

## Flooding: Toward a Municipal Contribution to Economic Risk Sharing Webinar Summary

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Over the past 40 years, flood damage costs in Québec have surged due to population and property growth in flood-prone areas, compounded by extreme weather events. These costs are primarily covered by provincial and federal programs, with limited private insurance involvement. Current cost-sharing mechanisms, however, create moral hazard by not incentivizing municipalities or residents to reduce risk. In this webinar, Bernard Deschamps, author of *Flooding: Toward a Municipal Contribution to Economic Risk Sharing* shared the reports proposed economic contribution mechanism for municipalities that distributes the cost of damage to residential buildings more equitably, and key findings from his research and consultation with municipal staff within Québec.

### Presenters

- 🕒 Bernard Deschamps, PhD Candidate in Environmental Science at Université du Québec à Montréal.

### Key Findings

- 🕒 Flood risk management is a shared responsibility among different levels of government.
- 🕒 The basic hypothesis within this work is the assumption that there's a municipal moral hazard, where moral hazard refers to someone who's taking risk knowing that someone else would be paying for the cost.
- 🕒 This research highlights that municipalities are not equally exposed to flood risk and that tailored flood risk management strategies are necessary.
- 🕒 It also determines values for annual damages, enabling the development of strategies based on the specific level of risk

### Presentation Overview

- 🕒 One of the main issues addressed in this work is the growing economic cost of flooding. This increase is partly due to the rising frequency and intensity of extreme weather events driven by climate change, as well as the increasing value of land in flood zones.
- 🕒 The second major issue is the lack of financial protection for many people. In Quebec, insurers often do not provide coverage for mortgages in flood zones, which creates a significant social problem.
- 🕒 The third issue is the lack of incentive to act on flood risk from a risk reduction perspective.

- ☉ The following four key municipal responsibilities were highlighted:
  - Responsibility to protect people and assets in their jurisdiction.
  - Responsibility to make sure land use planning and urban development is safe and taking flood risk into consideration.
  - Responsibility to apply and develop new regulations.
  - Responsibility to act.
- ☉ Three different flood risk management risk sharing mechanisms were highlighted: Insurance, financial aid, and self-insurance.
- ☉ As a private enterprise seeking to generate revenue, if the risk is too high insurance companies may withdraw. In Quebec, insurance coverage is becoming increasingly unavailable in high-risk flood zones.
- ☉ When financial protection is no longer available, society assumes the risk. As flood insurance becomes less accessible, the shift from economic risk to social risk is becoming more widespread.
- ☉ To reduce the consequences of flooding, the following solutions were highlighted: Financial protection, resilience, and incentives.
  - Flood protection: Reduce the protection gap. Restore equity between different actors.
  - Resilience: Reduce vulnerability to intensification of extreme weather events. Improve the quality of the building to sustain flooding.
  - Incentives: Encourage reduction of mitigation efforts through sharing mechanisms.
- ☉ To estimate the potential damage in a given territory, Bernard's research used a damage curve and found that in one municipality, 91% of residential buildings were exposed to flooding, resulting in an average annualized damage of over \$7 billion. In contrast, another municipality had only 4% of buildings exposed, leading to an average annualized damage of over \$600,000.
- ☉ Furthermore, 68% of the buildings included in the study were found to have damages below 1% of the assessment roll, meaning that a house with a value of \$500,000 would have annual damages of maximum \$5,000. Annual damage rates of less than 1% would require less intensive strategies to reduce risk to zero. These buildings can likely maintain insurance and access to mortgage.
- ☉ 18% of buildings included in the study ranged from 1-6% of the assessment roll. This means annual damages of up to \$30,000 for a house valued at \$500,000.
- ☉ 14% of buildings included in the study were found to have damages of upwards 6%. Maintaining these buildings from an economic perspective is difficult, and relocation may be required.
- ☉ The study found that 39% of municipal representatives don't think paying for damages will incentivize them to do more to mitigate risk. 37% were more convinced that it could work. 14% think it's a very good idea and that it would have an impact and lead to municipalities taking the risk more seriously.

## Additional Resources

- 🔗 [Flooding: Toward a Municipal Contribution to Economic Risk Sharing IMFG Paper](#)
- 🔗 [Flooding: Is it time to stop living in basements?](#)

## Contact Information

Please reach out to us at any time with questions, input, or for additional information.

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