

Understanding the Determinants of Effective Policy Instruments for Climate Change Adaptation: Lessons from Ongoing Case Studies in Coastal Areas of Québec, Atlantic Canada and Massachusetts



Photo Credit: Google Earth

Adaptation Platform Webinar (January 28, 2021):

Canada's Climate Change Adaptation Platform Coastal Management Working Group (CMWG)



- CMWG consists of representatives from federal, provincial and territorial governments, academia as well as professional and other organisations working to advance adaptation and increase resilience to climate change along Canada's coasts.
- The CMWG is Co-chaired by: Natural Resources Canada and the Government of Prince Edward Island
- August 2017 Adaptation Platform call for proposals. Coastal Management: Expanded or Innovative Policy instruments.

Webinar Presenters



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Understanding the determinants of effective policy instruments for climate change adaptation: Lessons learned from ongoing case studies in Quebec, Atlantic Canada and Massachusetts

Webinar presented by Nathalie Beaulieu, Emanuel Nicolescu and David Sulewski, on behalf of the project team

January 28th 2021, Climate Risk Institute



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Project supported by



Project team

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- Caroline Larrivée and Marie-Anta Diop, Ouranos
- Emanuel Nicolescu, Léa Braschi and Vincent Leys, CBCL Limited
- David Cash, Rebecca Herst, Stacy VanDeveer, Patricio Belloy, and David Sulewski, University of Massachusetts Boston
- Richard Palmer, University of Massachusetts Amherst

This is one of the projects informing the coastal management working group of Canada's Platform on climate change adaptation

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Subjects of the case studies

In the province of Quebec

- Taking climate change adaptation into account in the Montreal agglomeration's regional land use and development plan (SAD)
- Environmental assessment of bank stabilisation projects

Atlantic Canada

- Provincial support to municipal adaptation planning in New Brunswick and Nova Scotia

Massachusetts

- The Climate Ready Boston planning process
- The Commonwealth's Municipal Vulnerability Preparedness program

What are policy instruments?

- Strategies or means used to advance the objectives of a policy (Harman, 2005; Henstra, 2015)
- They allow a policy agent to act
 - directly (e.g. a greening program or a bank stabilisation project)
 - indirectly by influencing the behaviour of other actors (e.g. using information, community engagement, plans, regulations, or funding)

Examples of instruments that can be used for climate change adaptation

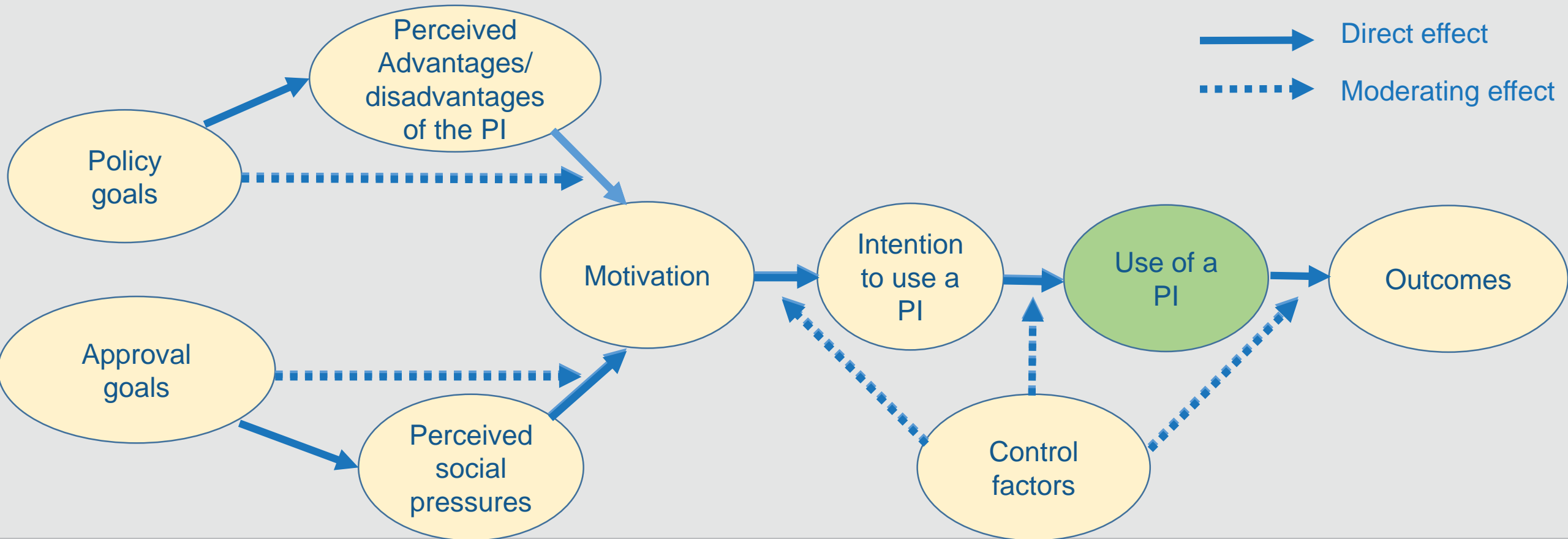
Municipal level

- Plans and programs
- Land use bylaws
- Maps
- Consultative committees
- Asset management (including natural)
- Tax incentives

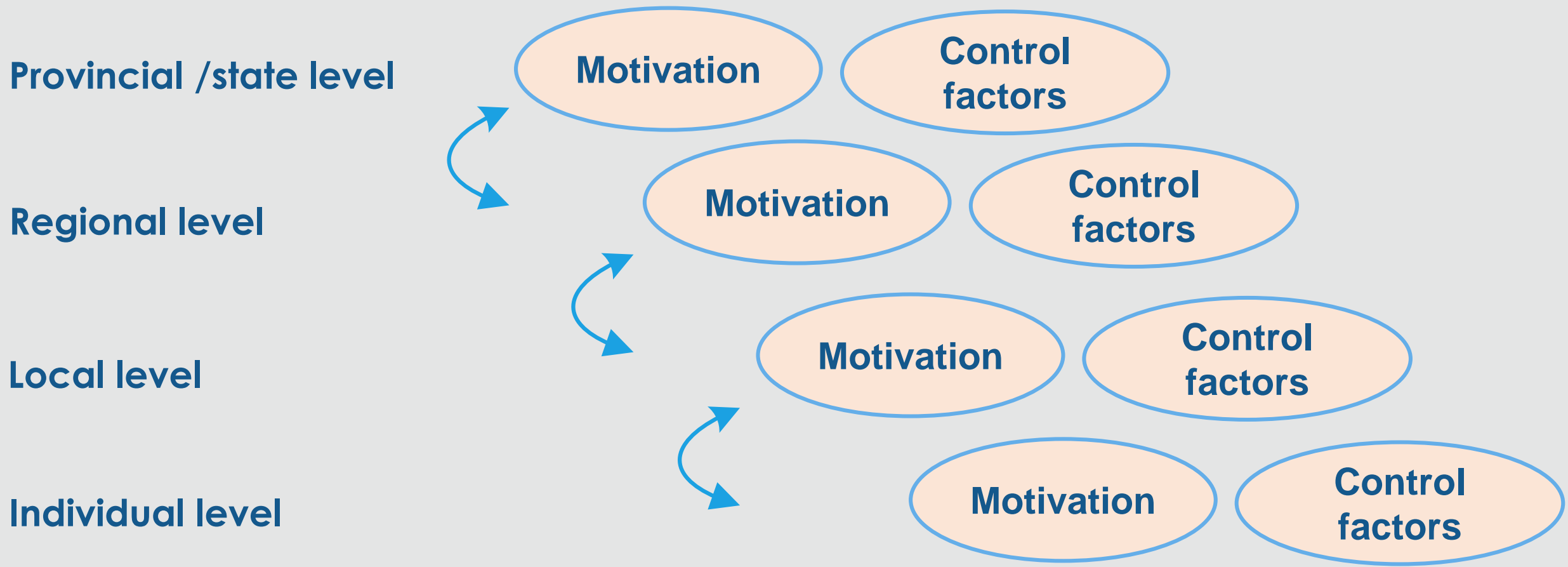
Provincial or state level

- Grant programs
- Capacity-building programs
- Websites and clearinghouses (climate indices, projections, impacts, etc.)
- Flood risk maps
- Regulations to protect coasts, watercourses and floodplains

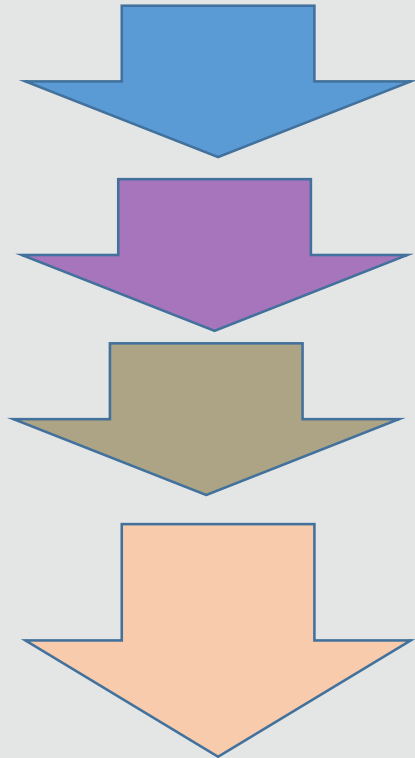
Use of policy instruments (PI): Theory of Reasoned Goal Pursuit (Ajzen & Kruglanski, 2019)



Applied to multilevel governance

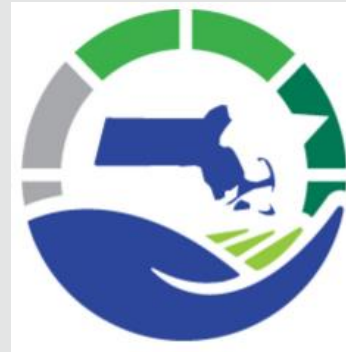
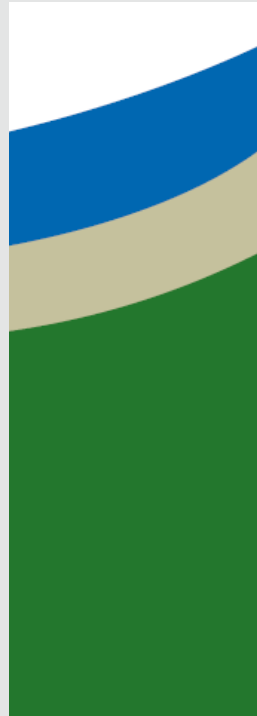


Methodology



- Literature review
- Semi-structured interviews (~ 1 hour average duration, 3 to 7 interviewees per case study, 13 in the MVP)
- Separate analysis by two judges until reaching inter-judge agreement
- Writing of case studies
- Collecting and integrating feedback

Highlights from interviews in three case studies



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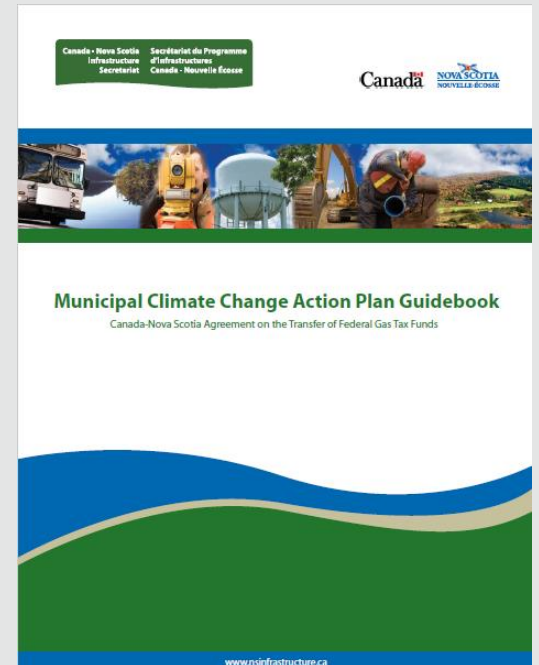
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Supporting municipal climate change adaptation in Nova Scotia

Objective: helping municipalities plan for climate change

Actions (instruments):

- [Guidebook](#) to develop a Municipal Climate Change Action Plan (MCCAP)
- Requiring an MCCAP by the end of 2013 as condition for gas tax funding
- Facilitated the use of gas tax funding to support planning



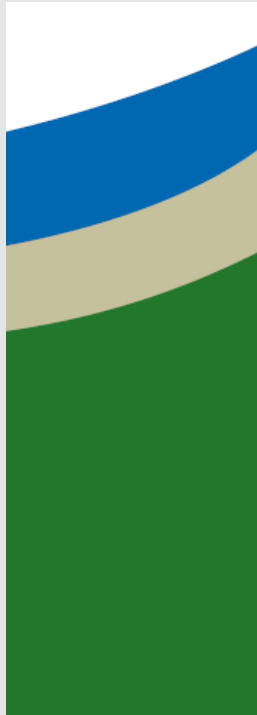
Motivating factors

Perceived advantages

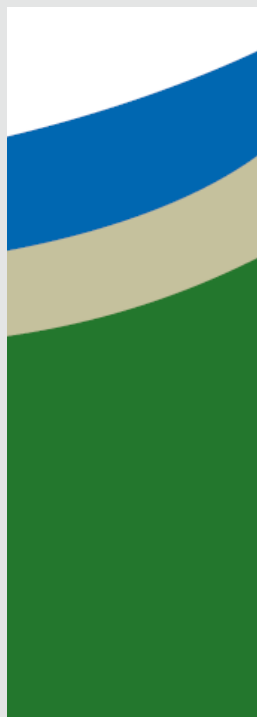
- Would incite municipalities to think about the impacts of climate change and plan accordingly
- Could lead to better prevention of floods

Perceived social pressure

- Due to floods and storm surges, climate change was an issue in municipalities' sustainability plans
- Emergency management organizations requesting better risk prevention

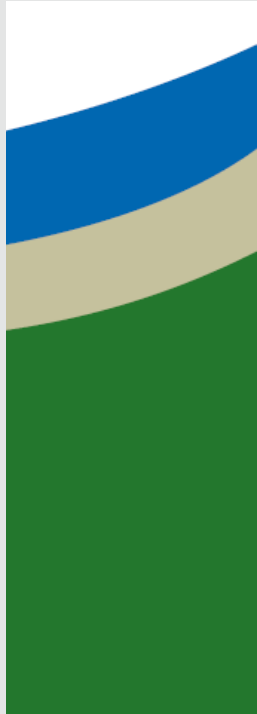


Facilitating factors for the province



- The opportunity to introduce a new reporting requirement for municipalities in the Canada-Nova Scotia Gas Tax Agreement
- Availability of climate projections and maps
- Statements of Provincial interest since 1998
- Participation in the Atlantic Climate Change Adaptation Solutions Association and in the [Coastal Community Adaptation Toolkit](#) (CCAT)

More facilitating factors



The province is paying attention and responding to constraints expressed by municipalities by

- Developing the Municipal Floodline Mapping Program
- Developing the Coastal Protection Act
- Developing amendments to the Municipal Government Act to include minimum planning requirements
- Collaborating with the Nova Scotia Federation of municipalities to include climate change in asset management

Motivating factors for municipalities

Perceived advantages

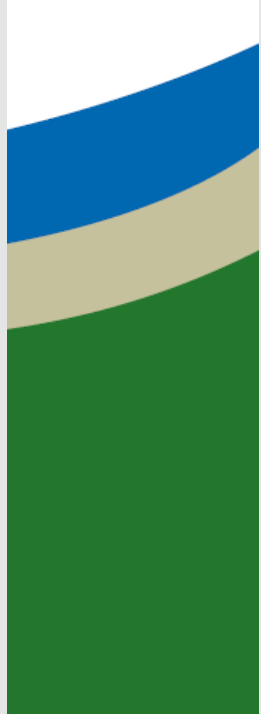
- Quality of life benefits, for example the proposed living shoreline project in Mahone Bay includes pedestrian path and bike lane, increased active transportation security and health, in addition to protecting Edgewater Street
- The possibility to reduce risks

Perceived social pressure

- Mandatory asset management (federal government)



Factors challenging the motivation of municipalities



Perceived social pressure

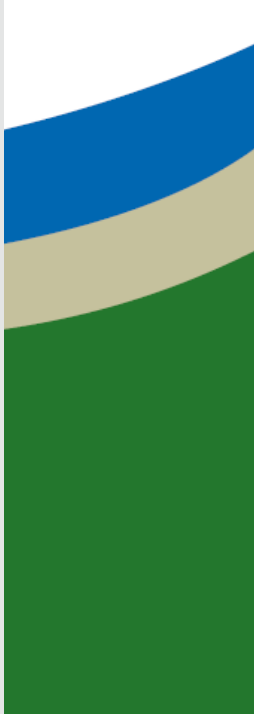
- Land owners reluctant to having limits to what they can do on their property
- Land owners potentially questioning choices of municipalities and finding them unfair
- Migration/relocation being a difficult subject, because of attachment to place
- Lack of strategic planning requirements until recently

Facilitating factors for municipalities

- Supportive council and staff
- Involvement of consultants, universities, NGOs
- Involvement of other local champions
- Having revenue generating activities
- Transportation planning
- External funding



Constraints for municipalities



- Limited financial, technical and human capacity
- Lack of updated flood maps
- Limited provincial contributions to infrastructure funding
- Towns being responsible for road infrastructure but receiving less gas tax funding than rural municipalities because of their smaller population

Massachusetts' Municipal Vulnerability Preparedness (MVP) program



- Resulted from the Commonwealth mandating both the Secretary of Energy and Environmental Affairs and the Secretary of Public Safety to work together to provide a framework and technical assistance to cities and towns
- Launched in 2017 by the Commonwealth of Massachusetts' Executive Office of Energy and Environmental Affairs (EO-EEA)
- Benefited from input of environmental NGOs such as The Nature Conservancy
- Emphasis placed on nature-based solutions and environmental justice groups

The MVP program



- Provides municipalities with planning grants, certification and action grants
- Uses the [Community Resilience Building Workshop Guide](#)
- Certified a number of consultants and regional planning agencies as vendors who can provide facilitation and planning services to municipalities
- Hired six regional coordinators

Challenges for municipalities in the MVP program



- Short workshops (1 day or 2 x 4 hours) favour attendance but limit in-depth discussions
- Lack of representation of low-income, immigrants, non-English speakers and persons with disabilities
- Translating multiple priorities into actions for adaptation and choosing which ones to fund
- Trade-offs between a technical vs. participatory approach to adaptation planning

Challenges for the MVP program



- Home rule (pre-eminence of local government over the state) possibly an obstacle to tackling issues that cross municipal boundaries, such as watershed management
- Regional planning agencies have no regulatory power
- Building resiliency & adaptation at the municipal level while also addressing existing issues of environmental inequities and injustices across the State

Overcoming some of these challenges



- Most recent cycles of MVP incentivize multi-municipal projects as a way to address issues that cross boundaries
- Regional planning agencies utilize MVP as a way to pursue regional / watershed adaptation

Considering adaptation in Montreal agglomeration's land use and development plan (SAD)



Objectives

Section on climate change adaptation is in the chapter on improving quality of life and aims to

- Increase greening
- Reduce heat islands
- Reducing stormwater quantity and increase it's quality

The SAD Also sets a target for protecting 10% of terrestrial areas

Montreal's revised SAD is in force since April 2015

Motivating factors for considering adaptation in the SAD



Perceived benefits

- Focus on greening because of all the social and environmental benefits of vegetation
- Multiple benefits of parks and protected areas to control development in areas at risk, give access to shores and retain stormwater
- The SAD influences local by-laws through conformity mechanisms

Motivating factors for considering adaptation in the SAD



Perceived social pressure

- Revision of the SAD by 2015 was mandatory following the entry in force of the metropolitan plan (PMAD), under the provincial Act respecting land use planning and development
- Public health agency was advocating for greening in response to extreme heat and air quality issues
- Environmental groups were advocating for conservation and access to shores
- Engagement of Montreal in a number of different international programs

Facilitating factors



- Adaptation section developed by municipal planning staff, with a multi-service working group and an expert committee
- Sections of Montreal's public administration with environmental goals
- Availability of climate projections
- Heat island maps provided by UQÀM
- Innovative boroughs providing examples of by-law provisions to reduce heat islands
- Water service updating City of Montreal's environmental regulations to improve stormwater management

Challenges



- Limited knowledge about the performance of possible adaptation options and their costs
- Tight deadlines limiting the number of public consultations
- Court cases with developers or land owners suing local governments for restricting their activities
- Limited budgets of local governments to acquire land and to ensure maintenance of vegetated areas

Common motivating factors across locations and scales

For authorities to use instruments such as plans, regulations, grants, providing information, technical assistance, for climate change adaptation

- Will favour sustainable development, quality of life, etc.
- Will reduce risks for civil security, real estate and infrastructure
- Requests or expectations of the constituency
- Required by authority of level above
- Previous engagements
- Accountability to funding agencies

} Perceived advantages

} Perceived social pressures

Common control factors (facilitating/constraints)

- Competent and motivated human resources in the administration
- Availability of experts (academics, consultants, NGOs)
- Availability of funds
- Availability of information (climate projections, maps, etc.)
- Involvement of members of the constituency
- “Boundary work” between the members of the constituency, experts and available information (Cash *et al.* 2003)

Common issues

- Challenges with consultation/engagement
- The necessity to limit the freedom of some groups to limit risks to them and to society in general
- Setting standards can increase the fairness and acceptability of these limitations, but involves responsibilities and costs

Preliminary conclusions

- Instrument effectiveness depends, among other things, on the capacity of authorities to combine different types of interventions towards collective and long-term benefits
- This includes their capacity to respond to constraints faced by them and by those whom they seek to influence
- Results of scientific research are used in planning, engagement and decision-making processes; they influence motivation and control factors
- Advancing goals related to sustainable development and quality of life contributes to the motivation of authorities and to their will to overcome constraints

Next steps

- Virtual workshops in February
- Drafts of the case study chapters, briefs and PowerPoint presentations available early March
- Final versions available at the end of the project, on March 31st.

Please contact us if you would like to give feedback on some drafts or participate in our reflections:

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Thank you for your attention !



And thanks to all the participants in the case studies

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