organizations, including the Assembly of First Nations and the Metis National Council. A blue button labeled "Indigenous Modules" is located below the text, with a "Back to Top" link to its right. Another horizontal line follows. The third section is titled "PLANNING" and includes a paragraph about the focus on climate change impacts and planning tools. A blue button labeled "Planning Modules" is placed below the text. At the bottom right of the page, the logo for "DILLON CONSULTING" is displayed, featuring a stylized blue and black graphic above the company name.



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Best Practices and Lessons Learned

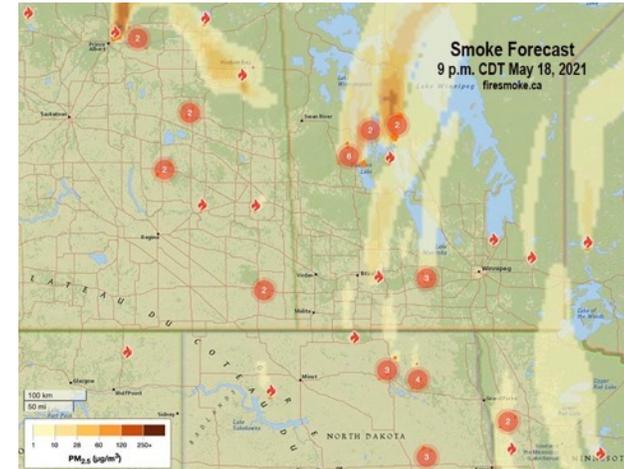
Prepare to Pivot Against Emerging Project Challenges



**Wildfire/Smoke + Drought + Extreme Heat + Pandemic
=Cross-Cutting Impacts for Stakeholders**

COVID-19 was not the sole disruption, particularly for mid and northern latitude regions of the Manitoba:

- Climate Change impacts were highly disruptive in MB
- Manitoba's 2021 Wildfire season was one of the most severe experienced here in decades.



Sources: Wildfire Today, @mikeflannigan



Then Pivot Again..

- Posed an extremely challenging environment to solicit ongoing engagement with our sector stakeholders. Our sector's capacity to engage was very hard hit.
- In-Person engagements **NOT** permitted during pandemic community health restrictions
 - **Project Pivot to Virtual Engagements, Workshops, Meetings, but protecting option if *In-Person* permitted during project window.**
- **Even scheduled Virtual Engagements were impractical for many stakeholders..**
 - **Required another pivot to Direct Key-Person interviews to collect required inputs.**



	Oct. 11th	Nov. 11th
Total Cases:	2,578	9,308
New Cases:	54	431
Active Cases:	1,063	5,676
Recovered:	1,483	3,509
In Hospital:	24	218
Deaths:	32	123
Test Positivity Rate:	3.1%	10.7%

CityNews COVID-19 IN MANITOBA

INCREASING CODE RED RESTRICTIONS IN MANITOBA

THU -9° 6:06 pm



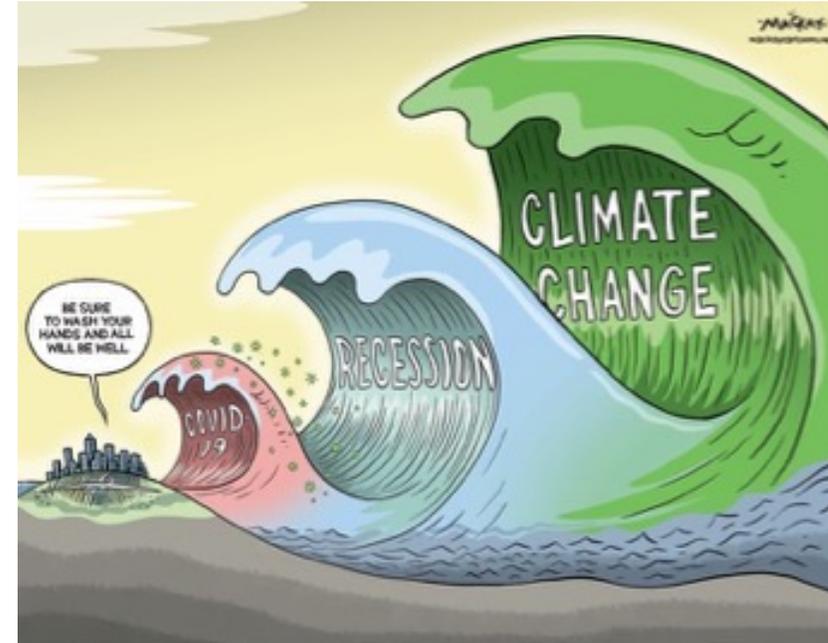
Lesson Learned: 1

- **Even under the best circumstances, prior messaging to Business Sector is important.**
 - ***Especially need for and benefits of climate resilience.***
- **Local Media had limited appetite for Climate Resilience coverage amidst a global pandemic environment.**

Response from local media:

*“Yes, climate resilience is a valid issue of concern - you’re just not going to find any real appetite for coverage on **that** issue within an ongoing pandemic environment.”*

Local reporter (2021).





Lesson Learned: 2

- **Business/Commercial survival** during the multiple COVID-19 waves and community health restrictions was the dominant priority:
 - Many communities were heavily impacted
 - Health and business restrictions
 - Supply Chain issues
 - Access to staff, access to some sites (route closures)





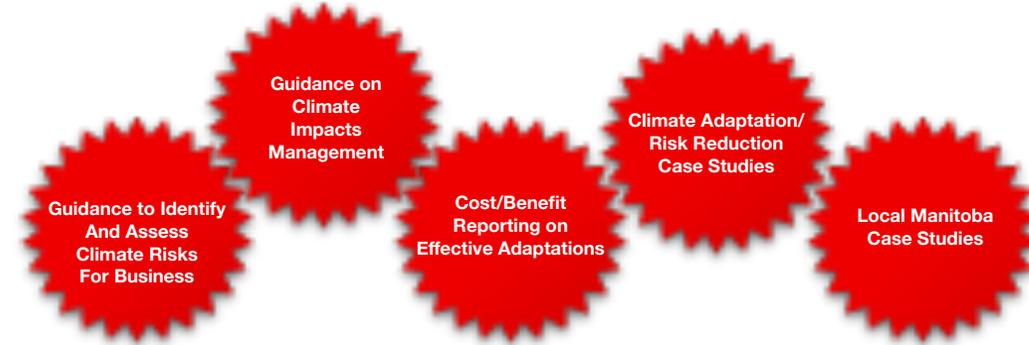
Lesson Learned: 3

- **Regulatory/Climate Policy Context and Prior Awareness of Impacts/Liabilities Matter.**
 - **Business sector is not currently regulated re: climate resilience**
 - **Contrast with *some* other sectors:**
 - **must consider climate change in professional practice as due diligence.**
 - **Potential exposure to professional liability if climate change not considered in designs.**



Lesson Learned: 4

Manitoba Northern Business identified key needs to improve resilience capacities in their products and services.



Positions Manitoba well for development of future additional capacity building modules, in future MRCT phases.

- **Sector-specific training for additional MB sectors**
- **Expanding existing training for current MB MCRT sectors.**



Strong, Capacity-Building, Foundational, Training Library



Highly Suitable for Future Resilience Training Programs to Build On



Does Not Completely Fulfill Resilience Training Needs for Economic Sectors Served by MCRT



When Developing Capacities in Climate Resilience..

- For many business sector stakeholders, your capacity building program **could be their first opportunity to build foundational local capacity in climate resilience**
- You will need to build foundational awareness within the business sector of:
 - **Benefits** of Proactive Response
 - **Triggers** driving climate impact
 - **Approaches to anticipate impacts** across assets, operations and personnel
 - **Good Business Practice** naturally leads to **Climate Resilience Planning**:
 - **i.e., *Business Continuity Planning* as a strong pathway to climate resilience planning.**

Key Phases in Time and Action for Resiliency





When Developing Capacities in Climate Resilience...

- Embrace the instances where your training is “eye-opening” for participants. Leverage this new awareness to inspire action.

*“ MCRT Training showed us **concepts we did not know and did not know we needed to know** regarding climate impacts..”*

- Build content upon foundational approaches to assessing climate change risk for business
- Place emphasis on accessible, clear formats for a range of technical capacities.

“The course module improved understanding of climate changes and how they trigger effects that we did not previously anticipate.”

40% of respondents indicated that their efforts begin now with this training, building their capacities to make informed decisions.

“Since this (Business Continuity Planning) was a topic I had never heard of, I felt the delivery was excellent as the pace was really good and things were well explained. I was not lost at all at any point. The presenter was really good at presenting the material. I enjoyed the presentation. ”

Thank You



MANITOBA CLIMATE
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**Building Adaptation Capacity in Key Economic Sectors:
Lesson Learned and Future Provincial Priorities**

Building Adaptation Skills for a Changing Climate Webinar Series

December 1, 2022

Building Adaptation Capacity in Key Economic Sectors

5 sectoral initiatives

- Private sector focused - agriculture, fisheries, forestry, mining and tourism
- Support from Econext

\$1.6 million in funding support

- Focus on risks-impacts-vulnerabilities as well as opportunities

Sector-specific workplans based on sector-specific priorities

- Bottom-up, membership-driven initiatives
- Complemented by top-down risk assessment (agriculture, fisheries, forestry)

Organizations

Newfoundland and Labrador Federation of Agriculture

Fish Food and Allied Workers Union

Newfoundland and Labrador Forest Industry Association

Mining Industry of Newfoundland and Labrador

Hospitality Newfoundland and Labrador

Supported by Econext

Project Objectives and Partners

Three pillars

- Education & Awareness – disseminate information and build capacity
- Risk & Opportunity – identify sector-specific risks and opportunities
- Training/Moving to Action – address risks and seize opportunities, develop where appropriate “legacy” products

Partners

- Private sector
 - Industry-specific organizations
 - Industry-specific trade unions
- Federal and provincial government departments
- Academic institutions

Approaches for Adaptation Capacity

Forestry and Agriculture

- Foundational work to address climate change
- Industry-wide awareness, identifying risks and opportunities

Fisheries

- Targeted to address invasive species, green crab
- Partnered with fish harvesters and DFO to collect data over two 10 week periods

Mining

- Worked one on one with mining companies
- Developed an audit tool to determine climate change risks
- Potential follow up work by Mining NL on adaptation indicators for ESG

Tourism

- Original plan – industry-wide awareness, identifying risks and opportunities
- Negatively impacted by COVID-19
- Evolved to assess risks and cost/benefit analysis on specific tourism sectors

Project Case Study: Tourism

Risk Assessment

- Identify risks associated with the marine based, outfitting, and winter tourism sectors
 - Marine-based: boat tours, coastal infrastructure damage, ocean species
 - Outfitting: Limited hunting window, riverine infrastructure damage, increased exposure to pests
 - Winter: Decreased season length, unreliable ice conditions, unpredictable travel (air and ferry)
- Risk assessment tool for operators

Additional Research Studies

- Climate change cost-benefit analysis for marine-based experience and winter operations
- Regional snow projections

Educate, Promote, and Training

- ‘Train the trainer’
- Targeted communication and training

Lessons Learned and Potential Future Directions

Lessons Learned

- Agility during COVID-19
- Bottom line = priority for private sector
- Information and tools are there; capacity is lacking

Ongoing Priorities

- Impacts of coastal erosion and flooding continue to have significant impacts on infrastructure
- Developing climate data to inform evidence-based decision-making
- Pursuing cost-shared programming with the federal government, e.g. NAS
- Account for geographic realities in NL, e.g. Avalon vs. Labrador

Thank you!

Joshua Barrett
Manager of Planning and Accountability
Department of Environment and Climate Change
Government of Newfoundland and Labrador
joshbarrett@gov.nl.ca

Provincial climate data: <https://www.gov.nl.ca/ecc/occ/climate-data/>
Hospitality NL climate resources: <https://hnl.ca/resources/climate-change/>

The Government of Newfoundland and Labrador gratefully acknowledges the support provided through Natural Resources Canada's BRACE program to make this work possible.



A Sectoral Approach to
Building Adaptive Capacity
in 3 Agricultural
Commodities in Nova Scotia

Jen Graham

Manager of the Climate Adaptation
Leadership Program

Nova Scotia Department of
Environment and Climate Change



Problem Statement

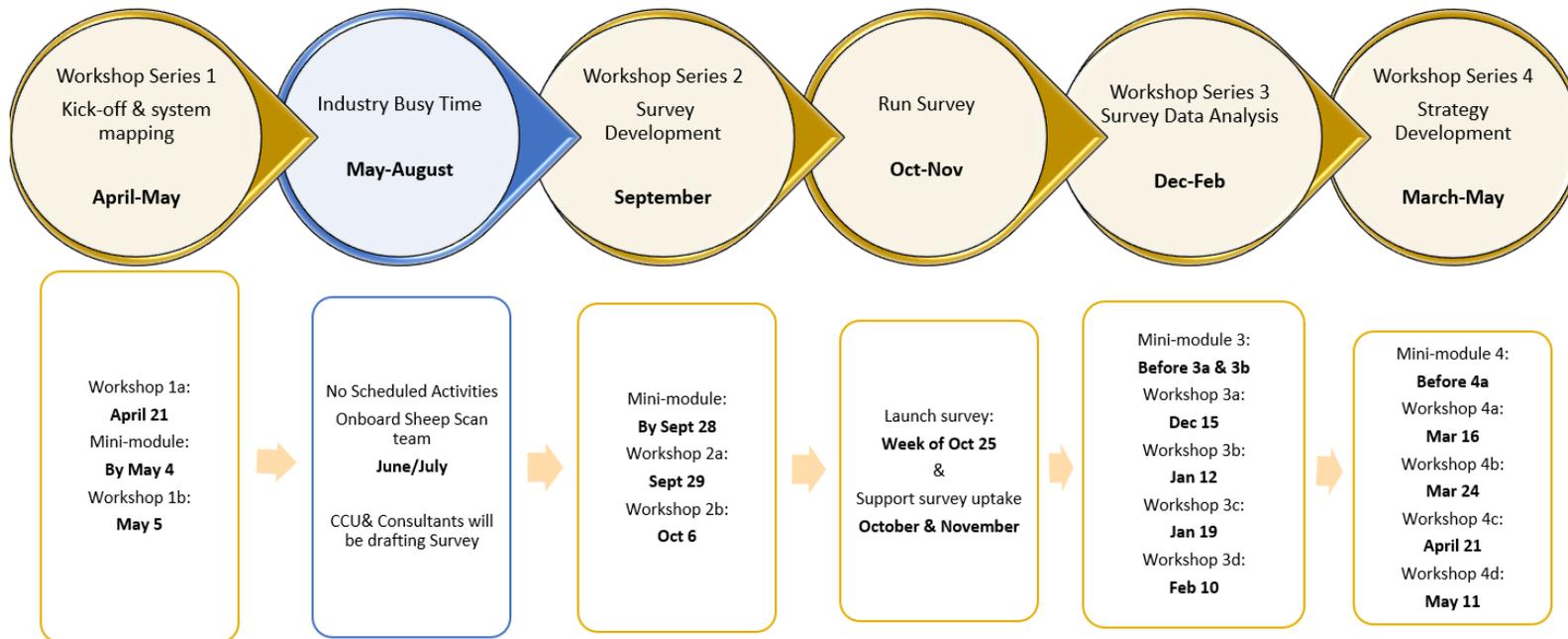
Nova Scotia's agricultural sector contributes to the health and well-being of farmers and farm families, rural communities, consumers, and the natural environment, however the agriculture sector is already facing challenges related to climate change. Sector specific adaptation strategies are required to help industries thrive in the face of a changing climate.

Christmas Tree and Greenery

Cattle and Sheep

Horticulture

CALP Approach



Activities are 2-3 hours each; 2-3 hours email/material review per Workshop series; averages ~3.5 hrs/month

- Sector recruitment and Engagement
- Formation of scan teams
- **Step 1**
 - Team orientation
 - System mapping
 - Survey
 - Analyze survey data
- **Step 2:**
 - Develop sector adaptation outcomes and adaptation strategy
- **Step 3:**
 - Implementation

Key Partners

- Nova Scotia Department of Agriculture
- Nova Scotia Federation of Agriculture
- Perennia
- Agri-Commodity Management Association
- Christmas Tree Council of Nova Scotia
- Horticulture Nova Scotia
- Industry Stakeholders and producers

Key Outcomes

- Agriculture sector more fully aware of climate risk and opportunities for their sector
- Agriculture sector strategically positioned to plan and act on climate risk and opportunities
- Agriculture sector has the relationships, and resources to sustain adaptation work

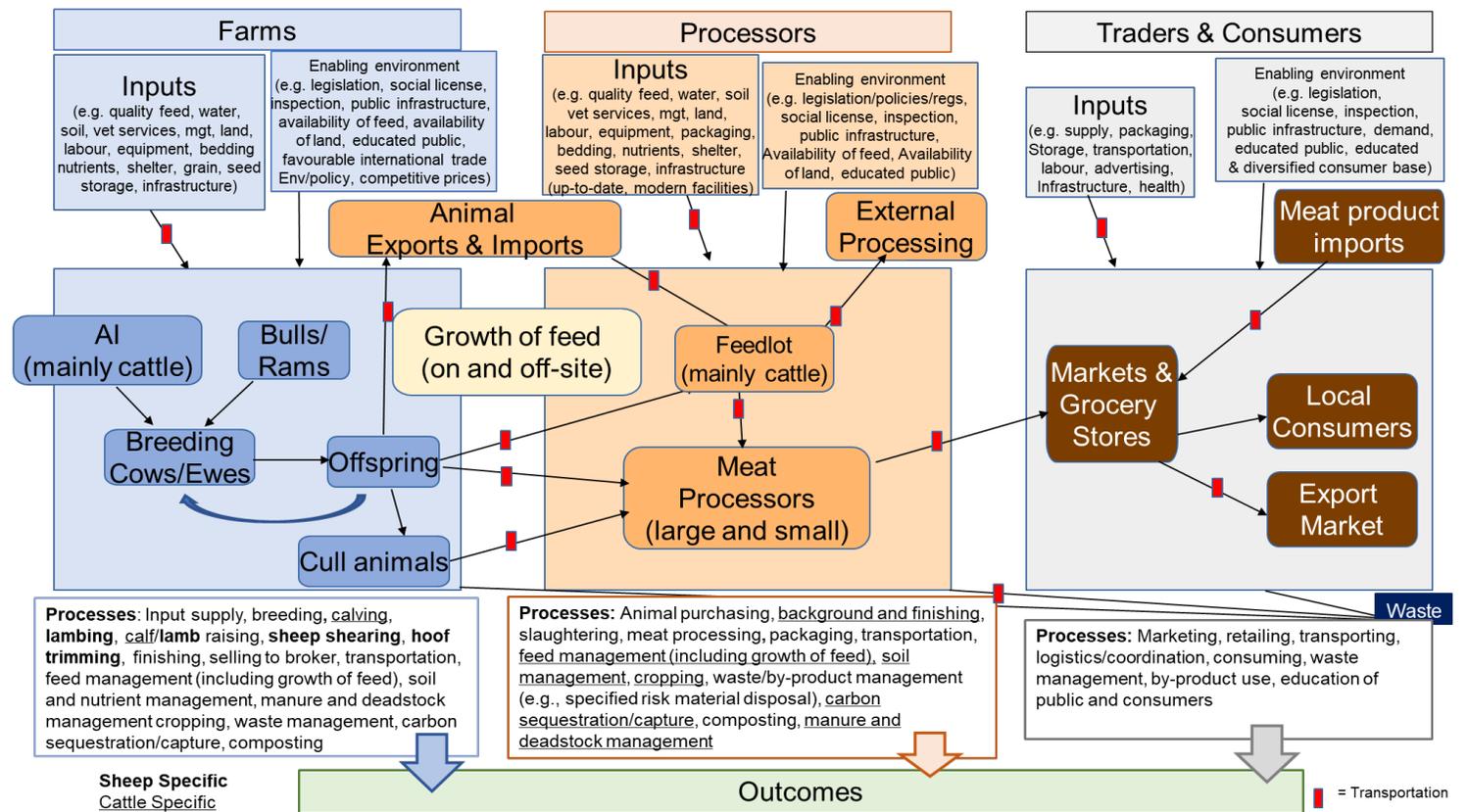
Key Outputs

- Sector analysis reports
- Sector specific climate change adaptation strategies
- Tools
 - Industry system maps
 - Sector surveys
 - Engaging workshops



Tool: Sector System Map

- Developed by scan team representatives from across the value chain
- Simplified representation of the entire system: Outlines key outcomes, things and processes
- **Key Consideration:** developed and validated by sector representatives



Tool: Sector Climate Change Survey

- **Purpose:** Identify top sector climate risks, and experiences of change
- Survey distributed throughout the sector
- Collaborative data analysis
- **Key Consideration:** Key role of scan team and industry leads in survey engagement and completion



Tool: Engaging workshops

- Workshops designed to get people talking, build relationships and develop shared understanding
- Facilitator's guide with clear outcomes and activities
- Check in and check out, and feedback survey
- **Key Consideration:** Structured process helps build team confidence and process running smoothly and effectively



Lessons Learned

Structured Process

- Well designed process
- Trust your process
- Stay the course

Being Feedback Responsive

- Listen to partners
- Ongoing dialogue
- Adjust to changing circumstances

Collective Coordinated Action

- Sector/value chain approach
- More than just farms and producers
- Policies, program
- Consumers and marketing

Next Steps

- Ongoing partnerships for implementation
- Sector coordinators hosted in organizations
- Moving forward on priority actions
- Expanding this work to other sectors



Special Thanks To:
NRCAN-BRACE – For funding support
Provincial Government Partners
Sector Partners



Questions?



RESOURCES

ClimateWest Resilience Training for the Prairies

<https://climatewest.ca/>

Building Regional Adaptation and Expertise (BRACE) Program

nrcan.gc.ca/climate-change-adapting-impacts-and-reducing-emissions/building-regional-adaptation-capacity-and-expertise-program/21324

Adaptation Platform BRACE Resources Library

<https://adaptationplatform.ca/home/braceresources>

Canada in a Changing Climate: Advancing our Knowledge for Action

<https://changingclimate.ca/>



Thank you!

Fill out a short **evaluation form** for today's webinar

<https://www.surveymonkey.com/r/braceweb5>

Learn more about the ***Building Adaptation Skills for a Changing Climate Webinar Series***

climateriskinstitute.ca/2022/06/20/coming-soon-brace-webinar-series/

Explore past Adaptation Platform webinars

climateriskinstitute.ca/platform-webinars/

Merci!

Remplir un court **formulaire d'évaluation** pour le webinaire d'aujourd'hui

<https://www.surveymonkey.com/r/braceweb5>

En savoir plus sur la **série de webinaires Renforcer des compétences en matière d'adaptation aux changements climatiques**

climateriskinstitute.ca/2022/06/20/coming-soon-brace-webinar-series/

Explorez les webinaires précédents de la plateforme d'adaptation

climateriskinstitute.ca/platform-webinars/