

# Adaptation processes of peripheral coastal tourism communities in Québec, Canada

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## Abstract

The research aims to explore how climate change and the discourses about adaptation to climate change are altering the spatial development of the tourism industry in coastal destinations in the periphery. Firstly, we will review the consequences of climate change for the coastal environment and tourism. Then, we will present the role of space in the adaption of the tourism industry. The reproduction of the coastal tourism space in the context of adaptation to climate change will be illustrated by two case studies in Eastern Québec in Canada – the communities of Tadoussac on the north shore of the St-Lawrence River and of Notre-Dame-du-Portage on the south shore.

*Keywords: climate change adaptation, tourism space, production of space, Québec, Saint-Lawrence River.*

## 1 Introduction

According to the World Meteorological Organization, the period 2011–2015 was the warmest recorded to date. This transformation of the global climate will have impacts for all ranges of societies and the tourism industry. The research aims to explore how climate change and the discourses about adaptation to climate change is altering the spatial development of the tourism industry in coastal destinations in the periphery. Firstly, we will review the consequences of climate change for the coastal environment and tourism. Then, we will present the role of space in the adaption of the tourism industry. The reproduction of the coastal tourism space in the context of adaptation to climate change will be illustrated by two case studies in Eastern Québec in Canada – the communities of Tadoussac and of Notre-Dame-du-Portage.

### 1.1 A change in climate: temperature and sea are rising

Recent decades have seen the climate transformed by human action, oceans and the atmosphere have warmed, the sea level has risen and the ice-covered poles decreased (Pachauri *et al.* [1]). According to the Intergovernmental Panel on Climate Change (IPCC) [2, 3] we are moving towards an increase in global average temperature of 2.6 to 4.8 degrees by the end of the century. With these changes, add an increase in extreme weather events, ocean acidification, an accentuation of coastal erosion, flooding of floodplains and the appearance of invasive alien species. In Québec, Ouranos [4] predict an increase of 2 to 4 degrees by 2050 and 4 to 7 degrees by the end of the century. The level of the St. Lawrence Gulf will increase by 30–75 cm. This increase will create erosion, flooding and a transformation of the coastal ecosystem of the Gulf and Estuary (Bernatchez *et al.* [5]).

### 1.2 Impacts for coastal tourism communities

The tourism industry is vulnerable to climate change because many of its resources, such as coastal areas and natural attractions, will be strongly affected (Jones and Phillips [6]; Becken and Hay [7]; Nicolls [8]). Coastal destinations are likely to be most affected by rising sea levels and extreme weather episodes. Compared with other sectors, research on the adaptation of the tourist industry is lagging behind, mainly at the community level (Becken and Hay [7]; Scott *et al.* [9]; Saarinen [10]).

Adaptation, which is of vital importance to several communities, is becoming a priority for this industry. The adaptation of local communities would be influenced by spatial dynamics, such as changes in the flows of visitors, transforming physical and geographical resources for tourism, relocation of infrastructure and the adoption of development and public policy strategies (Scott *et al.* [9]). These spatial dynamics are at work at different scales (e.g. national and international agreement policies) (Lépy *et al.* [11]), challenge the response capacity of local stakeholders (Plante *et al.* [12]) as well as the representations and attachment to the land of these stakeholders (Amundsen [13]).

However, current research on adaptation to climate change in the tourism industry has little interest in the spatial dimensions of adaptation and non-climatic factors, such as the evolution of representations of local stakeholders facing the transformation of tourism resources valued locally (Kaján and Saarinen [14]). However, these representations are directly involved in the spatial dynamics and material practices behind the tourism development of destinations (Buzinde *et al.* [15]). Indeed, current work focuses on finding supranational governance arrangements of the climate issue and technology choices to adapt to climate change (Giddens [16]; Urry [17]). They neglect the unequal distribution of the impacts of climate change and the fact that they are experienced differently in affected communities (Amundsen [13]), hence the importance of addressing the issue of climate change adaptation through the lens of spatial dynamics and to put local stakeholders at the core of the research.



### 1.3 The central role of space in tourism

Space is the main resource of tourism (Lozato-Giotart [18]). The destinations do not have the ability to relocate, hence, the crucial role for adaptation processes to be implemented (Joppa *et al.* [19]). This is especially true in the case of coastal areas where space is a scarce and coveted resource (Plante [20]) for a multitude of stakeholders. These stakeholders are all holders of social representations, discourses in the use and development of tourism space and, by extension, representations and discourses on adaptation to climate changes. If the tourism ability to transform the space is a known issue (Ashworth and Dietvorst [21]), the issue of adaptation of tourism to the transformation of physical space by climate change is little discussed. When approached, it is mainly regarding natural and technical sciences (Jones and Phillips [6]; Kaján and Saarinen [14]), leaving the social dimensions aside. The choice of adaptation strategies to climate change come from the stakeholder's social representations of climate change, the impacts that these changes will have on space and the different options available to adapt. These representations are expressed in discourses on space, tourism, climate change, and adaptation, which raises the question: how does climate change and the discourse on climate change adaptation alter the development of the tourist industry in coastal destinations in the periphery?

This intersection between the geographical and sociological gaze leads us to an epistemological posture where space is a social production (Harvey [22]; Lefebvre [23]; Di Méo and Buléon [24]). Thus, space is not just a passive receptacle of human action, it is also a result of this action in the interpretation and ownership that make local stakeholders. These interpretations, appropriations, and constructions by the stakeholders spatialized the action through social appropriation processes (Klein [25]; Di Méo and Bulléon [24]). The territory is the space provided by local stakeholders through their practices, representations and spatial imagination (Di Méo [26]). To analyze the space and its production, we will use the concept of relational space. We define it as all social and political relations that give meaning to a given space for stakeholders (Harvey [27]); relationships expressed through representations of space and social practices (Lefebvre [23]). Approaching these relationships with a territorial approach allows us to focus on the evolution of the forces that produce the historical result of the socio-economic activity in space (Smith [28]; Soja [29]), including tourism (Meethan [30]), and without neglecting the role of physical constraints.

## 2 Methodology

This exploratory research will address the issue of climate change adaptation in coastal tourist areas. This exploration will be using the case study strategy (Yin [31]). The cases selected are two communities along the estuary of the St. Lawrence River in Québec, Tadoussac and Notre-Dame-du-Portage close to Rivière-du-Loup. The interest of the comparison is to observe the process of (re)production of the tourist area of the coastal part of the dynamics of territorial stakeholders and the different responses in adapting to climate change.



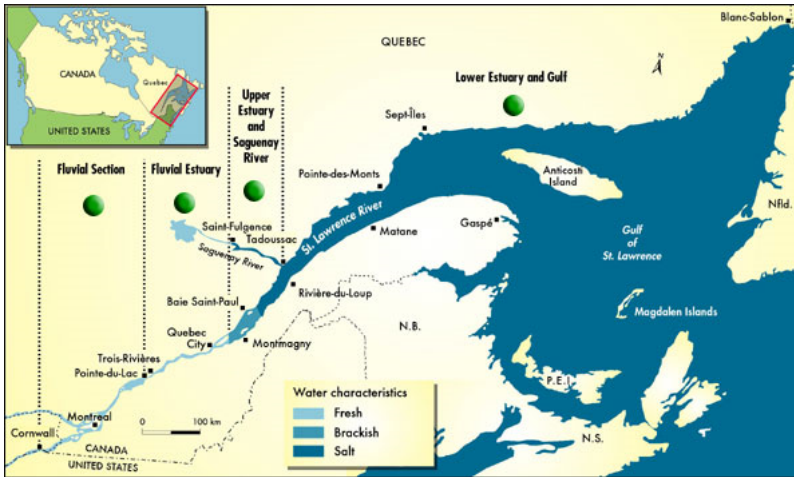


Figure 1: St. Lawrence estuary map (source: Environment Canada 2013).

Table 1: Socio economic portrait of the communities (source: StatCan 2011).

Categories	Notre-Dame-du-Portage	Tadoussac
	2011	2011
Population	1193	813
Schooling (no diploma)	10,8%	22%
Unemployment	0%	25,3%
Household average income	67 662\$C	52 007 \$C
% Government transfer payments	13,6%	25,9%
% low income units	11,4%	14,9%

This paper reports the first stage of a larger project on (re)production of tourist space in the context of climate change. In this paper we restricted the analysis of two coastal communities and the analysis of four kinds of discourses: discourses local municipal, regional environmental technical discourses, local and national tourism development and climate change discourses. Those discourses are conceptualized as one moment of the social processes internalizing all other social times (power, values, institutions, practices and material, social relations) (Harvey [22]). These discourses, under the forms of official documents have been analyzed with Nvivo with thematic textual queries. The themes guiding the queries were tourism, development, climate change, erosion and shores. Then the themes were reified together as part of the relational space produced and (re)produced by those discourses. We used this method to analyze how those discourses act on the local communities. The discourse analyses were twofold; here the four kinds of discourses were aggregated into two main discourses: tourism development and climate change discourse discourses and then restated through three geographic scales: local, regional and national. The national and regional scales applied to the two communities with the local scale while being presented separately for each community.

### 3 Finding two communities born in the era of steamship cruises

#### 3.1 Notre-Dame-du-Portage

The community of Notre-Dame-du-Portage (NDP) is a neighbouring community of Rivière-du-Loup by the St. Lawrence River. It is characterized by its history of second home and coastal tourism activities. Since the 19th century, NDP has been a summer home resort. The development of steam cruisers on the St. Lawrence, known as “les bateaux blancs”, and then the railroad have transformed the whole region into a popular tourism destination (Gagnon [32]). At the height of this era, around 5,000 people were spending the summer in the stations that were NDP, St-Patrice and Cacouna (Choko *et al.* [33]). The main activities were cruises on the St. Lawrence, and the beaches. Today, of those three communities only NDP has kept this part of tourism functioning.

In 2011, NDP was a village of 1193 residents. Its average income and schooling level are the highest of the county (Statistique Canada in MRC Rivière-du-Loup [34]). Mainly a white collar community, NDP still counts a good number of summer houses, even if the phenomena is not as important as it was in the 19th century. The village has two hotels right by the shore that offer spa and health services. Even though the community is no longer solely based on tourism, its whole identity revolves around its summer home resort quality and ambiance.

The core of the tourism activities of NDP is concentrated on a small linear road at the bottom of a cliff and parallel to the shore of the St. Lawrence estuaries. This linear occupation of the shore, limited at the rear by the physical constraint of the cliff makes space a rare and valuable resource, but also a space at risk from extreme weather events. As the effect of climate change on the estuaries and its shore has been documented since 1998 (Shaw *et al.* [35]), the questions became acute for NDP’s residents in December 2010 when a storm surge hit the community. During the storm, a part of the road was submerged, many houses were damaged and one of the summer homes was carried into the river by the waves. Following this storm, the question of adaptation of the community to climate change has been raised locally.

#### 3.2 Tadoussac

Located on the north shore at the intersection of the St. Lawrence River and the Saguenay River, the village of Tadoussac is a small community of 802 inhabitants (MRC Haute-Côte-Nord [36]) distributed a little over a territory of 50km<sup>2</sup>. The village is best known for its tourism and seaside resort. It is one of the oldest villages of Québec and has witnessed the occupation of both American-Indian and European settlers. Like the NDP development, the arrival of the “bateaux blancs” changed the development of the village, turning it into a popular resort. Tadoussac developed its seaside destination signature as a resort in which to relax and rest. Its clientele, mostly anglophone and affluent, came from Montréal and Québec to escape the rigors of such cities (Trepanier [37]).



Hotel Tadoussac, the first hotel built in 1864, became the symbol of the tourist town until the 1970s where it was supplanted by the whale watching cruises as the symbol of the destination. The village now attracts a wide variety of travelers both local and international (European and American). The recent development of new activities in natural, cultural, and historical tourism have aimed to diversify the local tourism industry and expands the profile of the target visitors. Nevertheless, the proposed core business remains the observation of marine mammals at sea.

Tadoussac tourism is estimated to be between 300 and 350,000 visitors a year and this on a very small territory along Tadoussac Bay between St. Lawrence and the Saguenay Fjord (Cayer-Huard [38]). Tadoussac tourist activity is seasonal and concentrated during the summer period, from June to September. For the rest of the year, the vast majority of tourist residences and service facilities close. As it is seasonal, some local stakeholders and the English summer residents leave the village. For the rest of the year, Tadoussac, therefore, sees some form of devitalized occupation of territory compared to its abundant summer activity. This is confirmed statistically. In 2011, Tadoussac was the community with the highest county employment participation rate (64.3%) and also the highest unemployment rate (24.4%) of the county (Development Plan [39]).

This desertion is particularly evident given the fact that in order to meet high seasonal demand, Tadoussac is the territory offering the services and tourist accommodation structures of the Haute-Côte-Nord county while it is the smallest geographical area of the region (more than 80 businesses, only a dozen of which are open all year round) (Cayer-Huard [38]).

## **4 Climate change adaptation discourses: between risk and market**

### **4.1 National discourses**

The discourse on climate change is carried by national stakeholders, mainly in the form of the Québec strategy to fight climate change (Québec [40]). As we highlighted in a previous paper (Lapointe *et al.* [41]), this discourse presents St. Lawrence as a focal area through multiple flows – economic and social – but is also a vulnerable area to climate change. The adaptation is presented as being dependent on the values that will be granted to these areas, and, implicitly suggesting regulation by the market adaptation to climate change.

### **4.2 Regional discourses**

Regionally, the discourse on climate change adaptation is integrated into the discourse on land planning and environmental conservation. The planning discourse considers adaptation to climate change as a regulatory issue that calls for tighter management regulations for property owners located in a high-risk area. Adaptation becomes a responsibility of private owners within a regulatory framework that identifies structures that can be built to protect the land from



erosion and flooding. It is especially true for the Tadoussac community where its regional instance adopted strict rules for construction in the zone at risk of erosion.

The other regional environmental discourse is a discourse carried by integrated coastal zone management organizations. This discourse represents the space of the estuary as a natural space in transformation under the impact of climate change. The adaptation process is mainly the re-naturalization of coastal ecosystems, through public and collective actions so the ecosystem could play its role in controlling coastal erosion. Although this environmental discourse favors dialogue and interventions to restore the healthy coastal ecosystems, they do not disqualify many individual land protection interventions in coastal areas. Indeed, although this discourse describes artificial interventions, such as wall protections, riprap, and ears as interventions whose long-term efficiency should be questioned, it still offers a set of good practices in connection with these interventions.

### 4.3 Local scale

In the case of NDP, where most of the coast is built and artificialized, this discourse is spatially expressed in the revegetation of the swamp of the northeastern bay. This action is taking place in the area where private appropriation of the coast is virtually absent. It thus leaves a blur on the interventions to prioritize in the area artificialized, even in the public part of the coast next to private properties. No plan for intervention along the artificialized and built areas are planned to date.

In the case of Tadoussac, it expresses itself by a work on the characteristics of the different beaches around the community and the land use restrictions that should be applied to limit the erosion of those beaches and the sand cliffs surrounding them. The main sand cliffs and beaches of the community has been acquired by the provincial government to give them a conservation status and, therefore, limits land use and development on those pieces of land. On the other side, most of the pier and other maritime infrastructures necessary for the whale observation cruises are privatized. The climate change adaptation for this crucial local industry is twofold: protect and rebuild for the material infrastructures and diversified to face the diminution of the whales in the area.

## 5 Tourism discourses

### 5.1 National scale

The tourist discourse is carried by several levels of stakeholders. Indeed, St. Lawrence is considered to be one of the major attractions of Québec. As mentioned by Lapointe *et al.* [41], the tourism development strategy built an image of St. Lawrence as a place of dreams, desires and structured recreation poles connected by circuits. The poles are designed to capture the international passenger flows, mainly cruise lines, and circuits are designed to disseminate these visitors in the coastal areas. NDP is 200km by road from the nearest pole,



Québec City, and is integrated within the circuit called Le circuit des navigateurs. As for Tadoussac, it is considered to be the heart of the center of the Saguenay St. Lawrence Marine Park. Henceforth, it is identified as the core of the Saguenay-St-Laurent pole because of its budding international cruise industry.

## 5.2 Regional scale

Regionally, St. Lawrence and its coast are also the places of predilection of tourism. The coast is represented as an exceptional natural environment, a space of contemplation and renewal, but also a space of discovery and active recreation. The images used to describe are those of a natural environment, little changed by man. It is as a natural heritage that the Saint-Lawrence River is proposed as a tourism resource.

## 5.3 Local scale

At the local level, the Municipality of NDP, tourism is presented from the perspective of vacationing. It revolves mainly around a heritage approach to the history of the resort area expressed in a set of rules to keep the buildings' character and view of the river. These measures result in the adoption of a Site Planning and Architectural Integration policy. It oversees "construction, renovation, changing colors or changing the landscape appearance (shed, fence, hedge, parking) affecting all sectors of the building of La Route du fleuve" (Infoportage July 2010 p. 3). The objective is to ensure that the cultural landscape of la Route du Fleuve keeps its sober look, respecting these architectural styles and that the views on the St. Lawrence are not obstructed by architectural changes and landscaping.

Another element of the tourism discourse lies in the identification of public access to the coastline. This last point reflects the land ownership of coastal areas (already identified by Gagnon [32]) as a process in the development of tourism space in Québec. Indeed, this area is now heavily artificialized and densely built. Landholdings are owned privately and serve as a barrier to the use of the public part of the coast. This observation highlights the importance that is put locally to identify and, in some cases, to negotiate access to the coast.

In short, tourism discourses produce NDP as an access point to the St. Lawrence River, which is represented as a unique natural area home to protect ecosystems and discover. Heritage conservation values are invested in space along la Route du Fleuve to limit changes in the atmosphere by private residential owners. Also, a local desire to preserve public access to the coast in order to maintain social and material practices associated with it emphasizes the importance of access to the coastline in local tourism practices. These observations also help to see the extent of the private appropriation of this highly valued space. It is also important to note that the tourism discourses analyzed only mentioned the issue of climate change regarding the change in the seasonality of tourism and never as a force capable of transforming the tourism space.





At the local level, the Municipality of Tadoussac, we can identify a clear orientation of a seaside resort. The village enjoys an exceptional location in the intersection of the St. Lawrence and Saguenay Fjord, so the maritime space is an asset to the destination; an asset valued by tourism discourses.

As a tourism mono industrial town, Tadoussac economy revolves around the observation of marine mammals at sea. The village is a strategic place for feeding and breeding of belugas whales. However, with the success and resurgence of observation cruises, the Saguenay St. Lawrence marine park, in collaboration with the Eco-Whale Alliance, is responsible for traffic management of cruise ships and whale watching tours. The maritime space is such a product for the village that it has just received accreditation as a cruise destination, confirming its role as a tourism pole, and benefits from thousands of dollars from government funds to develop its maritime infrastructure.

Tourism development discourses show that the local community does not want to stay only as a maritime tourism product. Terrestrial and cultural products are gradually highlighted to allow diversification from dominant maritime products. Many footpaths managed by park Saguenay and Saint Laurent are the subject of increasing interest from a tourist point of view. The concern for the preservation and enhancement of the natural heritage is also a leitmotif in Tadoussac. Following the renewed observation of anthropogenic disturbances in the sand dunes of the area, the state now owns the land sector to integrate it in the national park, in collaboration with SEPAQ, the conservation governmental agency. This appropriation, per transaction and expropriation, by the state of this part of the land implies a genuine concern for conservation of the sand dunes threatened by inappropriate human uses. Just like NDP, the village also has a site and architectural integration policy (PIIA) to preserve the local charm of the architecture of the village, and control private development projects.

However, the village's economy was historically built around the St. Lawrence River and the Saguenay Fjord. The whale watching cruises, among other activities, but also the explosion in demand for summer homes and a process of urbanization along the bay of Tadoussac reflect this interest to appropriate the shores of the St. Laurent and especially the views towards it.

Currently threatened by the risk of major erosion, park Languedoc where English private residences are situated along the bay, now holds national reserve status to prohibit any new construction in particular and preserve the attractiveness of this section of open land on the river. In a more formal way, the county of Haute-Côte-Nord set in 2008 an RCI, an interim regulation, to regulate and control the development of the bay. This regulation is seen as a necessary control to prevent private riprap works and the erection of protective walls without permits along the bay.

The small community of Tadoussac is, therefore, a space at high risk and experiencing many anthropogenic and phenomenological threats. Thus, ownership of these different social and tourist areas, sea and land, institutions and government show a willingness and regulatory land protection through conservation. Almost all of its 50m<sup>2</sup> land area is subject to special regulations from the Saguenay St. Lawrence Park, the architectural policy, the county and its



RCI, the nature reserve of the Languedoc and the Saguenay-Saint-Laurent marine park and the Eco-Whale Alliance.

## 6 Discussion and closing remark

Our objective was to explore how tourism development discourses and climate change adaptation discourses were involved in (re)producing tourism space. We analysed national, regional and local discourses and their effects on the production of the tourist space of the community of Notre-Dame-du-Portage and Tadoussac. Because of the exploratory dimension of the research, we limited the scope to those two discourses.

Adaptation to climate change is taking place differently in the two cases, but also contains similarities. The two territories have in common to build defensive structures to adapt without retreat in a hold the line strategy. The two cases differ in the role of adaptation procedures in NDP protective measures are put in place on private initiatives and aim the protection of private property, mainly from erosion. On the side of Tadoussac, the protective measures put in place target attractions such as dunes, access to the beach and the cruises pier. Public appropriation of space at risk through heritage and conservation discourses called for stronger regulatory and binding strategy in Tadoussac, specifically on the issue of construction in an erosion zone. This limitation discourages private appropriation of these spaces and thus leaves room for other stakeholders, such as government conservation agencies. The changes in the behaviour of marine mammals also makes the destination adapt by diversifying its tourism products, among others towards the discovery of land ecosystems and the development of cultural tourism products.

One of the elements that need further analysis is the question of the ownership status of the areas at risk from adverse weather that also act as tourism resources. Areas under public ownership show a greater diversity of interventions; ecological intervention by replanting, different regulatory prohibitions of construction, while the privately owned spaces try to adapt with minimal retreat, leaving the existing buildings at risk in the case of extreme weather events. The integration of the property value in the context of climate change is therefore a key aspect to consider in future research. An in-depth reflection on the topic should be conducted because it is at the heart of adaptation strategies without retreat (hold the line) because land rent could be higher than tourism rent.

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