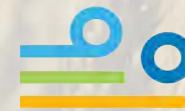


Social and Equity Dimensions of low-carbon transitions and adaptation to a warming world

Dr. Ian Mauro
Executive Director
Prairie Climate Centre
i.mauro@uwinnipeg.ca



THE UNIVERSITY OF
WINNIPEG



Prairie
Climate Centre

From Risk to Resilience

Where to begin????????????????????

STRATEGIC DIALOGUE ON CLIMATE CHANGE POLICY RESEARCH IN CANADA
RECHERCHE EN POLITIQUES CLIMATIQUES AU CANADA - UN ATELIER DIALOGUE STRATEGIQUE

Theme #2: Social and equity dimensions of low-carbon transitions and adaptation to a warming world

Climate change and low-carbon transitions have highly unequal impacts on various demographics, making transitions more difficult for some communities that also have little voice in choices made. Survey respondents provided several examples of such groups, including low-income, remote, northern, indigenous, resource sector transitioning workers, women, racialized people, health-compromised, very young, elderly, urban legacy communities with existing burdens of pollution and poor housing, communities with few readily available substitutes in relation to carbon pricing, or ones affected by clean tech trade offs that may exacerbate poverty. These impacts are the result both of climate change and of the policies put in place to ensure proper mitigation and adaptation to this change. Both categories of effects result in negative impacts for some populations in particular.

On the one hand, climate change itself affects different populations unevenly. For instance, adaptation challenges are unevenly distributed and greater for groups that are more exposed (flood-prone, coastal zones) or more vulnerable (socioeconomically disadvantaged in large urban areas) to the increasing impacts of climate change. When these populations also happen to live in remote, small centers, and/or experience socio-economic challenges due to current and marginalization policies, the limited local means to address the adaptation challenges can make it challenging or insurmountable.

On the other hand, policies designed to improve resilience or to mitigate change by accelerating low-carbon transitions can have unintended effects. For instance, the coal phase-out in the electricity sector across the world, in addition to reduced demand for coal worldwide being put out of work in a significant number of coal mine workers being put out of work in urban neighbourhoods can lead to gentrification, displacing vulnerable populations of solving them. Additionally, such industrial transformation consequences for populations living in areas where employment

FRAMING DOCUMENT

STRATEGIC DIALOGUE ON CLIMATE CHANGE POLICY RESEARCH IN CANADA
RECHERCHE EN POLITIQUES CLIMATIQUES AU CANADA - UN ATELIER DIALOGUE STRATEGIQUE

outside of these industries are scarce. Another example is carbon pricing policy, which can have a disproportionate impact on populations without the means to substitute energy sources or products, such as in northern regions or in low-income urban populations.

As a result, specific demographics are especially vulnerable to these unintended consequences. Some policies are implemented to address these inequities, such as the Canadian Coal Transition Initiative, which supports business development and re-employment initiatives in localities with a high number of laid-off coal industry workers. Similarly, under the BC climate action tax credit, low-income individuals and families are offered a tax-free payment to help offset the carbon taxes they pay.

Research should provide more information on how to design effective climate policies in a way that is both inclusive of vulnerable or underrepresented groups, and that ensures that specific attention is given to this vulnerability. This also includes intergenerational equity, and the importance to integrate youth perspectives into all aspects of climate policy.

Excerpts from survey responses:

"We tend in Canadian politics/policy to privilege region over other cleavages in Canadian society (income, race, gender). Regional fairness is an issue but not the only one."

"Research and policy should help address the multiple dimensions of vulnerability: exposure, sensitivity, adaptiveness and the different ways vulnerable people are affected (e.g. low-income buildings and heatwaves, economic disruption and jobs, flooding and women's shelters, indigenous community housing/food sources/health)."

Examples of questions to be discussed:

1. What are the key priorities for climate policy and research in trying to identify vulnerabilities to the impacts of climate change and related policies?

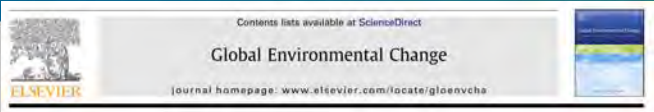
FRAMING DOCUMENT 10

STRATEGIC DIALOGUE ON CLIMATE CHANGE POLICY RESEARCH IN CANADA
RECHERCHE EN POLITIQUES CLIMATIQUES AU CANADA - UN ATELIER DIALOGUE STRATEGIQUE

2. In linking adaptation, mitigation and clean growth measures to social justice, what are ways to address real or perceived risks?
3. How can equity dimensions be better integrated into climate policy choices, to ensure that sufficient space is given to various perspectives, for instance youth, BIPOC (Black, Indigenous, People of Colour), French-speaking, etc.?
4. In contrast to "negative impacts, are there collateral social benefits that come from the implementation of climate policies?
5. How can policy be designed to address the challenge of "single-industry resource towns, where these industries are affected by climate objectives?"

11

Let's start from the top: IPCC



Who participates in the Intergovernmental Panel on Climate Change and why: A quantitative assessment of the national representation of authors in the Intergovernmental Panel on Climate Change

Claudia Ho-Lem^a, Hisham Zerriffi^b, Milind Kandlikar^{a,b,*}

^a Institute for Resources, Environment and Sustainability, University of British Columbia, 2202 Main Mall, Vancouver, BC V6T 1Z4, Canada

^b Liu Institute for Global Issues, University of British Columbia, 6476 NW Marine Drive, Vancouver, BC V6T 1Z2, Canada

IPCC Assessment Reports = 1990, 1995, 2001 and 2007

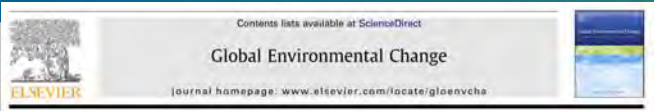


Table 1
 National data on authors in the IPCC Assessment Reports (1990-2007).

Annex 1	Rank	Country of author	Number of authors	Working Group I authors	Working Group II authors	Working Group III authors	Coordinating lead authors	Lead authors	Coordinating authors	Percentage of total (Annex 1) authors
By country (top 20)										
1	1	United States	1356.5	897	345.5	154	82	204.5	1010	115
2	2	United Kingdom	305	200	98.5	25	42	92.5	204.5	115
3	3	Germany	271.5	180	96.5	22	14	46	211.5	85
4	4	Canada	234.16	131.16	112	20	15.5	71.33	168.33	85
5	5	Australia	248.97	131.37	106.5	20	17.5	59	162.39	85
6	6	Japan	153	85	55	28	15	54	96	35
7	7	France	148.08	89.18	29	22.5	8	40.84	101.84	35
8	8	Netherlands	131	41	47	43	14.5	35.5	79	35
9	9	China	122.5	24.5	26	35.5	11	34.5	77.5	35
10	10	Denmark	111.5	48.5	39	23.5	8	17	65.5	35
11	11	Sweden	105.5	21.5	42	14	16	42	62	25
12	12	India	78	13.5	52.5	18	9	14.5	52.5	25
13	13	New Zealand	78	13.5	52.5	18	9	14.5	52.5	25
14	14	Norway	36.5	35.5	12	10	3	12.5	42	15
15	15	Argentina	41	1	31	5	2	20.5	24.5	15
16	16	South Africa	41.5	13.5	15	12	1	23.5	16	15
17	17	Sweden	44.5	21.5	24	4	4.5	4.5	29.5	15
18	18	South Africa	32.5	3.5	28	2	1	2	14.5	15
19	19	Kenya	36.5	2.5	21	7	4	17.5	9	15
20	20	Nigeria	30	20	7	3	0	4.5	20.5	15
21	21	Denmark	28.5	10	10	4.5	3	11	14.5	15
22	22	Ireland	27.5	1.5	14.5	0	4	4	15.5	15
23	23	Italy	21	12.5	7.5	1	1	10	16	15
24	24	Spain	20.5	0	12	11.5	0.5	10	16	15
25	25	Argentina	19	0	12	11.5	0.5	10	16	15
26	26	Spain	18.5	6.5	10	2	1	3	14.5	15
27	27	Spain	18.5	6.5	10	2	1	3	14.5	15
28	28	France	14.5	0	11	1	0	5.5	9	15
29	29	Bangladesh	14	0	12	2	4	5	5	15
30	30	Germany	14	0	10	4	2	5	7	15
		Country of origin	115	2	115	0	12	20	85	245
By continent										
		Africa	167	28.5	109	35.5	14	83.5	54.5	3.75
		Asia	465	142.5	209	118.5	44	199	102.5	103.5
		Europe	1006.5	676.0	539	205.5	92	339.87	170.84	35.6
		North America	1071.66	672.66	394	194	86.5	368.83	150.83	17.21
		South America	148	76.5	70	34.5	11	68.5	33.5	3.16
		Oceania	312.83	148.83	114	20	26.5	84.5	208.83	7.48
Annex 1 vs. Non-Annex 1										
		Annex 1 Countries	3688.5	2000	1183.5	446	257.5	820	2612	845
		Non-Annex 1 Countries	688.5	138	388.5	163	88.5	328	688.5	165
		Total for all countries	4377	2338	1572	609	346	1148	3299.5	1000



Let's start from the top: IPCC



Who participates in the Intergovernmental Panel on Climate Change and why: A quantitative assessment of the national representation of authors in the Intergovernmental Panel on Climate Change

Claudia Ho-Lem^a, Hisham Zerriffi^b, Milind Kandlikar^{a,b,*}

^a Institute for Resources, Environment and Sustainability, University of British Columbia, 2202 Main Mall, Vancouver, BC V6T 1Z4, Canada
^b Liu Institute for Global Issues, University of British Columbia, 6476 NW Marine Drive, Vancouver, BC V6T 1Z2, Canada

“Overall, we find that 45% of countries, all Non-Annex 1 [developing], have never had authors participate in the IPCC process; on the other hand, European and North American experts make up more than 75% of all authors (N = 4394).”



Table 1
Selected data on authors to the IPCC Assessment Reports (1990–2007).

Annex 1	Rank	Country of author	Number of authors	Working Group I authors	Working Group II authors	Working Group III authors	Coordinating lead authors	Lead authors	Contributing authors	Percentage of total (known) authors
<i>By country (top 30)</i>										
✓	1	United States	1356.5	857	345.5	154	82	264.5	1010	31%
✓	2	United Kingdom	503	300	168	35	43	95.33	364.66	11%
✓	3	Germany	271.5	189	59.5	23	14	46	211.5	6%
✓	4	Canada	254.16	113.16	112	29	13.5	71.33	169.33	6%
✓	5	Australia	249.83	131.33	106.5	12	17.5	50	182.33	6%
✓	6	Japan	153	65	50	38	13	54	86	3%
✓	7	France	140.68	89.18	29	22.5	8	40.84	91.84	3%
✓	8	Netherlands	133	41	47	45	14.5	39.5	79	3%
✓	9	Russia	123	59.5	50	13.5	11	34.5	77.5	3%
×	10	China	112.5	44	43	25.5	9	50	53.5	3%
✓	11	Switzerland	111.5	69.5	38	4	8	13	90.5	3%
×	12	India	100.5	23.5	42	35	16	42	42.5	2%
✓	13	New Zealand	78	17.5	52.5	8	9	16.5	52.5	2%
✓	14	Norway	58.5	35.5	13	10	3	13.5	42	1%
×	15	Argentina	47	9	33	5	2	20.5	24.5	1%
×	16	Brazil	45.5	13.5	15	17	6	23.5	16	1%
✓	17	Sweden	44.5	21.5	19	4	6.5	8.5	29.5	1%
×	18	Kenya	36	9	24	3	1	21	14	1%
×	19	South Africa	32.5	7.5	18	7	4	9	19.5	1%
×	20	Mexico	30.5	2.5	21	7	4	17.5	9	1%
✓	21	Belgium	30	20	7	3	0	9.5	20.5	1%
✓	22	Denmark	28.5	10	10	8.5	3	11	14.5	1%
✓	23	Finland	27.5	7.5	14	6	4	8	15.5	1%
✓	24	Italy	27	12.5	7.5	7	1	10	16	1%
✓	25	Austria	26.5	6	9	11.5	0.5	10	16	1%
×	26	Nigeria	19	3	12	4	1	8	10	<1%
✓	27	Spain	18.5	6.5	10	2	1	3	14.5	<1%
×	28	Peru	14.5	0.5	11	3	0	5.5	9	<1%
×	29	Bangladesh	14	0	12	2	4	5	5	<1%
✓	30	Hungary	14	0	10	4	2	5	7	<1%
		Country of origin unknown	115	2	113	0	12	20	83	2.6%
<i>By continent</i>										
		Africa	167	28.5	103	35.5	14	83.5	54.5	3.7%
		Asia	465	142.5	203	119.5	44	190	193.5	10.3%
		Europe	1600.5	876.01	519	205.5	92	359.67	970.84	35.6%
		North America	1673.66	975.66	504	194	86.5	360.83	1054.83	37.2%
		South America	140	26.5	79	34.5	11	69.5	53.5	3.1%
		Oceania	332.83	148.83	164	20	24.5	68.5	209.83	7.4%
<i>Annex 1 vs. Non-Annex 1</i>										
		Annex 1 Countries	3689.5	2060	1183.5	446	257.5	820	2612	84%
		Non-Annex 1 Countries	689.5	138	388.5	163	80.5	328	689.5	16%
<i>Total for all countries</i>										
	4494	2200	1685	609	350	1168	2976	100%		

Let's start from the top: IPCC



Who participates in the Intergovernmental Panel on Climate Change and why:
A quantitative assessment of the national representation of authors in the
Intergovernmental Panel on Climate Change

Claudia Ho-Lem^a, Hisham Zerriffi^b, Milind Kandlikar^{a,b,*}

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“Per capita gross domestic product, population, English-speaking status, and levels of tertiary education were all found to be statistically significant drivers of authorship counts. In particular, participation by authors from English speaking Non-Annex 1 [developing] countries is 2.5 times greater than those that are non-English speaking.”



Let's start from the top: IPCC

nature
climate change

PERSPECTIVE

PUBLISHED ONLINE: 24 MARCH 2016 | DOI: 10.1038/NCLIMATE2954

Including indigenous knowledge and experience in IPCC assessment reports

James D. Ford^{1*}, Laura Cameron¹, Jennifer Rubis², Michelle Maillet¹, Douglas Nakashima², Ashlee Cunsolo Willox³ and Tristan Pearce⁴



The IPCC is the leading international body for the assessment of climate change, forming the interface between science, policy and global politics. Indigenous issues have been under-represented in previous IPCC assessments. In this Perspective, we analyse how indigenous content is covered and framed in the Working Group II (WGII) portion of the Fifth Assessment Report (AR5). We find that although there is reference to indigenous content in WGII, which increased from the Fourth Assessment Report, the coverage is general in scope and limited in length, there is little critical engagement with indigenous knowledge systems, and the historical and contextual complexities of indigenous experiences are largely overlooked. The development of culturally relevant and appropriate adaptation policies requires more robust, nuanced and appropriate inclusion and framing of indigenous issues in future assessment reports, and we outline how this can be achieved.



Let's start from the top: IPCC

nature
climate change

PERSPECTIVE

PUBLISHED ONLINE: 24 MARCH 2016 | DOI: 10.1038/NCLIMATE2954

Including indigenous knowledge and experience in IPCC assessment reports

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“The documented silencing effects in AR5 WGII contribute towards divorcing climate change from its socio-political-historical-cultural context, constructing climate change as a problem for society as opposed to a problem of society.

Such depoliticization directs attention away from the root causes of vulnerability and constrains the potential for linking adaptation to broader policy goals or decolonializing processes”









MENU

MAP

Change (Days)

70 -70

Very Cold Days (-30°C)

High Carbon → More climate change • 2051-2080

HELP

TOUR

SHARE

Fr



Small grid



Change



Settings

Climate Atlas of Canada



Find me

CLIMATE CHANGE

TIME PERIOD

LESS

MORE

RECENT PAST

2021-2050

2051-2080



Hot Weather



Cold Weather



Temperature



Precipitation



Agriculture

Igloolik

Municipality
IGLOOLIK

Projected change in mean
Number of -30 °C days

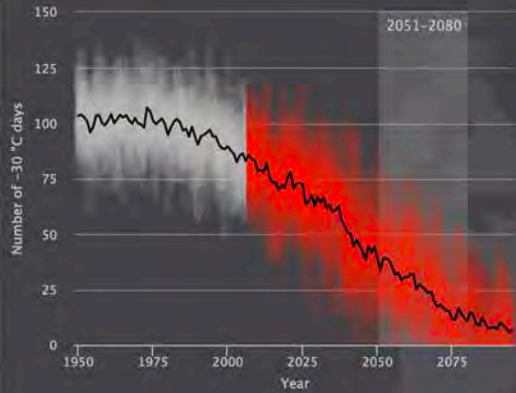
High Carbon → More climate change

1976-2005 2051-2080

94.3 → **24.5**

Down ▾

-69.8



— Ensemble mean — Historical Values

— 1950-2005 — 2006-2095

v2



1.



2.



MENU ▾

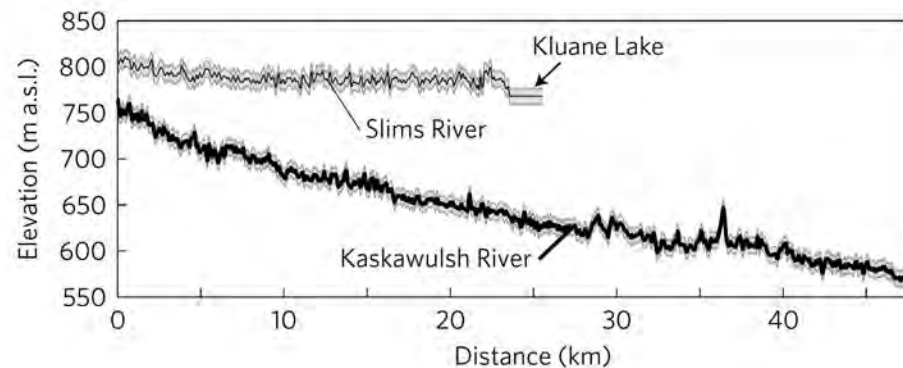
nature
geoscience

Article | Published: 17 April 2017

River piracy and drainage basin reorganization led by climate-driven glacier retreat

Daniel H. Shugar , John J. Clague, James L. Best, Christian Schoof, Michael J. Willis, Luke Copland & Gerard H. Roe

Nature Geoscience **10**, 370–375(2017)



The New York Times

Climate Change Reroutes a Yukon River in a Geological Instant

The Washington Post

Democracy Dies in Darkness

Climate and Environment

For the first time on record, human-caused climate change has rerouted an entire river

TIME

SCIENCE • CLIMATE CHANGE

An Entire Canadian River Vanished Due to Climate Change, Researchers Say





People first approach

Regional Environmental Change (2019) 19:1217–1223

<https://doi.org/10.1007/s10113-019-01478-8>

Climate change in context: putting people first in the Arctic

Henry P. Huntington¹  · Mark Carey² · Charlene Apok³ · Bruce C. Forbes⁴ · Shari Fox⁵ · Lene K. Holm⁶
Aitalina Ivanova^{7,8} · Jacob Jaypoody⁹ · George Noongwook¹⁰ · Florian Stammler⁴

Abstract

Climate change is a major challenge to Arctic and other Indigenous peoples, but not the only and often not the most pressing one. We propose re-framing the treatment of climate change in policy and research, to make sure health, poverty, education, cultural vitality, equity, justice, and other topics highlighted by the people themselves and not just climate science also get the attention they deserve in research on global and regional environmental change. Climate change can often exacerbate other problems, but a singular focus on climate change—as is often the case in much existing environmental literature on the Arctic and elsewhere—can distract from actions that can be taken now to improve the lives of Arctic peoples. The same logic also applies elsewhere in the world, where diverse residents face a host of challenges, opportunities, and obstacles, with climate change but one among many issues. Our proposed approach to regional and global environmental change research draws on the ideas of decolonization, emphasizing collaborative approaches and Indigenous voices in research and policy instead of top-down measures designed outside the affected communities. Only in this way of contextualizing human-environmental experiences can the full effects of climate change be understood—and appropriate responses developed and carried out to adapt to global change.

People first approach

Indigenous Women, Climate Change Impacts, and Collective Action

KYLE POWYS WHYTE

Hypatia vol. 29, no. 3 (Summer 2014) © by Hypatia, Inc.

Indigenous peoples must adapt to current and coming climate-induced environmental changes like sea-level rise, glacier retreat, and shifts in the ranges of important species. For some indigenous peoples, such changes can disrupt the continuance of the systems of responsibilities that their communities rely on self-consciously for living lives closely connected to the earth. Within this domain of indigeneity, some indigenous women take seriously the responsibilities that they may perceive they have as members of their communities. For the indigenous women who have such outlooks, responsibilities that they assume in their communities expose them to harms stemming from climate change impacts and other environmental changes. Yet at the same time, their commitment to these responsibilities motivates them to take on leadership positions in efforts at climate change adaptation and mitigation. I show why, at least for some indigenous women, this is an important way of framing the climate change impacts that affect them. I then argue that there is an important implication in this conversation for how we understand the political responsibilities of nonindigenous parties for supporting distinctly indigenous efforts at climate change adaptation and mitigation.

People first approach

Inuit, namiipita? Climate Change Research and Policy: Beyond Canada's Diversity and Equity Problem

Pitseolak Pfeifer
Inuit Solutions

The Northern Review 49 (2020): 265–269
<https://doi.org/10.22584/nr49.2020.018>



“...I ask: *Inuit, namiipita?* Why, in spite of so much research and policy focus on Arctic climate change, are we Inuit still consultants or fillers in an otherwise Western-driven enterprise to ‘monitor’ climate developments in Inuit Nunangat?...I want to highlight that the story of climate change research and policy in Canada has so far been the familiar story of marginalization of Inuit in the national narrative”

ITK Climate Change Strategy

1. Letter from ITK's President



As Inuit, our relationship with the environment is steeped with meaning. It shapes our identity, values and world view. Climate change has already brought marked changes to our way of life and the wildlife and ecosystems that sustain us. We must be prepared to take exceptional actions to adapt and remain resilient. Keeping our homeland cold is critical to us as a people. The international community understands now, more than ever, just how key keeping Inuit Nunangat cold is to avoiding irreversible changes to the Earth's entire climate system.

I am honoured to walk in the footsteps of past and current Inuit leaders who have consistently emphasized the critical importance of the snow, ice and permafrost that define us. For us, ice is a fundamental source of learning, memories, knowledge and wisdom. The United Nations warns that if humanity does not jump on the opportunity in the next decade to substantively and rapidly curb the current global rate of GHG emissions, we are literally leaving our children to face the consequences of catastrophic climate change, and nowhere more so than in our homeland.



National Inuit
Climate Change
Strategy



Knowledge & Capacity
Advancing Inuit capacity and knowledge use in climate decision-making



Energy
Supporting regional and community-driven energy solutions leading to Inuit energy independence



Health, Wellbeing & the Environment
Improve Inuit and environmental health and wellness outcomes through integrated policies and initiatives



Infrastructure
Close the infrastructure gap with climate resilient new builds, retrofits to existing builds, and Inuit adaptations to changing natural infrastructure



Food Systems
Reduce the climate vulnerability of Inuit and market food systems

Figure 2: Social and economic inequities in Inuit Nunangat

Social and Economic Inequity in Inuit Nunangat

Many Inuit face social and economic inequities that impact our health and wellbeing

Inuit Nunangat

52% of Inuit in Inuit Nunangat live in crowded homes*¹

34% of Inuit aged 25 to 64 in Inuit Nunangat have earned a high school diploma¹

70% of Inuit households in Nunavut are food insecure²

\$23,485 The median before tax individual income for Inuit in Inuit Nunangat¹

30 The number of physicians per 100,000 population in Nunavut⁴

47.5% of Inuit in Inuit Nunangat are employed¹

72.4 years The projected life expectancy for Inuit in Canada†⁵

12.3 The infant mortality rate per 1,000 for Inuit infants in Canada.⁶



IMR

All Canadians

9% of all Canadians live in crowded homes*¹

86% of all Canadians aged 25 to 64 have earned a high school diploma¹

8% of all households in Canada are food insecure³

\$92,011 The median before tax individual income for non-Indigenous people in Inuit Nunangat¹

119 The number of physicians per 100,000 population in Urban Health Authorities⁴

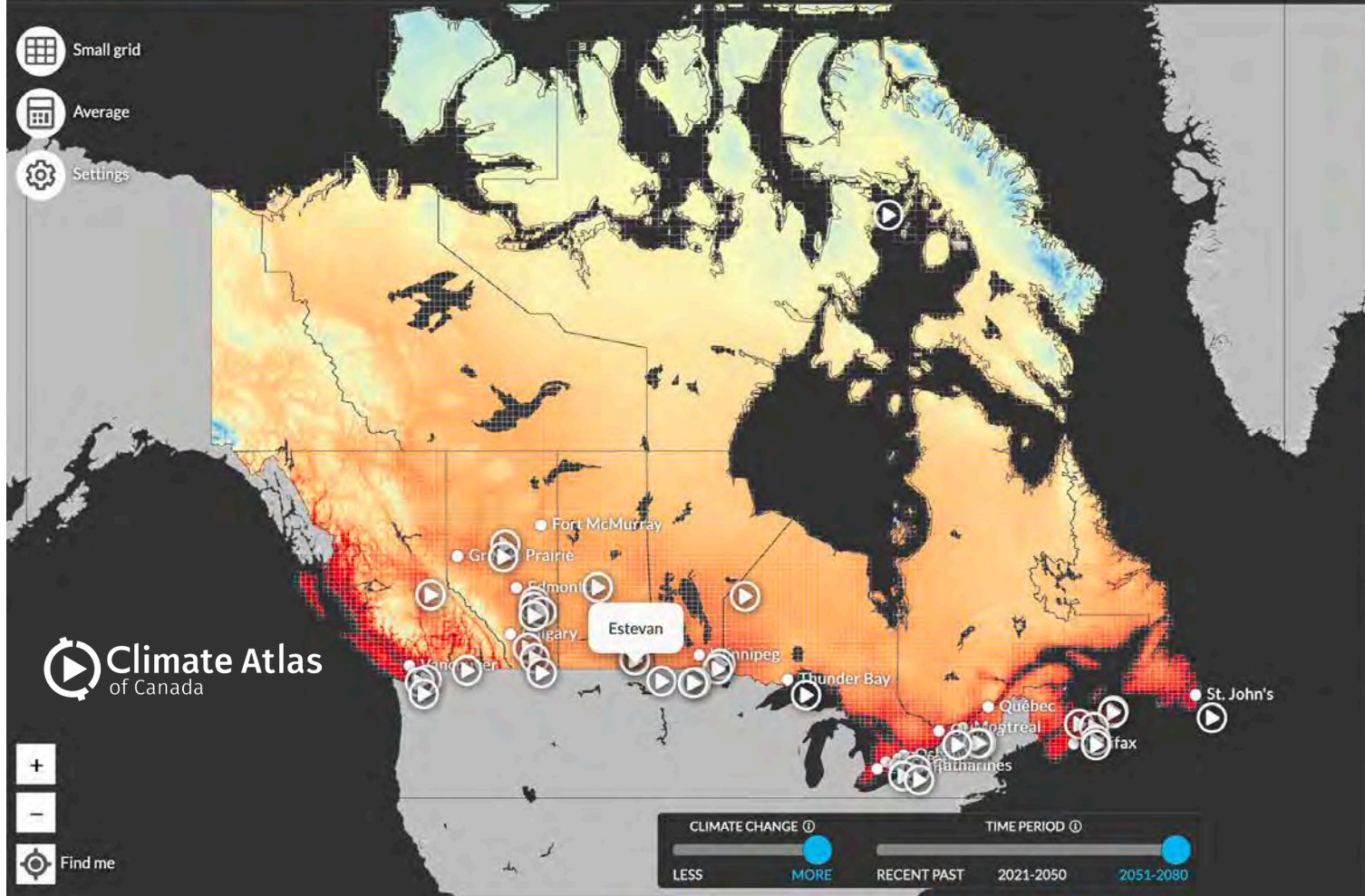
60.2% of all Canadians are employed¹

82.9 years The projected life expectancy for non-Indigenous people in Canada⁵

4.4 The non-indigenous infant mortality rate per 1,000 for Canada.⁶



- Small grid
- Average
- Settings



Climate Atlas of Canada

- +
-
- Find me

CLIMATE CHANGE ◯ TIME PERIOD ◯

LESS MORE RECENT PAST 2021-2050 2051-2080

- Hot Weather
- Cold Weather
- Temperature
- Precipitation
- Agriculture

Municipality ESTEVAN

Projected change in mean Length of the Frost-Free Season

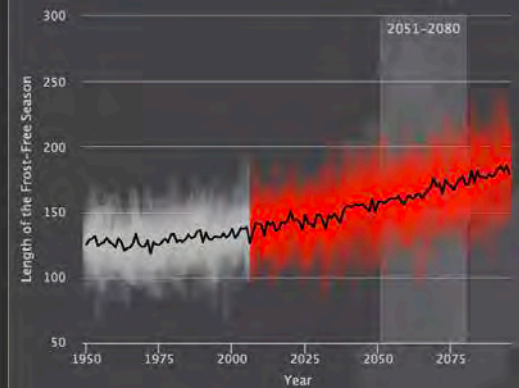
High Carbon → More climate change

1976-2005 2051-2080

131.5 → 165.3

Up ^

+33.7



Ensemble mean Historical values

— 1950-2005 — 2006-2095

This orange shows values from 24 climate models as well as their yearly mean.

Farmer-focused Approach

Net-zero Egg Farming: An innovation in low-impact agriculture
Net-zero Egg Farming
Élevage d'œufs net zéro
Brant Colony, AB



Watch later Share

Farming Carbon
Farming Carbon
Carbone agricole
Cartwright, Manitoba



Atlas climatique du Canada / Climate Atlas of Canada

Watch later Share

Energy, Emissions, and Agriculture
Energy, Emissions, and Agriculture
Énergie, émissions et agriculture
Dundurn, Saskatchewan



Atlas climatique du Canada / Climate Atlas of Canada

Watch later Share

Roy McLaren - On climate change and 70 years of farming



ROY MCLAREN
Farmer

MORE VIDEOS

Settings

0:20 / 4:30

CC YouTube

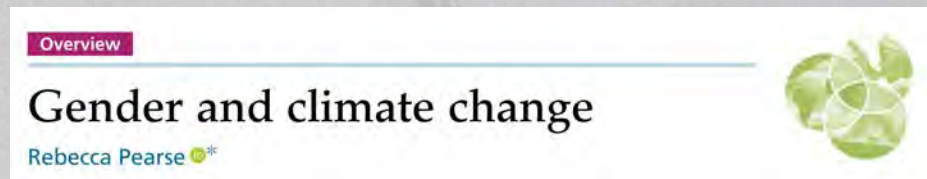
Watch later Share

Farmer-focused Approach



Dr. Amber Fletcher

Gender, agriculture and climate change



This study reviews the literature on gender relations and climate change. Gender analysis contributes to our understanding of: (1) vulnerability and climate change impacts; (2) adaptations in different contexts; (3) responsibility for greenhouse gas emissions; (4) inequalities in climate governance; and (5) knowledges and social action on climate change. Overall, the literature has established that gender relations are an integral feature of social transformations associated with climate change. Without gender analysis, we omit key aspects of social life in a changing climate. It is vital that the gendered character of climate change is recognized and further explored in the social sciences and humanities. © 2016 Wiley Periodicals, Inc.

Farmer-focused Approach

Are we taking farmers seriously? A review of the literature on farmer perceptions and climate change, 2007–2018

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ABSTRACT

While there is broad agreement in theory that farmers' expertise should be integrated into discussions of land management and climate change adaptation in the food system, it is unknown how much research practice has integrated these recommendations. To gauge the state of the field, we reviewed and coded a sample set of papers ($n = 105$) concerning farmers' perceptions of climate change. Crosstabulation analysis reveals that: 1) researching farmer "perception" of climate change seems to be more frequent in the Global South, as opposed to the North, where other terms are used; 2) farmers are rarely described within their social-ecological contexts, and often simply have their observations segmented and assessed for verification against historical data or quantitative measurements; and 3) the broader dynamics of research practice may perpetuate extractive and colonial patterns of exchange between the Global North and South. We find that farmers from the Global South are rarely described, but often evaluated in their perceptions. We conclude that, with some exceptions, the field does not substantively embrace farmers' perceptions as a contribution to adaptation discourse. We posit that the lack of in-depth qualitative methods in our sample may be correlated with the perception of farmers as passive and vulnerable, rather than viably adapting.

Farmer-focused Approach

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Climate change threats to family farmers' sense of place and mental wellbeing: A case study from the Western Australian Wheatbelt

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Place identity

ABSTRACT

'Sense of place' has become a central concept in the analysis of the cultural, personal and mental health risks posed by a changing climate. However, such place-related understandings of mental health and wellbeing remain largely limited to Indigenous health contexts. In this article we argue the relevance of sense of place in understanding the mental health impacts of climate change on family farmers who retain close living and working relationships to the land. We conducted a community-based qualitative case study located in the Western Australian Wheatbelt - a region that has experienced some of the most significant climate change in Australia. A three-part interview series was conducted with 22 family farmers between February 2013 and April 2014, and 15 interviews with various agricultural and mental health key informants. The research findings reveal that recently observed patterns of climate change have exacerbated farmers' worries about the weather, undermined notions of self-identity, and contributed to cumulative and chronic forms of place-based distress, culminating in heightened perceived risk of depression and suicide. The research findings highlight the tightly coupled ecosystem health-human health relationships that exist for family farmers living in regions affected by climate change, as well as the significance of farmers' place-based attachments and identities for their mental health and wellbeing.

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Journal of Environmental Psychology

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An investigation into climate change scepticism among farmers

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ARTICLE INFO

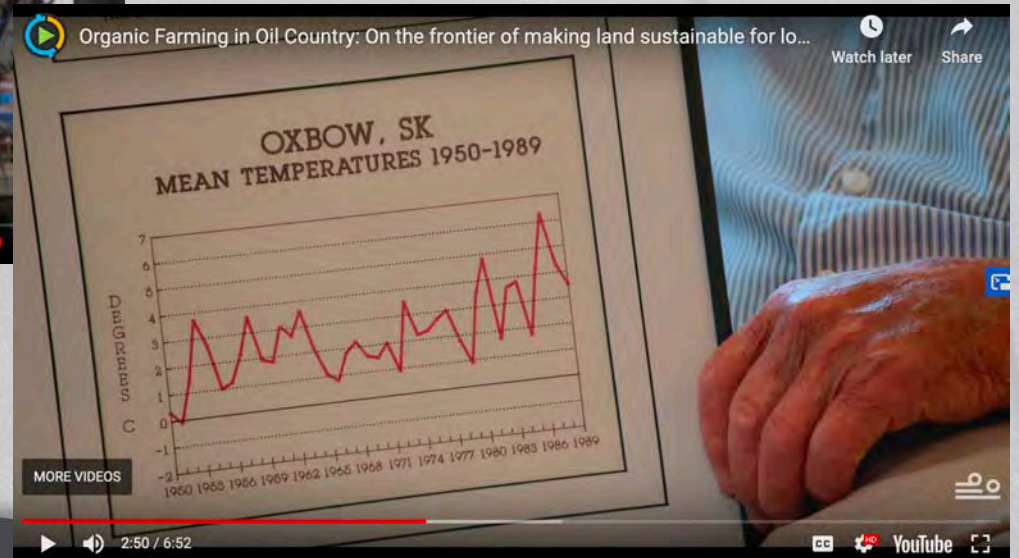
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Keywords:
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Scepticism
Dairy farmer
Scotland
Structural Equation Modelling

5. Conclusions and implications

This study aimed to investigate the extent of climate change scepticism among Scottish dairy farmers and the factors that affected their scepticism. Using Rahmstorf's (2004) typology, this study reveals that, similar to those observed among the general public in the UK, the prevalence of trend and attribution scepticism is not substantial among Scottish dairy farmers, but the prevalence of risk scepticism is. This calls for a greater emphasis on the risks of climate change in communication and engagement strategies. The use of Rahmstorf's typology also indicates the difficulty of labelling someone plainly as "sceptic" or "non-sceptic", since the same farmer who is sceptical of one aspect of climate change (e.g. trend) may not be sceptical of the other (e.g. risk). Therefore, treating scepticism as a multi-dimensional construct is crucial, both from academic (e.g. using multiple dimensions of scepticism in research) and policy perspectives (e.g. designing category-specific communication and engagement strategies).

Farmer-focused Approach



Coal worker-focus approach

Energy

SaskPower to roll out world's first carbon capture-embedded power plant



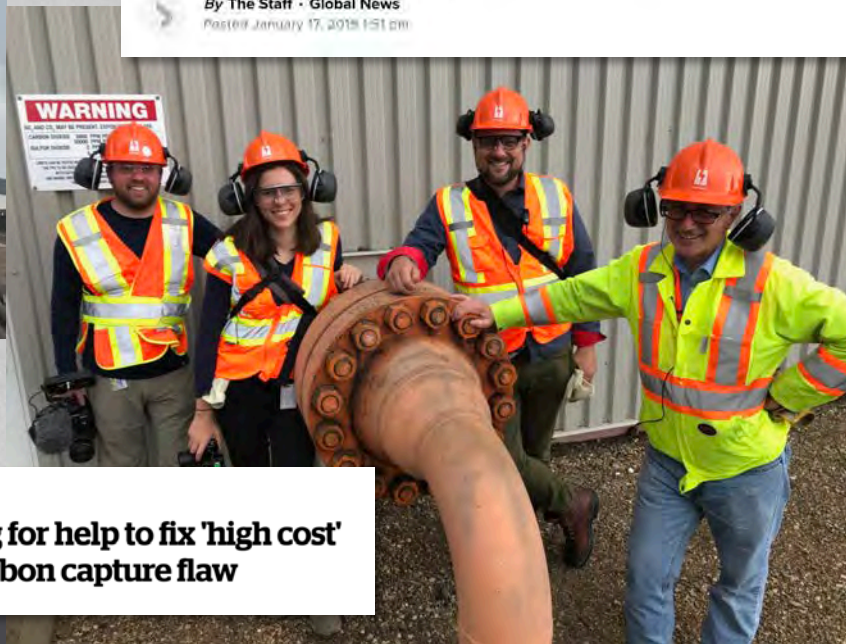
Saskatoon

SaskPower abandons carbon capture at Boundary Dam 4 and 5

CANADA

Boundary Dam Power Station had a good year for carbon capture: SaskPower

By The Staff · Global News
Posted January 17, 2018 1:51 pm



Saskatchewan · CBC Investigates

SaskPower looking for help to fix 'high cost' Boundary Dam carbon capture flaw

Coal worker-focus approach

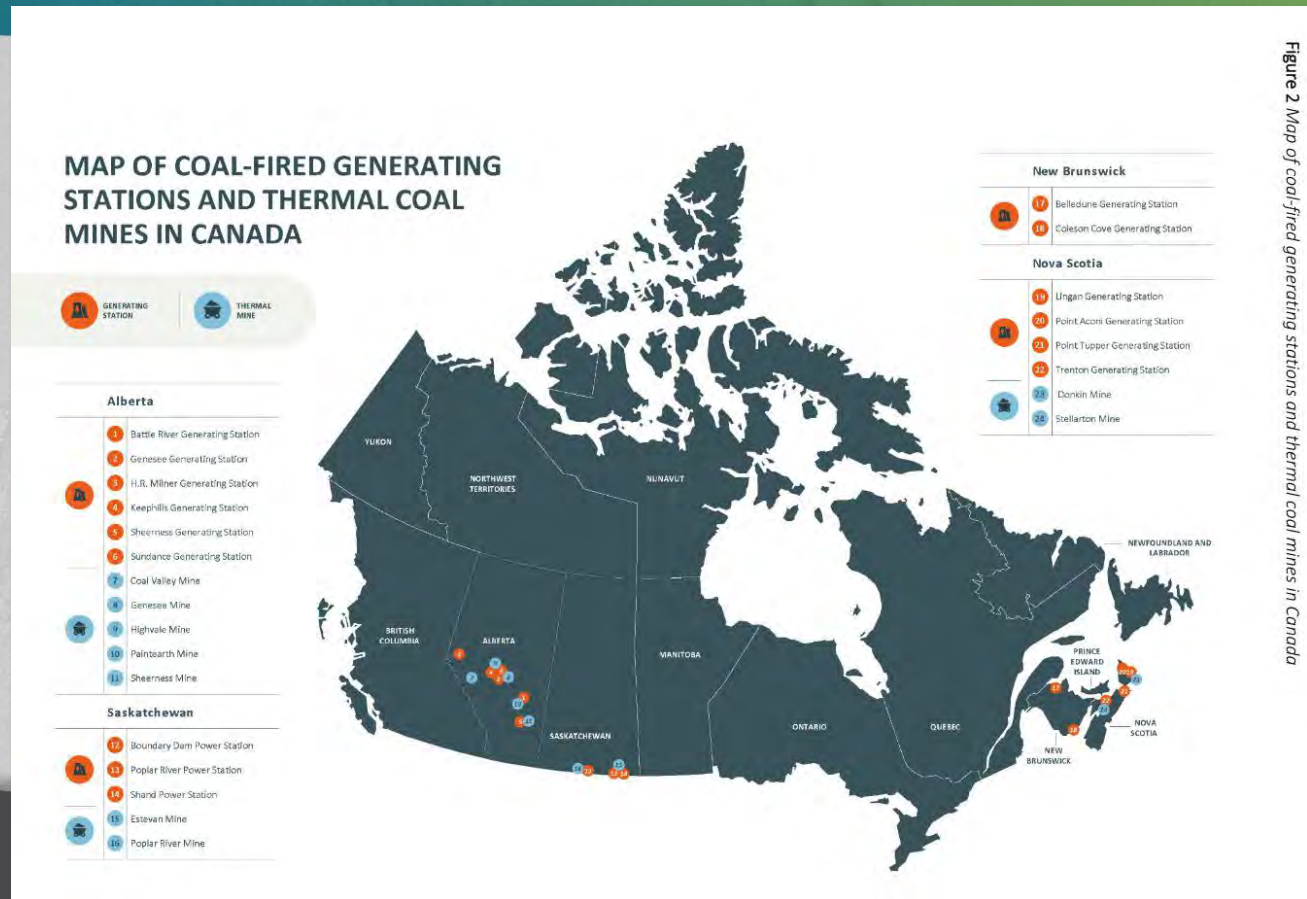
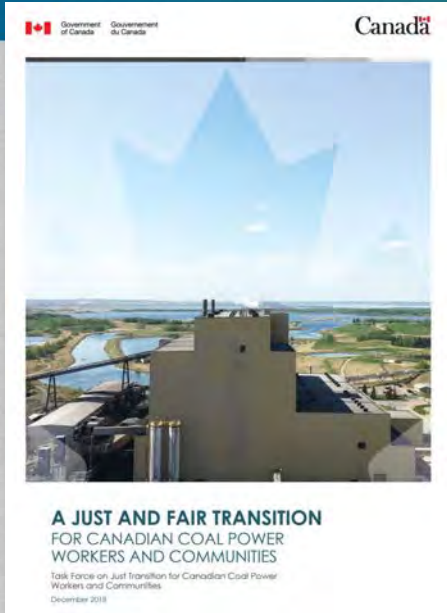
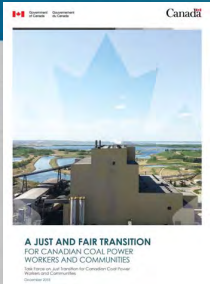


Figure 2 Map of coal-fired generating stations and thermal coal mines in Canada

Coal worker-focus approach



Based on the best available data, there are between 1,880 and 2,400 people working at coal-fired generating stations and between 1,200 and 1,500 working at thermal coal mines. It is anticipated that a significant number of these workers will lose their jobs by 2030—and some already have.

1. DEVELOP, COMMUNICATE, IMPLEMENT, MONITOR, EVALUATE, AND PUBLICLY REPORT ON A JUST TRANSITION PLAN FOR THE COAL PHASE-OUT, CHAMPIONED BY A LEAD MINISTER TO OVERSEE AND REPORT ON PROGRESS.

2. INCLUDE PROVISIONS FOR JUST TRANSITION IN FEDERAL ENVIRONMENTAL AND LABOUR LEGISLATION AND REGULATIONS, AS WELL AS RELEVANT INTERGOVERNMENTAL AGREEMENTS.

3. ESTABLISH A TARGETED, LONG-TERM RESEARCH FUND FOR STUDYING THE IMPACT OF THE COAL PHASE-OUT AND THE TRANSITION TO A LOW-CARBON ECONOMY.

4. FUND THE ESTABLISHMENT AND OPERATION OF LOCALLY-DRIVEN TRANSITION CENTRES IN AFFECTED COMMUNITIES.

5. CREATE A PENSION BRIDGING PROGRAM FOR WORKERS WHO WILL RETIRE EARLIER THAN PLANNED DUE TO THE COAL PHASE OUT.

6. CREATE A DETAILED AND PUBLICLY AVAILABLE INVENTORY WITH LABOUR MARKET INFORMATION PERTAINING TO COAL WORKERS, SUCH AS SKILLS PROFILES, DEMOGRAPHICS, LOCATIONS, AND CURRENT AND POTENTIAL EMPLOYERS.

7. CREATE A COMPREHENSIVE FUNDING PROGRAM FOR WORKERS STAYING IN THE LABOUR MARKET TO ADDRESS THEIR NEEDS ACROSS THE STAGES OF SECURING A NEW JOB, INCLUDING INCOME SUPPORT, EDUCATION AND SKILLS BUILDING, RE-EMPLOYMENT, AND MOBILITY.

8. IDENTIFY, PRIORITIZE, AND FUND LOCAL INFRASTRUCTURE PROJECTS IN AFFECTED COMMUNITIES.

9. ESTABLISH A DEDICATED, COMPREHENSIVE, INCLUSIVE, AND FLEXIBLE JUST TRANSITION FUNDING PROGRAM FOR AFFECTED COMMUNITIES.

10. MEET DIRECTLY WITH AFFECTED COMMUNITIES TO LEARN ABOUT THEIR LOCAL PRIORITIES AND TO CONNECT THEM WITH FEDERAL PROGRAMS THAT COULD SUPPORT THEIR GOALS.

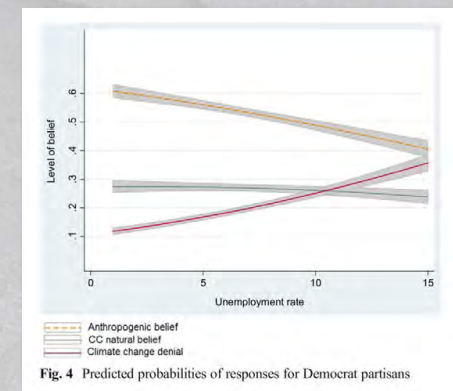
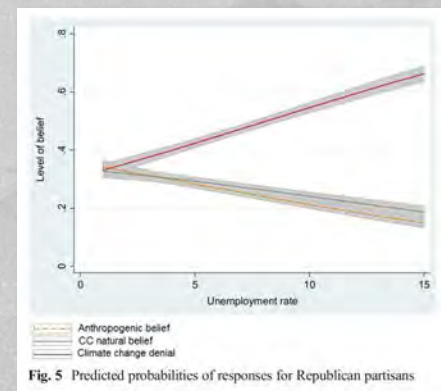
Unemployment, alienation, and denial

The impact of unemployment and economic risk perceptions on attitudes towards anthropogenic climate change

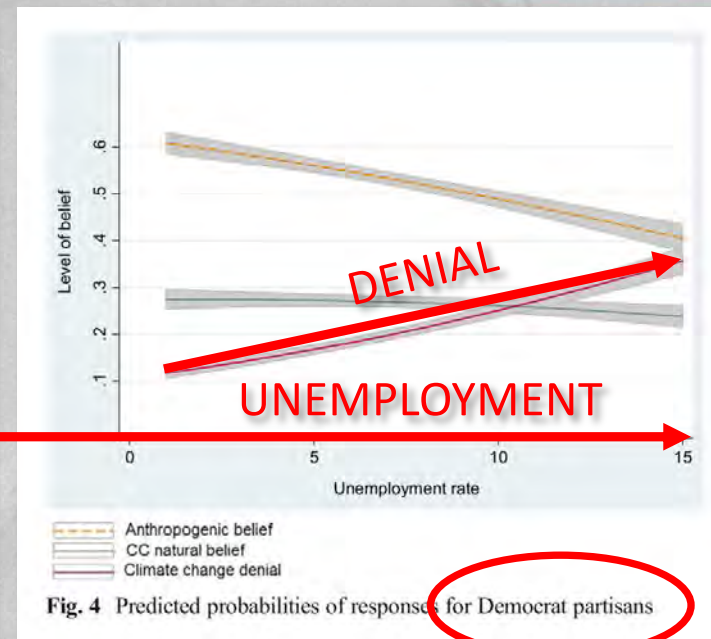
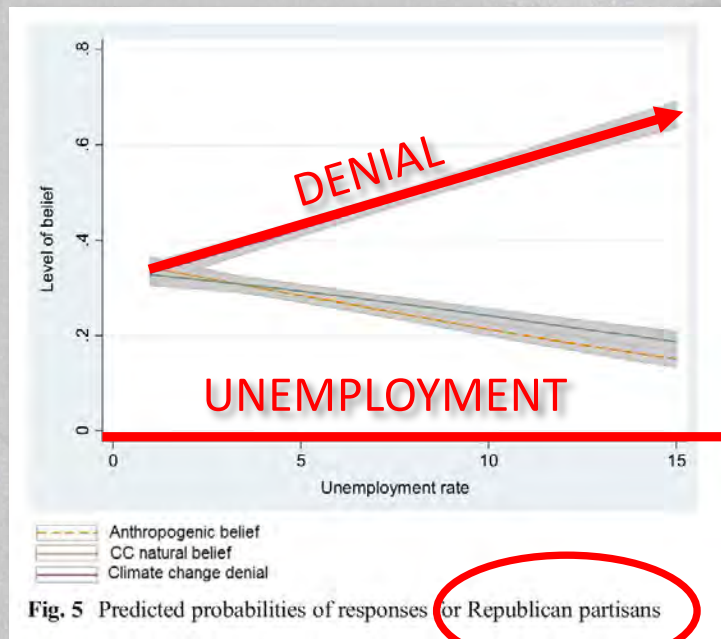
Salil D. Benegal¹ 

J Environ Stud Sci (2018) 8:300–311
DOI 10.1007/s13412-017-0452-7

Abstract This study uses public opinion data from 2006 to 2014 to examine the effect of unemployment and partisan identity on attitudes towards anthropogenic climate change. Results show that while Republican partisanship and conservative ideology are strongly associated with lower reported belief in anthropogenic climate change, these attitudes are also shaped by subjective perceptions of economic risk and increased local unemployment rates. I find that exposure to economic risk increases the likelihood of climate change denial among both Democrats and Republicans. These findings help explain trends in environmental public opinion over the past decade, in particular the increase in reported denial or skepticism about climate change after the 2008 economic recession.



Unemployment, alienation, and denial



The impact of unemployment and economic risk perceptions on attitudes towards anthropogenic climate change

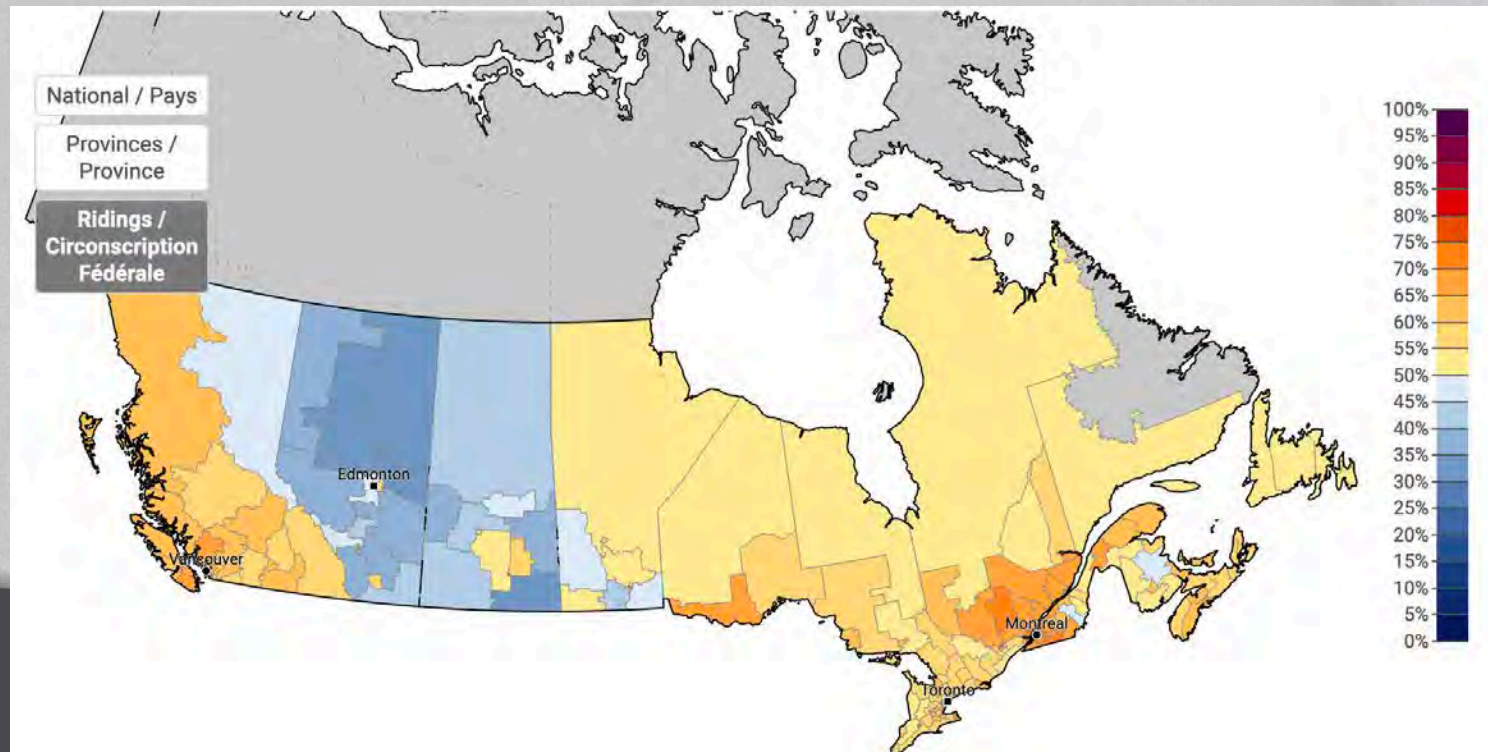
Sajil D. Benegal¹

J Environ Stud Sci (2018) 8:300–311
DOI 10.1007/s13412-017-0452-7

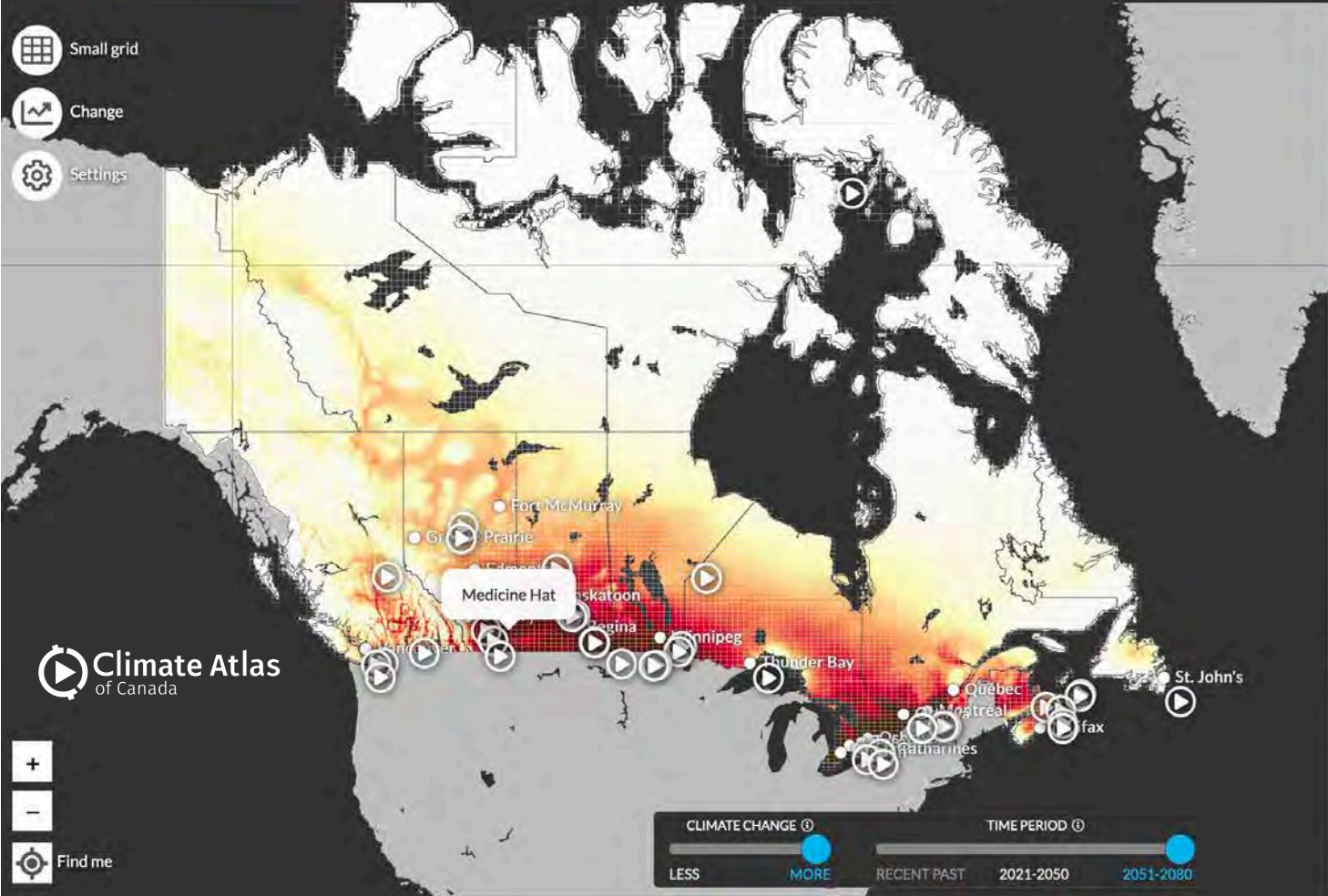
Unemployment, alienation, and denial



Estimated % of adults who think earth is getting warmer partly or mostly because of human activity



- Small grid
- Change
- Settings



Climate Atlas of Canada

- +
-
- Find me

CLIMATE CHANGE ◯ TIME PERIOD ◯

LESS MORE RECENT PAST 2021-2050 2051-2080

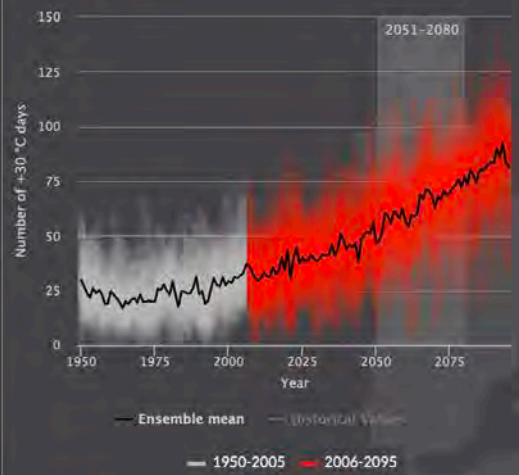
- Hot Weather
- Cold Weather
- Temperature
- Precipitation
- Agriculture

Municipality **MEDICINE HAT**

Projected change in mean
Number of +30 °C days
 High Carbon → More climate change

1976-2005 2051-2080
26.4 → 64.3

Up ▲
+37.9



This graph shows values from 24 climate models as well as their yearly mean

Unemployment, alienation, and denial

STUDIES IN POLITICAL ECONOMY
2020, VOL. 101, NO. 1, 77–91
<https://doi.org/10.1080/07078552.2020.1738780>

Transforming Alberta: an investment-based strategy for combatting Western alienation and climate change in Canada

Ryan M. Katz-Rosene

School of Political Studies, University of Ottawa, Ottawa, Ontario, Canada

ABSTRACT

In seeking to appease both environmentalists and proponents of Alberta's oil and gas sector, the Trudeau government's current approach to combined economic development and climate mitigation is fundamentally flawed. This essay advocates a new strategy aligned with proposals for a Green New Deal—major public investments in the communities hit hardest by Alberta's economic downturn, aiming to develop the province's low-carbon resources and create green jobs, yet made expressly on the condition of stranding fossil fuels.

Unemployment, alienation, and denial

STUDIES IN POLITICAL ECONOMY
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Transforming Alberta: an investment-based strategy for combatting Western alienation and climate change in Canada

Ryan M. Katz-Rosene

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“Western alienation is also of concern because it has given rise to xenophobic populism, the likes of which has resulted in Trumpism in the US and Brexit in the UK...the extreme right has tried to capitalize on the economic discontent in Alberta after the downturn in the energy sector...”

Unemployment, alienation, and denial

CLIMATE POLICY

<https://doi.org/10.1080/14693062.2020.1782824>

Carbon pricing and economic populism: the case of Ontario

Leigh Raymond 

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ABSTRACT

Carbon pricing policies face growing threats from populist attacks citing increased costs for consumers. This paper explores the potential for different strategies to protect carbon pricing policies from these attacks through an in-depth analysis of the enactment and subsequent reversal of an economy-wide cap-and-trade programme in Ontario, Canada, from 2015 to 2018. The paper uses process tracing of key government documents, media coverage, and interviews with those involved in the enactment and promotion of the policy, to answer two questions: (1) why did Ontario choose a carbon revenue approach focused on economic development and climate mitigation? and (2) how did that approach make the policy more vulnerable to a populist attack based on higher consumer prices? The analysis tests a central hypothesis grounded in previous research: A failure to focus more on consumer costs in designing and promoting the cap-and-trade programme is a primary reason for the Ontario policy's startling political failure. In this respect, the paper concludes, Ontario's experience constitutes a warning about the importance of designing and framing carbon pricing policies to defuse the potential power of populist attacks focusing on energy prices for 'working families'.

Key policy insights

- Carbon pricing policies remain vulnerable to populist attacks based on opposition to higher consumer prices.
- Dedicating carbon revenue to interest groups may undermine the ability to defend the policy against consumer pricing attacks.
- Carefully explaining a cap-and-trade policy mechanism can be important to building public support for the policy.
- Neither its complexity nor its integration with international carbon markets protected Ontario's cap-and-trade programme from repeal.
- Ontario's cap-and-trade policy's repeal can be substantially attributed to the government's approach to allocating carbon revenue.

COVID and CLIMATE CHANGE

A tale of two crises: COVID-19 and climate

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^aDepartment of Management, Technology and Economics, Group for Sustainability and Technology, ETH Zurich, Zurich, Switzerland; ^bDepartment of Political Science, University of Toronto, Toronto, Canada

ABSTRACT

In response to the COVID-19 pandemic, governments around the world are mobilizing unprecedented public resources to mitigate economic collapse. However, these new programs run the risk of paying insufficient attention to the multiple sustainability crises we face. Climate change, in particular, threatens the very basis for continued human prosperity and requires an equal, if not greater, societal mobilization. In this policy brief, we argue that the response to the coronavirus outbreak also offers an opportunity to advance the climate agenda. Indeed, given that we have scarce resources at our disposal, it is essential that we synergize such efforts. We propose that this can be accomplished in two primary ways: (1) harnessing the disruptive forces of the COVID-19 pandemic to accelerate the decline of carbon-intensive industries, technologies, and practices, and (2) leveraging responses to drive low-carbon innovation. From these two strategies, we outline five principles of “sustainability transition policy” to serve as a guide during these challenging times.

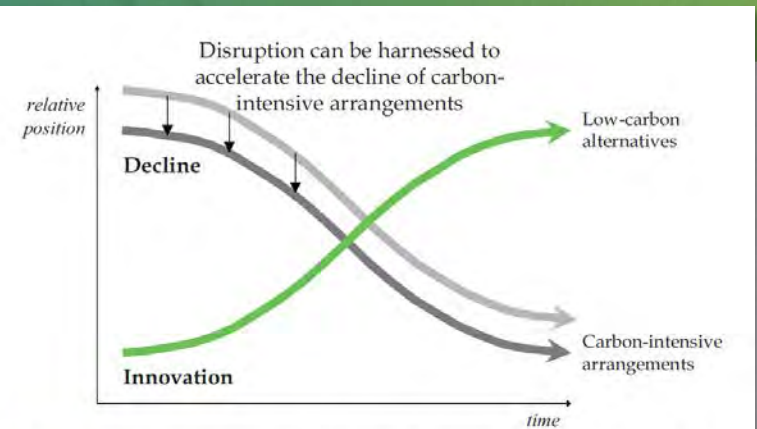


Figure 1. Harnessing disruptive forces to accelerate the decline of unsustainable arrangements (*adapted from Rosenbloom et al. 2020*).

Starting from the bottom up: a co-designed research agenda

WIREs Clim Change 2017, 8:e482. doi: 10.1002/wcc.482

Co-production in climate change research: reviewing different perspectives

Scott Bremer^{1*} and Simon Meisch²

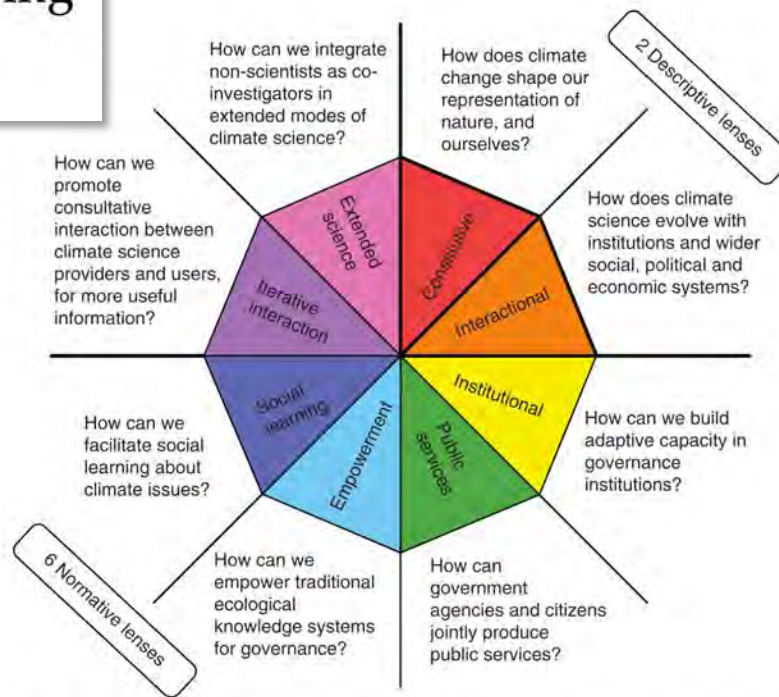
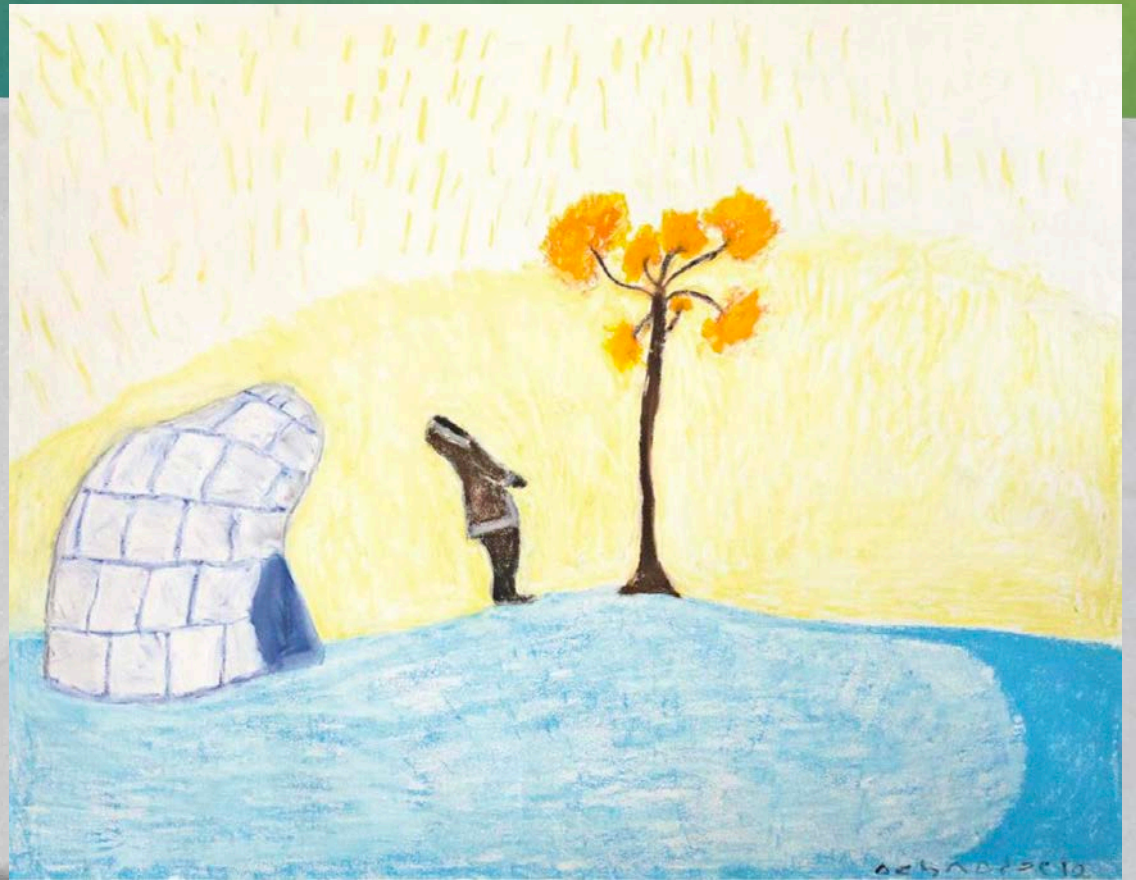


FIGURE 3 | The co-production prism comprising eight unique perspectives on climate change co-production, two mainly descriptive and six mainly normative.







Prairie
Climate Centre
From Risk to Resilience

**THANK YOU
MERCI
Qujannamiik**

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