

Ninth Annual National Roundtable on Disaster Risk Reduction

2018

Advancing and Empowering Disaster Risk Reduction in Canada

Canada's Platform for Disaster Risk Reduction

CONFERENCE REPORT 2018

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Emergency management partners in collaboration with the Government of Canada



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Canada's Platform for Disaster Risk Reduction

In June 2009, Canada's Platform for Disaster Risk Reduction (Canada's Platform) was established as part of the Government of Canada's commitment to deliver on the Hyogo Framework Accord, and beginning in 2015, the domestic implementation of the Sendai Framework for Disaster Risk Reduction (2015-2030) ([Sendai Framework](#)).

The objectives of Canada's Platform are to: (1) develop broad awareness and an integrated approach to disaster risk reduction; (2) strengthen stakeholder relationships across whole-of-society; (3) provide a coordinating mechanism for disaster risk reduction activities across sectors; and (4) support stakeholders with relevant policy, program and research information. In order to attain these objectives, Canada's Platform brings together stakeholders from a broad cross-section of society, including the public sector, the private sector, academia, non-governmental and not-for-profit organizations, professional associations, and Indigenous peoples.

Through Canada's Platform, the Government of Canada demonstrates an ongoing commitment toward building important relationships with stakeholders and establishing coordinated leadership in disaster risk reduction in order to increase the safety, security and resilience of Canadians. To facilitate whole-of-society disaster risk reduction discussions, Canada's Platform hosts Annual National Roundtables on Disaster Risk Reduction that are free of charge and open to the public. Nine Roundtables have occurred to date:

- October 26, 2010 — Fredericton, New Brunswick
- October 18, 2011 — Ottawa, Ontario
- October 23, 2012 — Vancouver, British Columbia
- November 5, 2013 — Regina, Saskatchewan
- October 21, 2014 — Toronto, Ontario
- November 2-3, 2015 — Calgary, Alberta
- November 21-22, 2016 — Montreal, Quebec
- October 23-24, 2017 — Halifax, Nova Scotia
- October 29, 2018 — Vancouver, British Columbia

Program

Timing (PT)	Activity
8:00 – 9:00	Registration
9:00 – 9:20	Opening of the Roundtable Dr. Michel C. Doré, Associate Professor, Université du Québec à Montréal Ms. Hanna Guenoun, Regional Director, Prairies and Northwest Territories, Public Safety Canada Elders Gail Sparrow and Morgan Guerin, Musqueam Nation Elder Margaret George, Tsleil-Waututh Nation
9:20 – 9:30	Opening Remarks by Federal Representative Ms. Karen McCrimmon, Parliamentary Secretary to the Minister of Public Safety and Emergency Preparedness
9:30 – 9:40	Opening Remarks by Provincial Representative Ms. Becky F. Denlinger, Deputy Minister, Emergency Management British Columbia
9:40 – 10:20	Keynote Address Mr. Carlos Castillo, Associate Administrator for Resilience, Federal Emergency Management Agency (FEMA), Government of the United States of America
10:20 – 10:50	Health Break and Networking (Demonstration of GCcollab Tool)
10:50 – 11:00	Climate Change and Extreme Weather Scene-Setter Ms. Dilhari Fernando, Director General, Policy, Planning and Partnerships, Meteorological Service of Canada, Environment and Climate Change Canada
11:00 – 12:00	Climate Change and Extreme Weather Risk: How Do We Engage the Capital Markets? Dr. Blair Feltmate, Head, Intact Centre on Climate Adaptation, University of Waterloo Mr. David McGown, Senior Vice-President, Strategic Initiatives, Insurance Bureau of Canada Ms. Susan McGeachie, Global Director, Climate Change and Sustainability Services, Hatch Ltd. Ms. Tania Caceres, Principal, RiskNexus
12:00 – 13:00	Lunch and Networking

13:00 – 14:00	<p>Cross-Sector Leadership in Advancing and Empowering Disaster Risk Reduction</p> <p>Ms. Sarah Sargent, Vice President, Canadian Operations Programming, Canadian Red Cross</p> <p>Ms. Katie McPherson, Chief Resilience Officer, City of Vancouver, 100 Resilient Cities Initiative</p> <p>Ms. Jessica Shoubridge, Principal, Thrive Consulting; and Director, BC Chapter Earthquake Engineering Research Institute</p> <p>Mr. David Diabo, Assembly of First Nations</p> <p>Mr. Nigel Deans, Youth Representative, Research Assistant with ResiliencebyDesign Laboratory</p>			
14:00 – 14:30	<p>Circles of Influence and Disaster Risk Reduction</p> <p>Mr. Arjun Vinodrai, Director, Strategic Policy, Emergency Management and Programs Branch, Public Safety</p> <p>Dr. Michel C. Doré, Associate Professor, Université du Québec à Montréal</p>			
14:30 – 15:00	Health Break and Networking (Demonstration of GCcollab Tool)			
15:00 – 16:10	<p>Circle of Influence Session 1: Private/Financial Sector</p> <p>Ms. Chris Rol, Insurance Bureau of Canada</p> <p>Dr. Murray Journey, Geological Survey of Canada</p>	<p>Circle of Influence Session 2: Youth Engagement</p> <p>Ms. Tiffany Hill, Research Assistant, Royal Roads University</p>	<p>Circle of Influence Session 3: Indigenous Emergency Management</p> <p>Mr. David Diabo, Assembly of First Nations</p> <p>Mr. Dan Peters, Congress of Aboriginal Peoples</p> <p>Dr. Laurie Pearce, Justice Institute of British Columbia</p>	<p>Circle of Influence Session 4: Climate Change Adaptation</p> <p>Ms. Monica Harvey, Natural Resources Canada</p> <p>Mr. Chris Jennings, Natural Resources Canada</p> <p>Dr. Jodi Manzhenezi, Northern Alberta Institute of Technology</p>
16:10 – 16:40	Reporting Back from Circles of Influence Sessions			
16:40 – 17:00	<p>Closing Remarks</p> <p>Mr. Patrick Tanguy, Assistant Deputy Minister, Emergency Management and Programs, Public Safety Canada</p> <p>Elder Syexwaliya, Squamish Nation</p>			

Summary of Proceedings

The Ninth Annual National Roundtable on Disaster Risk Reduction

Sheraton Vancouver Wall Centre
Vancouver, British Columbia
Monday, October 29, 2018
9:00 – 17:00 Pacific Time

Opening of the Roundtable

The masters of ceremony for the event were Dr. Michel C. Doré, Associate Professor at the Université du Québec à Montréal and Co-Chair of the Steering Committee for Canada's Platform, and Ms. Hanna Guenoun, Regional Director for the Prairies and Northwest Territories with Public Safety Canada. Ms. Guenoun began by acknowledging that the land on which Roundtable participants were gathered belonged to the Coast Salish Peoples, in particular the Musqueam, Squamish, Stó:lō, and Tsleil-Waututh Nations. Elders Gail Sparrow and Morgan Guerin from the Musqueam Nation and Elder Margaret George from the Tsleil-Waututh Nation provided a joint traditional welcome.

After the national anthem, Dr. Doré and Ms. Guenoun introduced the Roundtable's theme, "Advancing and Empowering Disaster Risk Reduction in Canada." They outlined the objectives of the Roundtable, which were: to explore best practices in collaborating across sectors to advance disaster risk reduction; to empower existing networks to advance common goals; and to explore connections between disaster risk reduction and other related priorities like climate change adaptation, Indigenous emergency management and youth engagement. Finally, Dr. Doré noted that the Roundtable was co-located with the [15th Annual Symposium of the Canadian Risks and Hazards Network](#) and the [2018 Emergency Preparedness + Business Continuity Conference](#).

Welcoming Remarks by Federal and Provincial Representatives

Ms. Karen McCrimmon, Parliamentary Secretary to the Minister of Public Safety and Emergency Preparedness, provided remarks by video message on behalf of the Government of Canada. Ms. McCrimmon welcomed participants and acknowledged the impressive number of partners working on new and innovative approaches to disaster risk reduction and Sendai Framework priorities.

“We must do everything we can to empower anyone in our society who can contribute, both before and after disaster strikes.”

Ms. McCrimmon noted that these discussions could not be timelier in the face of disasters that are increasing in severity, frequency and cost. In addition to the Roundtable’s theme, which represented the Government’s desire for whole-of-society collaboration on disaster risk reduction, the Parliamentary Secretary noted that Public Safety Canada is working with partners on a number of important emergency management priorities, including: ongoing improvements to the [National Public Alerting System](#), a new Emergency Management Strategy for Canada to be unveiled in 2019, flood relief under the [National Disaster Mitigation Program](#) and a recently-announced two billion dollar investment in large-scale infrastructure climate resiliency projects under Infrastructure Canada’s [Disaster Mitigation and Adaptation Fund](#).

Ms. Becky F. Denlinger, Deputy Minister, Emergency Management British Columbia, provided welcoming remarks on behalf of the Government of British Columbia. Ms. Denlinger thanked participants for attending, noting that each of them represented a foundation for positive action. She also acknowledged that the Roundtable’s focus on climate change adaptation and Indigenous emergency management aligned well with provincial priorities.

Deputy Minister Denlinger mentioned that British Columbia experienced record-breaking flood and wildfire seasons in 2017 and again in 2018. In 2018, wildfires in the province burned 1.3 million hectares of land and affected every region, leading to widespread economic, health and psychological impacts. These wildfires, like most disasters, had a disproportionate impact on people with disabilities, on the elderly and those who are poverty-stricken, and on Indigenous peoples.

“Disaster risk reduction is a shared responsibility, and it is going to take all of us working together to make a positive impact.”

With the understanding that devastating floods and fires will continue to increase in severity, Ms. Denlinger announced that the provincial government officially adopted the Sendai Framework in October 2018 and mirrored the Government of Canada’s commitment to the [United Nations International Strategy for Disaster Risk Reduction](#). She noted that aligning the province’s emergency management framework with Sendai is an important step in fostering disaster risk reduction.

Keynote Address

Mr. Patrick Tanguy, Assistant Deputy Minister, Emergency Management and Programs Branch, Public Safety Canada, introduced the Roundtable's keynote speaker, Mr. Carlos Castillo, Associate Administrator for Resilience, FEMA. He noted that Canada and the United States had a long history of sharing resources when responding to disasters.

Mr. Castillo's address focused on recent reforms within FEMA to advance disaster risk reduction in the United States. Much like in British Columbia, the United States experienced record-breaking disasters in 2017 and again in 2018. Based on lessons learned from the 2017 Atlantic Hurricane Season and in order to prepare for future disasters, FEMA recently developed a three-pronged strategy that focuses on: (1) developing a culture of preparedness; (2) preparing the United States for catastrophic disasters; and (3) reducing the complexity of the Agency's programs.

To help advance this strategy, in October 2018, the President of the United States signed the [Disaster Recovery Reform Act of 2018](#). The Act codified a number of important changes to how FEMA approaches disasters, including the creation of the National Public Infrastructure Pre-Disaster Mitigation Grant Program (Grant Program). The Grant Program funds public infrastructure projects that increase community resilience before disasters. Previously, funding for pre-disaster mitigation grants relied on congressional appropriations that fluctuated from year to year. The new Grant Program is funded on a permanent basis as 6% of the money set aside for annual disaster costs under the Disaster Relief Fund. This ensures a more consistent funding stream for pre-disaster mitigation grants to reduce disaster risk in the United States.

FEMA recently created a new branch within the Agency called [FEMA Resilience](#). This branch amalgamated different parts of FEMA that focus on insurance, mitigation, preparedness, continuity and grant programs. Mr. Castillo highlighted some of the work of FEMA Resilience that supports the strategy. Based partly on the results of a study from the National Institute of Building Sciences, which indicated that on average every one dollar spent on federally-funded mitigation grants results in six dollars in future savings, FEMA developed a guide to help navigate available grants across all government Departments and Agencies in addition to streamlining investment under a draft [National Investment Mitigation Strategy](#).

FEMA Resilience is also working toward closing the insurance gap, or the difference between what is insured and what is insurable. Mr. Castillo contended that even though insurance is the best disaster recovery tool available, the United States

currently has the largest insurance gap among all countries globally. By 2022, FEMA aims to double the amount of flood insurance policies across the nation to 10 million. Mr. Castillo also noted a few other examples of FEMA Resilience’s work, including efforts to prepare the public and communities for disasters, and a new streamlined inspection process when providing damage assessments post-disaster.

Mr. Castillo then answered questions from Roundtable attendees. In response to a question about how to account for unaffordability when trying to close the insurance gap, Mr. Castillo noted that one approach would be to make insurance more cost-effective while another is to promote financial emergency management preparedness. To that end, FEMA recently developed an [Emergency Financial First Aid Kit](#).

In response to another question, Mr. Castillo elaborated on [FEMA’s Integration Teams](#) (FIT). The FIT program embeds FEMA employees with state, local, tribal and territorial partners to enhance FEMA’s customer service, the efficiency of the Agency’s program delivery and intergovernmental coordination. Currently, three States have agreed to be part of the FIT program and more are expected to join shortly. It was noted by Roundtable participants that implementing a similar program in Canada might be worthwhile in order to, for example, embed climate change adaptation experts in different departments at the federal and provincial level.

First Panel—Climate Change and Extreme Weather Risk: How do we Engage the Capital Markets?

To open the first panel discussion of the Roundtable, Ms. Dilhari Fernando, Director General, Policy, Planning and Partnerships, Meteorological Service of Canada, provided a scene-setting presentation on extreme weather and its risks.

Environmental hazards are at the forefront of the global risk landscape. According to the results of the [2017-2018 Global Risk Perception Survey](#) – an annual exercise by the World Economic Forum where roughly 1000 experts assess the likelihood and impacts of global threats over a ten year period – disasters related to extreme weather were ranked the most likely to occur with the second biggest impact behind weapons of mass destruction. The importance of extreme weather as a global risk was also underscored by the United Nations Intergovernmental Panel on Climate Change’s October 2018 report entitled “[Global Warming of 1.5°C](#)”.

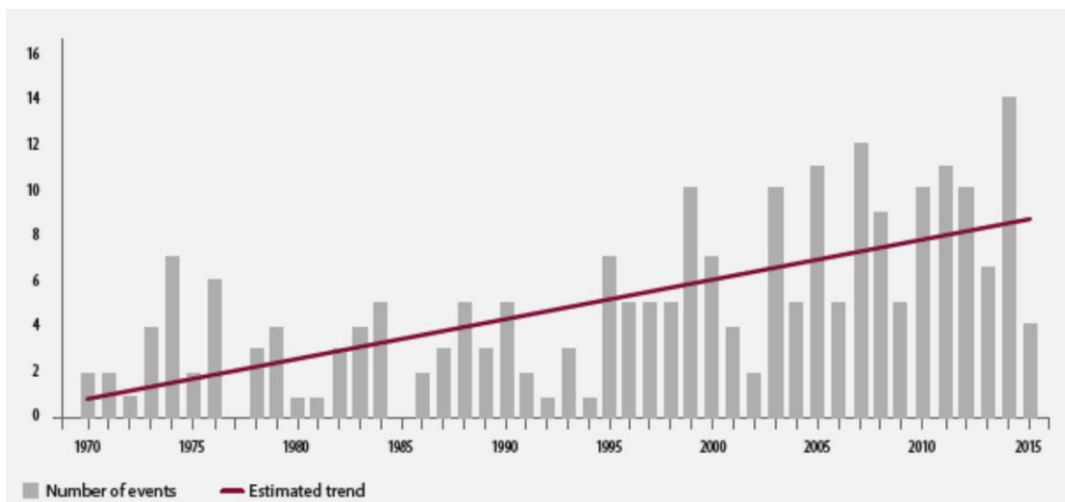
In a Canadian context, disasters related to extreme weather can manifest themselves in a number of ways: storm surges can threaten marine life and navigation; intense rain fall can cause flooding and trigger landslides; drought limits agricultural

production and creates dangerous conditions for wildfires; and lengthy periods of hot and cold weather can strain the energy grid and result in poor health outcomes, especially among the most vulnerable.

Extreme weather events have various possible contributing factors, such as temperature, moisture, air pressure, wind speed and direction. Climate modelling is demonstrating that climate change has the potential to make certain types of extreme weather more frequent and more intense. Ms. Fernando then reflected on the significant economic and social disruption posed by the extreme weather by citing the September 21, 2018, tornadoes that affected Ottawa, Ontario, and Gatineau, Québec. She noted that these communities are rebuilding and underscored the importance of whole-of-society and inter-generational engagement.

In addition to the significant human impacts caused by extreme weather events, Ms. Fernando concluded by noting that the economic impacts of extreme weather are growing and affecting all sectors. According to the Insurance Bureau of Canada, property and casualty insurance payouts have dramatically increased in recent years. From 1983 to 2008, the average annual insurance payout was roughly \$400 million, but from 2009 to 2017, the average annual payout increased to roughly \$1.8 billion.

All levels of government have borne the cost of disasters. Below for example is a chart that outlines the number of natural disasters in Canada requiring [Disaster Financial Assistance Arrangements](#) compensation for provinces and territories from 1970 to 2015. The chart demonstrates that the average number of disasters requiring federal financial aid have increased steadily to present.



Source: Public Safety Canada 2016-2017, Evaluation of the Disaster Financial Assistance Arrangements

Dr. Blair Feltmate, Head, Intact Centre on Climate Change, University of Waterloo, introduced the panel discussion on how to engage capital markets on climate change and extreme weather risk. Capital markets—insurers, private companies, and investors among others—have a vested interest in addressing climate change and extreme weather since these pose a direct threat to sustainable economic development, without which growth is not possible over the long term. The panel discussion was based on two questions: What are the capital markets already doing to help with climate change and extreme weather risk and how can the disaster risk reduction community attract their investments?

Mr. David McGown, Senior Vice-President, Strategic Initiatives, Insurance Bureau of Canada, began by stressing that the personal and commercial (p&c) insurance industry has an important role in climate change and extreme weather adaptation since insurance is one of the principal ways by which financial risk is transferred from the public to the private sector. The p&c industry was among the first to realize the associated risks when disaster costs rose dramatically in recent years. Like Ms. Fernando, Mr. McGown noted that at present insurable disaster costs average nearly \$1.8 billion a year in Canada. Globally, the annual total reaches roughly \$190 billion USD.

Although the p&c insurance industry is limited in the extent to which it can invest in projects with long-term time horizons, there has been a concerted effort in recent years to bring investment tools to market that can help consumers manage disaster-related risks. For example, since 2014, insurers in Canada have been making residential flood insurance policies more widely available. Mr. McGown also mentioned that two cities in Canada—Toronto and Calgary—are now using insurance policies to protect their taxpayers from disaster risk.

More innovative insurance financing options to adapt to climate change and extreme weather are also starting to proliferate. Around the world for example, insurers are offering more catastrophe bonds. These bonds are issued by insurance or reinsurance companies and allow them to share extreme weather related risks with the wider investment community. These bonds have a special condition that states if the issuer should suffer a loss from a predefined catastrophe, then its obligation to pay interest or repay the principal is deferred or forgiven entirely. In exchange for this added risk, investors receive a higher interest rate than most other bonds. For the first-quarter of 2017, the estimated total value of the catastrophe bonds market was \$2.5 billion USD. Mr. McGown provided other examples. More recently, global insurer SwissRe pioneered an insurance policy to protect a coral reef in the Caribbean by covering its

restoration and conservation costs, thereby protecting the whole area from a decline in tourism should the reef falter.

Ms. Susan McGeachie, Global Director, Climate Change and Sustainability Services, Hatch Ltd., noted that private companies are increasingly factoring climate change and extreme weather risk into their business practices, and that the [Task Force on Climate-related Financial Disclosures](#) (TCFD) is an example of existing interest. The TCFD is developing a voluntary framework that companies can use to disclose their climate-related risks in a way that is consistent across companies and aligned with investor's needs. In the year since its launch, 460 companies have joined the initiative, representing a combined global market capitalization of \$7.9 trillion USD. Another 40 governments and other organizations have also joined.

Ms. McGeachie noted that although the TCFD helped put climate change and extreme weather risk at the forefront of boardroom discussions, still more can be done. It is presently much easier to access finance for revenue-generating opportunities rather than risk reduction that is more focused on avoiding cost, especially when it comes to climate change and sustainability initiatives. Although innovative financing solutions like catastrophe bonds might help encourage more finance, these along with green bonds – bonds earmarked specifically for climate change mitigation, adaptation and other projects with environmental benefits – only comprise a small fraction of the overall bond market. Furthermore, an even smaller number of green bonds support projects that would have not have been otherwise financed. Ms. McGeachie concluded by noting that areas with significant climate risk reduction potential such as sustainable land use development remain largely underfunded. Newer bonds that are structured to help bridge this gap still lack defined criteria, which makes them unappealing to investors.

Ms. Tania Caceres, Principal, RiskNexus, outlined some of the climate related investment opportunities currently available in Canada and what the disaster risk reduction community should be doing to attract investment from the capital markets. Investment opportunities certainly exist. In Canada, the green bonds market is growing. In 2017, the market was valued at \$155 billion; in 2020, its value is expected to rise to \$1 trillion. In April 2018, for example, the Canada Pension Plan Investment Board issued a \$1.2 billion green bond.

This new capital is seeking investment opportunities, but what do capital markets require when looking to invest? Ms. Caceres explained that first, capital markets seek to reduce uncertainty, or idiosyncratic risk. Depoliticizing climate change will help in building the type of stable environment that institutional investors crave when investing in long-term climate adaptation projects, like large infrastructure for example. Second,

and equally as challenging, these investors are looking for large-scale projects in the hundreds of millions of dollars to fund. That scale is particularly difficult to achieve in Canada so it is worth exploring how to bundle climate resiliency projects to attract larger investors. Third, capital markets want control over how large-scale investments are governed in order to maintain as much control as possible and reduce financial risk.

Dr. Feltmate illustrated the need to invite representatives of the capital markets to future Roundtables to engage them on disaster risk reduction. Although the markets lack an understanding of how climate related risks will manifest themselves materially across business sectors, this knowledge is a prerequisite to advancing investment discussions.

Panelists addressed questions from the audience. The panelists agreed that the recent launch of the [Expert Panel on Sustainable Finance](#) in Canada was a welcome development towards advancing understanding of climate change and extreme weather risk in the capital markets, especially since one of the challenges in the country is a lack of universal standards when it comes to assessing climate related risks. Such standardization would do much to encourage investment.

The panelists then answered a question on engaging corporate mechanisms to address how the poor are disproportionately affected by disasters. Ms. McGeachie provided an example of recent innovative financing. In September 2018, the [Global Green Bond Partnership](#) was launched at the Global Climate Action Summit. The Partnership will invest in green bonds issued around the world—including in developing countries—in order to bolster confidence in the issuer and encourage more investment in turn. It was suggested that these bonds could be bundled and underwritten several times over to encourage even larger-scale investment.

Panelists then addressed the final question: How can the disaster risk reduction community encourage the insurance industry to directly fund research into climate change adaptation strategies? Mr. McGown agreed that research is important, and mentioned that sponsored studies are already underway; for example, the Insurance Bureau of Canada recently funded a study by the Intact Centre on Climate Change on natural infrastructure as flood adaptation measures. Ms. Caceres noted that developing climate change adaptation strategies with a strong return on investment—somewhere from 6.5% to 8.5% annually—is a definite way to encourage investment.

Second Panel—Cross-Sector Leadership in Advancing and Empowering Disaster Risk Reduction

After lunch, Ms. Sarah Sargent, Vice President, Canadian Operations Programming, Canadian Red Cross, introduced the discussion on leadership in disaster risk reduction. The panel consisted of four professionals with different backgrounds in emergency management who considered how to advance cross-sectoral collaborative efforts that promote disaster risk reduction and climate change adaptation. Ms. Sargent noted that disaster risk reduction requires whole-of-society collaboration; there is no single actor or solution that can address these priorities alone. Ms. Sargent asked four questions to which the panelists responded in turn.

[Q: What does a whole-of-society approach to disaster risk reduction and climate change adaptation mean to you?](#)

Mr. Nigel Deans, Youth Representative, Research Assistant with ResiliencebyDesign Laboratory, considered a whole-of-society approach to be one where all sectors are studying to reduce disaster impacts, including groups that have been historically excluded from disaster risk reduction and climate change adaptation. He mentioned that youth in particular merit more attention. The Sendai Framework recognizes that disasters and climate change have a disproportionately larger and longer impact on younger people, yet they are often omitted from climate decision-making. Although youth might not possess experience in equal measure to those who have been working for longer in climate or emergency management fields, it is important to remember that they are not bound by that experience, and as such could bring fresh perspectives to stubborn and persistent issues. Mr. Deans also noted that youth are particularly adept with technologies and can use this comparative advantage to the benefit of all.

In a similar way to Mr. Deans, Ms. Katie McPherson, Chief Resilience Officer, City of Vancouver, 100 Resilient Cities Initiative, defined a whole-of-society approach as one where everyone is included in the decision-making, in the understanding and the analysis of the impacts of disasters and climate change. Ms. McPherson noted that at present the threat of disasters and extreme weather resulting from climate change does not factor into the everyday preoccupations of many Canadians, yet the economic and social systems that have caused this elevated state of risk are the same that perpetuate inequality. The more that the disaster risk reduction and climate change adaptation communities can help Canadians connect climate or disaster risks to the same systems that underpin inequality, the greater the likelihood that a whole-of-society approach

would succeed. Failing to address both at the same time would mean failing to address either.

Mr. David Diabo, Assembly of First Nations, noted that a whole-of-society approach needs to be community-reflective and culturally-relevant in order to consider the unique stature of First Nations communities. Managing emergencies requires collaboration to succeed and First Nation communities understand that they cannot develop strategies in isolation, yet Mr. Diabo contended that a distinct approach would help them from a position of relative disadvantage. It is also important to note that First Nation communities have historically adapted to foreign social and natural environments and as a result have much practice with developing resilience. They have a lot to contribute in this regard.

Ms. Jessica Shoubridge, Principal, Thrive Consulting and Director, B.C. Chapter Earthquake Engineering Research Institute, echoed the same sentiments of her peers. Her work involves bridging understanding between different disciplines, including land-use planners, emergency managers, asset managers, and engineers. Forums like this Roundtable provide an opportunity to bridge these divides and allow these sectors to dispense with their biases and attempt to find common ground.

[Q: Given the central role of collaboration in disaster risk reduction and climate change adaptation, drawing from your experiences, what approaches do you recommend for building inclusive, supportive networks and cross-sector collaboration?](#)

Mr. Diabo explained that, in his experience, building supportive, inclusive networks and collaborating across sectors means holding events like the Roundtable at the national and regional levels and developing linkages on the understanding that disasters and climate change affect everyone. Ms. McPherson noted that her experiences while working in emergency management for the City of Vancouver taught her that meaningful solutions to disaster risk reduction and climate change adaptation often originate at the micro-level, at the scale of neighbourhoods and below. There exists opportunities at this scale to learn from locals about how to address climate risk in a way that can motivate action; conversely, developing solutions without local consultation results in disengagement. Ms. McPherson also echoed Mr. Diabo's comments about how vulnerable populations like Indigenous peoples and newcomers have much to teach us about resilience based on their life experiences.

Ms. Shoubridge noted that the City of Vancouver is concerned with the rates of social isolation among its residents, yet the type of disaster risk reduction and climate

change adaptation network-building for which she and her co-panelists advocate could be an excellent way to reduce barriers. Ms. Shoubridge also explained from her experience that focusing on opportunities rather than risks and consequences is a good way to motivate others to engage. More financial resources should be devoted toward disaster risk reduction stakeholder consultation and efforts be made so that every sector is represented. Oftentimes, important stakeholders like the development, finance and construction industries are missing, for example.

Mr. Deans mentioned that the language around disaster risk reduction and climate change adaptation needs to be more accessible and intuitive to foster network-building and collaboration. For example, in his experience framing the discussion in terms of opportunities rather than risks and consequences worked well with youth in the aftermath of recent flooding in Alberta. Mr. Deans also noted that inviting marginalized groups to pre-existing fora is a positive development, but still more needs to be accomplished to include them in the decision-making process. Ms. Sargent concluded by asking participants to consider what drove them to attend the Roundtable and other similar venues; understanding those drivers could maximize opportunities for discussion in the future.

Q: How do you set common direction and goals and sustain momentum?

Ms. McPherson noted that it is important to have multiple levels of government involved in a given project in order to sustain momentum. For example, the City of Vancouver, Natural Resources Canada and the Government of British Columbia have recently partnered to develop a comprehensive seismic risk assessment for Vancouver and surrounding areas. To sustain momentum, it is important that the partnership work to bring others into the discussion, particularly building owners and residents. Ms. McPherson also mentioned that it will be important to allow for failure when devising solutions to address the rate at which climate change is occurring. Sustaining momentum when confronted with such a large and complex problem requires one to be allowed to fail and learn repeatedly.

Mr. Diabo noted that it is important to personalize risk and goals in order to sustain momentum. For example, many First Nation communities are motivated by the noticeable changes to their natural environments. Mr. Diabo also commended Public Safety Canada for working to bring First Nation participants to these events in an effort to sustain momentum, but remarked that more Inuit and Métis participation is required. Ms. Shoubridge mentioned that indicators and incentives are useful tools in establishing goals, direction and momentum. Developing a universal set of risk reduction indicators could help pull everyone in the same direction; similarly, developing a shared common

operating picture of risk through an open and accessible information portal will help build policy based on a shared understanding. Lastly, Ms. Shoubridge noted that new risk governance mechanisms are required to facilitate the implementation of the Sendai Framework in the province now that it has been officially adopted.

Mr. Deans concluded by noting that the Sendai Framework has already provided a common direction. The problem is not in establishing a common direction but rather in translating Sendai and other related frameworks into tangible goals to which people can relate. The disaster risk reduction and climate change adaptation communities need to understand people's priorities and then work towards relating them to the Sendai Framework if they want to sustain momentum.

[Q: What is the key message you want people to take with them into the afternoon breakout sessions to discuss opportunities to leverage existing fora to advance Canada's disaster risk reduction and climate change adaptation agenda forward?](#)

Mr. Diabo asked First Nations present at the Roundtable to take advantage of the networking opportunities and participate in the Indigenous Emergency Management breakout session. Mr. Deans reminded Roundtable participants that youth and other groups experiencing barriers are more than boxes waiting to be checked. Youth have energy, optimism, motivation and, in some cases, the technological skills needed to create rapid evidence-based change.

Ms. Shoubridge asked Roundtable participants to consider the following questions during the breakout sessions: What is the best governance mechanism to implement Sendai Framework in British Columbia and more broadly in Canada? Is perhaps a regional resilience roundtable the way forward? For her part, Ms. McPherson noted that Canadians live in a time of eroding trust between people and in government which render crises exponentially more difficult to manage. How can we concurrently build trust, which is an admittedly slow process, while acknowledging that we need to accelerate action? Ms. McPherson noted that the current governance structures do not allow for this.

The panelists then answered questions from the audience. According to the [Intergovernmental Panel on Climate Change](#), there are twelve years remaining until the irreversible compounding effects of climate change take place. If money was not an option, what could one be doing to advance disaster risk reduction and climate change adaptation? Mr. Deans addressed the question from a youth perspective. There should be more investment in educating youth about climate change at a younger age because

the information is not easily available at present. This education should include more critical-thinking to help them separate evidence from the interpretation of evidence, or news from so-called “fake news” in the age of post-truth.

Dr. Feltmate asked panelists about how best to accelerate—and not just maintain—momentum when faced with the knowledge that the climate change adaptation deficit is growing in Canada. Ms. McPherson offered a few solutions in response. Addressing the deficit requires a stronger and braver government to take the necessary action. Municipal governments need to attract more investment from the capital markets but are impeded by mistrust of private companies and by a lack of understanding of the financial tools available.

Plenary Presentation—Circles of Influence and Disaster Risk Reduction

Dr. Doré and Mr. Arjun Vinodrai, Director of Strategic Policy, Emergency Management and Programs Branch, Public Safety Canada, presented on the renewal of Canada’s Platform for Disaster Risk Reduction (Canada’s Platform). In particular, they spoke about two Platform initiatives that were developed in recognition of the need to sustain momentum between Roundtables: GCcollab and Circles of Influence.

Dr. Doré provided a background on Canada’s Platform (refer to page 2). At last year’s Roundtable in Halifax, Nova Scotia, Roundtable participants expressed the need to enhance: collaboration with stakeholders, particularly the financial sector; engagement between all orders of government, including Indigenous peoples; awareness of Canada’s Platform; and information-sharing through an online presence. As a result of this consultation, Canada’s Platform created an online forum on GCcollab to increase collaboration and information-sharing. Mr. Vinodrai provided an overview of the website, which was developed by the Treasury Board Secretariat as an interactive platform designed to increase collaboration between stakeholders and the government on issues or policies of common interest. Public Safety Canada created a group on GCcollab that is intended to facilitate disaster risk reduction-related discussions year-round and provide a platform through which to advance Circles of Influence in emergency management.

Dr. Doré explained that Circles of Influence is a pilot concept initiated by Canada’s Platform to mobilize existing networks and work to advance disaster risk reduction objectives in recognition of the need to accelerate momentum and encourage cross-sector dialogue. Circles of Influence are organic, self-directed, grassroots and collaborative networks. They are formed from the various resource streams that exist

within each of their member organizations and are comprised of influencers that will advance disaster risk reduction issues beyond where they are already being addressed, into a new discussion space. It was stressed that participants are free to create other Circles of Influence on topics that interest them.

Circle of Influence Breakout Sessions

Private – Financial Sector

Overview: There were approximately twenty people who attended this breakout session from the financial and public sectors. Ms. Chris Rol, Insurance Bureau of Canada, and Dr. Murray Journeay, Geological Survey of Canada, facilitated group discussion on the following three questions: What are the disaster risk reduction priorities in your area of interest? What existing opportunities or networks can be leveraged to advance these priorities? What challenges act as a barrier to advancing these priorities, and how would you address these barriers?

Key Messages:

- The private and public sectors want to connect mitigation and adaptation efforts with investment opportunities, but there needs to be a viable economic return; a moral imperative is not sufficient on its own.
- It was suggested that developing a way to monetize resiliency or co-develop an incentive-based program would encourage investment.
- It is important to invest more into public education when it comes to mitigation and adaptation efforts in order to attract more funding. People need to understand the “why”. Using technologies like mobile applications would help disseminate information.
- A shared understanding of climate and disaster risks would accomplish much in terms of bringing private organizations and companies together, even though each has its own priorities.
- In addition to leveraging all orders of government and civil society, developing a universal rating system could drive investment—for example, an earthquake rating system for buildings. Participants identified a total of 16 different partnership opportunities to pursue.
- A number of barriers were identified, but a lack of trust within the public sector and between the public and private sectors was identified as the biggest.
- This lack of trust can manifest itself in many ways: for example, the public distrusts when private companies invest in the public sector; the private sector distrusts investment opportunities which may fail to succeed or succeed too slowly; or the

private sector distrusts funding disaster-prone communities if they feel that the public sector has not done enough to make them resilient.

Youth Engagement

Overview: The session on youth engagement opened with a scene-setting video developed by youth in Lac Mégantic, Québec—the city where in 2013 an unattended freight train derailed downtown resulting in the explosion of multiple tank cars. Throughout the video, youth from the city were asked a series of questions about their community involvement and what it means to them. Following the video, there were short presentations by the [EnRiCH Project](#) and the [ResiliencebyDesign Research Laboratory](#), and after, a panel discussion with three young emergency management practitioners and students. The facilitator, Ms. Tiffany Hill, Research Assistant, Royal Roads University, asked the panel the following questions that were developed by youth: What existing networks can be leveraged to enhance youth engagement? Are youth already involved? How can we put youth engagement into action today? How could we use social media to engage you in disaster risk reduction? How do we engage the “un-engageable” youth?

Key Messages:

- There are a number of young men and women, including individuals from diverse backgrounds and cultures, who have an interest in community projects even though they feel that these projects often lack youth representation.
- When engaging youth, it is important to consider that their parents and/or guardians are key enablers that are often left out of the conversation. For example, many rely on their parents and/or guardians to drive them to activities. Disaster and climate issues need to be explored with the youth’s support network in mind.
- It is important that youth become personally connected to an issue to sustain engagement. For example, one panelist explained that it was easier to connect with a youth about sustainable practices once she made the connection between that concept and whale finning.
- It is important to engage youth on their terms, or to “go where the youth are” in online and offline spaces. It was mentioned that youth are moving away from older technologies like Facebook and Twitter and using newer social media like Snapchat and Instagram.
- Youth need to feel free to participate as opposed to forced, and this is especially true for the “un-engageable” youth. Understanding the cause of their hesitation is an important first step.

- The panel suggested establishing a pan-Canadian framework for youth engagement and a youth award to encourage them to participate in disaster risk reduction issues.

Indigenous Emergency Management

Overview: This breakout session, which was facilitated by Mr. Diabo, Mr. Dan Peters, Congress of Aboriginal Peoples, and Dr. Laurie Pearce, Justice Institute of British Columbia, asked participants to consider the following three questions in five groups: What are the disaster risk reduction priorities in your area of interest? What existing opportunities or networks can be leveraged to advance these priorities? What challenges act as a barrier to advancing these priorities, and how would you address these barriers?

Key Messages:

- Participants discussed the importance of blending traditional Indigenous knowledge and scientific understanding into disaster risk reduction strategies that are based on truthful, two-way dialogue.
- Indigenous communities are uniquely impacted by disasters since these events often add to existing trauma. Developing trauma-informed psycho-social programs for responders and residents would be useful.
- There is also a need to develop evacuation plans for remote Indigenous communities and to ensure the continued well-being of evacuees.
- Encouraging community awareness and readiness through public engagement and training that leverages traditional and newer modes of communication. This education should be based on hazard risk and vulnerability assessments.
- There are a number of existing conferences and forums where Indigenous-specific disaster risk reduction strategies could be discussed. The focus should be on youth and Indigenous-led sessions. Enabling participation for remote communities is also important, as is engaging Inuit and Metis populations.
- Participants also identified a number of barriers and solutions:

Issue	Barriers	Solutions
Current Culture	<ul style="list-style-type: none"> • Emergency management systems in Canada have been designed by the dominant culture, and are based on issues caused by the dominant culture; • Existing systems lack the flexibility to meet unique needs of communities; • Lack of common goals and differing political priorities—emergency management not that important compared to other pressing issues such as housing; and • The bureaucratic rules surrounding funding rules and processes, varying government mandates, and general mistrust. 	<ul style="list-style-type: none"> • Think outside the box and decolonize emergency management systems and leadership; • Greater collaboration and planning; • Respecting the systems in place, involve Elders in the process; and • Working together in full partnership and collaboration with common objectives.
Resources and Capacity	<ul style="list-style-type: none"> • Long-term sustainable and equitable funding for Indigenous communities to participate in true partnership; • A lack of capacity in many communities; emergency management may not be a high priority for many First Nations; and • Lack of volunteers. 	<ul style="list-style-type: none"> • Resources, including time, access, funding, and greater capacity; and • Financial support to cover volunteers who participate in emergency management related activities.
Inclusion of Northern and Inuit Communities	<ul style="list-style-type: none"> • Ability to physically reach all remote and isolated communities (face-to-face interaction is best and web interaction is not always possible); • Northern capacity requires funding; northern realities need inclusion; and • Costs due to geographic and linguistic isolation. 	<ul style="list-style-type: none"> • Increased funding and ease of access to funding for travel to bring people together; and • Create an online network to connect communities and build relationships to reduce isolation.

Climate Change Adaptation

Overview: This panel discussion was moderated by Ms. Monica Harvey and Mr. Chris Jennings, Natural Resources Canada, and Dr. Jodi Manz-Henezi, Northern Alberta Institute of Technology (NAIT). Ms. Harvey and Mr. Jennings explained their Department's climate change adaptation efforts and the ongoing work of the [Climate Change Adaptation Platform](#). They explained that they are seeking to better incorporate climate change adaptation into disaster risk reduction. Dr. Manz-Henezi explained that NAIT's mandate is to be responsive and relevant to the needs of Albertans, including through improved emergency management regimes.

The facilitators divided participants into three groups to discuss the following questions: What are the disaster risk reduction priorities in your area of interest and how does climate change adaptation affect those priorities? Do you currently incorporate climate change adaptation into your disaster risk reduction measures? If so, how? What existing opportunities or networks can be leveraged to advance the incorporation of climate change adaptation into disaster risk reduction? What challenges act as a barrier to incorporating climate change adaptation into disaster risk reduction, and how would you address these barriers?

Key Messages:

- It was noted that the failure to adapt to climate change will inevitably create more work and cost in the long-term. For example, emergency response services in communities will dramatically increase.
- Participants provided a number of examples of how they are incorporating climate change adaptation into their work. For example, municipal utilities companies, who have low risk thresholds due to the essential services that they provide, are including adaptation measures when accounting for future systems pressures, both in terms of infrastructure and quality of service.
- Other sectors and groups are also incorporating climate change adaptation into their work, including land use planners and engineering societies. It was suggested that tying funding to demonstrating how future projects have accounted for climate change could expand its reach further.
- Participants also discussed how to incorporate more professions that have expertise that could meaningfully contribute to improving resilience or that have a product or service with broad application into Natural Resource Canada's Climate Change Adaptation Platform. Specific professions that were mentioned include architects and planners.

- Certain other professions, like teachers' associations, can act as amplifiers in educating the public and building awareness. Options to work with teachers and the provinces to incorporate adaptation into school curriculum could be explored. Similarly, community and cultural associations could also be better engaged in outreach related to local-level adaptation.
- It was mentioned that a communications strategy needs to be developed that depoliticizes climate change and engages the public in a relatable fashion on the understanding that it is not solely a technical or stand-alone issue. For example, does the public understand what we mean by "resilience"?
- The communications strategy should also stress the need for common terminology to facilitate whole-of-society collaboration. For example, what one organization calls emergency response, another calls climate resilience or disaster risk reduction.
- Creating a "Climate Smart" or "Better World" program with incentives, similar to the existing "Energy Smart" program, could cut across political divides and benefit from broad public support.
- Similar to what was discussed in the "Private – Financial Sector" discussion, more investment from the private sector is required.

Closing of the Roundtable

Mr. Tanguy provided closing remarks and thanked all the organizers and participants who contributed to the success of the Roundtable. He noted that the Prime Minister mandated the Minister of Public Safety and Emergency Preparedness to "work with provinces and territories, Indigenous Peoples, and municipalities to develop a comprehensive action plan that allows Canada to better predict, prepare for, and respond to weather-related emergencies and natural disasters." To that end, Mr. Tanguy stressed that it requires collective leadership from a range of partners to reduce disaster risk, and that these annual Roundtables provide an excellent venue to advance discussion. Following Mr. Tanguy's remarks, Elder Syexwaliya from the Squamish Nation provided a traditional closing.

Annex – Evaluation and Statistics

The 2018 Roundtable was attended by 210 stakeholders in person and countless others by video and teleconference. Those in attendance represented a broad range of society, including the public and private sectors, non-governmental and not-for-profit organizations, Indigenous peoples, academia, and the general public.

An evaluation survey was provided to Roundtable participants to gather feedback and inform the planning of future events. The full results of the survey are found below.

Results and Key Highlights

- 210 – Total number of in-person Roundtable participants
- 65 – Total number of survey respondents
- 81% – Total percentage of respondents who indicated that their expectations were exceeded or achieved concerning their overall Roundtable experience
- 80% – Total percentage of respondents who indicated that their expectations were exceeded or achieved concerning the Circles of Influence breakout sessions
- 63% – Percentage of respondents who attended a Roundtable for the first time

Figure 1

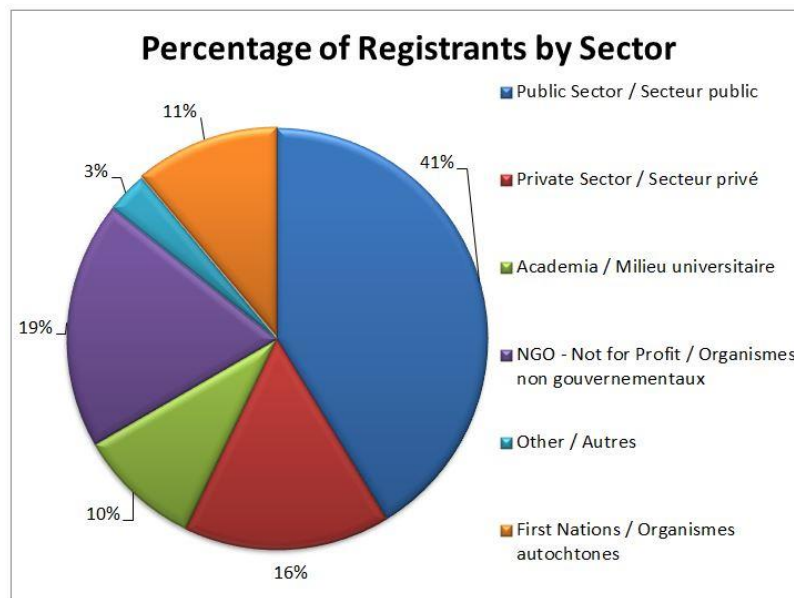


Figure 1 illustrates the percentage of Roundtable registrants by sector. Among respondents, 41% were from the public sector; 16% were from the private sector; 19% were from the NGO and Not for Profit sector; 11% identified as First Nations; 10% were from academia; and 3% were from the other category.

Figure 2

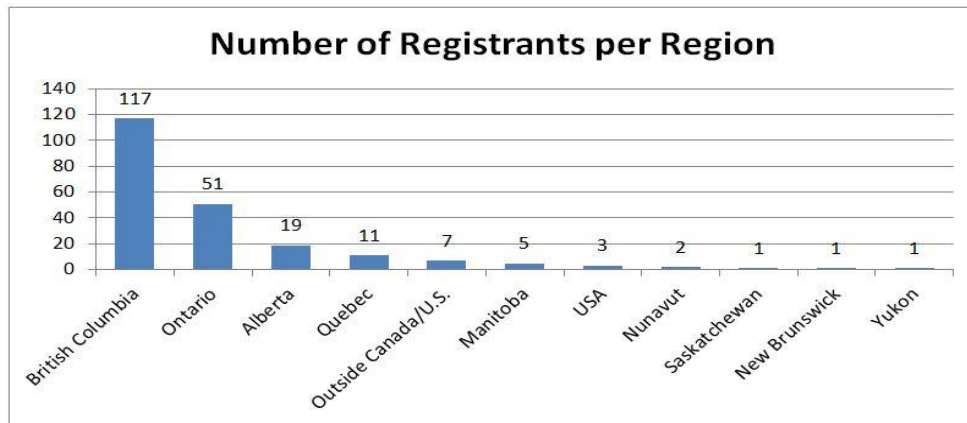


Figure 2 illustrates the number of Roundtable registrants by geographical location. Among respondents, 117 were from British Columbia; 51 were from Ontario; 19 were from Alberta; 11 were from Quebec; 7 were from outside Canada; 5 were from Manitoba; 3 were from the U.S.A; 2 were from Nunavut; and 1 each from Saskatchewan, New Brunswick and the Yukon.

Figure 3

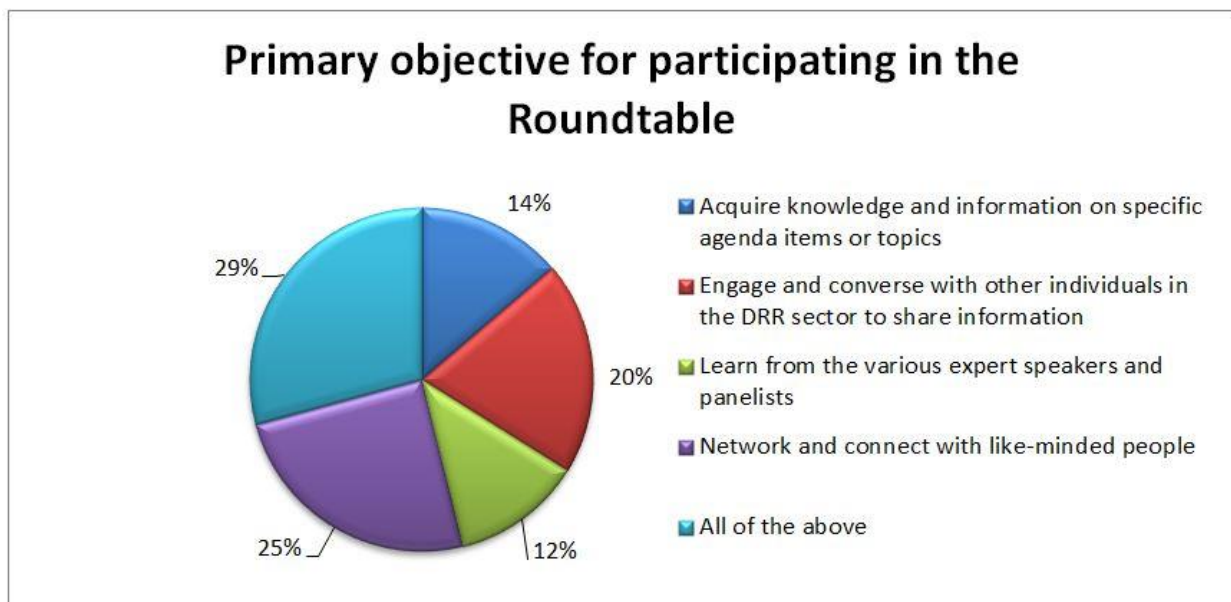


Figure 3 illustrates what Roundtable registrants indicated as the primary objective for participating in the Roundtable. Among respondents, 25% indicated that networking and connecting with like-minded people was their primary objective; 20% indicated that engaging with other individuals in their sector to share information was their primary objective; 14% indicated that acquiring knowledge and information on specific agenda items or topics as their primary objective; 12% indicated that learning from various expert speakers and panelists as their primary objective; and the remaining 29% indicated that all of the above-mentioned objectives were important to them.

Figure 4

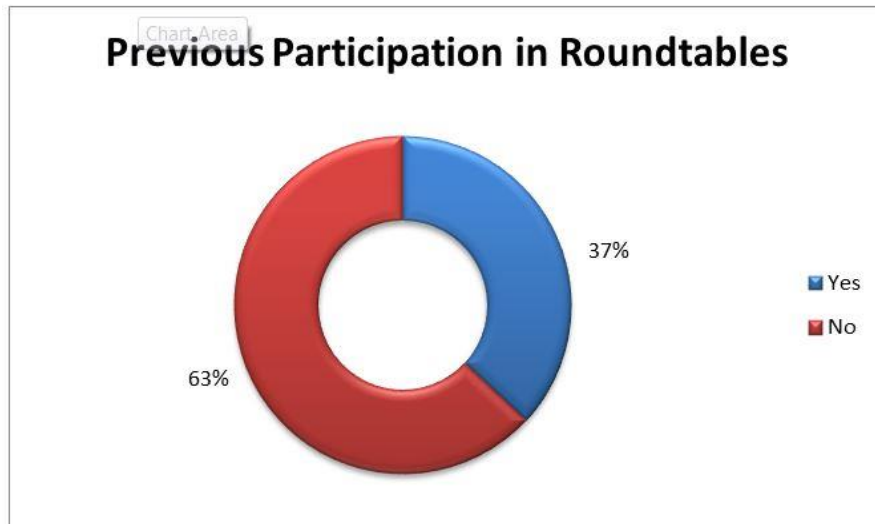


Figure 4 illustrates the percentage of Roundtable registrants who had attended previous Roundtables. Among respondents, 37% indicated that this was not their first Roundtable, while the remaining 63% indicated that this was their first Roundtable.

Figure 5

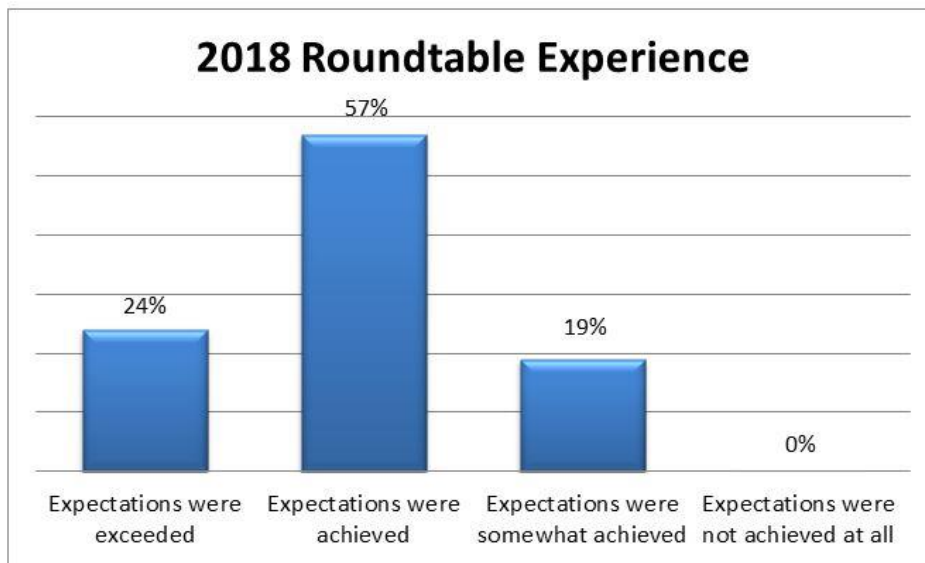


Figure 5 illustrates how Roundtable registrants viewed their overall experience. Among respondents, 24% indicated that their expectations were exceeded; 57% indicated that their expectations were met; 19% indicated that their expectations were somewhat met; and 0% indicated that their expectations were not met.

Figure 6

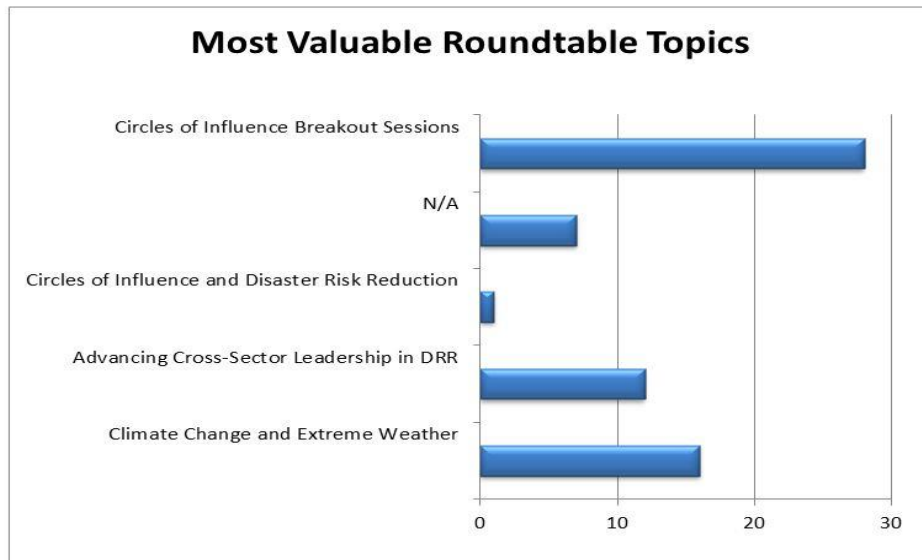


Figure 6 illustrates what Roundtable registrants indicated as their preferred topic on the agenda. Among respondents, 28 people indicated that the Circles of Influence breakout sessions was their preferred topic; 16 people indicated that the panel discussion on extreme weather and the capital markets was their preferred topic; 12 people indicated at the panel discussion on advancing cross-sectoral leadership in disaster risk reduction was their preferred topic; and 1 person indicated that the presentation on Circles of Influence was his or her preferred topic. 7 respondents did not answer the question.

Figure 7

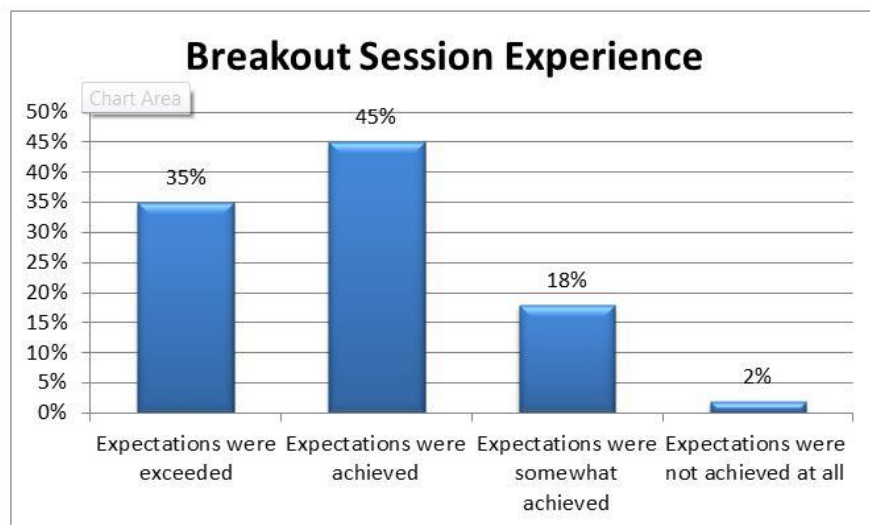


Figure 7 illustrates how Roundtable registrants viewed the breakout sessions. Among respondents, 35% indicated their expectations were exceeded; 45% indicated that their expectations were met; 18% indicated that their expectations were somewhat met; and 2% indicated their expectations were not met.