

Canadian Climate Forum

Responses

1. Economic Recovery and Growth

Given the current climate of federal and global fiscal restraint, what specific federal measures do you feel are needed for a sustained economic recovery and enhanced economic growth in Canada?

Canada has been overtaken by a new environmental reality. This is having a major economic impact on all sectors of our economy: transport, energy, resource development, health, agriculture, the financial sector, etc. Measures are needed to adapt to changing climatic conditions, to foster innovation to deal with its challenges, and to benefit from any associated advantages. This requires us to have information on the changes and how they are evolving (sustained monitoring, data management, analysis and communication), skilled people, state of the art facilities, links with the work of other world experts; and a supportive policy environment. We recommend : • Long-term support for major interdisciplinary and intersectoral research consortia (e.g. 15 years) • Expanded training of students in both basic and applied research, to ensure Canada has the intellectual and theoretical base to a) generate new ideas and move them through the continuum of research to commercial or other applications; and b) the capacity and nimbleness to respond to new needs and opportunities. • Measures to ensure policy decisions are underpinned by facts (i.e. are based on evidence).

2. Job Creation

As Canadian companies face pressures resulting from such factors as uncertainty about the U.S. economic recovery, a sovereign debt crisis in Europe, and competition from a number of developed and developing countries, what specific federal actions do you believe should be taken to promote job creation in Canada, including that which occurs as a result of enhanced internal and international trade?

See answer to question 3

3. Demographic Change

What specific federal measures do you think should be implemented to help the country address the consequences of, and challenges associated with, the aging of the Canadian population and of skills shortages?

Canada requires a vigorous research environment to attract and retain skilled workers: in other words, to train and ensure employment of graduates or early career professionals, and to retain experienced senior scientists. At the same time, however, job prospects, even in some key sectors, are subject to cyclic market and policy trends that can push graduates into alternate careers where they lose their specialized skills. The popular assumption that experience and skills can be imported ignores a) the reality of keen international competition for skilled knowledge workers b) current barriers to accreditation of skilled immigrants; and c) loss of Canadian research leaders to countries where conditions and research support are more favourable. Particular attention is required in sectors that underpin Canada's economy and are of critical importance to its future: meteorology, oceanography, climatology, hydrology etc. Lack of funding and career prospects for young scientists now will lead to critical shortages in the near future. (See also Question 5).

4. Productivity

With labour market challenges arising in part as a result of the aging of Canada's population and an ongoing focus on the actions needed for competitiveness, what specific federal initiatives are needed in order to increase productivity in Canada?

Canada encompasses a broad range of environmental conditions, some of which are changing rapidly and require federal measures to minimize negative impacts and promote opportunities. Actions to increase productivity must include removal of barriers to productivity and innovation; as well as support for development of innovative solutions and new products or services. Federal initiatives are also required to safeguard existing advantages. • Introduce policies that provide stability for major research facilities, to avoid breaks in productivity, in data series and research output, and to encourage visiting scientists. One example is the Polar Environment Atmospheric Research Laboratory, Canada's unique, fully-equipped high arctic research facility, which ended year round operations earlier in 2012 due to the termination of several federally-funded support programs. Results generated at PEARL have raised Canada's profile internationally, confirmed it as a leader in research on wind-borne pollution and ozone depletion, and produced a cohort of highly skilled knowledge workers.

5. Other Challenges

With some Canadian individuals, businesses and communities facing particular challenges at this time, in your view, who is facing the most challenges, what are the challenges that are being faced and what specific federal actions are needed to address these challenges?

All weather dependent businesses are facing particular challenges due to changing weather trends and the recurrence and ferocity of extreme events. Weather-dependent businesses account for over \$100 billion per year of Canada's economy. For example: • The two worst years (2001-2002) of Canada's last major drought resulted in a loss of \$5.8 billion in Gross Domestic Product; loss of over 41,000 jobs; and a negative or zero net farm income for several provinces, for the first time in 25 years (Statistics Canada, 2003). Agricultural production over Canada dropped by an estimated \$3.6 billion. • In the Canadian insurance industry, water claims have overtaken those for fire and theft. Catastrophic events in 2011 cost the industry \$1.6B and almost \$1B in each of the previous two years. Most insured losses were caused by extreme weather events - and these events are increasing in frequency and severity. • The Canadian Medical Association has estimated that the economic costs of air pollution in 2008 topped \$8 billion. By 2031, it expects the costs will be over \$250 billion. • Low water levels affect commercial marine operations at major ports such as Montreal, which is at 'Seaway alert' level, requiring lightening of loads. A container ship must leave 5 containers behind on the dock for each cm. of draft lost to low water levels. This contributes to higher shipping costs. This year water levels are at their lowest in a decade – and among the lowest in a century. • Up to date information on changes in ground and melt water supply is essential to Alberta's oil and gas industry. Suncor's oil sands operations require 1.25 cubic meters of river water and groundwater to produce one cubic meter of oil. In 2011 Suncor withdrew 27.7 million cubic meters of water from the Athabasca River for its mining operations, and a total of over 135 million cubic meters of water for all its operations – some of which is returned to the river after use. With changing climatic conditions the volume of meltwater from mountain snowpack and glaciers, and from rainfall, is changing. This will affect industrial operations and the downstream water available to farmers and towns. Other challenges arise from changes in global weather patterns (e.g. product shortages/gluts; impacts on supply chains; environmental refugees) and national/regional weather (e.g. forest fires and drought; Fraser river floods; water pollution in Saskatchewan; transportation in the North, heat waves in Ontario). Federal actions are urgently needed to anticipate and to adapt to rapidly changing conditions. We recommend: • Sustained support for the generation and management of new information (research) on Canada's weather and climate, including: Arctic

weather and permafrost conditions, water security, weather patterns; extreme events; urban temperatures and other environmental conditions. • Federal measures to ensure timely uptake and use of this information for revised construction standards, transportation, business decisions, strategic planning, health service planning, northern infrastructure, emergency preparedness etc. • Support for knowledge translation – the analysis of data from different sectors for the development of policy options for decision makers. • Actions to ensure government decisions and policies have the benefit of independent scientific and technical advice on options. As stated by Charles Darwin, “it is not the strongest that survives; it is the one most adaptable to change”. We are on a trajectory of environmental change that can no longer be stopped. Federal actions are needed to anticipate and to stimulate adaptation to these changes and their likely impacts, to ensure Canada’s economic and social advantage and the country’s economic health in the future.