

Briefing for Decision Makers Outside of the Health Sector

HEALTH OF CANADIANS IN A CHANGING CLIMATE: SCIENCE ASSESSMENT 2022

Overview

The report *Health of Canadians in a Changing Climate: Advancing Our Knowledge for Action* assesses the latest research and knowledge about the effects of climate change on health and health systems, populations most at risk, and effective adaptation measures to protect Canadians and their communities. The report evaluates the scientific evidence related to the following topics:

- Climate change and Indigenous Peoples' health
- Natural hazards
- Mental health and well-being
- Air quality
- Infectious diseases
- Water quality, quantity, and security
- Food safety and security
- Climate change and health equity
- Adaptation and health system resilience

Who is This Report For?

This report will support actions by decision makers in sectors important to health, such as economic development, agriculture, energy, infrastructure, natural resources, water and sanitation, urban planning, and transportation.



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Climate change is already affecting the health of Canadians

- Climate change has been a driver of recent health effects related to rising temperatures and extreme heat, wildfires, and the expansion of zoonotic diseases into Canada, such as Lyme disease
- Climate change also threatens Canadians by increasing risks to livelihoods for some people (e.g., people engaging in farming, fisheries, tourism) and through impacts on important infrastructure and systems that sustain health (e.g., energy, housing, transportation, water, health system)
- Without greater adaptation efforts, projected increases in the frequency and severity of extreme precipitation events, droughts, extreme heat, wildfires, and storms will directly affect health by causing more illness, injuries, and deaths
- Disruptions to food systems and water resources, worsening of air pollution, the emergence and re-emergence of climate sensitive infectious diseases, effects on mental health, and increasing demands on health systems will continue to threaten Canadians' health

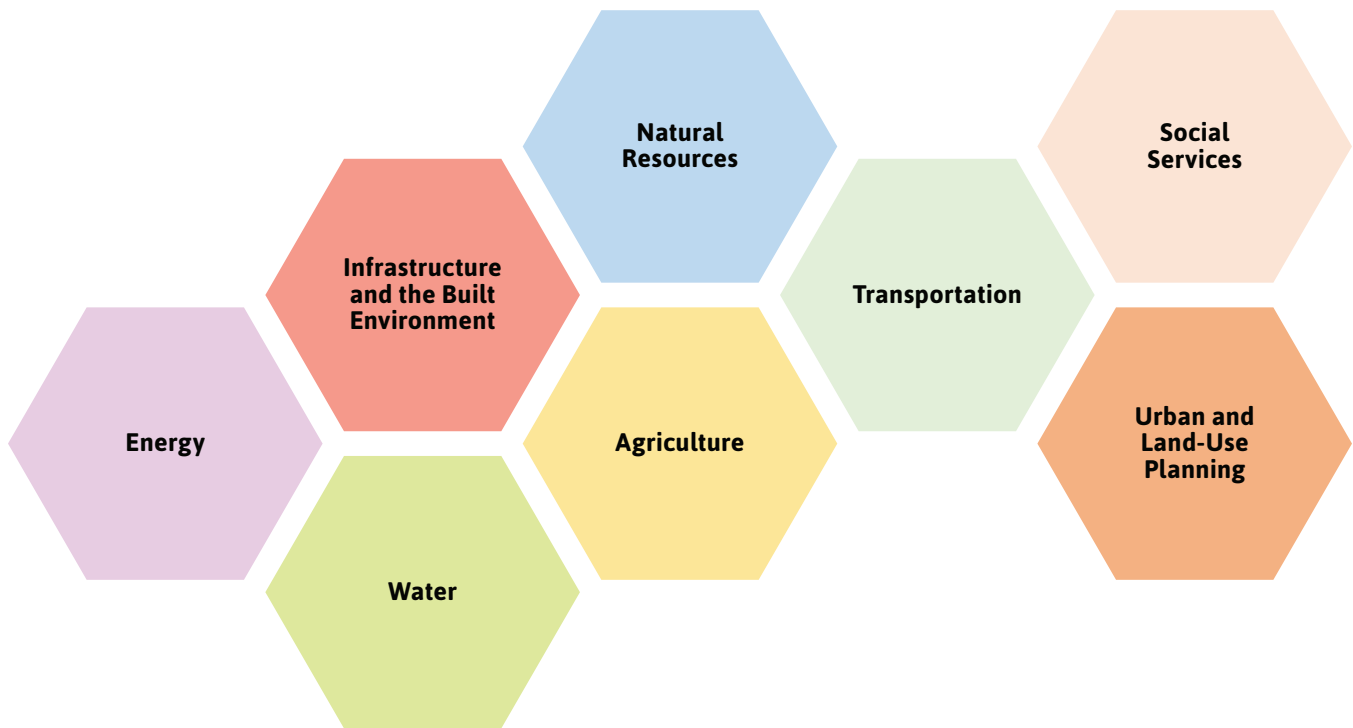
The impacts of climate change will affect Canadians differently

Some Canadians and communities are affected more severely by climate change as exposure and sensitivity to hazards and the ability to take protective measures varies across and within populations and communities. Some groups who may experience increased risk to the health effects of climate change include:

- First Nations, Inuit, and Métis peoples
- Racialized populations
- People of a low socio-economic status
- People experiencing homelessness
- People living with pre-existing physical and mental health conditions
- Children, seniors, and pregnant people
- Certain occupational groups (e.g., agricultural workers, people working outdoors and in the heat, first responders)



Sectors important to health



Did You Know?

In 2019, globally averaged atmospheric concentrations of carbon dioxide (CO₂), the main driver of long-term climate change, reached a record high of 409.8 parts per million (ppm), up from 400.1 ppm in 2015.

Climate change is increasing risks of food insecurity through disruptions to food systems, rises in food prices, and negative nutritional effects. Climate change has been a significant driver of food price increases in Canada since 2016.

Small communities are more vulnerable to impacts from climate change on water quality and security because of water system infrastructure deficits, as well as fewer technological, training, and financial resources.

Wildfire smoke, which can spread over vast areas of the country, contributed to an estimated 620 to 2700 deaths annually in Canada from 2013 to 2018. The public health burden of wildfire smoke is expected to increase in the future due to climate change.

Recent research in Quebec suggested that, from 2015 to 2065, the projected costs of the increase in health effects of ragweed allergies due to climate change are \$360 million for governments in that province and \$475 million for society as a whole. For extreme heat, the study estimated costs of \$370 million for governments and over \$33 billion for society.

Approximately 4,500–6,500 premature deaths could be avoided in Canada annually between 2030 and 2100 with GHG emission reductions associated with an intermediate emissions scenario (Representative Concentration Pathway RCP6.0).



When efforts to address climate change impacts by decision-makers, in or outside of the health sector, are not coordinated and well planned, they can lead to maladaptation — unintentionally increasing risks to other sectors, social groups, or systems. Maladaptation that can harm the health of Canadians occurs when engineered defences to adapt to climate change are designed without a health equity lens.

Reducing GHG emissions in all sectors can provide very large immediate and long-term health co-benefits to Canadians

Well-designed approaches to addressing climate change that engage a wide range of sectors (e.g., energy, water, housing, urban planning, transportation, insurance, agriculture, and food systems) through a “health-in-all-policies” approach can result in very large immediate and long-term health co-benefits and cost savings to the health system. For example:

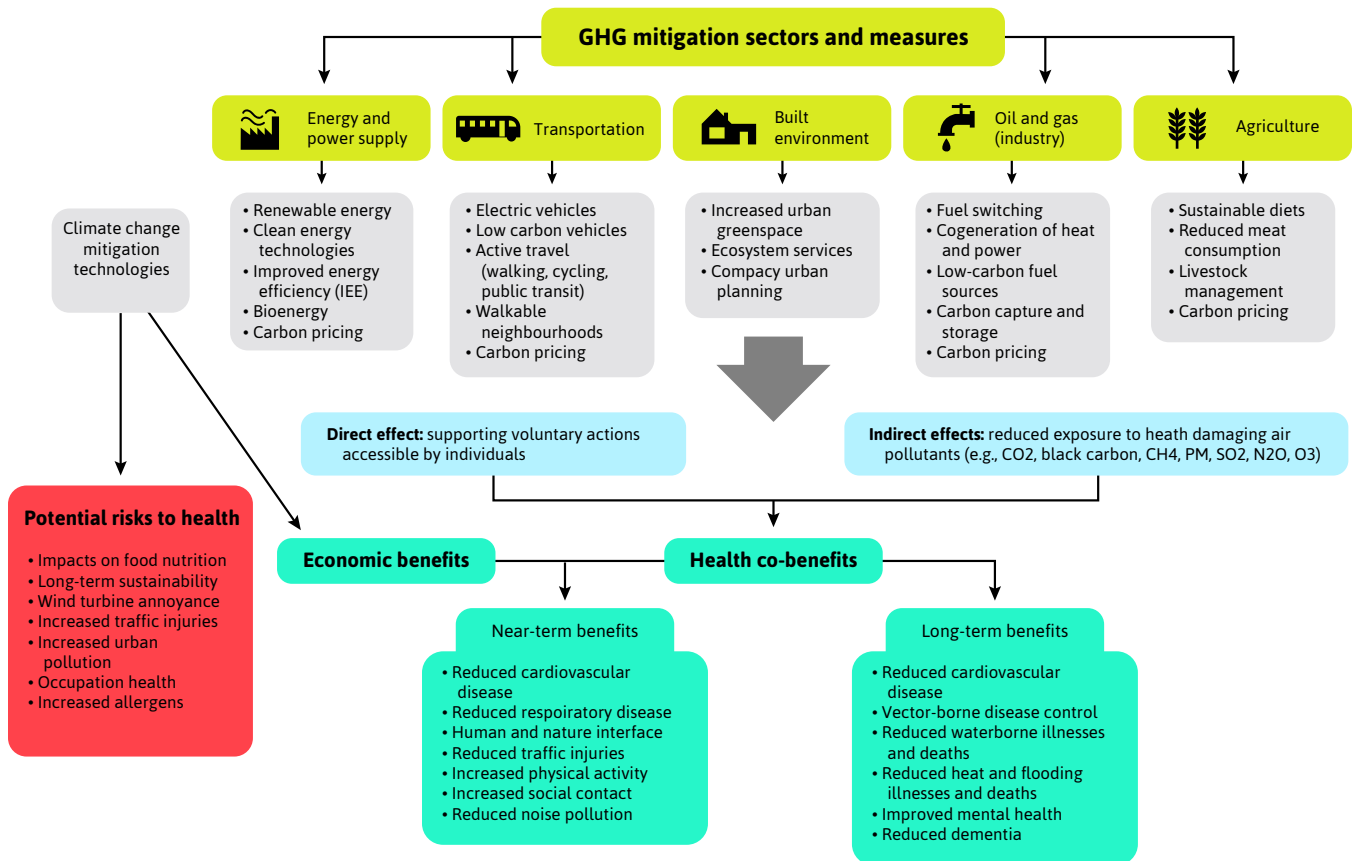
- GHG mitigation and climate adaptation efforts that significantly reduce fossil fuel use (e.g., use of low-emission vehicles, promotion of active and public transportation, etc.) also improve air quality by reducing fine particulate matter and other air pollutants. These efforts can have multiple co-benefits for health, including reductions in cardiovascular and respiratory diseases

- Increasing canopy cover and green spaces in communities to cool them and installing walking and biking paths can have multiple health co-benefits, such as reducing chronic diseases and improving mental health

Measures that address climate change can also result in cost savings to the health system. The economic value of the health co-benefits can help to offset the implementation costs of mitigation measures. For example, GHG mitigation efforts that reduce air pollution could help to avoid thousands of premature deaths annually in Canada by the middle of the century.



Figure 10.4: Potential health co-benefits and risks of GHG mitigation measures



Adaptation measures can greatly reduce the negative health impacts of climate change

Efforts to prepare for climate change are known to reduce risks and protect health; this is called adaptation. Adaptation measures taken outside of the health sector, such as in land use planning and urban design, protecting infrastructures from climate shocks and stresses, and the use of renewable energy sources can help Canadians improve their health, including by building climate resilient and environmentally sustainable health systems. Indigenous knowledges can inform climate change and health-related decision-

making at a variety of levels to benefit diverse stakeholders, including researchers, decision makers, and community members.

To successfully protect Canadians from the health impacts of climate change, adaptation actions in all sectors should be inclusive, equitable, and consider the needs of racialized, marginalized, and low-income populations.



Box 10.1: Preventive adaptation to keep children safe from climate hazards in playgrounds

Children are at increased risk of heat illness and death because of their physiology and because of their dependence on caregivers. Developing safer outdoor playspaces for children with preventative measures can reduce health risks, particularly as the climate continues to warm and extreme heat events become more frequent. As part of a broader Government of Canada initiative to adapt infrastructure to the changing climate, the Standards Council of Canada and Health Canada partnered with the National Program for Playground Safety (NPPS) to develop guidance to improve the climate-resilience of playgrounds. This guidance was included as an Annex in the Canadian Standard Association's Children's Playspaces and Equipment Standard (CAN/CSA-Z614-14). The updated standard supports practical and evidence-based options for climate mainstreaming by municipalities, affordable housing providers, and schools when new playgrounds are built or existing ones are renovated. The recommended changes in design include planting shade trees, selecting cooler materials for structures and surfaces, and adding water features. The guidance applies for all seasons of play, with a particular emphasis on keeping playgrounds cooler and comfortable for children and caregivers in the summer to help prevent overheating and injuries to children such as burns from metal slides.

Source: Kennedy et al., 2021

Decision makers outside of the health sector can play a vital role in addressing the health risks of climate change

- Implement sector-appropriate adaptation measures that integrate climate change and health information and considerations, and are developed in collaboration with health partners to ensure health equity is promoted and health co-benefits are maximized
- Implement sector-appropriate mitigation measures that reduce GHGs and maximize health co-benefits to Canadians
- Implement monitoring and evaluation programs to ensure mitigation and adaptation actions are effective, address the needs of populations at highest risk, and make adjustments to measures as necessary



How to Use the National Assessment Report

Decision makers in sectors important to health can use the national assessment report and supporting materials in a variety of ways:

- The findings can be used to understand and identify the impacts of climate variability and future climate change, and identify possible measures and strategies in a range of sectors to contribute to increasing the resilience of Canadians, communities, and their health systems
- The conceptual frameworks and case studies of health system adaptation and resilience building measures can help inform the development of effective climate change measures implemented outside of the health sector, that result in health co-benefits
- The infographics and fact sheets can be shared with other decision makers and community partners to enhance understanding of climate change impacts on the health of Canadians and health systems and encourage multisectoral collaboration
- The findings of the assessment can be integrated into sector specific climate change impacts and adaptation assessments from local to national levels to integrate human health and well-being considerations

Helpful resources

- [Health of Canadians in a Changing Climate: Science Assessment 2022 – Factsheets and Decision maker Briefings](#)
- [Health of Canadians in a Changing Climate: Communication Products](#)

Source

Berry, P., & Schnitter, R. (Eds.). (2022). [Health of Canadians in a Changing Climate: Advancing our Knowledge for Action](#). Ottawa, ON: Government of Canada.

