

**INTERSESSIONAL PANEL OF THE UNITED NATIONS COMMISSION
ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)**

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Contribution of Canada

to the CSTD 2018-19 priority theme on ‘The role of science, technology and innovation in building resilient communities, including through the contribution of citizen science’

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United Nations Commission on Science and Technology for Development (CSTD)

Theme 2: The role of science, technology and innovation in building resilient communities, including through the contribution of citizen science

Canadian contribution

1. Can you give examples of projects/policies in your country aimed at using science, technology and innovation (STI) to build resilient communities? What are the main challenges confronted while trying to implement these projects/policies in your country or region?

A) Canada's Feminist International Agenda – Action Area on Environment and Climate Action

Canada is committed to helping the most vulnerable communities adapt to climate change, mitigate its impacts and, by leveraging private-sector investment, facilitate the transition to a low-carbon economy. Canada supports women in order to increase the resilience of their crops and their access to water and other natural resources, as well as their participation in environmental decision making and in the renewable energy sector.

Communities around the world, particularly the poorest and most vulnerable, are experiencing the destabilizing effects of climate change in dramatic and costly ways. With climate change comes a wide range of challenges: rising sea levels, floods, heat waves, droughts, desertification, water shortages and the spread of tropical and vector-borne diseases (diseases transmitted by one living organism to another, such as through a mosquito bite).

Women and girls are particularly at risk when it comes to the destabilizing effects of climate change. The scarcity of resources in the wake of these challenges—in particular, the lack of clean drinking water—coupled with a gender-based imbalance in household responsibilities, means that climate change has a disproportionate impact on women and girls at the household level.

Further, women often do not have sufficient funds to cover weather-related losses, nor do they have equal access to technologies that can help families and communities adapt to climate change. When women and girls have better access to climate-resilient resources and technologies, they are able to devote more time to the activities—such as education, paid work, political and public participation, and leisure activities—that enhance the quality of life for entire communities.

It is especially important—as individuals with a vested interest in mitigating the effects of climate change—that women and girls be given an active role in designing and developing strategic responses to climate change.

Canada is committed to combatting climate change and its impacts (SDG 13: Climate Action). That is why Canada is providing \$2.65 billion in climate finance to help the most vulnerable countries adapt to and mitigate climate change and make the transition to low-carbon, climate-resilient economies.

B) Building resilience to a changing climate

The [Pan-Canadian Framework on Clean Growth and Climate Change](#) is Canada's plan – developed with the provinces and territories and in consultation with Indigenous peoples – to meet Canada's emissions reduction targets, grow the economy, and build resilience to a changing climate.

C) Hazards and Emergency Preparedness for Community Resilience

Canada faces a number of natural hazards, which can vary from region to region. Other hazards can also trigger emergencies that may affect the population. These emergencies could be bomb threats, chemical spills or infectious disease outbreaks. Knowing what to do is an important part of being prepared and building resilience. Canada's [Get Prepared](#) website provides information about risks in various regions and how to prepare for different situations.

2. Can you provide examples of policies/projects/initiatives aimed at using/promoting citizen science to build resilient communities? Do these projects incorporate a gender approach? What are the main challenges confronted in implementing these projects?

A) Citizen Science in Canada

Citizen science, meaning public engagement in scientific research, has undergone a tremendous expansion in recent years, in part due to new technologies, social media, and an increased awareness of science's integral role in addressing global challenges and in economic growth.

The Government of Canada is seeking to foster citizen science within the national research eco-system. Currently, the [Citizen Science Portal](#) hosts links to twenty citizen science projects across Canada; the Government of Canada Science twitter account regularly highlights ways for Canadians to get involved in citizen science projects, and promotes the #ScienceAroundMe and #LaScienceEtMoi hashtags for use across the platform. Canada is host to citizen science projects that focus on nature as a way to help protect forests, oceans, rivers and prairies.

Community-collaborative research is happening across Canada to help local communities in confronting the conservation challenges of the future. These include identifying and understanding the appearance of unusual flora and fauna, which can affect traditional hunting and local eco-systems. They also demonstrate the vital role

communities and individuals can play in supporting government efforts to recover species at risk.

Citizen science projects in Canada exist along a spectrum. The first type is on-way, tapping into already active networks of people, and obtaining data through websites and apps: Dr. Jeremy Kerr, Professor of Biology at the University of Ottawa runs Bumble Bee Watch, which encouraging people to take pictures and upload the data onto their platforms for scientists to use in their analytical research. In return, public users learn more about the different types of bees, and what they can do to increase the number of bees foraging in their communities.

The second is citizen-facilitated science, where the public gives researchers access to their property or community, and in turn are engaged in the project, increasing their awareness of science and scientific literacy. The work of Dr. Elizabeth Gow, NSERC Postdoctoral Fellow at the University of Guelph, who studies the interaction between domestic cats and wild birds through setting up field cameras in suburban homeowners' backyards, is an example of this type of citizen science.

The third is an active team approach, or collaborative community science, where community members conduct science alongside researchers, and give input to the design of the research project through local or traditional knowledge. Dr. Jean Lieppert Polfus' research involves conducting genetic and traditional knowledge studies on caribou populations in partnership with the Sahtú Renewable Resources Board and five Renewable Resources Councils in the Sahtú Region, North West Territories, Canada. Community members are acknowledged as co-authors on her academic papers as she builds a comprehensive understanding of the identities and relationships among caribou populations and Dene people in Canada's north.

Canada is also beginning to explore the extent to which citizen science can contribute to building resilient communities.

B) International Development Projects

Canada has many international development projects that build resilience, use of innovative technologies and citizen participation. The following link provides a tool to search Global Affairs Canada's international projects and download information as open data files:

<http://w05.international.gc.ca/projectbrowser-banqueprojets/?lang=eng>

3. What are the actions that the international community, including the CSTD, can take to leverage the potential of STI in building resilient societies, including through the contribution of citizen science? Can you give any success stories in this regard from your country or region?

Some actions that the international community could take to leverage the potential of STI in building resilient societies, including through the contribution of citizen science:

- Building capacity of communities and citizen to collect, use and analyse data;
- Improving early warning systems for weather, agriculture, temperature;
- Creating joint ventures with the insurance sector;
- Including traditional knowledge in decision-making, whereby citizens have observed changes in the climate and its consequences, but these have not been documented; and
- Supporting new concepts such as environmental services in order to increase community resilience to natural disasters, and other threats such as water shortages.

4. Could you suggest some contact persons of the nodal agency responsible for projects/policies, related to resilient communities, STI and the citizen science as well as any experts (from academia, private sector, civil society or government) dealing with projects in this area? We might contact them directly for further inputs or invite some of them as speakers for the CSTD inter-sessional panel and annual session.

Please contact Daniel Dufour (daniel.dufour2@canada.ca) for Canada's science policy matters.

5. Do you have any documentation, references, or reports on the specific examples on the priority theme in your country or region?

Canada's Feminist International Assistance Policy

http://international.gc.ca/world-monde/issues_development-enjeux_developpement/priorities-priorites/policy-politique.aspx?lang=eng

Government of Canada's official source for science and technology information:

<http://science.gc.ca/eic/site/063.nsf/eng/home>