

WORKSHOP PROCEEDINGS:

Climate Change Adaptation Governance in BC

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INTRODUCTION

On March 6th, 2018, ACT, SFU and Western University co-hosted a workshop in Vancouver on the topic of climate change adaptation and governance in Canada, with a specific focus on issues relating to the British Columbia (BC) context. Attendees included participants from government, academia, private sector, and non-governmental organizations. Particular attention was given to province-wide strategies for adaptation, risk reduction, and the intersection between them. This workshop was part of a series of events being carried out in tandem with research at Western University.¹ This report summarizes the discussion with participants on adaptation framed as a set of actions and governance strategies.

WORKSHOP FOCUS AND CONTEXT

Climate change adaptation is the process of preparing for actual or projected changes in climate averages and extremes. It relies on interpretations and values pertaining to key questions regarding ways hazards and vulnerability are determined; the nature of acceptable interventions; and the determinants of success. As a result, adaptation is both complex and political in nature. The process of identifying the most effective roles for various actors and the best policy instruments to use to reach certain goals is not only value-laden, but complex and uncertain.

In an attempt to untangle this many-faceted issue within the provincial context, participants were asked to consider the following questions:

1. Based on your experience and professional insight, what are the necessary components for effective climate change adaptation governance in Canada?
2. Based on existing successes, what roles and mechanisms are required for effective and collaborative adaptation?
3. What are the barriers to effective adaptation governance, and what are some potential strategies for overcoming them?

To open the workshop, Dr. Gordon McBean, Professor Emeritus at Western University, provided context for the discussion through a presentation on why climate change adaptation is one of the leading issues in the world today. A summary of the presentation follows.

¹ D. Bednar, J. Raikes and G. McBean. 2018. The governance of climate change adaptation in Canada. ICLR Research Paper Series - No. 60. <https://www.iclr.org/listofpublicpolicypap.html>

SUMMARY PRESENTATION

The scientific evidence indicating that the climate is changing is irrefutable. The global temperature is currently increasing 0.2 degrees Celsius per decade. With this change comes alterations to many natural systems, such as higher sea levels, changing water cycles, and more extreme weather events such as flooding, drought, and powerful hurricanes. If we do not adapt our physical and social systems to withstand these disasters, their impacts on the economy, infrastructure, health, and society will be much greater. Of the top five risks most likely to impact the global economy, according to the World Economic Forum, three concern climate change: extreme weather events, natural disasters, and failure to mitigate and adapt to climate change.

Climate change adaptation can significantly reduce the negative risks of climate change if all sectors of society, such as business, government, the public, and NGOs, work together and commit to adaptation initiatives.²

The ratification of the Paris Agreement was an important step towards advancement of international prioritization of climate change adaptation. All countries that signed the agreement are required by law to create both early-warning systems and adaptation strategies in order to build resilience to current and projected climate change impacts. Within Canada, this is not only a federal government responsibility, but a provincial, municipal, and private sector one as well.

Participants then discussed the questions, framed in the context of the potential for successful climate change adaptation governance in BC. A summary of their responses follows:

SUMMARY OF DISCUSSION 1: COMPONENTS OF EFFECTIVE GOVERNANCE

Question: Based on your experience and professional insight, what are the necessary components for effective climate change adaptation governance in Canada?

Participants were asked to envision a future in which adaptation efforts in British Columbia are vibrant, building resilience and reducing risk to climate change, and what components of government might have facilitated such a scenario. Participants were asked to consider the motivations, resources needed, and potential outcomes

2 IPCC. (2014). Presentation: In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Presentation available at: <https://www.ipcc.ch/report/ar5/wg2/>.



of a successful adaptation process.

First, participants discussed what was meant by “governance.” The working definition agreed upon was simply “who is doing what with what instruments?” Based on common categories, three types of policy instruments were defined: regulatory, market-based, and persuasion-based.³ Not all actors have access to all these instruments and therefore the participants agreed that discussions of effective governance must invoke more than just government actors (local, provincial, federal), and should include private industry, non-governmental organizations, and various stakeholder groups.

Indicators for Planning, Monitoring, and Measurement

Participants identified the development of new monitoring and measurement tools, tailored to different contexts, as crucial to advancing adaptation across the board in BC. These tools could be used to track the presence of adaptation actions, the progress made through these actions, and assessment of resulting changes through three priority areas:

- 1) Multi-purpose indicators to evaluate the net benefits of adaptation approaches that all sectors can use throughout all planning and development stages. This would establish common standards for adaptation and allow for comparisons between initiatives. Having specific indicators would also make it easier for different sectors to know how to begin to adapt.
- 2) Sets of indicators to measure climate change impacts on and resilience in specific sectors, such as health, transport, or infrastructure. This is particularly important as monitoring for compliance by federal or provincial governments might be most effective but could also prove challenging from a political perspective.
- 3) Adaptation indicators with specific focus on evaluation and monitoring after a project has begun, designed to measure whether, and to what extent, impacts have been avoided. Ideally such a process would be possible whether significant climate impacts had been experienced or not. This was earmarked as an area in need of further exploration.

This discussion raised further questions regarding where indicators come from, and who is responsible for implementing and measuring them, which should be considered for future discussion.

Senior Government Leadership

Participants agreed that senior government leadership is needed and that clear targets are important. The reduction of greenhouse gas emissions is an example of an identifiable policy target that keeps governments accountable. Participants agreed that similar targets for adaptation are needed.

Third Party Review

Reports such as the 2017 Fall Report of the Commissioner of the Environment and Sustainable Development to the Parliament of Canada are important to show what is going well and what needs improving. Such audits were identified as important ways to hold organizations accountable for progress on adaptation. These audits need to be rigorous and come from a legitimate source that carries adequate authority, such as the

³ Henstra, D. (2015). The Tools of Climate Adaptation Policy: Analysing Instruments and Instrument Selection. *Climate Policy*, Vol. 16(4), 496-521.

Auditor General of Canada. The academic community can also perform audits. Creation of an organization designed to perform a similar role to the IPCC for audits/reviews on adaptation actions specific to Canada was seen as an important priority to facilitate reporting. This could potentially be a function of the Auditor General; however, it would also be useful to explore the impact of audits in fostering action, as this has not yet been assessed.

Professional Training Opportunities

Another key topic raised by participants was the need for training opportunities for professionals in climate change adaptation. Provincial-level implementation of training programs for building inspectors, engineers, urban planners, and other key practitioners is important to advancing adaptation from the ground up. Professional associations were identified as key influencers in this context because they have the power to standardize training and influence on-the-ground projects across the province. For example, building inspectors trained in adaptation practices could work with insurance companies to inform development of appropriate rates in a changing climate. This led to a discussion on the role of insurance in adaptation.

Effective Insurance Responses

Insurance discounts for adaptation efforts could be used as an incentive. Comparisons were made with the carbon tax for its ability to influence all sectors because of its economic implications. If insurance costs fully accounted for projected climate impacts, developers might avoid building in high risk areas and local governments might be more vigilant about future risks to public infrastructure. Additionally, economic incentives for adaptation measures could drive innovation; however, it is difficult to govern and/or regulate innovation. This is why economic measures, such as climate-sensitive insurance premiums, need to be carefully calculated to further adaptation.

Appropriate Government Regulation and Use of Market Mechanisms

Governmental regulation was also acknowledged as an essential measure. Regulation is an important influence on the economy, and strong policies will be required to further successful adaptation governance in BC. Regarding market-based approaches, Ontario's cap and trade program was discussed as a mitigation-driven approach that could be emulated in the adaptation field.

Interdepartmental and Intergovernmental Communication

Communication at and between all levels of government was acknowledged as crucial, as was the role of public servants, including their ability to prioritize issues in the public eye. If successful adaptation action succeeds in averting disasters when hazards occur, the actions may be largely invisible and may therefore require effective information campaigns to justify the cost of the programs. Education and public outreach are therefore essential in order to raise awareness, so that adaptation is both an issue of public concern, as well as justified in its cost. Academia and government could also prioritize the roles of educators to more actively incentivize leadership in this area.

Access to Current Information

Participants noted the need to update existing documents and maps with the most recent global and regional climate projections as an important step in fostering adaptation. Notably, floodplain maps need to be updated with the latest sea level rise and/



or precipitation projections to better allow municipalities, developers, and citizens to make informed decisions on risk management and take appropriate action.

Culture of Risk Transparency

Additionally, there may be value in requiring long term (10-100 year) risk assessments for major projects in both the public and private sectors. This proactive approach to public risk disclosure, while not directly forcing adaptation measures, would help to drive dialogue around and innovative approaches to adaptation in both the public and private sectors, and reduce the likelihood of selective bias in the results of consultancy reports to government.

National and Global Integration

Finally, participants agreed that adaptation in BC should be examined in the context of climate change around the world, as impacts on businesses, other regions in Canada, and the international community affect BC through imports, exports, and other business relationships. In order for BC to successfully adapt, practitioners within the province need to be informed on how the rest of the world is being, or is projected to be, impacted by climate change, and how that in turn could impact BC.

SUMMARY OF DISCUSSION 2: BEST PRACTICES AND ROLES

Question: Based on existing successes, what roles and mechanisms are required for effective and collaborative adaptation?

Drawing on past experience, participants were first asked to identify current best practices for adaptation in BC. Particular attention was placed on the roles of various adaptation actors from government and non-government sectors in facilitating these practices.

CURRENT BEST PRACTICES

Provincial Guidance

The first example mentioned was the recommendation that the Province made for municipalities to plan for one meter of sea level rise by 2050, and two meters by 2100. This recommendation was powerful because it stimulated widespread consideration among BC practitioners of future climate conditions and how these might impact lives and communities. This official nature of the recommendation from the provincial government also gave legitimacy to the issue and spurred municipalities to take it seriously.



Boundary and Research Organizations

It was noted that organizations such as the Pacific Institute for Climate Solutions (PICS) are a valuable resource for organizations within BC, as they have the ability to communicate with communities and the public on important issues such as climate change and drive social change that can help foster adaptation.

Data Products

Another provincial example is a risk assessment map that was made for health authorities within the Lower Mainland, allowing emergency responders, disease control groups, and public health organizations, and others to coordinate better with each other and with local and provincial governments. Overall, the availability of locally relevant data products, such as maps, graphics, and models, was identified as among the most useful of the tools currently being used by adaptation practitioners.

Regional Collaboration

The Lower Mainland Flood Management Strategy being led by the Fraser Basin Council is also a useful mechanism that benefited from the sea level rise projections produced by the Province, which helped different governance actors come together to work toward the common goal of mitigating floods on a regional basis.

Public Outreach

Major mechanisms identified as contributors to these successes included robust science and public outreach. For instance, media reports on the comprehensive research on sea level rise in BC's Lower Mainland were thought to have helped the issue of sea level rise permeate public consciousness and therefore acceptance of the need for action.

Private Sector Actions

The group also discussed private sector actions in terms of role models and mechanisms. For instance, the BC Real Estate Association highlights the need for updated floodplain mapping and helps make this issue transparent for public audiences, raising home buyer awareness of risks in certain areas.

Professional Association Leadership

Professional associations were recognized as significant climate change adaptation actors. Professionals such as engineers and planners can ensure that adaptation is built into projects, plans and designs, ensuring widespread uptake. However, we cannot rely on professionals to spearhead adaptation alone. The provincial government could provide regulations requiring adaptation and mitigation within plans at the municipal level. Both approaches are needed for successful climate action. Professional associations are taking action. For instance, the BC irrigation industry association has produced several documents on water conservation strategies that are useful for irrigation projects at the individual level or larger scales. However, there was a perception among participants that the provincial government may not acknowledge or support such initiatives adequately.

FUTURE ACTIONS

The discussion shifted to looking towards the future and how the potential successes discussed might be emulated in other parts of the province. Questions were raised such as “Should adaptation be centralized or decentralized?”, “Who should be the lead in BC?”, and “What is the provincial government’s role in adaptation?”

Centralization

Participants suggested that a centralized approach to adaptation adds resiliency to adaptation policies because a central lead agency would have the mandate to require adaptation. Participants discussed which entity should be the lead decision-maker for adaptation in the province. Within BC, it was agreed that the Minister of the Environment is in the best position to hold this role on proposed adaptation projects and policies. Once responsibility is given to elected officials to act on climate change, they can then allocate that responsibility as they see fit within their ministry. This would add resiliency to adaptation action itself, because if departmental staffing changes, the mandate for adaptation would still be embedded within the responsibility of the Minister. The current status of ministerial mandates and which ones addressed climate change adaptation, if any, was also mentioned by workshop participants. It is important to note that the current mandate for BC’s Environment Minister does not mention adaptation but focuses its climate directive solely on emissions reduction. In addition, there may be a need for a centralized agency to regulate and monitor the progress of climate change adaptation.

Participants suggested that it would be beneficial to have a federal Minister responsible for climate change adaptation who can convene meetings with provincial and territorial ministers to ensure standardization and knowledge sharing. There is currently a disconnect between federal and provincial/territorial agencies regarding which ministry is the lead on adaptation, and better communication and a united effort are needed for effective action on adaptation in Canada. Participants pointed out that, while the federal Minister for Environment and Climate Change Canada’s mandate acknowledges the need for climate resilient infrastructure and collaboration, it does not clarify who should lead on this file, and that Natural Resources Canada is active on adaptation as well.

Role of the Province

The role of the Province was also discussed by participants, who acknowledged that each province is different, with a variety of abilities to regulate adaptation policies within their local governments. BC was seen as having a particular challenge because local governments hold a large proportion of regulatory power. A good first step for the Province might be to provide the tools and knowledge local governments need to better address climate change issues. Local governments appreciate guidelines and goals that help to further their ability to act, for instance, the aforementioned provincial sea level rise guideline. However, most local governments do not have the funding nor the staff capacity to carry out the planning and implementation of costly infrastructure upgrades that full scale adaptation will require and will likely need more support on all these fronts on an ongoing basis. The Province must also consider the localized nature of adaptation and differing levels of challenge and urgency between BC regions. It must work with public and private sectors, as well as NGOs, to identify values and priorities, and must then establish these as standards that the government is accountable to maintain throughout its policy making.

Participants then discussed ways that governing bodies might enforce adaptation policies. It was recognised that governments have significant authority, and that, if the Province initiates a requirement to include adaptation into development and growth, this would add power to promotion of climate change adaptation.

It was proposed that the Province could withhold funding for projects until applicants can demonstrate that they are following adaptation policy requirements, once these have been developed. For example, Nova Scotia requires that municipalities applying to the provincial gas tax fund for funding to develop land must create a water management plan that incorporates climate change considerations. However, accountability is crucial. If implementation of these plans is not enforced, developers may simply 'check the box' saying there is a plan, but not actually acting. The Province must therefore follow through with mechanisms designed to hold organizations accountable.

Another problem with this strategy is that the projects with shovel-ready plans (i.e., that easily fit into existing practices) are most likely to be funded, while projects that face capacity challenges in terms of both funding and the expertise-heavy process of incorporating long-term climate change projections into planning may have less chance of receiving funding, even if they are deserving of it. This issue was identified as a priority for further exploration.

SUMMARY OF DISCUSSION 3: BARRIERS

Question: What are the barriers to effective adaptation governance, and what are some potential strategies for overcoming them?

Disconnect and Lack of Motivation

The participants identified the disconnect people feel from climate change events that are happening outside their immediate vicinity as a major barrier to climate change adaptation governance. The risk of a climate disaster is difficult for people to identify with when they have no prior experience to draw from. Adaptation and risk reduction must be proactive, not reactive, to be truly effective. Often, the only time action is motivated is after a disaster has occurred, and by then it is too late for adaptation. However, participants noted that it can be difficult to get governments to act because successful adaptation results in the absence of impacts and is therefore difficult to demonstrate, additionally reducing the ability to promote these successes in election campaigns. Governments would generally rather address issues with tangible benefits that can be shown to the public and there is need for better information, based on scientific analysis, to document the benefits of climate change adaptation in ways that will gain political and societal support.

Timelines Required

The problem of timelines is prevalent within government policy-making. Due to their long timescales, adaptation actions are likely to have



benefits too far into the future to be immediately demonstrable. In order to address the complex nature of adaptation, it would therefore be useful to create indicators that cover multiple scales, including temporal (early, mid-term, and long-term), geographical, and different levels of governance, to evaluate adaptation planning. For example, development and implementation of drought management plans is an early, measurable indicator that the province is adapting to the longer, hotter, drier summers projected by climate models, and are already in evidence. Medium-long term indicators could examine the effectiveness of these plans in terms of reduction of the negative impacts of drought.

Lack of Leadership

Another barrier is lack of leadership. Individual champions have been proven to be instrumental in promoting and implementing climate action. Without powerful voices from leaders such as senior government officials, it is hard to drive action on climate change.

Lack of Capacity among Professionals

Lack of capacity among professionals in terms of access to knowledge and tools designed to advance adaptation is also a potent barrier. Professional associations, academia, and peer-to-peer networks were identified as being valuable for sharing information and experiences that can help drive action. Concern also arose regarding the capacity of adaptation experts to effectively convey climate change impacts and the seriousness of the issue to the public.

Competing Priorities

Participants noted that competing priorities are a barrier. For example, affordable housing is the most visible concern in Metro Vancouver, outweighing the issue of adapting to flood risk. Similarly, the disclosure of climate change impacts threatens immediate personal loss to some individuals, as proposed developments may be required to change drastically or be canceled entirely if updated flood maps reveal unacceptable levels of risk, potentially negatively impacting many people personally in terms of developer investment, perception of municipalities as desirable places to live, and individual house prices.

Lack of Resources

Lack of resources is also a barrier. Larger governing bodies such as the federal and provincial governments need to provide smaller governing bodies, such as municipalities and NGOs, with the resources and knowledge they need to adapt to climate change. It is important for the federal and provincial governments to work together in this context.

Inflexibility of Regulations and Guidelines

Current regulations and guidelines are often not consistent with adaptation approaches and must be designed to be flexible enough to incorporate unforeseen yet common sense adjustments, including regional and case-specific considerations required for adaptation. One example is New Orleans after Hurricane Katrina, where the city's planning department thought it best to rebuild schools that had been destroyed outside the floodplain, rather than in the same, risky locations; however, existing legislation did not allow for such changes and resulted in rebuilding that is now vulnerable to future repetitions of this disaster. Thus, while regulation is a powerful tool, its inflexibility may

limit adaptation in some cases. Rules must therefore be flexible in response to the kind of unforeseen events projected to occur with climate change that may render their original mandates and rationales obsolete, and even dangerous to the public.

Fragmentation Amongst Levels of Authority

Fragmentation amongst levels of authority is an important issue, relating back to the question of where responsibility lies for climate change adaptation in BC. Ironically, when everyone is responsible, no one tends to take the lead on action. However, this barrier could be surmounted if a Minister is designated responsible and uses his or her authority to delegate responsibilities to other governing bodies. Mismatch of scale was acknowledged as being a possible problem in this context, as the issue may be too large or conversely too small in scope for certain authorities to address, even if they want to. It is equally crucial for different departments within levels of government to work together on adaptation. Another example from New Orleans, but this time of a success, is the fact that many agencies are now combined on coastal management. While this reorganization led to some initial growing pains, it now seems to be working well. Similar initiatives could be started in BC and throughout Canada.

Path Dependency

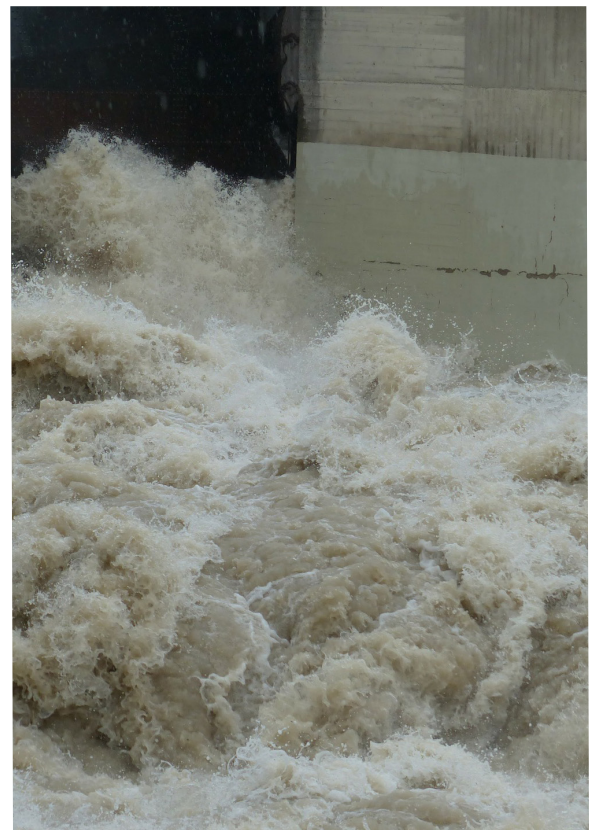
Participants acknowledged that many government ministries and departments, as well as industry sectors, can be resistant to change. We must break with the path dependency that we have been on for the past century in the Province if we are to advance successful adaptation actions. Economic growth and traditional grey infrastructure development cannot continue to be the central tenet of policy. More adaptive and sustainable policies need to be implemented, which can still encourage growth, but must also consider the changing climate and the new impacts it implies.

Communication and Comprehension

Finally, both the term and the concept of adaptation itself were acknowledged as problematic. Many people may not intuitively understand the term. The concept is often communicated as a cost and may be seen as a result of failed mitigation (emission reductions). Further, adaptation was initially predominantly viewed in the context of infrastructure. It has now expanded to all sectors, physical and social; however, not everyone recognizes this yet. Another issue with the concept of adaptation is that people may assume that adaptation is a set of actions that will eliminate all the risks of climate change, whereas it will be an ongoing, evolving process. Risk management was considered to be a potentially more useful

BOX 1 : Stormwater Retention and the Agriculture Industry

Most of BC's stormwater flows directly back into the ocean. An alternate strategy could be to return the water into our river systems and/or groundwater resources, allowing the water to be re-used by industries like agriculture, and reducing dependence on reservoirs. Green infrastructure and natural assets are also new considerations that will be instrumental in a shift to more adaptive stormwater policies, and training on these innovative approaches is needed. Once embedded into guidelines and best practices, the resulting changes in by-laws and infrastructure development are not expected to be especially costly and may in fact save money and time. Adapting to the changing water cycle is a significant aspect of climate change adaptation in BC for the agricultural industry and must be started now rather than later.



term because it does not imply elimination of risk, but instead careful management designed to build resilience to impacts. Climate change preparedness is also a term that may be more useful for uptake by the general public. Effective communication is therefore key; it is important to understand the needs of the different audiences being addressed and to use clear terms that are easily understood and unambiguous.

CONCLUSIONS AND RECOMMENDATIONS

Based on the discussions summarized in this report, the meeting's conclusions are as follows:

- **It is key to invest in effective communication of adaptation for different audiences**
- **Updated climate risk maps are required**
- **Adaptive policies, guidelines, regulations, bylaws and codes and standards must be developed**
- **Vertical and horizontal harmonization of government on adaptation is needed, as well as development of regional governance capacity to enable communities to collaborate**
- **The federal and provincial governments must develop resources to support top-down, local and NGO-based adaptation**
- **Professional associations and industry sectors must develop resources to support bottom-up adaptation province-wide and within the private sector**
- **Boundary organizations can be instrumental in furthering outreach, research and other prerequisites to action**
- **Leadership is crucial to advance climate action, so professional education on the issues for the executive level is increasingly important as well as higher education for students, and Ministers at the federal and provincial levels must be allocated adaptation mandates**
- **A centralized government agency would be an asset to development of coordinated, comprehensive adaptation action in the Province**
- **The Province must work with public and private sectors, as well as NGOs, to identify values and priorities, and must then must establish these as standards that the government is accountable to maintain throughout its policy making**
- **Programs with targets designed to advance adaptation monitoring, measurement and evaluation on multiple time and geographic scales, such as indicator development and funding associated with measurable reductions in vulnerability, plus analysis of benefits such as avoided costs and reduced damages, will help quantify progress and ensure actions are beneficial**
- **Public disclosure of climate risk is necessary to advance a sense of urgency on adaptation that is not biased by short-term interests that may build in long-term vulnerability**
- **Federal and provincial funding for development should require evidence of and accountability to adaptation planning as a prerequisite for disbursement, and**

disaster risk disclosure incorporating climate projections should be required as part of due diligence at the organizational level

- Further research is needed on the following:
 - The effectiveness of audits, especially in the context of monitoring and measurement tools
 - Identification of the most vulnerable communities, to ensure that they receive funding and resources even if they do not have the capacity to apply for it
 - Collaboration with the private sector on economic incentives and innovations such as climate-sensitive insurance premiums

CLOSING STATEMENT

In a closing statement, the participants of the climate change adaptation governance workshop agreed that adaptation is not just one step, but a continuing process that must be reviewed and changed with the changing climate.

PARTICIPANTS (in alphabetical order of first name)

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Absent:

Due to changing commitments, the following could not attend:

Deborah Harford, ACT, SFU (co-host)
Magda Szpala, BC Housing
Maryam Golnaraghi, Geneva Association
Stewart Cohen, Environment and Climate Change Canada