



Managing Flood Risk in Canada's Coastal Regions: Policy Opportunities and Challenges

Workshop Report

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CCRF

Canadian Coastal Resilience Forum



Introduction

In recent years, Atlantic Canada has experienced several major floods. Floods are a policy challenge for coastal communities, because they stretch already limited human and financial resources and trigger difficult questions, such as whether to allow property owners to rebuild their homes, knowing they may again be at risk.^{1,2}

Governments at all levels have initiated dialogue on the suitability of policies that support flood risk management (FRM). FRM emphasizes active engagement among stakeholders and a combination of multiple policy instruments to reduce flood risk. Examples include restrictions on development in risky areas and flood risk maps to inform property owners and developers.

This report presents findings from a workshop discussion about policy instruments that could be implemented to strengthen FRM in Atlantic Canada. Four policy instruments (see Figure 1) identified as key measures in effective FRM were examined through structured discussions among the workshop participants. Twenty-nine professionals representing all three levels of government, academia, the private sector and the non-profit sector took part in this activity on June 13, 2018 in Halifax, Nova Scotia.

Summary of key findings

The workshop discussion provided insights on the suitability of the four policy instruments for managing flood risk in Atlantic Canada. It also highlighted challenges for implementation and enforcement. The following are the three main takeaways from the workshop discussion:

1. FRM in Atlantic Canada could be improved by implementing these policy instruments.
2. Local governments lack resources and capacity to implement and enforce FRM instruments on their own. Direction and support from other levels of government is required.
3. Although there is an appetite for new risk reduction strategies, more clarity is required on how they should be used, when and by whom.

Policy Instruments

1. Property Disclosure

Property owners disclose flood risks to potential buyers at the point of sale of a property.

2. Flood Map Portal

An online portal where flood maps and associated information are available for public use.

3. Development Setbacks

Regulations specifying the minimum distance that development must be built from shorelines.

4. Managed Retreat

The relocation of property at risk from flooding or coastal erosion.

Figure 1

Atlantic Canada’s flood problem

Floods represent a significant risk on Canada’s east coast. The consequences of floods on people and property are anticipated to worsen as sea level rises and extreme weather events become more frequent.³

Workshop participants recognized that in the face of a changing climate, there is currently a policy transition underway in Atlantic Canada. Emphasis is shifting away from structural flood defences and government-funded disaster recovery towards FRM. That means that responsibility is broadening to include multiple stakeholders in FRM, such as planners, engineers, landscape architects, insurers, and homeowners themselves, and a wider range of policy instruments is being considered.

Flood Facts

- 78% of federal disaster recovery payments are flood-related
- Canadians pay \$600 million in out-of-pocket flood-related expenses annually
- Flood has replaced fire as the largest cause of insurance claims

Figure 2

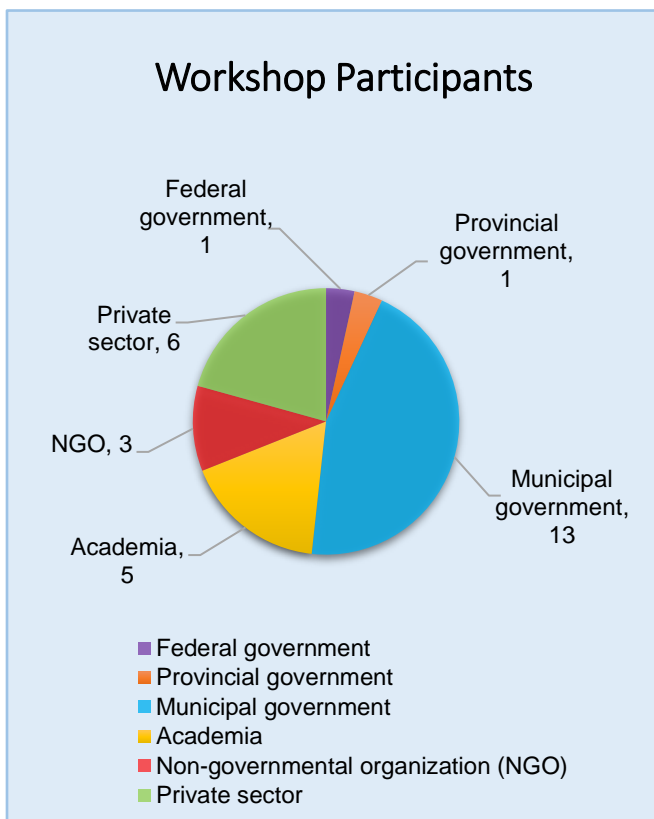


Figure 3

Property disclosure, public flood map portals, coastal property setbacks and managed retreat are four policy instruments that align with FRM and are being used more frequently around the world. Property disclosure enables potential buyers to make a risk-informed purchase. A flood risk map portal allows stakeholders such as planners and developers to consider water-related threats when making long-term decisions about the location of new properties. Regulatory setbacks create a buffer of safety between properties and sources of flooding, such as rivers and coastlines. And where the risk of repeated flooding is too great, managed retreat moves people out of harm’s way.

The Halifax workshop involved group discussions to better understand the suitability of these four policy instruments. Participants were asked to comment on their perceived effectiveness in reducing flood risk, the degree of political support they would receive, their efficiency and their fairness among those affected by them. The next section outlines findings for each of the four policy instruments included in the discussion.

Stakeholder perspectives

1. Property Disclosure

Participants agreed that property disclosure is an effective tool to enhance community resilience to floods because it (1) raises public awareness about flood risks and (2) encourages property owners to take action to reduce the impacts of floods on their property. If a property's flood risk is disclosed, prospective buyers can determine if there is any potential impact on the property's valuation and therefore make a more informed decision when purchasing a property.

Property Disclosure

Property owners disclose flood risks to potential buyers at the point of sale.

Property disclosure was also recognized as an efficient tool, in that flood risk would be better integrated into property valuation and could encourage positive behavioural change as buyers seek out less risky properties. This would ultimately reduce the need for expensive structural protection such as dykes and levees, freeing up scarce public resources for other priorities.

Some participants cautioned that disclosure could be inequitable for those seeking to sell their property, since it could make it less desirable to buyers. However, they also recognized that it is fair for flood risk to be disclosed when the risk is known (e.g., the home has flooded in the past). The level of political support for property disclosure was uncertain, because owners in high-risk areas could oppose the idea and lobby elected officials. Nevertheless, it was noted that elected officials would recognize their highest responsibility is to protect the public.

Several factors were raised that should be considered when designing and implementing property disclosure as a policy to reduce flood risk.

- The public may be more willing to accept the implementation of property disclosure policy after a major flood has occurred.
- Provincial and municipal governments, real estate agents and the Canada Mortgage and Housing Corporation (CMHC) were identified as having a role to play in property disclosure.
- Real estate professionals should inform buyers about flood risks and advise them how they can reduce these risks, but this would likely require training in risk communication.
- As the largest mortgage insurer in Canada, CMHC is uniquely positioned to require flood risk disclosure before approving coverage for a home purchase.
- Ultimately, implementing and enforcing property disclosure requires resources and expertise from both the public and private sector but more clarity is required for how these stakeholders should share responsibility.

2. Flood Map Portal

Participants fully supported publicly accessible flood maps via an online portal. Although they recognized that publicly accessible flood maps would not reduce flood risk on their own, participants concluded that this was an efficient use of scarce resources, because it makes risk information available to all stakeholders simultaneously. Flood maps were recognized as effective for making better planning decisions and allocating emergency management resources. Participants felt a flood map portal would have political support, because it would provide an objective rationale for local governments to regulate risky development and to convince owners to implement property-level flood protection. And, like property disclosure, a flood map portal would allow individuals to know their flood risk.

Flood Map Portal

An online portal where flood maps and associated information are available for public use.

Participants provided several insights about further considerations and ideas on how this policy could be implemented.

- The provincial government was identified as the appropriate stakeholder to produce standardized flood maps. Local governments could then use these provincial flood maps to enforce development restrictions.
- The federal government has a role to play in funding this initiative.
- There was recognition that flood maps need to be updated. However, questions remain about how to ensure the maps are up-to-date, when maps should be updated, how to incorporate climate change impacts, and who is responsible for paying for updates.
- Flood maps should be paired with tips for homeowners that promote flood preparedness (e.g., “if your house or property is in this [flood] zone, call this number”).
- Participants acknowledged that not everyone can use flood maps or the Internet. It is important to take this into account when developing resources that motivate the desired response from the public (e.g., educate and promote a culture of flood preparedness).
- There will be need for a large awareness campaign to inform the public of the existence of this public flood portal.

3. Development Setbacks

Participants recognized that development setbacks are an effective tool to enhance community resilience to floods, because they separate development from flood hazards. Development setbacks were identified as politically feasible given that (1) governments have long used this policy for development regulation, and (2) this policy is applied to new developments (i.e., no existing residents on the floodplain are impacted), so it is easier

Development Setbacks

Regulations specifying the minimum distance that development must be built from shorelines.

(and less expensive) to implement than policies directed at protecting existing development or removing properties from hazardous locations. Development setbacks were regarded as a potentially efficient tool to reduce flood risk because they prevent development on land highly exposed to flooding, thereby preventing future damage and the costs associated with recovery. However, setbacks are not a solution for existing construction in flood-prone areas.

Participants noted several challenges associated with development setbacks:

- In provinces like Nova Scotia, municipalities are responsible for development decisions, but many municipalities do not have access to reliable data (including flood maps) to justify setbacks. Under pressure for development, staff enforcing setbacks need a defensible rationale; without solid data, setbacks can be criticized as arbitrary.
- Participants raised the question whether the provincial government should set a minimum setback standard. They were uncertain, however, about what standard would be appropriate (e.g., flood return period, historical flood event, water level height or distance from shorelines).
- Enforcing development setbacks requires human and financial resources that many municipalities do not have. Provincial governments could support municipalities by (1) setting a provincial standard that facilitates municipal decision-making, (2) providing municipalities with financial resources to enforce development setbacks.

4. Managed Retreat

Managed retreat enhances community resilience to flooding by removing existing properties from hazardous locations, and it was therefore seen by participants as an effective tool to reduce flood risk. Participants suggested this instrument—though potentially expensive—is economically efficient if the resources required are less than the cost of repeated rebuilding. It is also equitable, in that it involves a one-time short-term cost to achieve a long-term reduction in community flood exposure. However, participants expressed concern about its political viability, since some at-risk property owners would surely resist relocation.

Managed Retreat

The relocation of property at risk from flooding or coastal erosion

Participants offered the following suggestions to promote managed retreat as an attractive flood risk reduction tool and to gain political and social support:

- Participants noted that removing properties away from hazardous locations is more likely to be accepted by the public after a disaster occurs. Governments can remove properties on a case-by-case basis when they are damaged. Participants emphasized, however, that plans for managed retreat must be in place before a flood occurs, such as by re-zoning flood-prone lands as a “non-confirming use”, thereby prohibiting rebuilding.
- Some participants felt the term “retreat” suggested “failure” or “defeat”, and suggested other terms, such as “planned migration” would be more appropriate.

- In light of the significant cost of managed retreat, participants suggested that properties in high-risk areas could be charged a special surcharge to generate funds for buyouts in the event of a flood.
- Participants recognized that managed retreat should be aligned with other policies like property disclosure. Prospective buyers would then be aware of the risks associated with a property and the potential that it would be bought out after a flood.
- Participants suggested a transitional period after a flood, in which where property owners are given a choice to relocate.

Finally, participants noted that questions persist about the responsibility of property owners before and after flood damage occurs. For managed retreat to become a socially and politically acceptable tool, more clarity is required about the roles and responsibilities of homeowners and governments before and after a flood.

Conclusions

The workshop discussion offered insights on whether these four policy instruments were suitable to implement in Atlantic Canada. Overall, participants were accepting of the four policy instruments and thought these could strengthen FRM in Atlantic Canada. However, careful consideration of their efficiency, equity and social and political acceptability is required before they are widely implemented. Moreover, new policy responses must be coordinated and aligned with each other and with existing policies to effectively support flood risk reduction. For example, local governments enforcing development setbacks can benefit from provincial resources, such as provincially-standard flood maps. The introduction of one policy without another can diminish its effectiveness as a flood risk reduction measure. Ultimately, the Halifax workshop was beneficial for gathering a variety of perspectives; yet, additional discussions are needed to clarify how these policy instruments should be used in practice and who should implement, enforce and monitor them over time. The provincial and federal governments were identified as necessary stakeholders to provide direction and facilitate decision-making for local governments. Non-government stakeholders, like real estate agents and private property owners, were also identified as having responsibility over FRM, but further clarification is needed as to their role and resources they require (e.g., training and education).

Acknowledgements

The Canadian Coastal Resilience Forum (CCRF) is a community of practice focused on strengthening social resilience to natural hazards and climate change in Canada's coastal regions. The CCRF was established in 2018 to facilitate knowledge-sharing across sectors, institutions and disciplines to identify policy and governance strategies for reducing and managing the consequences of natural hazards in coastal areas.

This community of practice is supported through funding from the Marine Environmental Observations, Prediction and Response (MEOPAR) Network of Centres of Excellence.

This workshop was prepared by the CCRF to bring together experts across fields and all levels of government to discuss measures for reducing and managing flood risks in a changing climate in Atlantic Canada.

To access the full workshop agenda, and slide decks from speaker presentations, please visit the CCRF's website by [clicking here](#).

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