

Innovations for Climate-Health Coherence

Presentation to the Experts' Conference on Accountability, Innovation and Coherence in
G8 Health Governance: Seizing the 2010 Opportunity
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Introduction:

In the late winter of 1998, several days of freezing rain basically shut down the island of Montreal and caused havoc over eastern Ontario, southern Quebec and parts of Atlantic Canada. The 1998 Eastern Canada Ice storm resulted in more than 30 deaths and well over \$5B in damages. There was months of impact and great stress on the peoples being afflicted by this event. About 11 years later, at a Conference¹ on "Climate Change and the Unborn" at the Douglas Mental Health University Institute the effects of natural disasters such as hurricanes, floods and ice storms on mental health were discussed. Evidence was presented that the stress caused by living through one of these cataclysmic events may have far-reaching implications. In particular, the hardships experienced by pregnant women during these times, and their effects on their children's long-term well-being and development, were discussed by Professor S. King, Director of the Psychosocial Research Division, Douglas Institute and with the Department of Psychiatry at McGill University. She concluded that" "*Children whose mother experienced high stress (during the Quebec 1998 ice storm) scored lower on IQ and language performance tests than those whose mother had less stress.*"

In Canada, during the period 1980-2005, there were 430 disastrous events² of which 311 (72%) were related to climate – storms and floods. These events resulted in over 460 deaths and hundreds of thousands of people evacuated from their homes. These events are not all due to climate change but the "*Impacts of recent extreme weather events highlight the vulnerability of Canadian communities and critical infrastructure to climate change.*"³ Weather can be holiday perfect but weather can be life threatening and costly. Weather and weather-related events are what people see, feel, experience and what impacts them and their activities and climate is the statistics of weather.

A changing climate and Canada:

In 2007, the Intergovernmental Panel on Climate Change⁴ concluded that "*warming of the climate system is unequivocal*" and that "*most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations.*" Global mean temperatures are now increasing at 0.19°C per decade over the past 25 years and there is no indication in the data of a slowdown or pause in the human-caused climatic warming trend⁵. The issue of climate change for Canadians is best summarized by the Canadian National Assessment⁶ statement that:

“The impacts of changing climate are already evident in every region of Canada; Climate change will exacerbate many current climate risks, and present new risks and opportunities, with significant implications for communities, infrastructure and ecosystems; and Climate change impacts elsewhere in the world, and adaptation measures taken to address these, will affect Canadian consumers, the competitiveness of some Canadian industries, and Canadian activities related to international development, aid and peace keeping [underlining added].”

The links between climate change and health impacts come both through extreme events like storms and gradual change like sea level rise or increasing desertification. There are then impacts on the natural, built and social environments. These impacts intersect with the determinants of health: the physical environment; personal health practices; employment and working conditions; health and social services; social networks and culture. The results are health impacts such as temperature-related illnesses; vector-borne diseases; effects of water and food contamination; air-pollution health effects; direct effects of extreme weather events; and the impacts of climate related changes in social and economic conditions.

Climate change⁷ is expected to increase risks to the health of Canadians through many pathways: the food they eat, the air they breathe, the water they drink, and their exposure to extreme weather events and infectious diseases found in nature. For example, the frequency of hot days (above 30°C) is projected to increase in most parts of Canada, such that, under a medium emission scenario, the number of hot days, by 2050, will quadruple in Calgary, and at least triple in Winnipeg, Toronto and Fredericton.⁸ Summer heat poses a significant risk to public health and safety, as was starkly demonstrated by the 2003 heat wave in Western Europe, which was associated with more than 50,000 deaths.⁹ Extreme heat events can also have indirect negative health impacts since hot summer days are usually smoggy days as well. The Canadian Medical Association (CMA)¹⁰ has estimated that, in 2008, 21,000 Canadians died from the effects of air pollution with economic costs exceeding \$8 billion and projected that by 2031, almost 90,000 people die from the acute effects of air pollution with the number of deaths due to long-term exposure to air pollution being 710,000 with economic costs accumulating to over \$250 billion. Canada’s National Assessment projects that both heat waves and smog episodes are likely to become more frequent under a changing climate and the CMA estimates do not factor in these projections. Adaptation helps us prepare now for the expected changes by taking proactive actions to minimize risks. Understanding existing health vulnerabilities in society and among specific population groups allows decision makers within and outside of the health sector to target their resources, policies and program priorities in order to better protect Canadians.

A changing climate and the world:

The global impacts of climate-related hazards are enormous. *“Over the last two decades (1988-2007), 76% of all disaster events were hydrological, meteorological or climatological in nature; these accounted for 45% of the deaths and 79% of the economic losses caused by natural hazards. The real tragedy is that many of these deaths can be avoided.”*¹¹ Moreover, during the period 2000-2008¹², more than 220 million people were victims (deaths plus people affected) of the yearly 360 climate-related disasters. MunichRe, a large global re-insurance company which categorizes disasters on a scale of

1-6, has shown that the number of Category 5 events called devastating catastrophes with more than 500 deaths and/or overall losses of more than \$US 500 million, has increased from 5-15 events per year in the 1980's to 15-25 events per year in the period 1990-2005 to 28-41 events per year in the 2006-2008 period (2008 had 41 devastating catastrophes, the largest number ever).¹³ Floods (44%) and storms (27%) (including hurricanes, typhoons, tornadoes, mid-latitude winter storms) are the most frequent events. The number of weather-related major disasters, which have overwhelmed communities, has risen substantially since the 1960's. With this increasing burden, the economic and social systems of developing countries are being stressed and the possibility of state failures has become more likely. Munich Re has reported that *"In view of continued global warming, we anticipate a long-term increase in severe, weather-related natural catastrophes."*¹⁴ Insured losses caused by weather-related disasters have increased by about two percent per year since the 1970s and, since the 1990s, total costs associated with extreme weather events have averaged around US\$60 billion annually.¹⁵ Although these figures are staggering, both insurers and scientists expect that climate change will bring more frequent and intense extreme weather events, potentially resulting in more costly disasters in years to come.

While these hazardous events have clear impacts on all countries, their impacts on developing countries are larger¹⁶. Among the key findings and recommendations of the UN ISDR Global Assessment Report on Disaster Risk Reduction-2009¹⁷ were:

- *Global disaster risk is highly concentrated in poorer countries with weaker governance.*
- *Weather-related disaster risk is expanding rapidly both in terms of the territories affected, the losses reported and the frequency of events.*
- *Climate change is already changing the geographic distribution, frequency and intensity of weather-related hazards and threatens to undermine the resilience of poorer countries and their citizens to absorb and recover from disaster impacts.*
- *The governance arrangements for disaster risk reduction in many countries do not facilitate the integration of risk considerations in development.*

The German Advisory Council on Global Change¹⁸ concluded that *"without resolute counteraction, climate change will overstretch many societies' adaptive capacities within the coming decades"* which could result in destabilization and violence, jeopardizing national and international security to a new degree. They used the term climate-induced conflict constellations or *'hotspots'* and identified four specific climate-induced types, namely: degradation of freshwater resources; decline in food production; increase in storm and flood disasters; and environmentally induced migration. The recent events in Haiti bring these issues to the forefront – noting that Haiti has been also devastated by 4 hurricanes in the past few years. The important links between climate change and human health was stated as: *"Climate change is the biggest global health threat of the 21st century"*¹⁹ This is particularly the case in Africa and south Asia where estimated climate change death rates per million people are at least 40-80 and in much of south and central Africa in the 80-120 deaths per million people.²⁰

International framework for climate governance:

The United Nations Framework Convention on Climate Change (UNFCCC – the Climate Convention)²¹ was signed at the 1992 Earth Summit by most government leaders including Prime Minister Brian Mulroney (assisted by his then Environment Minister Jean Charest). The Climate Convention was ratified by Canada and it formally entered into force in 1994. The objective of the Climate Convention is in Article 2: “... *the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure food production is not threatened and to enable economic development to proceed in a sustainable manner.*”

Global carbon dioxide emissions from fossil fuels were nearly 40% higher in 2008 than those in 1990 and are rising at an annual rate for this century that is over three times higher than the annual rate in the 1990's. At the 2009 G8-G20 meeting, the leaders of the Major Economies Forum on Energy and Climate²² agreed that:

- *We recognize the scientific view that the increase in global average temperature above pre-industrial levels ought not to exceed 2 degrees C.*

Because global mean temperature has already increased by 0.7°C, there is only 1.3°C left to go and for realistic emissions scenarios, the IPCC²³ has projected a warming of 0.2°C per decade for the next 3-4 decades – a further warming of 0.6-0.8°C. Hence, unless there are dramatic reductions and soon, the 2°C target will be exceeded. And recent re-analyses²⁴ of the growing literature has led to the conclusion that smaller increases in global mean temperature (i.e., less than 2°C) are now estimated to lead to significant or substantial consequences. The selection of the 2°C target was based in significant ways on the impacts of climate change on global human health.

The UNFCCC Conference of Parties (CoP 15) was held in Copenhagen in December 2009. The outcome was not a global goal in terms of emission reductions but instead basically only side agreement called the Copenhagen Accord²⁵ which was “*noted*” by the CoP. The assessment of the Climate Group²⁶ is that having the US, China, India and other major developing countries for the first time signing up to a joint climate agreement and making unconditional national pledges towards the agreed target of limiting average global temperature increase to 2°C or less are good steps forward. In addition, the Accord includes a developed country commitment to provide US\$30 billion of short-term funding through to 2012, and US\$100 billion per annum of long-term funding by 2020, although no information is given on where the money will come from. The Accord also does not include an emission reduction goal for either 2020 (for developed countries) or 2050 (for all countries). There is also no timetable for concluding a legally binding agreement. The Accord, as a side agreement of the UNFCCC, leaves uncertainty over the future of UNFCCC process. The last paragraph of the Copenhagen Accord calls for an assessment to be completed by 2015, to include consideration of strengthening the Accord to address limiting temperature rises to 1.5 °C. Overall the Accord represents an important political step but is conditional on immediate, concrete and ongoing commitment from all major economies beginning in early 2010.

Canada and the UNFCCC

According to Environment Canada²⁷, total greenhouse gas emissions in Canada in 2007 were about 26% above the 1990 total and 33.8% above Canada's Kyoto target. The Government of Canada has now stated that its target is a commitment to reducing Canada's total greenhouse gas emissions by 20 per cent from 2006 levels by 2020 and by 60 to 70 per cent by 2050²⁸. The 20 per cent reduction from 2006 levels by 2020 corresponds to about 3% reduction compared to the internationally agreed reference year of 1990 and is a much weaker than the Kyoto Protocol target.

Canadians collectively seem to understand the threat of climate change. When surveyed²⁹ about their perceptions of the threats to vital Canadian interests in the next 10 years, half of Canadians say climate change is a critical threat and another 30% said it was an important if not critical threat. This makes climate change the most important threat in the views of Canadians. This is especially significant when weighed against more traditional security threats. For instance, while climate change remains of high concern, *“terrorism and potential epidemics have almost disappeared from Canadians' radar screen.”* Canadian are now also seeing climate change and its relationship to their health: *“Almost half of Canadians see what they believe to be evidence of climate change in their own community and believe it already poses a significant risk to their own health or that of their families, or will so in the future.”*³⁰

Canada's role in international negotiations has been the subject of much criticism³¹ and Canadians when polled, seem chagrined over status as *climate-change dawdlers*, *“Poll finds three quarters are embarrassed that country hasn't taken international lead on cutting greenhouse gases”*³² a more positive approach would seem appropriate.

International science – bridging the disciplines and issues

Although international scientific programs have traditionally focussed on issues of a fairly narrow disciplinary base, there has been in the past decade or less some significant movements towards interdisciplinary approaches addressing linked issues. For example, the International Council for Science (ICSU), the International Social Sciences Council³³ and the United Nations International Strategy for Disaster Reduction (ISDR)³⁴ are co-sponsoring a new international research initiative - Integrated Research on Disaster Risk (IRDR) with a mandate to address the challenge of natural and human-induced environmental hazards. Focusing on disaster risk reduction, the research will be aimed at integrated risk analysis, including consideration of relevant human behaviour and decision making processes in the face of risk. The IRDR research program fulfills the need for an international, multidisciplinary and an all hazard research program emphasized in the Hyogo Framework for Action. The added value of such a research program lies in its coupling of natural sciences' examination of hazards with socio-economic analysis of vulnerability and mechanisms for engaging the policy decision making process. The IRDR will draw upon the expertise and scientific outputs of many partners in research with the Earth System Science Partnership (ESSP)³⁵. The ESSP which links, for example, the World Climate Research Programme and the International Human Dimensions (of Global Environmental Change) Programme, initiated in late 2006 a new project Global Environmental Change and Human Health. For all, capacity building efforts are critical in developing countries and the Global Change System for Analysis Research and Training [START]³⁶ project, which builds research networks in

Africa and Asia, is expanding its mandate to include hazards-disasters (including the climate-related events) and health studies.

Seizing the 2010 Opportunity

In 2010 Canada will host the leaders of the G8 and G20 countries for major policy discussions. The book *Collapse*³⁷ - *how societies choose to fail or succeed* examines how climate-related events, and other factors, have led to the evolution and development of societies and, in some cases, to their collapse. The lessons of *Collapse* are particularly relevant today. The 2010 meetings of the G8 and G20 provide opportunities where the international community moves forward this agenda. Canada has both the opportunity and the challenge to be a leader on addressing global climate change.

In 2009, G8 Leaders³⁸ discussed the interlinked challenges of the economic crisis, poverty, climate change and international political issues. The discussion on health issues,³⁹ four themes related to achievement of the health-related Millennium Development Goals, strengthening health systems for universal access, promoting health as an outcome of all policies, and increasing the quantity and quality of development aid in the context of existing G8 commitments and further advancing G8 accountability. It was noted that these are closely linked and that better health is linked to other areas of G8 concern, including climate change.

The 2010 opportunity should build upon these linkages of climate change and global health. The Copenhagen Accord, recently agreed to among essentially a critical subset of the G20 includes the identification of adaptation to the adverse effects of climate change, which must include the implications for health. The Accord puts emphasis on “*reducing vulnerability and building resilience in developing countries, especially in those that are particularly vulnerable, especially least developed countries, small island developing States and Africa.*” Again health issues need to be in the forefront of these approaches.

As noted above the Accord includes commitments of funding and also broke an earlier deadlock on monitoring, reporting and verification. Perhaps this funding and the agreement on monitoring, reporting and verification can be extended to health impact reduction and agreements on health. Drexhage⁴⁰, an experienced international negotiator, suggests that Canada needs to demonstrate a willingness to accept its responsibility to make aggressive emission reductions. As Chair of forthcoming G8 and G20 summits, where climate change will be important agenda items, the Canadian government should be seen to be acting in a positive way to influence climate-change decisions, in a co-ordinated and coherent manner and taking advantage of the climate change – health links to further an agenda that is clearly important to Canadians and the global community. Climate change is an issue of intergenerational and international equity and ethics. We need to take action for our children and grandchildren and those around the globe.

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