



REPORT

Canada in a Changing Climate

National Issues

Chapter 9: International Dimensions



Government
of Canada

Gouvernement
du Canada

Canada

Outline

1. Introduction to the chapter
2. Key messages
3. Emerging issues and knowledge gaps
4. Q&A
5. What's next in the National Issues Report
Winter Webinar Series

Introduction to the chapter – The team

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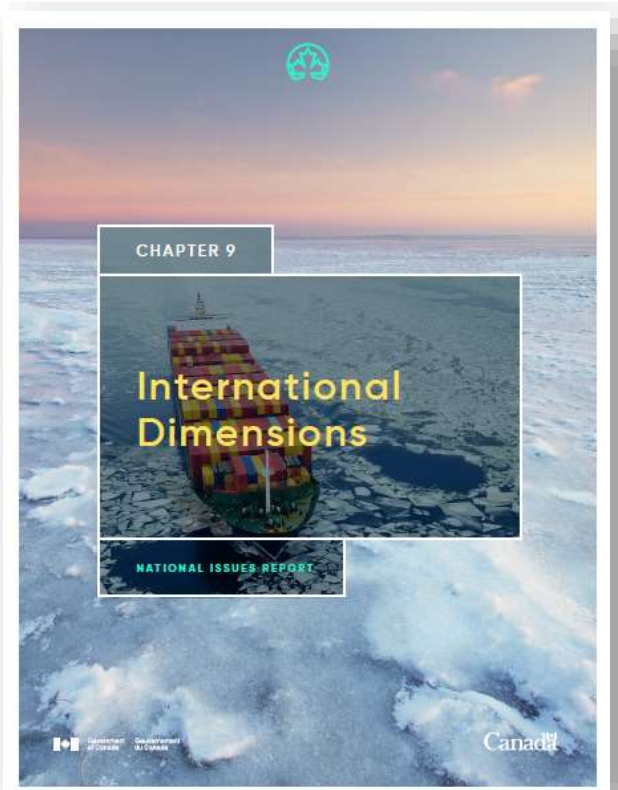


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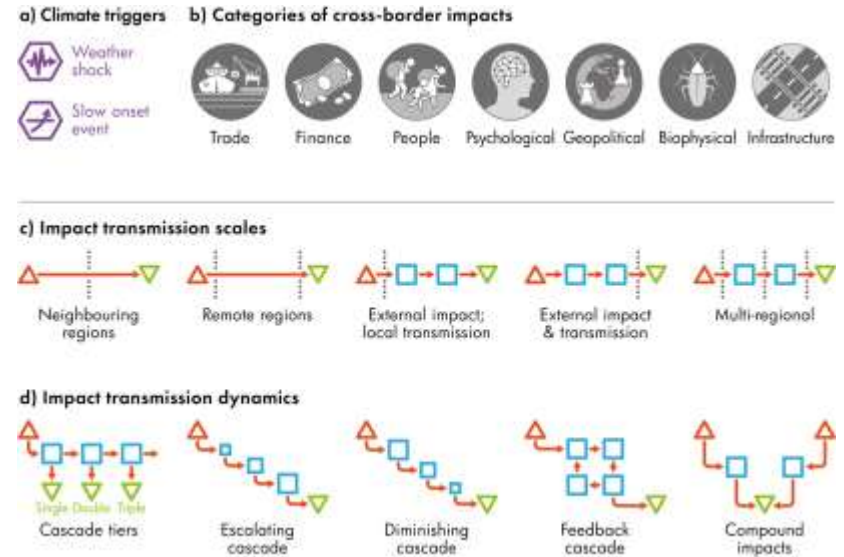
Introduction to the chapter - Purpose

- The goal is to examine **how climate change is affecting connections between Canada and the rest of the world.**
- The impacts of climate change and variability do not stop at national borders.
- Actions taken to adapt to climate change also have ramifications beyond the areas targeted for implementation.
- These indirect impacts are important to include in climate change assessments and adaptation planning but this is rarely done.



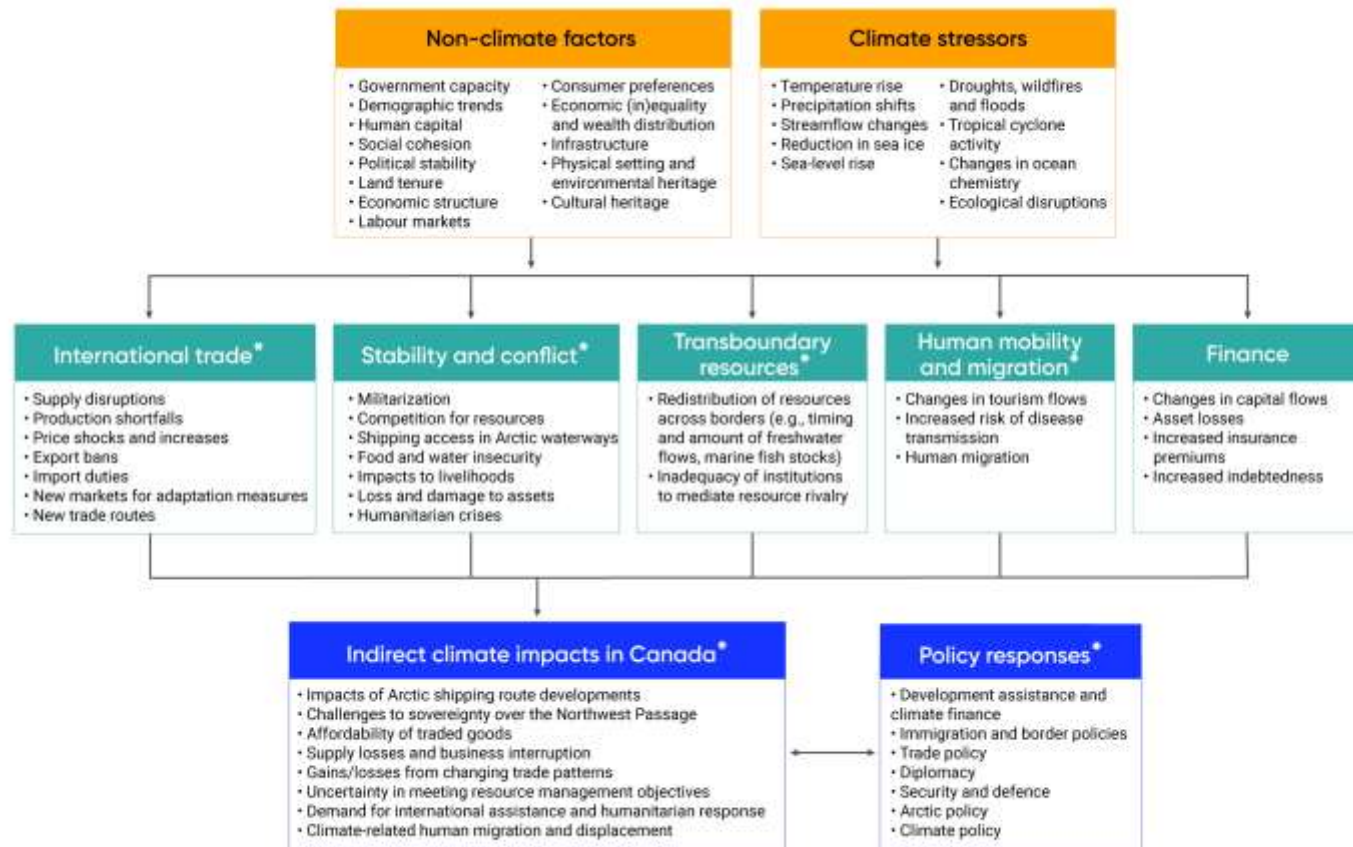
Introduction to the chapter – Scoping process

- 2008, 2014 assessments as point of departure
- Rapid literature scan
- Consultations and observation
 - International development community
 - Participation in Canadian Forces College symposia
- Themes selected to represent a mix of transmission mechanisms, scales of impact and opportunities for adaptation.



Carter, T. R., Benzie, M., Campiglio, E., Carlsen, H., Fronzek, S., Hildén, M., ... & West, C. (2021). A conceptual framework for cross-border impacts of climate change. *Global Environmental Change*, 69, 102307.

Indirect climate change impacts for Canada and related policy responses



*This chapter on international dimensions explores these elements.

#1



Climate change affects Arctic shipping and threatens sovereignty

#2



Transboundary marine and freshwater agreements generally do not consider climate change

#3



Climate change presents risks and opportunities for international trade

#4



Climate-related human migration and displacement will increase demands for immigration to Canada

#5



Increased demand for international assistance is expected

Key Messages

Key Message #3

Climate change presents risks and opportunities for international trade

Climate change impacts can result in economic consequences for Canada by disrupting supply and distribution networks reliant on vulnerable trade infrastructure.

- Well-functioning transportation infrastructure is essential for trade.
- Canada's transportation system moved \$1.107 trillion in traded goods in 2017, with Port Metro Vancouver handling upward of 15% of the trade by value, with more than 160 countries
- Global food trade is particularly at risk because of a growing reliance on a small number of maritime, coastal and inland choke points to move food staples and fertilizers.

Exposure to climate risk through marine shipping

Marine shipping and seaport operations account for 80% of global trade by volume, and 70% by value.

Over half of Canada's GDP derives from the export and import of goods and services in the global marketplace.

International and Canadian Port authorities and operators indicate that weather and extreme climate events are already causing shipment delays and physical damage.

Key Message #3

Climate change presents risks and opportunities for international trade (cont'd)

- Canada will increasingly experience economic effects through trade relationships from extreme weather, climate impacts, and adaptation elsewhere in the world.
- Direct impacts on international trade will occur and potentially intensify with climate change, but consequences remain unclear – with limited study of impacts in Canada.
- Critical uncertainties in assessing impact include viability of Arctic shipping, resilience of trade infrastructure, and operators' levels of preparedness.
- Global food and agricultural production are particularly vulnerable, with potential impact to Canadian food prices at home.

Macro (global), sectoral and domestic factors shaping Canada's food prices

LEVEL	FACTOR	2019		2020	
		IMPACT	LIKELIHOOD	IMPACT	LIKELIHOOD
Macro	Climate change (-)	4	4	5	5
	Geopolitical risks (-)	5	5	5	5
	Input costs (+)	4	4	4	4
	Energy costs (*)	3	4	3	4
	Inflation (+)	4	5	3	4
	Currencies and trade environment (-)	4	5	4	5
Sectoral	Food retail and distribution landscape (-)	5	4	4	4
	Processing industry (+)	4	5	5	4
	Policy context (-)	5	5	3	5
	Consumer food awareness and trends (-)	4	5	3	4
Domestic	Consumer indebtedness (-)	4	5	5	5
	Consumer income and income distribution (-)	4	5	5	5

Source: Authors' elaboration, based on Dalhousie University and University of Guelph, 2019, 2020, 2021.

Key Message #3

Climate change presents risks and opportunities for international trade (cont'd)

- Despite Canadian industry recognition of indirect impacts of climate change, limited evidence of action to adapt.
- Trade can help moderate climate impacts through adaptive shifts in the market – including around food and agriculture – but gains are more likely to be captured in wealthier countries.
- Financial support for planned adaptation, including through international assistance (KM#5) can be justified on grounds of economic self-interest by building resilience of trade networks – in addition to concerns around fairness and equity.

Adaptation as a trade opportunity

Countries that invest in building climate resilience and enabling growth in adaptation markets domestically could be at an advantage as a global supplier of adaptation solutions.

Canada's experience in forestry and forest products, engineering and coastal infrastructure, ocean technologies, water and wastewater, and financial risk-transfer tools could be harnessed to meet growing global demand.

Key Message #4

Climate-related human migration and displacement will increase demands for immigration to Canada

- Key climatic drivers of involuntary displacement are hurricanes and extreme storms; floods; droughts; wildfires and extreme heat.
- In 2021, these events displaced approximately 30 million people.
- Regions at greatest risk are sub-Saharan Africa; Asia (South, SE and East), and Latin America and the Caribbean.
- The Government of Canada will come under growing pressure to accept larger numbers of migrants from countries in climate-disrupted regions.

Climate-related displacement can worsen political instability: evidence from Mali

In 2019, Canadian Forces assisted in UN peacekeeping operations in Mali

Droughts played observable role in displacement and destabilization in Mali

Deep emissions cuts combined with sustainable development assistance can reduce the potential of future conflict and displacement risks in Mali and other climate-disrupted

Key Message #4

Climate-related human migration and displacement will increase demands for immigration to Canada (cont...)

- Drastic cuts in global greenhouse gas emissions can reduce future increases in extreme weather events and sea level rise.
- Sustainable development helps build adaptive capacity in areas exposed to climate hazards.
- By meeting Paris Agreement commitments and working with international community in pursuing the Sustainable Development Goals, Canada can help reduce the risk of large scale displacements of people later this century.

Key Message #5

Increased demand for international assistance is expected

Climate change can undermine human security in developing countries and increase demands for Canadian assistance.

Canada recognizes need for financial and technical assistance for adaptation and climate resilience.

Climate-Security Connection

- Climate extremes can exacerbate tensions and raise risk of conflicts, especially in politically-fragile countries.
- Future impacts of climate change on conflicts and violence will depend on future socio-economic development in at-risk areas.
- Canadian development assistance therefore has potential to play important role.

Did climate change help cause Syrian conflict?

Studies suggest drought conditions may have contributed to political instability and refugee out-migration 2010-2012.

However, political, economic, social, cultural, & other non-climatic factors played a bigger causal role

Key message: climate events alone are not often the direct causes of violent conflict.

Key Message #5

Increased demand for international assistance (cont'd)

Demands on International Assistance

- Developing countries have less capacity to adapt to climate change, and estimated costs are high (US\$60-100B/year by 2030).
- Climate adaptation can be mainstreamed into development assistance programs.

Canada's Response

- Government has recognized need for mainstreaming, some programs have been created with climate adaptation in mind.
- Canadian development spending and climate financing as portion of GDP have lagged other OECD countries.
- Since report was published, new commitments were made at COP26 in Glasgow.

Climate Vulnerability of Aid Recipients

Important recipient countries of Canadian development assistance (e.g., Haiti, Mali, South Sudan, Syria, Tanzania) are also highly vulnerable to future impacts of climate change

This highlights need for continued assistance and incorporating climate adaptation into programs.

Emerging issues and knowledge gaps

- Adaptation—planned or proactive—is either not documented or not yet occurring consistently.
- Research on risks and opportunities to Canada from international dimensions of climate change impacts remains underdeveloped.
- It is possible to highlight early indicators of risk factors for decision makers to respond to while knowledge gaps are filled.
- There is least confidence in risk factors related to international trade.

Qualitative assessment of risks and opportunities to Canada from transboundary impacts of climate change over the next 30 years

	Likelihood (5-point scale)	Confidence (4-point scale)
Increased displacement of millions of people each year around the world due to tropical cyclones, floods, droughts, wildfires and food insecurity, combined with non-climate stressors	5	4
Increased future demand for immigration to Canada from countries highly exposed to climate risk, especially from Canada's largest source countries of international migrants	4	3
Increased skilled worker migration to Canada from climate-disrupted regions	3	3
Increased pressure to provide financial assistance for refugee procedures and serve as a resettlement destination	4	3
Evolution of climate-related migration arrivals into Canada shaped by disparate immigration and border policies between Canada and the United States	4	3

Emerging issues and knowledge gaps (cont...)

- International dimensions of adaptation governance
 - Transforming institutions
 - Creating ones where none exist
 - Evolution of public / political sentiment in addressing domestic and international policy priorities
- Assessment tools that accommodate uncertainty and complexity
 - Integrated approaches bringing together climate and non-climate stressors
 - Foresight tools
 - Decision-maker competencies to use them
- Global food systems
 - Canada's role in supporting food security and climate resilience of food systems
 - Threats to food supplies in Canada
- Economic modelling
 - Climate-sensitive trade sectors
 - Economic ripple effects of climate change impacts in the U.S.

Question & Answer Period



Upcoming National Issues Report Webinars

**Water Resources and
Ecosystem Services**
Friday, February 11, 2022
12:00 – 1:30 pm (EST)



**Costs and Benefits of Climate
Change Impacts and Adaptation**
Friday, February 18, 2022
12:00 – 1:00 pm (EST)



Thank you!

The full assessment chapter is available here:

<https://changingclimate.ca/national-issues/chapter/9-0/>

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