From CC science to adaptation planning and decision making: The Ouranos experience

Alain Bourque
I&A Director
Caroline Larrivée

www.ouranos.ca
and
Guillaume Simonet

UQÀM
Université du Québec à Montréal

GoldCoast, Australia
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>90% of population lives in <10% of land. Diversified/growing economy. Cold winters. Often warm/humid summers.


Main objectives
Provide to decision makers:
• Relevant regional scale climate scenarios
• Assessment of impacts and vulnerabilities
• Facilitation of adaptation actions/planning

Urban floods, rural floods, coastal flooding, coastal erosion, low reservoir levels, forest fires, heat destruction from loose ice, fishery productivity and capacity, distribution/transport, way of life, fauna, ice roads, permafrost failure.
**Ouranos consortium structure to facilitate adaptation**

- **Members**
- **Scientific Council**
- **Board of Director**
- **Chief Executing Officer**
- **Administration**
- **Informatics**
- **Communication**

**Regional Climate**
- Climate Simulations
- Hydro Climatic Analyses

**Impacts and Adaptation**
- Northern Environment
- Maritime Environment
- Built Environment
- Natural Environment
- Water Resources
- Health
- Energy Production
- Forests Resources
- Agriculture
- Tourism/Leasure

**Departments:**
1. Public Security
2. Environment
3. Natural Resources
4. Municipal Affairs
5. Transport
6. Agriculture and Fisheries
7. Economic Development
8. Health/Social Services

**Contributed Manager:**
- Hydro Québec
- Environnement Canada
- Université du Québec à Montréal
- McGill
- INRS

**Resources:** Financial, human, infrastructures, R&D and users network.
Modoified programs to better feed adaptation needs

Framework: Development of knowledge and tools while promoting synergies, tech. transfert and communication

Adapted from Vescovi and Bourque, 2009
Multidisciplinary coastal adaptation study for 3 towns

Past climate

Future climate

Sea level rise
Protecting ice cover reduction
Freeze-thaw cycle increases
Increased storminess

Modification of coastal processes
submersion
alteration solifluxion landslides
Increases in wind intensity and wave height
Increases in frequency intensity of storms

Portfolio of adaptation solutions
zoning
Control développement
Infrastructures
retreat
relocation

3 research groups

"Climate group"
Documentation of past and future climate

"Coastal dynamic group"
Evaluate impacts on different coastal processes and usage

"Users group"
Estimate impacts and adaptation solutions

3 study areas

Acceleration of coastal erosion

Projection in 2030 of scenarios for areas at risk

S1 Optimistic scenario
Mean rate in last 30 years

S2 Moderate scenario
Max decadal rate since 1930

S3 Pessimistic scenario
S3 = 2 S2 – S1

Cost/benefit analysis for adaptation, scenarios
Objective: maximize quality and usefulness of V&I&A activities by involving key Partners from the start

Weight function of:
- Uncertainties and reliability
- Data and resources
- Vulnerability to variability
- Importance of non-climatic
- Type of users/issues
- «Mainstreaming» potential
- …

Managing «boundaries» between partners and scales

Each have their own:
- Objectives
- Conceptual models
- Base info
- Time horizons

More likely to be effective when:
- Information salient, credible, legitimate
- Active multidirectional communication
- Efforts to translate
- Good mediation

VARIOUS LEVELS OF ENGAGEMENT FROM MEMBERS IN CHARGE OF MAINSTREAMING ADAPTATION

Deputy/Minister
- Adjoint Deputy Minister or Director
- Contributed manager or coordinator
- Contributed expert/scientist
From case studies to a provincial adaptation strategy

Meeting Canadian Kyoto targets for Quebec by 2012

- Mitigation: -20% by 2020!
- Adaptation: Broad multi-ministerial 2 years initiative to identify actions to support adaptation through 5 major roles

Adaptive capacity or Adaptation actions


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- Adaptation: Broad multi-ministerial 2 years initiative to identify actions to support adaptation through 5 major roles