

## Developing an Arctic Tourism Observation System

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<sup>a</sup> Ginny Fay, Assistant Professor of Economics, [ginnyfay@uaa.alaska.edu](mailto:ginnyfay@uaa.alaska.edu)

<sup>b</sup> Anna Karlsdóttir, Assistant Professor of Human Geography and Tourism Studies, Chair of Geography and Tourism Research Center, [annakar@hi.is](mailto:annakar@hi.is)

<sup>a</sup> Institute of Social and Economic Research, University of Alaska Anchorage

<sup>b</sup> School of Engineering and Natural Sciences, University of Iceland

Arctic Observing Network – Social Indicators Project

<http://www.iser.uaa.alaska.edu/projects/search-hd/index.htm>

### Abstract

This paper reviews and assesses the state of data used to describe and monitor tourism trends in the pan-Arctic and their potential social effects. We selected 12 potential indicators for long-term assessment and monitoring changes in arctic tourism. We attempted to collect consistent data from 1980–2008 for Alaska, Canada, Norway, Greenland, Lapland and Iceland. In addition to visitor counts of various types, the database includes tourism-related employment and earnings at the place and regional levels, though the data are not consistent or complete for all the countries. The World Tourism Organization provides relatively standardized tourism data definitions. However, data collection by national agencies varies across the arctic countries and data are not available for all selected indicators. A significant problem is that most jurisdictions use sampling and reporting protocols that result in statistically unreliable estimates for remote rural areas. These same areas may also be most vulnerable to potential impacts and changes brought about by expanding tourism development. Standardization or comparability of time series data sets will be important for the future monitoring and modeling of changes in the arctic environment and associated impacts of expanding tourism, especially as diminishing sea ice cover increases visitor access.

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Keyword: tourism, arctic, climate change

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## Role of Tourism in the Arctic

The focus of this paper is on the role of tourism in arctic regions, especially tourism's contribution to social and economic development by comparing data across regions and time. This information was sought out for each arctic country, with the goal of isolating data for the arctic portion of tourism, and even further, for the individual sub-regions of the arctic, if possible. In Norway, for example, data were obtained for the counties of Nordland, Tromsø, Finnmark, and Svalbard (part of the Kingdom of Norway but with special governor administration), while in Canada data were sought for the Yukon and Northwest Territories, and Nunavut. For Finland data was retrieved from the region of Lapland.

This analysis is a component of a larger project known as the Arctic Observations Network Social Indicators Project (AON-SIP), which is part of a science initiative known as the Study of Environmental Arctic Change (SEARCH).<sup>1</sup> The goal of SEARCH is to understand the nature, extent and future development of the system-scale changes presently seen in the arctic. The SEARCH program of research is focused on climate change in the context of other global changes underway, with the intent to identify knowledge that will help people respond and adapt to environmental change. The tourism industry poses additional complications to tracking impacts on local well-being because tourism is often seen as an instrument of change and tool for local economic development. Industry development is embedded in historical, economic and socio-cultural structures and ultimately linked to relationships of power (Franklin and Crang 2001). Our approach involves longitudinal studies which are ideal for studying social change and the combined effects of social change and development (Veal 2006).

Researchers first identified the types of data available for each of the arctic regions under consideration. The types of data were considered for comparability across regions as well as applicability as a measure for estimating the impact of tourism activities on northern human populations. We developed 12 tourism indicators to use as potential measures to track changes:

- total visitors by year,
- total visitors by month by year,
- visitor accommodation nights per year.
- visitor accommodation nights by month by year
- visitors by mode (e.g. air, cruise ship) by year,
- visitors by origin by year: domestic and foreign,
- visitors by origin by year: Scandinavian (for Scandinavian countries),
- visitor related employment by month by year,
- visitor related peak July or peak season employment by year,
- visitor related average annual peak season/monthly earnings,
- cruise ship passenger numbers by port by year, and
- total visitor expenditures by year.

We found, however, that there is little comparability in tourism measures across the arctic (Table 1). Comparable data are not available at the national or regional level, nor is there annual data across all jurisdictions. Data on total numbers of visitors exist for Alaska and part of the Canadian arctic. All the Scandinavian countries track monthly accommodation overnights—a better measure of tourism activity. But neither of these measures is sufficiently refined to enable tracking of the well-being of arctic residents in response to climate change and resulting changes in tourism.

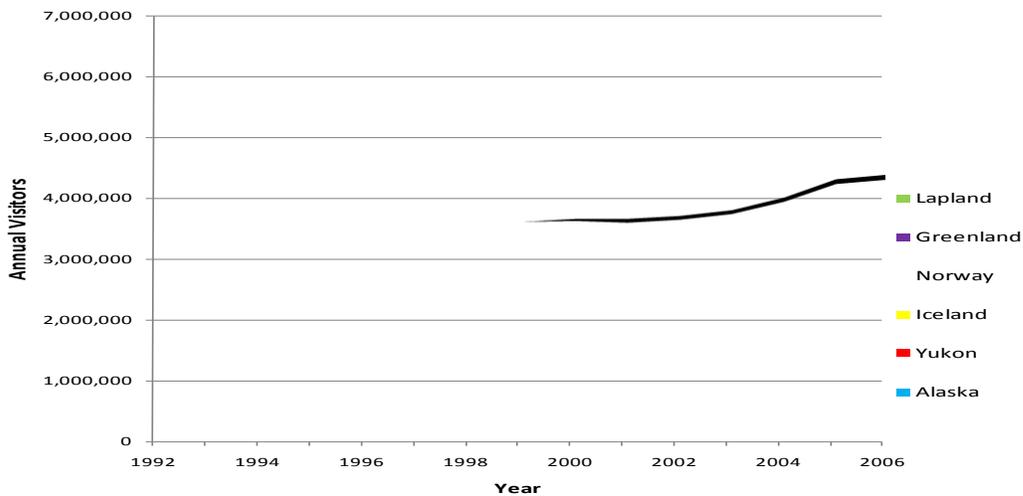
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<sup>1</sup> Project website: <http://www.iser.uaa.alaska.edu/projects/search-hd/index.htm>

**Table 1. Arctic tourism indicators**

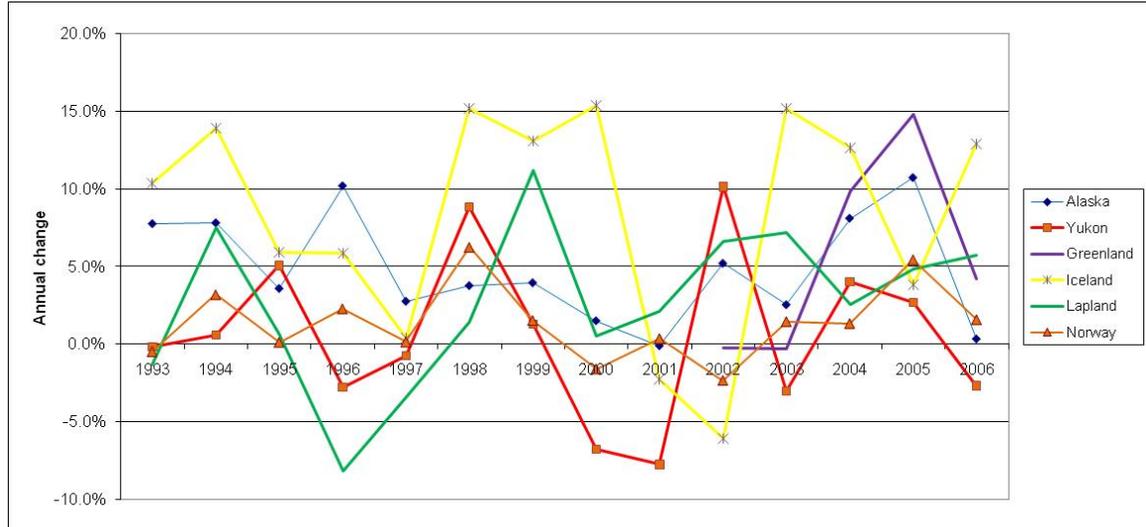
Tourism Indicators	Alaska	Canada	Greenland	Iceland	Lapland	Norway	Russia
<b>Visitors</b>							
Total visitors by year	✓	✓					✓
Accommodation nights by year			✓	✓	✓	✓	
Total visitors by month by year		✓	✓	✓			
Visitors by mode (e.g. air, cruise ship) by year	✓			✓	✓		
Visitors by origin by year: domestic		✓	✓			✓	
Visitors by origin by year: foreign		✓	✓	✓		✓	✓
Visitors by origin by year: Scandinavian			✓	✓		✓	
Cruise ship passenger numbers by port by year	✓			✓		✓	
Visitor expenditures by year						✓	
domestic and foreign combined							
domestic							
foreign				✓			
Accommodation nights			✓	✓	✓	✓	
<b>Employment</b>							
Visitor related employment by month by year	✓	✓					
Visitor related peak July employment by year	✓	✓					
<b>Income</b>							
Visitor related average annual/monthly earnings	✓	✓					✓

**Figure 1. Arctic visitation, 1992- 2006**



What is clear from the data is that arctic visitation appears to be generally increasing for all regions (Figure 1). However, the annual rate of change tends to vary (Figure 2).

**Figure 2. Variation in arctic tourism, 1993-2006**



In Alaska, this variation seems to be most closely tied to business cycles (Brigham, Fay, Sharfar 2006); this also appears to be the case in other locations studied. Travel to these arctic regions is more remote and tends to be more expensive than visitation to less distant and more easily accessible areas. While most personal travel is discretionary and fluctuates with income and perceptions of personal wealth, higher cost arctic travel seems to fall into more of a luxury category with significant annual fluctuations (Figure 2). Travel to destinations that have more developed and “mature” tourism industries, such as Norway and Alaska appears to fluctuate less than travel to less mature destinations such as Iceland and Greenland.

### Sources of Tourism Data

The sources of arctic tourism data vary across and within each jurisdiction. For Canada, Norway, Iceland, and Greenland a national statistics office archived both visitor and visitor related employment and wage information to the extent it was available. The sources of Alaska visitation data are primarily the Alaska Visitor Statistic Program data collected by the Alaska Department of Commerce, Community and Economic Development ([www.commerce.state.ak.us/oed/toubus/research.htm](http://www.commerce.state.ak.us/oed/toubus/research.htm)). This is a statewide visitor intercept survey program that provides relatively little reliable data at the community or place level partly because of the structure of the questions as well as the patterns of visitation. The majority of travelers visit a fairly well developed corridor of Alaska. Survey sampling results in a statistically unreliable sample for remote and rural areas. The same issue occurs in arctic Canada where visitor numbers are estimated by visitor surveys maintained and managed by Statistics Canada ([www.statcan.gc.ca/](http://www.statcan.gc.ca/)). The Statistics Canada visitor information was not releasable for Nunavut and the Northwest Territories due to statistical reliability concerns. Yukon Territory border crossings were substituted as a second best source of estimating travel to this region; these statistics are also used by the Yukon Territory for their estimates of visitation in the region.

Wage and employment information for Alaska and Canada uses the hospitality and accommodation sectors of the North American Industry Classification System (NAIC).<sup>2</sup> Scandinavian countries all use satellite accounting to estimate tourism’s contribution to the economy.<sup>3</sup>

<sup>2</sup> <http://www.bls.gov/bls/naics.htm>

<sup>3</sup> [http://ec.europa.eu/enterprise/sectors/tourism/cooperation/tourism-satellite-account/index\\_en.htm](http://ec.europa.eu/enterprise/sectors/tourism/cooperation/tourism-satellite-account/index_en.htm)

## The AON-SIP Tourism Database

The AON-SIP tourism database contains time series information and 292 variables on visitation and tourism-related employment and wages in Alaska, Canada, Finland/Lapland, Greenland, Iceland, Norway and Russia. Visitation data ranges from 1985 to 2008 for Alaska and from 2001 to 2007 for Lapland. Similarly, employment and wage (Alaska and Canada) or satellite accounting (Scandinavia) information ranges from 1980 to 2008 for Alaska and from 2001 to 2007 for Lapland. Scandinavian data include monthly visitation data at the region level and are considerably more comprehensive than Alaska and Canada data. Visitation information at the region level is not systematically collected in Alaska and difficult to obtain. Rather than truncating datasets to provide consistent time series, data for all available years and variables are included in the dataset.<sup>4</sup>

The quality of the data appears to reflect each jurisdiction's public policy toward tourism management and development, with Nordic countries taking a considerably more proactive role. Tourism in itself is a cross cutting activity that encompasses a wide array of activities. It has gained increased public recognition as a legitimate economic activity and therefore the time series of systematic data collection is relatively short. National statistical authorities have to a varying extent taken over the function of collecting data on tourism and the quality of the data is improving each year. This is also reflected in the literature review of scholarly tourism research in which the Nordic countries and Canada are extensively represented while Alaska is conspicuously lagging (see references and literature review section).

## Observation Requirements

What we would like to know and monitor include the rate of growth or decline in tourism activity, how tourism activities affect the well-being of people living in the circumpolar north, if and how tourism activities are expanding with climate change, especially as it pertains to the opening of the Northwest sea passage as a result of the loss of northern sea ice (Arctic Council 2009, European Commission 2010).

The small communities where rural cultures and lifestyles, including subsistence, may be disrupted by tourism are also the communities that most lack opportunities for jobs and income in the regions. Research on small business development in Alaska found that small rural communities near scenic areas, especially national parks, had a greater quantity and diversity of small business development and community income (Haley, Fay, and Angvik, 2007). This tension between tourism providing opportunities for community development while simultaneously disrupting cultural and community cohesion and environmental quality is well documented (Saarinen, 2003; Buzinde, et. al, 2009; Gosling and Hall 2008, Kneafsey 2001, Hung and Petrick 2009, Müller and Pettersson 2001, Maher 2007 and others--see the references for a more complete listing).

The ability to manage and develop tourism and its connections and linkages to local residents and economies is a challenge to all the arctic regions. Their remoteness, isolation, small populations and lack of infrastructure make these areas difficult to develop. There is also a natural tension between local economic development and cultural preservation. In many of the jurisdictions, culture and handicrafts are used to attract visitors without full participation of local residents. To estimate the economic role of tourism in communities, employment and wage information were also chosen as indicator variables. Determining who receives these jobs and wages is likely to remain a challenging but critical component of understanding the role of tourism in remote arctic communities.

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<sup>4</sup> All data and metadata are available on the project website: <http://www.iser.uaa.alaska.edu/projects/search-hd/index.htm>

## Designing a Tourism Observation System

To understand relationships among climate change, tourism, and impacts on well-being, it is necessary to track the number of visitors, visitor expenditures, and wages and income from tourism-related activities. These constitute core components of a community-based observation system. It is also necessary to be able to link these tourism activities and their impacts at the local level, especially on the well-being of local residents. Our research revealed that this type of information and the ability to track and link changes over time are inadequate.

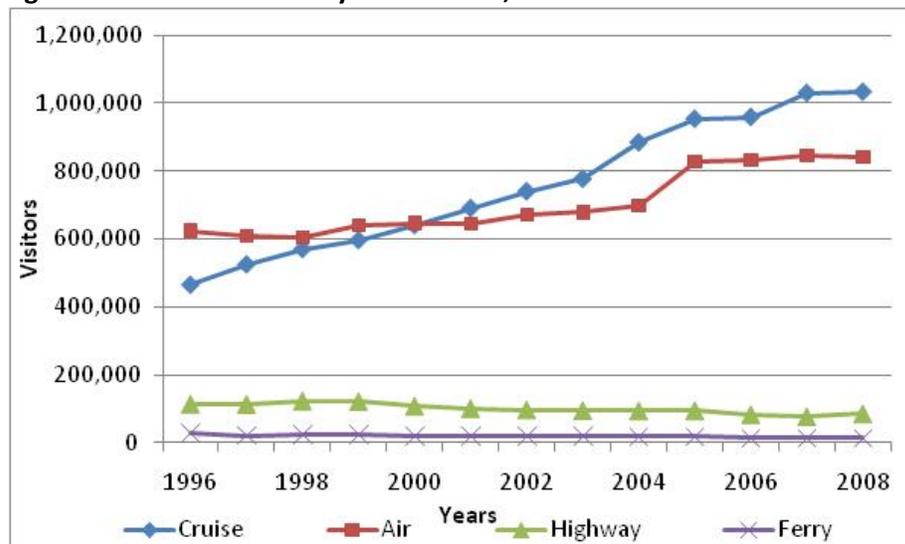
The most significant potential impact of climate change on tourism in the arctic is the dramatic increase in access as a result of diminishing sea ice. This sea ice decline has resulted in a rapid increase in cruise ship travel to previously little- or never-visited northern ports. In this section we focus on the rapid growth in cruise tourism to Alaska, Greenland, Iceland, and Norway. We follow this with a discussion on the importance of developing a tourism observation system in order to ensure that expansion of tourism is controlled by and benefits local residents while also minimizing environmental impacts to the resources on which arctic residents depend.

### Alaska

Since the mid-1990s, the growth in Alaska visitation numbers has been driven by the expansion of cruise ship visitation (Figure 3). Communities with sustained increases in the number of visitors are predominately cruise ports (Figure 4). Similar to other arctic regions, visitors are attracted by scenic beauty, glaciers, wildlife, fishing and northern lights.<sup>5</sup>

Cruise passenger numbers are tracked by the major cruise lines but there is little other systematic data for total visitor numbers at the community level for any but the largest communities (Anchorage, Fairbanks, and Juneau). Sitka is an exception with an ongoing visitor data collection and indicator program (Figure 5). Sitka over time has actively managed tourism development, in part by limiting the number of cruise ship berths by limiting docking space. By controlling the rate of growth in visitation, Sitka also appears to have influenced the ownership of tourism related businesses and amenities, likely as a result of not outpacing local access to capital. A walk through downtown Sitka contrasts markedly with Juneau and Ketchikan in that many of the Sitka's businesses have remained in place and owned by local residents for decades.

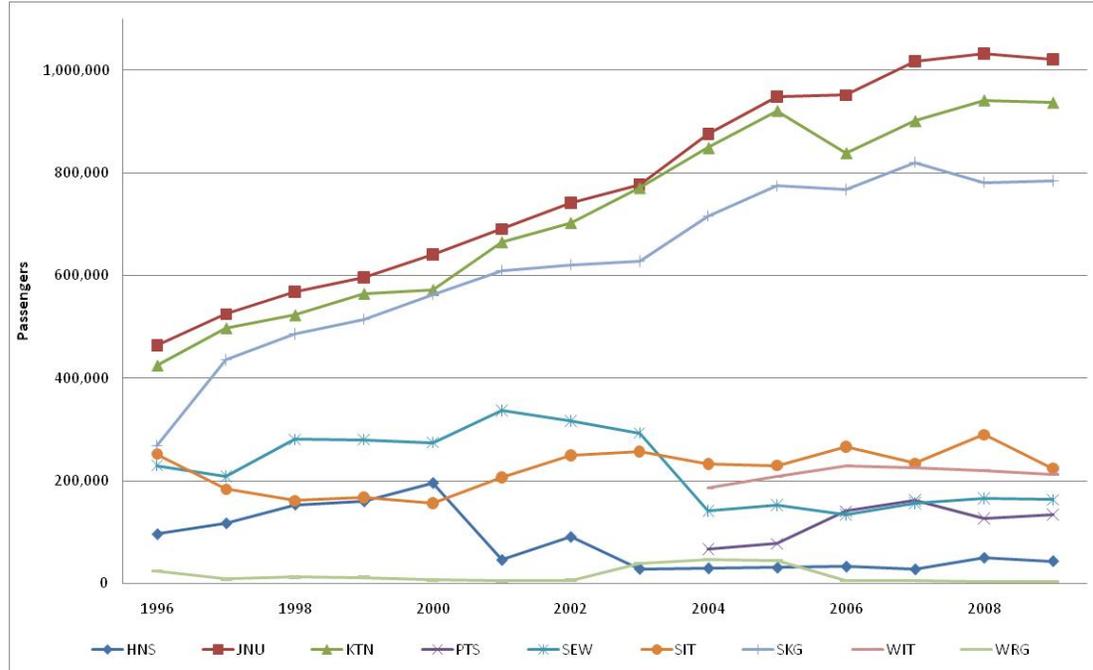
**Figure 3. Alaska visitation by travel mode, 1996-2008**



Source: Alaska Visitor Statistics Program data, various years.

<sup>5</sup> Alaska Department of Commerce, Community and Economic Development, Images of Alaska, various years.

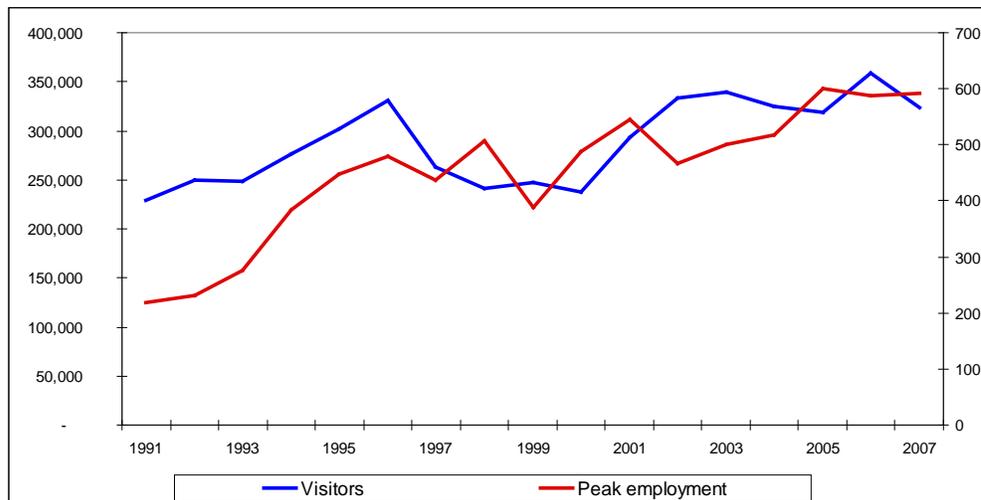
**Figure 4. Alaska cruise passengers by port, 1996-2009<sup>6</sup>**



Source: Cruise Lines of Alaska, various years.

In contrast to Sitka, the research team struggled to identify any consistent visitor information for other northern Alaska subareas (Nome, Northwest Arctic and North Slope Boroughs). This is attributable in part because these areas receive significantly fewer visitors but it also means there is no reliable baseline from which to measure future changes. For Nome we ultimately settled on visitor counts to a national park visitor center (Figure 6). No annual counts of cruise passengers to Nome were available despite its growing role as a North American anchor to Northwest Passage cruise itineraries. Alaska does not monitor or manage cruise ship visitation and actively markets its expansion. A per person passenger head tax aimed at providing infrastructure and services to the industry and offsetting the community costs is actively opposed by the cruise industry.

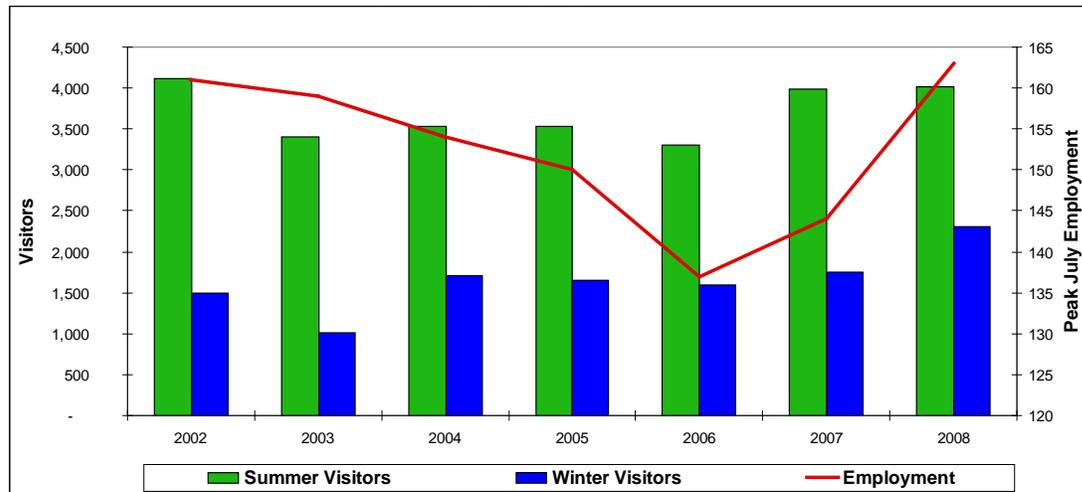
**Figure 5. Sitka visitation and peak July visitor related employment, 1991-2007**



Sources: Sitka Convention and Visitors Bureau; Alaska Department of Labor and Workforce Development, multiple years.

<sup>6</sup> HNS=Haines, JNU=Juneau, KTH=Ketchikan, PTS=Petersburg, SEW=Seward, SKG=Skagway, WIT=Whittier, WRG=Wrangell

**Figure 6. Seasonal visitors and peak July employment, Nome, Alaska 2002-2008**



Sources: Alaska Department of Labor and Workforce Development, multiple years.

### **Greenland**

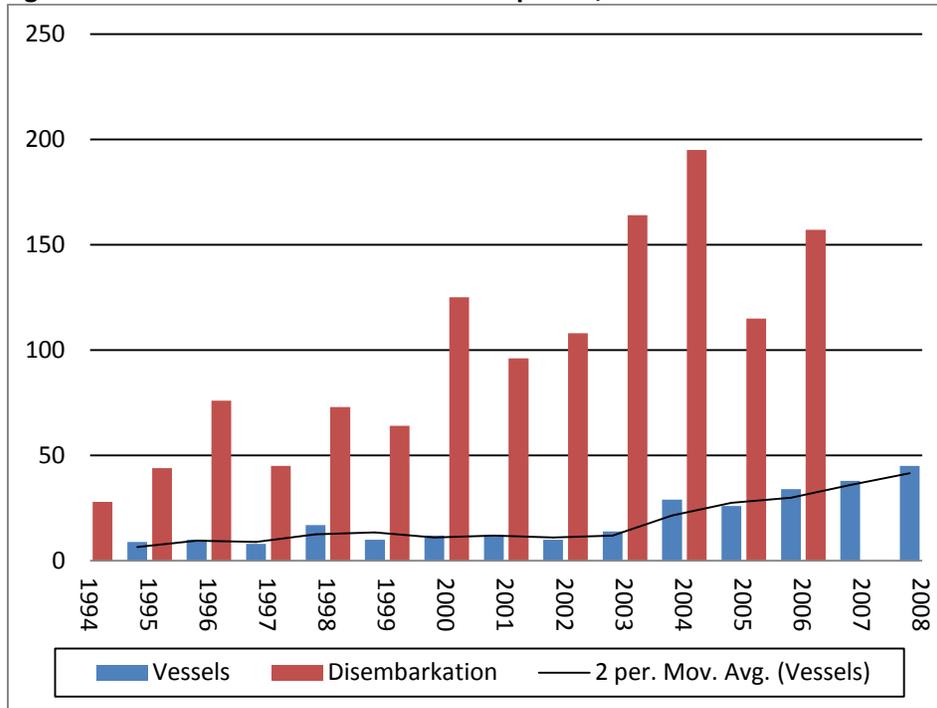
The majority of visitors, as well as freight and mail, arrive by plane. There are 12 airports and 47 helicopter ports including two international airports. Eighty percent of air passengers use Kangerlussuaq/Søndre Strømfjord (Greenland Tourism and Business Council and Statistics Greenland 2009). The most common reason for visiting Greenland is its natural scenery, with the Greenland Tourism board advertising Greenland as the “last white spot on earth” (Rasmussen, 2010) Adventure tourism includes, for example, dog-sledding, hiking and kayaking. Wildlife (whales, seals and musk ox), icebergs, the ice cap, and the midnight sun, are a few of Greenland’s natural attractions.

Cruise ship port calls have grown since 1994 (Figure 7). The most common routes for cruise tourism in Greenland is the route between Ilulissat in North Greenland (a Unesco Heritage site) and Narsarsuaq in South Greenland. It has been the most popular cruise route for many years. The vessels disembark in landing sites in a string of towns that lie between the two destinations. Ships carrying from 50 to 250 passengers, so-called expedition ships, seek more atypical routes, than the larger ships that may carry upward of 5,000 passengers. In particular, trips to remote towns such as Qaanaq in North Greenland’s hunting district as well as Ittoqqortoormiit and the national park in Northeast Greenland are popular amongst elite travelers seeking remote and unusual destinations (Karlsdóttir and Hendriksen 2005). The rate of visits to each town by cruise ship varies significantly since 70% of all disembarkation occurs in seven towns. The most visited towns are, by, Ilulissat in the Northwest (11,000 pax in 2008), Kangerlussuaq (10,000 pax in 2008), Sisimiut (8,000 pax in 2008), Nuuk (13,000 pax in 2008) and Umanaq in the West, and Qaqartog and Qeqertasuaq in the South (Greenland Tourism Board 2008 and correspondence with Greenland Tourism and Business Council representative Anders la Cour Vahl, August 2010). No community level statistics for tourism exist in Greenland.

The distribution of tourism receipts reflects visitation patterns with Mid-region and Region Disco in the West of Greenland receiving the most visitors (Figure 8).<sup>7</sup> Tourism statistics are not available before 2000 but are improving each year. The graph below illustrates a shift in 2007 where the majority of tourism receipts divided regionally were received in the South. Most of that sudden shift can be attributed to cruise tourism. Most of that sudden shift can be attributed influx of mobile labor for construction activities related to hydro-electrical dam in that region. Generally, cruise statistics are not included in the conventional tourism statistics.

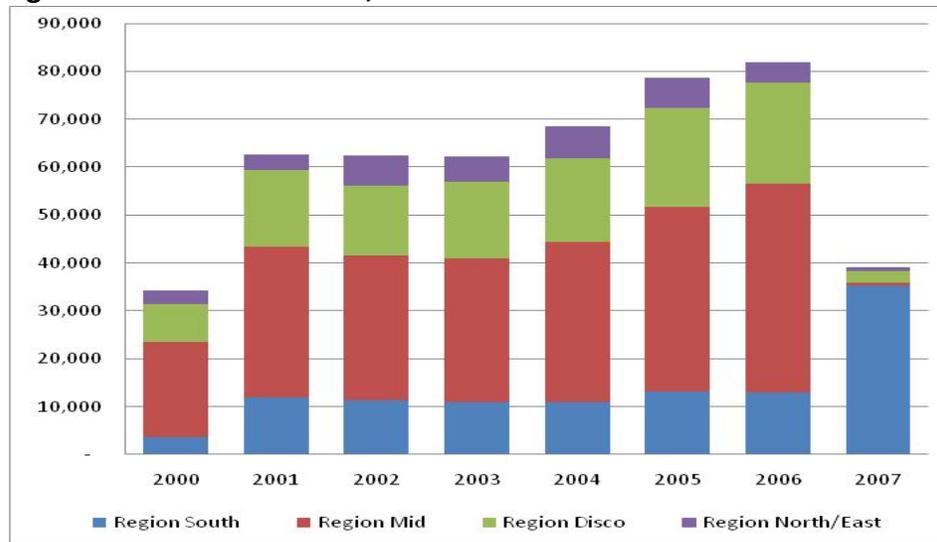
<sup>7</sup> The regions of Greenland were redefined in 2006/2007. This largest island of the world is divided into four municipalities, 18 townships and 60 settlements. The total population is 56.000 people, of which 16.000 live in the administrative capital, Nuuk (Hansen, C.G. 2009).

**Figure 7. Greenland tourism development, 1994-2008**



Sources: Greenland Tourism 'Værdibaseret årsrapport multiple years, and Greenland Tourism and Business Council, turismen i tal

**Figure 8. Greenland visitors, 2000-2007**



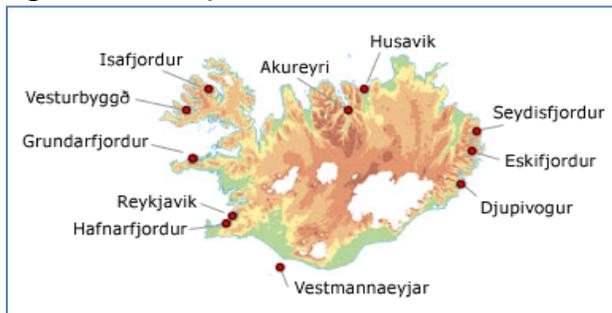
The Inuit NGO view and the Greenland Government Home Rule view on tourism and climate change does not correspond with each other. The NGO perspective is in line with Canadian and Alaskan Inuit activists and ICC in presenting climate change as a matter of survival. Representatives speak of loss of sea ice and habitat critical for Arctic wildlife, of the melting of the inland ice, and of the cultural impact of climate change. They accuse foreign holiday makers of making unnecessary journeys that contribute to greenhouse gas emissions (Nuttall 2008). For politicians of the Home Rule government, climate change brings opportunities for new and further resource extraction. By that token Greenlanders are being encouraged to think positively about the opportunities that climate change is bringing. Among them is that the world is heading for Greenland. Tourists are eager to see the inland ice, icebergs and sea ice before it all disappears (Nuttall 2008).

## **Iceland**

Iceland's predominant attraction is also its natural beauty (Sæþórsdóttir 2009, Ólafsdóttir and Runnström 2009, Sæþórsdóttir and Lund 2007, Karlsdóttir and Hendriksen 2005, Helgadóttir and Sigurðardóttir 2008, Gunnarsdóttir 2007, Jóhannesson, Huijbenz and Sharpley 2010). Marketed images of Iceland are purity, freshness and wondrous nature and wilderness that people should be inspired by (Icelandic Tourism Board 2010). The majority of tourism receipts are derived from airline passengers. The main international airport, Keflavik, is a key hub in Trans-Atlantic flights and receives over a million passengers each year, though only about half actually visit the country (Karlsdóttir 2008).

From 2004 to 2006 an extensive cruise passenger survey was conducted of all cruise ships departing from Akureyri (North Iceland) (Karlsdóttir 2007). One of the questions asked about the most interesting features of their visit to Iceland. The findings of the survey indicate that arriving passengers find Iceland to be an important destination in a cruise itinerary. Iceland offers 11 ports, some with natural sheltered ports that are easily accessible by large and small cruise ships (Figure 9). The number of disembarkments have grown significantly in Akureyri, the capital of north Iceland, reflective of a general trend towards increased interest in the North (Karlsdóttir and Hendriksen 2005).

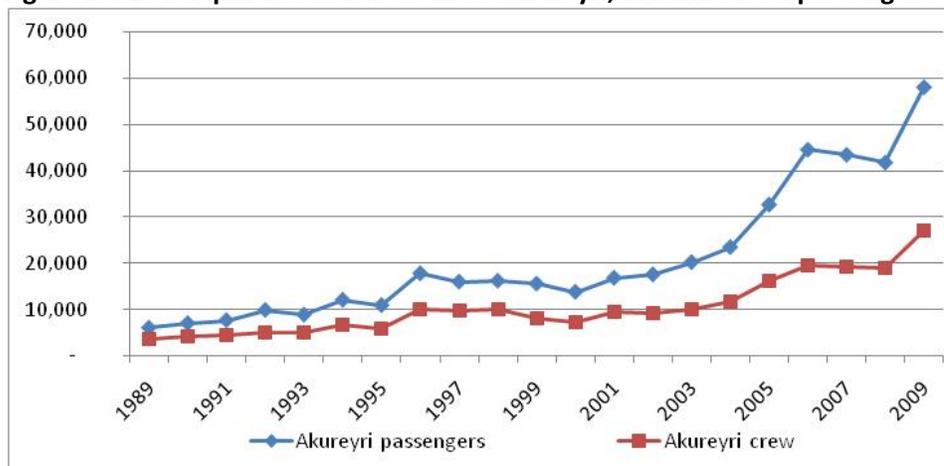
**Figure 9. Cruise ports around Iceland**



Source: Cruise Iceland 2010

In general, the Icelandic people feel positive towards inbound tourism, though in recent years some have expressed concern about overvisited areas on highly popular bus routes, believing these areas have reached the maximum carrying capacity. The Myvatn Lake area in close proximity to Akureyri is the most popular route among cruise passengers. Some days over 64 fully loaded buses drive the scenic areas causing congestion. The public debate on tourism's effect on society is related to intensity of visits to protected areas and the propensity of travel operators to diffuse the crowd around the country (Karlsdóttir and Hendriksen 2005). Iceland has not imposed limits on the number of travellers to each harbour. There is no systematic monitoring of the environmental impacts of cruise tourism and no impact fee, even though this has been required by the International Maritime Organisation (IMO) since 2007. In Iceland, the debate over climate change is generally not linked to tourism, It is considered an issue more relevant to those further north, whereas Iceland is seen poised to reap the benefits of curious tourists seeking more remote destinations (Karlsdóttir 2009) as is clearly illustrated in the growth of cruise calls to North Iceland (Figure 10).

**Figure 10. Development of Cruise calls to Akureyri, in numbers of passengers and crew<sup>8</sup> 1989-2009**

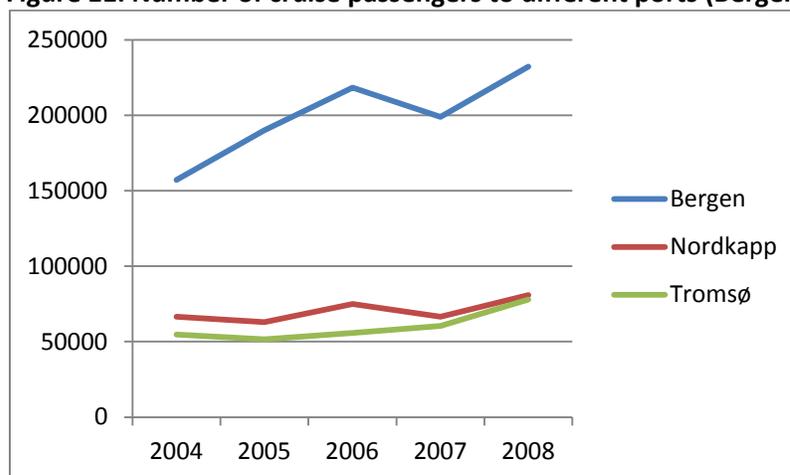


Source: Pétur Ólafsson and Port of Akureyri.

### Norway

Norway's long coastal line makes the country specifically suitable for coastal tourism. With a long heritage in shipping and sailing, the coastal route operated by "hurtigruten" offers eight cruise-like ferry vessels that take passengers along the Norwegian coast (Hurtigruten 2010). Norway is by far the largest recipient of cruise traffic around the North Atlantic. Given the CO<sub>2</sub>, NO<sub>x</sub> and NO<sub>2</sub> emissions from cruises Norwegian authorities have developed special environmental guidelines aimed at cruise traffic. They also imposed a special NO<sub>x</sub> fee, working in close cooperation with Cruise Norway to ensure that shipping companies received the new regulations positively (Eeg 2009).

**Figure 11. Number of cruise passengers to different ports (Bergen, Nordkapp and Tromsø) 2004-2008.**



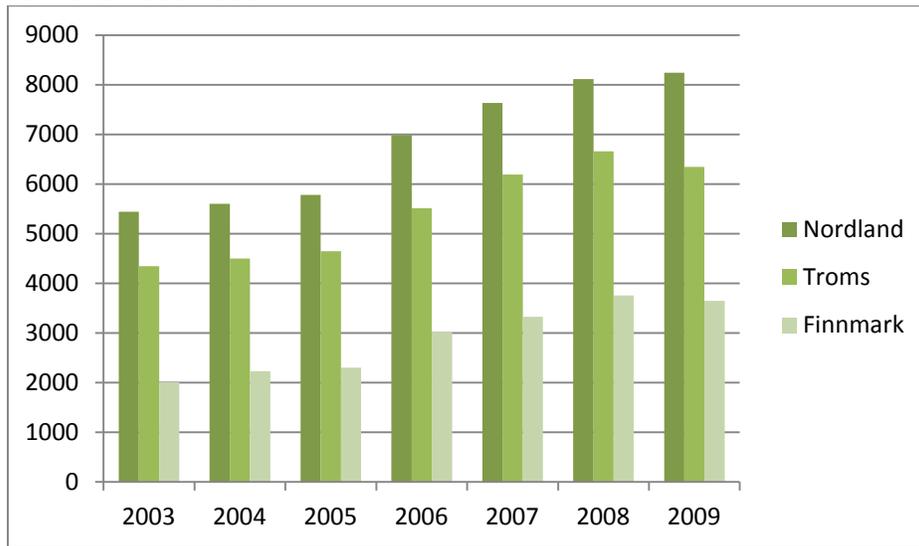
Source: Cruise Norway

As can be seen from figure 11, the main centre for cruise traffic north of Oslo (the capital) is Bergen, which receives the largest number cruise passengers in Northern Europe. The growing number of cruise passengers is also reflected in northern & arctic locations such as Nordkapp and Tromsø. The influx of cruise passengers along with increased numbers of land based tourists reflect large numbers of people who visit as part of an extended tour in the North Atlantic but spend very little time in any single location. Hence, both the economic and environmental impact is limited (Kaltefleiter 2009), given the expectation of economic returns for inhabitants and the visible effect of ever larger ships in port.

<sup>8</sup> Number of crew for 2007 is an estimate

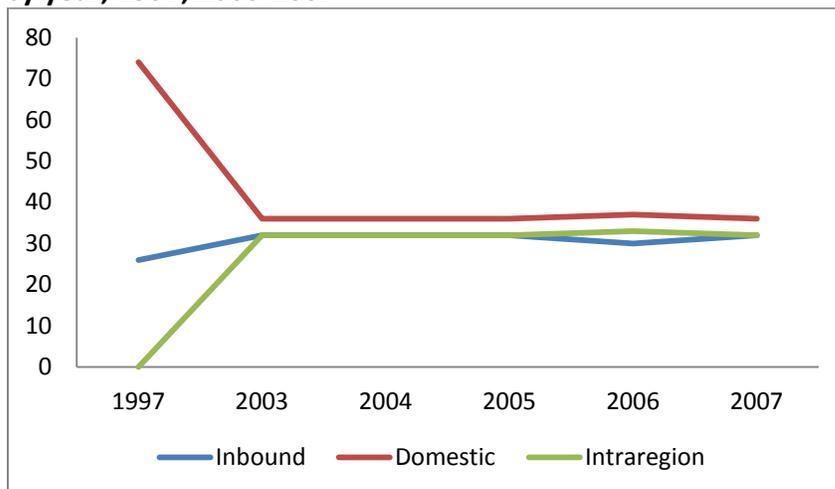
Employment directly related to tourism is calculated in annual jobs. As a result, the figures do not represent the seasonality inherent in most tourism activities but reflect the growing importance of tourism in terms of occupations in the northernmost counties of Norway (Figure 12). The rate of tourism jobs compared to the overall employed workforce in each region (compared in 2008 numbers) varies from tourist jobs making up 6.7% of the overall labor market in the Nordland region, to 9.8 in Finnmark (Statistics Norway 2009). This is a high rate compared to most other Nordic countries, where the usual rate is around 4 to 5%. In terms of income generated, domestic tourists are relatively more important than inbound tourism within the northernmost regions of Norway (Figure 11). In all three counties the income directly related to tourism has been increasing exponentially as the Figure 14 clearly illustrates.

**Figure 12. Employment in the North Norway tourism Industry, jobs in person years, by counties 2003-2009**



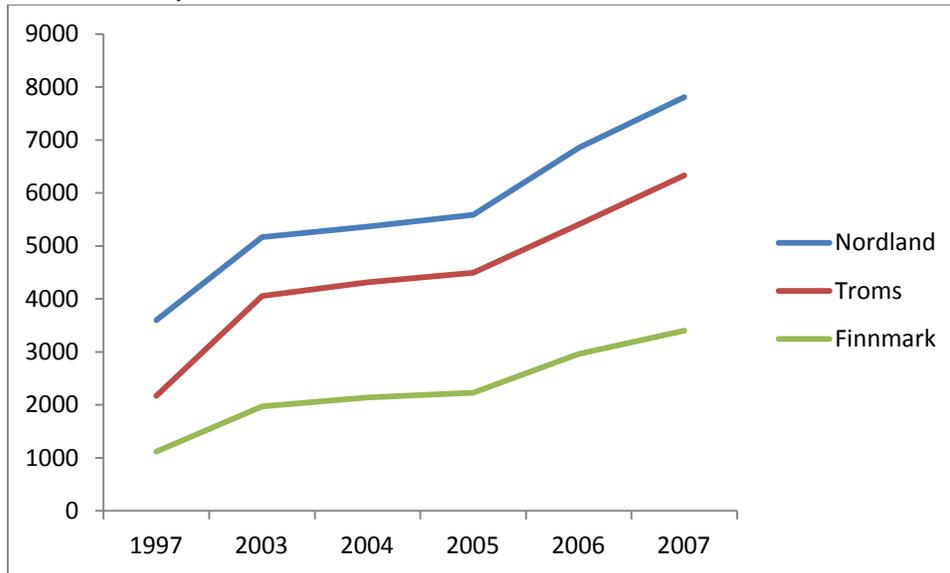
Source: Reiselivsbedrifternes Landsforening (RBL) Nord-Norge and Reiseliv Nord Norge, Arena Nord AS.

**Figure 13. Percentage of Inbound versus domestic expenditure in Northern Norway by year, 1997, 2003-2007**



Source: Statistics Norway.

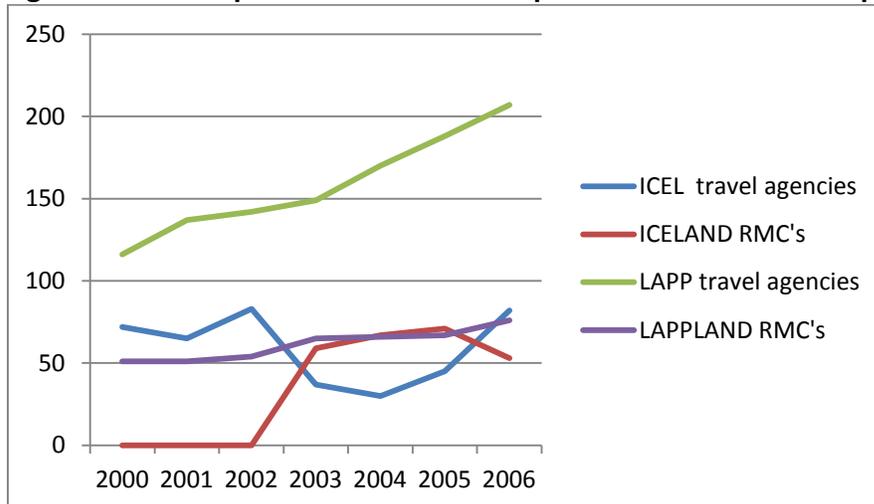
**Figure 14. Total Visitor Expenditure in North-Norway, by region and year 1997, 2003-2007 (in millions NOK)**



Source: Statistics Norway.

The employment effect of increased tourism has different attributes. One is the number of established companies directly related to regional tourism growth. Only a few countries publish statistics on the number of businesses but a more systematical collection of this type of data would enable comparative assessments of local and regional economic diversification (Figure 15). Numbers for employees in tourism are likewise inexact as the methodology for estimating exact figures among service personnel varies.

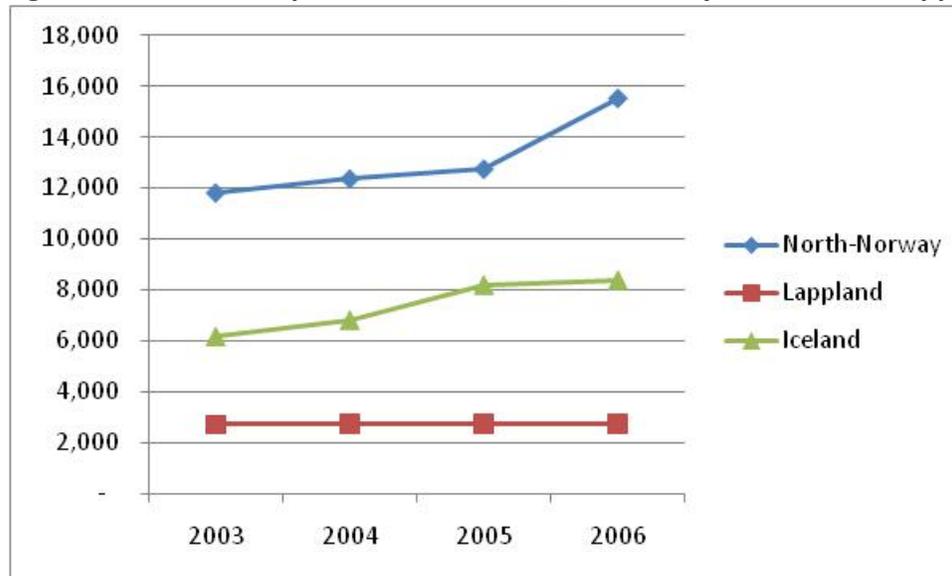
**Figure 15. Development of Tourism companies<sup>9</sup> in Iceland and Lapland, Finland 2000-2006.**



Source: Iceland Tourist Board and Lapland regional office.

<sup>9</sup> Travel agencies and Tour operators (recreational management companies=RMC) in Iceland and Travel agencies in Lapland and other leisure services.

**Figure 16. Number of personnel in tourism, N-Norway, Iceland and Lappland 2003-2006**



Source: [http://www.ferdamalastofa.is/upload/files/Ferdatjonusta\\_i\\_tolum\\_okt2009.pdf](http://www.ferdamalastofa.is/upload/files/Ferdatjonusta_i_tolum_okt2009.pdf) Source: NHO Reiseliv Nord Norge, Iceland Tourist Board, Lappland regional office and [http://www.ferdamalastofa.is/upload/files/Ferdatjonusta\\_i\\_tolum\\_okt2009.pdf](http://www.ferdamalastofa.is/upload/files/Ferdatjonusta_i_tolum_okt2009.pdf)

## Discussion

The economic impact of tourism on a host economy is generally positive but can also have negative aspects. Tourism satellite accounts (TSA) were derived to provide a clearer picture of the economic significance of tourism to a destination. Built along similar lines to national accounts, satellite accounting provides insight into the contribution tourism makes towards gross national product and the proportion of demand that is attributable to tourism activity (Cooper et.al 2005). All the countries in our studies have applied TSA to varying extents. For example, Iceland initiated the methodology in 2008; Alaska conducted a TSA study in 2004 but not again since; and TSA information is not available for the arctic region of Canada. The comparability between regions is therefore limited to arctic Scandinavia. Many misconceptions exist on tourism in the arctic that more detailed and reliable data would remedy. Even prominent scientific reports fall into the trap of glorifying the benefits of tourism (i.e. chapter on Arctic Tourism in Arctic Council 2009). Combining different methodologies in analyzing the effects of tourism development would also improve research. For example, a combination of longitudinal studies and meta- and discourse analysis would be beneficial (Veal 2005).

Generally, firms in the local economy are dependent upon other firms for their supplies. As a result, changes in tourist expenditures will bring about a change in the economy's level of production, household income, employment, government revenue and foreign exchange flows. These changes may be greater than, equal to or less than the value of the change in tourist expenditure that caused them (Cooper et.al 2005). The magnitude of change depends on policy and management practices as well as tourism ownership patterns in each place (Mckinnon and Cumbers 2007).

Though ownership issues were outside the scope of this study, it is worth noting that several studies show its importance. Well documented in a series of tourism research articles, ownership of tourism resources influenced residents' perceptions and attitudes towards recreation and tourism development impacts as well as visitor satisfaction. This is critical knowledge for tourism developers and planners (Andriotis 2005, Allen et.al 1993, Andereck, 2000). Research on tourism development and neo-colonialism and enclaves economies show the social and cultural impacts of tourism assets ownership patterns (Franklin and Crang 2001, Meyer 2003, Stronza 2001). Many studies have recently argued that

tourism is a “hyper-globalizer” (Hjalager 2007), that, if not well managed, can pose a threat to local residents’ sense of “fate control”.

Iceland and Alaska, for example, have very different patterns of foreign ownership of tourism businesses. While non-local American and international tourism corporations have significant ownership influence on tourism development in Alaska, most of the Icelandic tourism companies are owned locally/nationally. Reykjavik, Iceland’s largest city, is a significant “powerhouse” both in terms of infrastructure, as well as being the home-base of most tourism companies (Karlsdóttir 2007). The same intra-regional dynamic is true for Anchorage in Alaska, which serves as both a gateway and commercial center.

The governance of the shipping activities in the Arctic might be described as a complicated mosaic. United Nations conventions on the Law of the Sea (UNCLOS) sets legal framework for the regulation of shipping according to maritime zones of jurisdiction. A wide range of actors affect the law, policy and practice applicable to shipping in the arctic. In addition to governments, ship owners, cargo owners, insurers, port authorities, trade and labor union associations, others may be involved in determining when and where shipping in the arctic should occur under what conditions (Arctic Council 2009). The IMO acts as a secretariat for most international maritime conventions and facilitates their implementation through the adoption of numerous codes and guidelines aimed at operationalizing and facilitating the implementation of international rules and standards (Arctic Council 2009). However, because the cruise lines belong to globalized corporations they are sailing under flags of convenience that in some cases does not obligate them to follow national regulation on environmental standards, national fees, renovation costs for attractions and ports, wastewater taxes, income taxes, and other factors. The cruise industry can also easily shift ports leaving local communities with unpaid for infrastructure and failed businesses. As a result, many local communities are reluctant to effectively manage cruise operation for fear of reprisals. National regulation of tourist operations is more effective and efficient.

The cruise industry has not been critically assessed in the arctic in order to limit its potentially detrimental effects. Cruise ships are believed by some to be a destructive form of tourism (i.e. Klein, 2005, Wood 2000, Ward 2009), with few benefits to host destinations and many environmental impacts such as carrying capacity problems in over-visited attraction spots (Karlsdóttir and Hendriksen 2005), pollution, waste management and the need for developed infrastructures. As addressed by several scholars this can become of serious concern in the arctic context, where vulnerable ecosystem balance can be threatened. Global warming quickly facilitates access to previously secluded villages (Bélanger 2009). Some studies of indigenous communities have found many residents are not prepared for mass tourism and are still highly dependent on the environment for survival, in both physical and cultural terms.

Despite these potentially problematic implications, cruising remains the most convenient means of access to arctic coastal communities. Since cruises include accommodation, they reduce the strain on small villages that are unprepared to accommodate tourists. Locals can instead focus on selling arts and crafts, conducting performances, communicating traditional knowledge (Milne 2006) and providing guiding services for day visitors. Cruises can be a provisional solution for tour operators, who consider the arctic industry as being too young to fully support land based tourism activities for a long period, but still want to organize trips that can be beneficial to these communities (Bélanger 2009).

The scale of tourism enterprises in arctic countries in our study is diverse. Small scale, locally initiated tourism enterprises working on a seasonal basis predominate in rural areas. Operating a year-round tourism business is almost impossible in some areas so alternative and sometimes quite creative approaches are needed. In Iceland, for example, there is a longstanding tradition of using boarding

schools in the summer season for hotels and promoting local gourmet food, thus strengthening the emphasis on existing resources and creativity. In Northern Canada there is a tradition of operating tourism businesses on a cooperative basis, an arrangement well received by the local communities because of its flexibility towards inevitable market fluctuations (Lundgren, J.A.J. 2001). Approximately 32% of tourist ventures in Nunivak and Nunavut are based on arts and crafts. These products can be offered by almost any business because they require relatively little space. Furthermore, Nunavut and Nunivak have a long-established a strong base of Inuit artists that can take advantage of Inuit art being sought after and recognized around the world by collectors (Bélanger 2009).

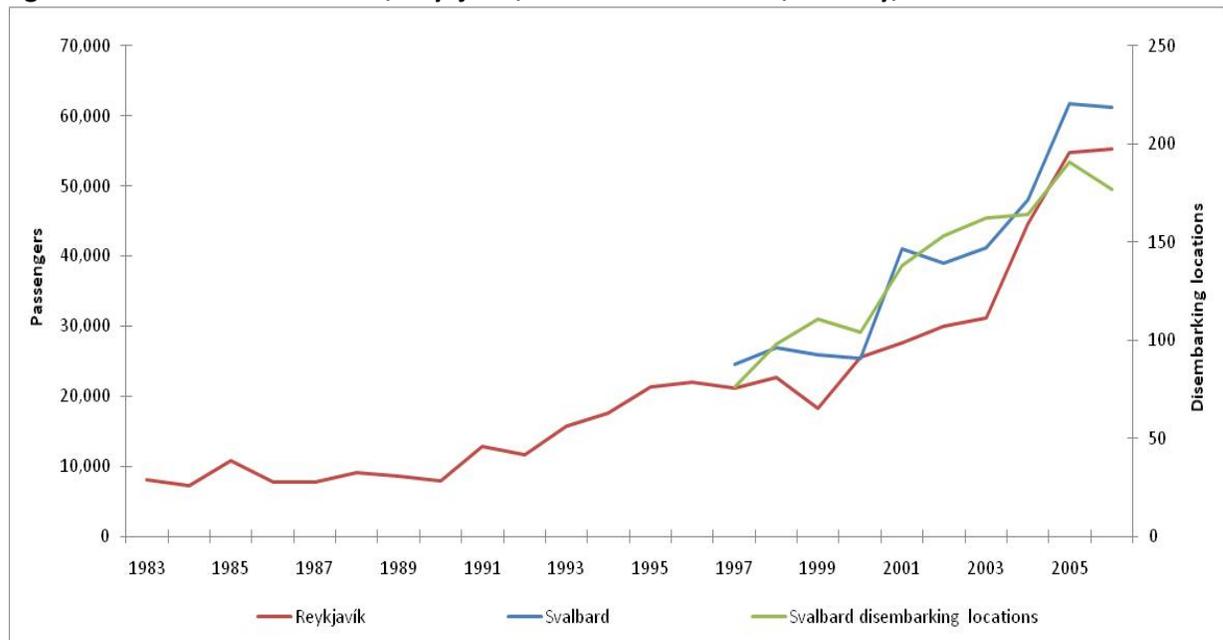
Another important factor is assessing tourism contribution to social and economic development relates to cultural continuity. Many studies have focused on the transforming power of tourism within regions and rural areas (Hammer, 2008). This is relevant for the arctic as it is the most sparsely populated and predominantly rural region of the world. These sparsely populated destinations, compared to capacity of cruise vessels, can be quickly overwhelmed by mass tourism (Ward 2010). In the article "Signs of the post-rural", Hopkins (1998) found that the countryside's role in tourism development has become that of a commoditized ideal in the imagination of citizens of Western societies. Thus, the countryside is increasingly viewed as both a commodity in itself and as a set of commodifiable images that can be attached to particular places, peoples and lifestyles (Kneafsey 2001). A recent study in Norway found that rural amenity-led development (as nature tourism is commodifying resources) is now shifting from traditional "high amenity" areas toward previously overlooked places. In this way, tourism is geographically and substantially broadening the potential economic base away from solely tradition natural resource extraction dependency (Hammer 2008).

Our study indicates that the number of tourist receipts across the arctic has been increasing cumulatively, broadening the scope of the rural economies and available jobs. Where the job creation related to tourism takes place is also a relevant question to address. Farm tourism, for example represents a counter-trend to homogenization and mass tourism. Increased diversification and improved marketing of farm tourism services, combined with an international trend among tourists to search for unique experiences, not only offer visitors a grasp of rural qualities such as peace and quietness but are an example of a recent tourism development that compliments traditional products and local services (Blekesaune et.al 2010).

In relation to cruise tourism it is necessary to emphasise arctic destinations in a global context, since arctic and sub-arctic destinations are merely routes in the itineraries of the cruise lines. In some cases the passengers decide not to disembark at port but stay in their cabins or enjoy amenities onboard while the ship stays in port. The cruise vessel is itself a destination and can be in direct competition with the land-based destination, however exotic these destinations may be. As pointed out by several sources (Klein 2005, Wood 2000) the supply of recreation and shopping onboard the vessels has increased significantly in last decade, resulting in passengers staying and spending their money onboard rather than on land. Other studies have indicated that cruise passengers are to an ever-larger extent a more varied group than reflected by the market segmentation taking place in previous decades (Dickinson and Vladimir 1997: 211-214). In general, the opposition towards mass sailing with thousands of passengers on board has grown, according to Krafft (2004). The people who oppose this mass tourism are experienced cruise tourists. According to most studies on cruise and passenger vessel traffic in the North, and particularly in the arctic, a larger proportion of passengers are travelling on what market analysts categorize as "niche" cruises. These are a combination of expedition cruises based on the "Lindblad model" (Snyder 2007), and include icebreakers and specially tailored tours where lectures and libraries are more important than luxurious on-board amenities (AECO 2010). The common belief that cruise lines are always looking for new destinations and new harbors is true in some respect. According to Klein (2003) the interest of cruise lines lies in the possible profit at the destination, the possible cost, and the possible profit on board before and after the arrival at the harbor.

Cohen (2002) pointed out that as more mature tourist centers became developed “mass” destinations, tourism tended to penetrate further into new and as yet “undiscovered” areas. The more adventurous, authenticity-seeking travelers move further a field in quest of “pristine” nature and “unspoiled” natives (Cohen 2002: 272). On one hand, the arctic’s primary draw is its vast wilderness; the very nature of which would be altered by significant growth in mass tourism by cruise and all-inclusive tours. Thus, the growing number of tourists to northern destinations introduces an element of urgency and concern in managing and controlling the surge, as well as preventing the development of mass tourism, which has globally impacted some host communities environmentally, socially and economically.

**Figure 17. Cruise boat visitation, Reykjavik, Iceland and Svalbard, Norway, 1982-2006**



Territorial governments, tourism associations and local communities should establish mandatory standards for all cruise companies. Compliance with these standards should be required to obtain a permit to navigate arctic waterways. For example, specific measures could be adapted from the World Wildlife Fund’s (WWF) Codes of Conduct for tour operators and tourists in the Arctic (WWF 2006). In Svalbard, as a result of robust growth, a system was established to monitor and limit the number of visitors by limiting the number of cruise ship berths as well as the number of landing sites (Figure 17). These limits were developed through an extensive planning process (Johnston and Twynam 2008). Companies could be expected to train a minimum number of local residents to work on their ships or on land, notably as interpreters, guides, managers, lecturers or event organizers. As cruise passenger shore excursions most commonly are short, longer stays could be planned (varying from an average of 4 to 11 hours). “Drop off” services by cruise ships in suitably equipped communities, with passengers being picked up a week, or some other period, later by another passing cruise ship. Reykjavik and Sitka have both become the launching and terminus ports for cruise itineraries. In the case of Sitka, the community serves as an anchor for small, high-end adventure cruise ships, which significantly increases the community’s economic benefits (Colt and Fay 2007). Ultimately, cruising in the arctic should only be supported if it generates sustainable advantages for the local residents while preventing damage to the environment. Currently, local communities are not always direct beneficiaries of the cruise industry, a situation that calls for attention.

We recommend that a pilot project be conducted in at least one community in each arctic jurisdiction to develop and monitor tourism impacts related to climate change. Data for the 12 indicator variables developed by this project could be collected for a baseline and then collected annually for long-term monitoring. A local stakeholder process similar to the planning process used in Svalbard by WWF should be used to ensure local participation. Funds for the process could come from a small head fee on arctic cruise passengers.

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