

## POLICY BRIEFING - CLIMATE CHANGE AND MANAGEMENT

# Addressing human dimension of climate change

Through the advancement of knowledge and the development of talent on environmental issues, the social sciences and humanities research community is making a fundamental contribution in implementing Canada's Science and Technology strategy.



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In the context of global financial crises, geo-political restructurings, and cultural transformations, society's ability to adapt to climate change brings an increasingly complex mix of opportunities and challenges.

Adaptation is fundamentally about people—how we live and how we interact with each other in the changing world around us. Adapting to climate change successfully requires an understanding of political, social, cultural and economic issues that researchers in the social sciences and humanities are addressing with increasing intensity both on campuses and with partners across the private, public, and not-for-profit sectors.

Through the advancement of knowledge and the development of talent on environmental issues, the social sciences and humanities research community is making a fundamental contribution in implementing Canada's Science and Technology strategy.

The S&T strategy identified the social and economic dimensions of research on the Environment as a key priority and, as a result, in Budget 2008 the Government of Canada allocated \$12-million per year to SSHRC to increase funding for research on Canadian environmental issues, as well as on northern communities. This research is focused on four key themes—climate change impact, mitigation and adaptation; energy and natural resources; water; and the environmental impact of new technologies—and is contributing to an enhanced understanding of, and practical solutions for, pressing Canadian environmental and sustainability issues, particularly on the interactions and interdependencies between the environment, the economy, society and culture.

With forestry, agriculture and energy being major contributors to Canada's balance of trade, protection of the country's natural

resources and its environment is key to the continued growth of Canada's economy and the well-being of its people. The economic implications and consequences of climate change are a focus of G. Cornelis van Kooten, Canada Research Chair in Environmental Studies and Climate Change at the University of Victoria. Professor van Kooten is a renowned expert on the economic considerations of climate change on forestry and trade and he is creating cost-effective policy responses that will inform Canadian decision-makers.

Nearby, the Coastal Communities Project, a SSHRC-funded Community University Research Alliance, brings together researchers from the University of British Columbia with community leaders to address challenges of community development in coastal B.C. The project includes partnerships with the leadership of six civic and nine First Nation communities. Together they are assisting in the adaptation of local knowledge about environment and resource usage into sustainable strategies for development.

As the principal investigator for the Integrated Management Node of the Ocean Management Research Network, Fikret Berkes, Professor and Canada Research Chair Natural Resources Institute at the University of Manitoba has contributed to government policy plans for implementing integrated coastal management in the North. His study of the human dimension of sustainability in oceans management has great significance for the seven million Canadians who live in coastal communities and for the ocean-based industries that generate over \$22-billion annually in direct economic activity and contribute more than \$83-billion to international trade.

McGill University geographer, James Ford, is examining climate change vulnerability & adaptation in Arctic regions. He is investigating the effects of climate change on Inuit communities especially the impact on traditional food sources like hunting and fishing. He has discovered that about 64 per cent of the Inuit population in Igloolik, a small community near Baffin Island in Nunavut, suffers from food insecurity. By working with territorial and federal governments,

Ford's research is contributing to better social outcomes and health for Canada's Inuit people.

Brenda Parlee, Canada Research Chair in Social Responses to Ecological Change, at the University of Alberta, is tackling tough questions related to traditional knowledge, practices and rules that help northern communities learn and respond to environmental change. In examining impact assessments, she has created culturally appropriate indicators and monitoring systems that are being integrated in the planning and management of large scale development projects in the Arctic.

Stewart Elgie at the University of Ottawa chairs the Sustainable Prosperity Network that brings academics from across a range of disciplines together with leaders from business, government and civil society, to develop market-based environmental solutions. By addressing global problems like climate change, water pollution and forest conservation through profit-generating policies and programs such as green taxes and emissions trading, the Network is creating new markets and job opportunities that are positioning Canada to be a leader in the 21st century green economy.

At the University of Saskatchewan, geography professor Bram Noble is investigating the cold rush in the Canadian North—the search for oil and gas in what is believed to be the world's largest remaining reservoir of fossil fuels. Through his work in strategic environmental assessments (SEAs), which consider the perspectives of local communities, government, industry and academics while assessing the long-term environmental impacts of northern fossil fuel development in the Beaufort Sea region, Noble is contributing to the creation of environmentally sustainable energy policies for Canada.

At SSHRC, in collaboration with the academic, public, private and not-for-profit sectors, we are increasing knowledge and awareness of Canadian environmental and sustainability issues; increasing the number of highly qualified personnel with expertise on environmental issues; and increasing the application of research knowledge in decision-making and best practices in the public and private sectors, communities and civil society. By aspiring to become an environmental leader, Canada will maintain its place in the 21st century as one of the world's most successful societies.

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# Federal government's Northern Canada strategy should focus on climate change, says Arctic expert

The North is on the front lines of global climate change, says Michael Byers.

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Prof. Byers said Canada must take a multimodal approach to climate change in Canada's North that includes mitigation measures to try and slow the affects of climate change, as well as strategies for dealing with changes that are already happening.

"We have to do everything. We have to do mitigation, we have to do emissions reductions all together, and all urgently and to the full extent of our abilities," he said. "Even if we somehow manage to reduce our emissions by 50 per cent or by 80 per cent, we would still see ongoing climate change for some decades now. There's a timeline involved in a lot of the feedback loops. Mitigation and adaptation are absolutely necessary. We do need to recognize that pretty serious adaptation is going to have to take place."

Andre Costopoulos, an anthropology professor at McGill University who studies human adaptation, said that while historically humans were able to adjust to dramatic changes in their environment, the way societies are organized today means that the changes brought on by climate change will have catastrophic implications. Recently the U.S. military has been studying the possible security implications of climate change that could lead to violent storms, drought, forest fires, pandemics, and mass migration.

"If we have a few centimetres of sea level change it's going to be a major catastrophe because we're tied to particular resource bases that happen to be on the coasts in many cases, and we have private property, and you can't just pick up and go somewhere else," said Prof. Costopoulos. "So because of the way we're organized now industrially, socially, politically, in terms of subsistence, some of the changes that we're facing, that are relatively small changes at the scale of environmental change that humans have faced in the past, are going to have very, very, serious implications for us."

Prof. Costopoulos said currently the dialogue is mostly centred on how to achieve emissions reductions, but that as the affects of climate change take

hold there is a need for a greater focus on adaptation strategies. He said there has been a reluctance among some in the environmental movement to discuss adaptation because there's a fear it could embolden those who would advocate not doing anything to reduce emissions.

"Politically it's difficult to discuss adaptation for that reason, because some people feel it gives an excuse for opponents of mitigation to say, 'Let's ignore the whole thing, it's going to change anyway,'" he said.

Nellie Cournoyea, chair and CEO of the Inuvialuit Regional Corporation, and a member of the board of Inuit Tapiriit Kanatami, said there is a sense of frustration among Inuit that although they are not responsible for the causes of climate change, they bare a disproportionate amount of the effects. One of the communities in Ms. Cournoyea's region is Tuktoyaktuk, which was recently featured in a series by the Associated Press for a series on how climate change is affecting the Arctic in anticipation of the United Nations Climate Change Conference, which will be held in Copenhagen, in December. Tuktoyaktuk is literally sinking, with the shoreline eroding at a pace of about two-metres per year, affecting the traditional way of life of its residents.

"There is very little that happens in the Arctic that is contributing to global warming or climate change. The after-affects of other people's actions, in other parts of the country is causing climate change and global warming that effects the Arctic. There's very little that we can do," she said.

Ms. Cournoyea said too often when the federal government, or environmental organizations are talking about what's needed in the Arctic they don't take into account the people who live there. She said in order for people living in Northern communities to adapt to the affects of climate change local institutions must be strengthened, and the local leadership must be brought more into the decision-making process.

"They have to put the focus on the people who are up here. Right now we get tacked onto a lot of initiatives and only when something goes wrong or something gets missed all of a sudden we're very important. But we're living up here, we make our life up here, and we live here all year round, not in the summer, or not because we just have a job, we live here because it's our life."

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