Analysis of Socioeconomic Impacts and Adaptation to Climate Change by Quebec’s Tourism Industry

(Innovative Tourism Research)
Project Coordination
Transat Chair in Tourism, ESG UQAM

In collaboration with

Ouranos Consortium on Regional Climatology and Adaptation To Climate Change (RAC-Québec)
University of Waterloo (IC3)

Partners

Ministry of Tourism, Société des établissements de plein air du Québec (Sépaq)
Sector-based associations: skiing, golf, camping, snowmobiling
Tourism associations: Eastern Townships and the Laurentians, and 3 CLD (Laurentians)
Créneau d’excellence Tourisme de villégiature quatre saisons
RATIONALE

• Climate change is affecting the biosphere, hydrosphere and cryosphere in Canada (ex: unstable ice or shorter ice season (Bonsal et al, 2006; Ouranos, 2010; Arcticnet compendium, 2010).

• Seasonal Recreation & OUTDOOR NATURE BASED ACTIVITIES (Scott & al, 2008; 2007) are affected by CC.

• Unreliable weather and changing patterns can increase vulnerability of summer (golf, camping, parks) & winter recreation resource; snowmobiling, alpine ski, cross country (Ouranos, 2010; Bourque et Simonet, 2008).

• Business opportunities and risks may arise from CC modifications. Impacts could be encountered in businesses across Quebec and it’s southern regions «the Eastern Townships and Laurentian regions».

• Need to determine the extent of CC impacts on seasonnal tourism businesses
THE CURRENT SITUATION (climate & trends)

Source: Ouranos, 2010
OBJECTIVES

1- Assess the potential extent and impact by using visitor projections for 2020-2050 horizons on outdoor & recreation activities (ski, golf, camping, x-cross country, snowmobiling and Provincial Parks).

2- Describe the economic impacts under different climate scenarios for 2020-2050 and how these may affect regional tourism dynamics.

3- Assess climate risk management perceptions and practices by the tourism industry.

4- Identify relevant adaptation strategies (measures) for outdoor tourism and recreation sector of Québec.

5- Determine recommendations to fully engage tourism stakeholders in Quebec, leading to appropriate adaptation strategies and measure (regional/local).
METHODOLOGY (adaptation process)

Socioeconomic Impacts and Adaptation to CC
(Alpine skiing, golf, camping, snowmobile, Parcs, cross country skiing)

Climate and tourism (demand/offer) scenarios (2020-2050)
- Res: 200 km, 3 GHG scenarios (CGM), visitation and climate data sets (T, P, SD), ski station parameters, statistical methods and trends
- Impact assessments (seasonal activities)
- Regional economic impacts projections 2020

Participatory Action Research (PAR) and SAS²
- CC perceptions and challenges
- Factors (+/−)
- Strategic orientations (pilot regions)

Benchmark
- Adaptation projects (Europe, Australia, Canada)
- Case studies
- Risk management (climate)

Validate & specify qualitative data, outreach
(Intentions, actions, extreme events, visitation, cost, industry needs)
- Questionnaire on CC
- Interviews
- Discussion groups

Recommendations
- Future projections (2020-2050)
- Good practices
- List of adaptation actions
- List of efforts and needs

Adaptation process continuity
METHODOLOGY (adaptation process)

Participatory (community-based) action research (PAR) for adaptation.

- Project or program planning and evaluating
- Learning
- Problem solving
- Social engagement in complex settings involving multiple stakeholders

Workshops (sectors/regions)

Social analysis system (SAS2)
Tools & processes

Advantages:

- Accessible to beginners
- Flexible and adjustable
- New approach to educational, community and public engagement.

Progressive learning, decision making and adapting to CC together

SAS2: A Guide to Collaborative Inquiry and Social Engagement (Chevalier & Buckles, 2008), Carleton University, Ottawa, Canada
RESULTS: Regional perceptions

SAS 2: Cartesian graph

Purpose:
understand climate change perceptions through different probabilities & weight of impact (+/-) on seasonal products

(Computerized version on the left versus drawn on the right)
RESULTS : Sectors perceptions

SAS2 : Force field analysis (degree of control)
Cross - country skiing & snowmobiling

Purpose : understand factors that contribute to a problem and those that counteract it.
Goals : maintain activities and economic growth

<table>
<thead>
<tr>
<th>Counteract -</th>
<th>Contribute +</th>
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<tbody>
<tr>
<td>Late snow in early season, recurring freeze &amp; thaw cycles</td>
<td>Regulations (land) = improved user coexistence</td>
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<td>Winter precipitation (rain), thermal variability (more complex operations)</td>
<td>Demographic increase &amp; regional economic spinoffs (hotels, shops, etc.)</td>
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<td>Energy (fuel costs), snowmobile $$, Investments &amp; maintenance</td>
<td>Mild seasonal weather (snow), ↓ T winter extremes</td>
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<td>Media communication of weather</td>
<td>Technological advances, equipment</td>
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<td>Lack of expertise (manage $$, equipment)</td>
<td>Sustainable development of trails</td>
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<td>New real estate development (limit access to slopes &amp; trails)</td>
<td>Diversification (activities, hotels, packages)</td>
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<td>Communication &amp; image</td>
<td>Increase of well being and demand (cross country skiing)</td>
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RESULTS: Adaptation strategies, evaluation & feasibility

SAS2: Socratic Wheel
1- Use the cartesian graph results
2- Recognize strategic orientations (plenary session)
3- Brainstorm on potential adaptation actions

SAS2: Floor mapping
Snowmobiling & cross-country skiing
Proposed sector based adaptation actions

Axe Stratégiques
Cantons-de-l'Est

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<tr>
<th>Axes Stratégiques</th>
<th>Situation actuelle</th>
<th>Situation désirée</th>
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<td>Changement</td>
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<td>Technologies, Recherche, Développement</td>
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Proposed sector-based adaptation actions

1. Communication, education
2. Social and environmental responsibility
3. Research, development, innovation, technology
4. Diversification
5. Development & infrastructure
6. Practice and policy modifications, climate fund
7. Maintaining the quality of products

Regional strategic orientations for adaptation action

1. Communication, education
2. Social and environmental responsibility
3. Research, development, innovation, technology
4. Diversification
5. Development & infrastructure
6. Practice and policy modifications, climate fund
7. Maintaining the quality of products

Regional discussion groups & personalized approaches

**Eastern Townships** = integrate adaptation into the renewed tourism association management plan: assets (mountain destination & diversification)

**Laurentians** = mobilize water users and form a cross-sectoral committee; include adaptation in an existing or new project (DD & CC) (e.g., ecotourism park, ski resort or multi-function destination).
RESULTS: sectoral needs towards real applications

How we can help the tourism industry in the future?

- Informative web portal on CC impacts and adaptation initiatives (mitigation)
- Business training & education
- Guide (understating of CC & good practices)
- Incentives to innovation

Adaptation process leading to enhanced resilience of seasonnal practices
1- Impossible to address climate change without considering all the challenges

2- Climate is not the determinant factor of growth & disruptions in operations

3- The tourism regions must consider the diversity of products offered to evaluate vulnerability (supply) in order to make adaptation decisions.

4- More tourism sectors and stakeholders must be mobilized

5- In a regional perspective, the industry must adopt a collective attitude towards climate change adaptation.

6- Research needs to involve (outfitters, ski, camping, parks) in participatory action research (PAR) workshops to develop a regional approach an encourage sector-based adaptation actions.
CONTRIBUTIONS

- First study of its kind in Quebec with visitation data (1998-2008) for the tourism industry
- Better knowledge of climate dynamics, tourism issues, adaptation solutions of involved parties
- Regional approach & strategic orientations for ongoing work in a collaborative manner (adaptation)
- Comparable techniques, knowledge transfer, social engagement and industry outreach (Toolbox)
- Tourism and climate projections of impacts on tourism visitation, revenues, snowmaking and season length
- End of project (October 2012), tourism actors want to continue the adaptation process initiated
Thank you!

Questions

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Impacts and adaptation to climate change
(Tourism, northern and maritime environments)
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