WHAT FUTURE FOR TOURISM IN THE COLD REGION ENVIRONMENTS ?

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The mean temperature in Europe is estimated to increase by 2-6°C by 2100, which will probably result in shorter and milder winters and warmer and longer summers. Several researchers believe that this will have a very great effect on tourist movements in Europe, turning them round from South to North. In other words, a climate change is expected to be favourable for summer and winter tourism in northern Europe and unfavourable for winter tourism in the Alps and summer tourism around the Mediterranean. However, it is not yet known what economic, social and environmental consequences this change in tourism will have in Europe.
The aim of this article is to make the reader understand the complexity of the goods and services systems provided by tour operators, because these are the main providers for the activities included in the tourism sector.
The article is structure in many parts: theoretical approaches, research methodology and the results of its application, conclusions. The main research method was the case study on a large Romanian tour operator.

Introduction

The tourist industry is affected by weather and climate, especially tourism for sun and bathing or for skiing. These types of tourism are extremely vulnerable to changes in climate variables such as temperature, precipitation and humidity. A climate change is therefore expected to have great significance for the patterns of tourist travel in future. In this context it is however important to remember that tourism, and particularly its travel pattern, for instance car and air travel, increases global emissions of carbon dioxide and thus accelerates climate change. Because tourism both affects, and is affected by, a climate change, it is very difficult to forecast future tourist streams, as shown by several research reports. Since the commencement of the International Polar Year (IPY) in 2007 to just prior to the Copenhagen climate conference in December 2009 a number of notable anomalies have occurred.

Table 1 Cold regions and cold events that took place between 2007-2010

Regions	***Events***
Alaska (2007–2008)	Second highest winter snowfall in 30 years
Northern Hemisphere Snow Cover Extent (January 08)	Largest January snow cover extent on record.
Arctic Sea Ice (September 2007)	All-time lowest extent on record in September. Surpassed previous record set in 2005 by 23 per cent.
Arctic Sea Ice (September 2009)	Second lowest extent on record behind September 2007.
Fenno-Scandinavia (2008)	Warmest winter ever recorded in most parts of Norway, Sweden and Finland.
Eurasian Snow Cover Extent (January 2008)	Largest January extent on record and smallest extent during March, April, and boreal spring. Antarctic Ozone hole (2008): A maximum 27.2 million km_ in September; 5th largest recorded (McMullen and Jabbour, 2009).

Regions	***Events***
North America (December 2010)	Big snowstorms and rainstorms were the most notable events for the United States and Canada punctuated at the end of the month by one of the most severe tornado outbreaks in December history in the south-central portion of the United States.
SOUTH and CENTRAL AMERICA (December 2010)	During the first two weeks of December floods in Columbia killed 257 people and at one point 1.9 million people (5% of the country's population) were affected. On December 6-8 the Panama Canal was closed because of flooding. This was only the 3rd time in history that the canal was closed and the first time as a result of weather.
EUROPE (December 2010)	The cold wave and snow that engulfed Western Europe towards the end of November continued into December. In fact, on December 21 the temperature fell to -15°C (5°F) at Belfast, Northern Ireland, the coldest reading ever measured there. Castlederg reported -18.7°C (-1.7°F) for the coldest temperature on record for any location in Northern Ireland (old record -17.5°C at Magherally in January 1979). For France it was the coldest December on record since 1969. In Sweden the coldest in 110 years, and in Germany the coldest in 40 years. Poland saw temperatures fall as low as -33°C (-27°F) on December 2 and Pozan received a total of 58" of snowfall during the month. 68 people were reported frozen to death in Poland.
AFRICA (December 2010)	A powerful winter storm blasted Egypt and other parts of the Middle East on December 10-12. Three people were killed by collapsing buildings in the port city of Alexandria where 60mm (2.3") of rain fell..
ASIA (December 2010)	The same storm that blasted Egypt in mid-December also strongly affected Israel and Lebanon. The eastern Siberian 'pole of cold' lived up to its reputation in December with Oymyakon reporting a minimum of -59.2°C (-74.6°F) on December 24th, the coldest temperature in the world for the month.
AUSTRALIA (December 2010)	The big weather news from Australia in December were the major floods in Queensland towards the end of the month that continue to plague the state as of this writing. On the cold side, the town of Applethorpe in Queensland recorded a minimum temperature of 3.7°C (38.7°F) on December 21st. This was the 2nd coldest reading ever measured during December in the state.

Regions	*Events*
ANTARCTICA (December 2010)	The coldest temperature ever measured in the Southern Hemisphere during a December was registered at the Dome A site in Antarctica on December 1st and 2nd: -52.0°C (-61.6°F). The previous record was -48.0°C (-54.4°F) at Vostok on December 1, 1960.

Source: http://www.wunderground.com/blog/weatherhistorian/comment.html?entrynum=10 (accessed May 2011) and other information concerning cold regions events

Such events have served to focus the attention of governments and other stakeholders not only on the influence of climate change in Polar Regions but also because of its synergies with natural and political systems. For example, the decline in Arctic sea ice extent is inseparable from the increased interest in maritime access to the polar seas for fishing, mineral exploration and exploitation, trade and tourism, and concerns over political sovereignty.

Content

However, one of the great lessons of climate change is that the Earth behaves as a single, self-regulating system comprised of physical, chemical, biological, and human components. This means that what happens in the Polar Regions also has implications throughout the world in terms of environmental and other futures and that human activities, including that elsewhere in the world are affecting high latitudes. Of the nine tipping elements considered as Earth System components vulnerable to climate change by Lenton *et al*. (2008), five of them are directly polar related.

Table 2 Arctic vulnerable regions

Regions	5 out 9 earth systems vulnerable to climate change are directly polar related
Arctic summer sea-ice	As sea ice melts it exposes darker ocean, which absorbs more heat that ice does, causing further warming. Possible time frame: by 2020; temperature increase: 0.2–2°C.
Boreal forests	Longer growing seasons and dry periods increase vulnerability to fires and pests. Possible time frame: by 2060; temperature increase: 3–5°C.
Atlantic Ocean thermohaline circulation	Regional ice melt will freshen North Atlantic water.This could shut down the ocean circulation system, including the Gulf Stream, which is driven by the sinking of dense saline water in this region. Possible time frame: by 2100; temperature increase: 3–5°C.
Greenland ice sheet	As ice melts, the height of surface ice decreases, so the surface is exposed to warmer temperatures at lower altitudes which accelerates melting that could lead to ice-sheet break up. Possible time frame: by 2300; temperature increase: 1–2°C.
West Antarctic ice sheet	Ice sheet is frozen to submarine mountains, so high potential for sudden release and collapse as oceans warm. Possible time frame: by 2300; temperature increase: 3–5°C.

Sourse: Lenton et al. (2008)

Given such concerns it is perhaps not surprising that some polar destinations and tourism companies are looking to promote climate change tourism (Hall and Saarinen 2010) as part of a 'Last chance to see' also referred to as 'doom tourism' .'The world has never traveled to the Arctic like now. Aided by global warming – that's opening up areas never before visited – but tinged by a quiet urgency, it's here the world gets a live demonstration of how our world is changing (Round's, 2008): observation that, 'The plight of the region has become such a part of our contemporary background that it's no wonder demand for the region has become so high. The message is quite clear: come quickly or you'll miss it', is something of a moot point, but it is one shared by a number of travel writers and commentators (e.g. E The Environmental Magazine 2002; Egan 2005; Margolis 2006).

Firstly, as Hall and Saarinen (2010) highlight, the numbers of tourists traveling in the Arctic region is substantial, of the order of over five million visitors per year. *Secondly,* European regulations and those of Arctic countries protect sites. *Thirdly,* operators are responsible for managing them properly and it's in their interests to maintain the pristine environment they are selling. *Finally,* compared to national parks in Alaska where many thousands visit, for example, the number of Arctic tourists is minimal' (Round, 2008). Similarly, (Round 2008) states, 'do we need just a little more perspective?

Apart from the geographical challenge of not including Alaska as part of the Arctic, there still remains the issue that the number of tourists is continuing to grow and represents a significant figure in relation to permanent populations and concentration in a relatively small number of accessible areas in space and time. For example, the number of fly-in tourists per year now exceeds the population of Greenland, with the number of cruise guests already being over half. A similar situation with respect to number of visitors per year in relation to permanent population also exists in Iceland, Svalbard, and northern Norway, Sweden and Finland above the Arctic Circle (Hall and Saarinen 2010).

Given the number of visitors to the Arctic it should therefore be of no surprise that tourism is regarded as such a key component of the economy, along with fisheries and mineral and energy development. Climate change, rather than having a negative impact on the regional economy is regarded as being a major beneficiary along with maritime transport generally as access to many northern areas is improved. Antarctica and the sub-Antarctic is also receiving increasing numbers of tourists, which although not on the scale of the Arctic, also has significant economic benefits both for the small number of sub-Antarctic communities as well as the gateway communities in Australia, New Zealand and South America (Hall 2000). And, given the much smaller amount of visitor access to ice-free areas, tourism is arguably of proportionally even greater significance in terms of direct environmental impact in the Antarctic than the Arctic (Hall 2010).

Nevertheless, despite the importance of tourism as both a potential means of economic adaptation to the effects of climate change as well as being a direct source of environmental impact and change and a significant contributor to greenhouse gas emissions its potential role in the future of the economic and environmental transition of high latitudes to a new set of climatic, environmental, socioeconomic, and political states is not well understood.

Although there have been a number of notable analyses and reviews of tourism in polar regions such work has often occurred in relative isolation from broader research on response to environmental and social change in polar regions. There has not only been a gap between those undertaking research in the physical and biological sciences in polar regions and those studying tourism, but even between students of tourism and other social scientists. This has meant that the nature and role of tourism in high latitude economies has not been adequately appreciated in studies of climate change, nor its positive and negative contributions to biodiversity conservation in Polar Regions (Hall 2010). For example, because of the extent to which tourism provides an economic justification for transport infrastructure that existing population sizes may not justify alone, tourism therefore becomes extremely important in providing connectivity for peripheral

high-latitude communities to major settlements. This may take the form of: increased numbers of connections (i.e. flights); improved connections (i.e. better quality of road, or speed of transport available), or whether there is a connection or not at all.
Tourism's role in polar economic development when well planned and managed therefore goes well beyond that of tourism alone as it provides a major 'enabling' role via transport, accommodation and other infrastructure that may also contribute to local quality of life.
There is therefore a need to better integrate tourism into the broader understanding of climate and environmental change in Polar Regions and for greater dialogue of those that study tourism with other disciplines. One way in which this can be advanced is by recognizing the role that tourism plays in the proposals for future research of the IPCC, some of which has already begun to be addressed as an outcome of the IPY. This is especially important given tourism's economic role in Polar Regions for both indigenous and non-indigenous populations. An issue recognized is the need to examine the economic impacts of climate change which are difficult to address at present due to the dearth of information. However, in addition to a greater integrative dimension of tourism research with other fields and regional research projects there are also clearly a number of tourism specific issues that need to be addressed in terms of the development of a more substantial knowledge base (Stewart *et al*. 2005; Hall 2008). These include:

- tourism entrepreneur and organization perceptions of climate change and their adaptation and mitigation strategies to climate and environmental change;
- tourist perception of the affects of climate change on polar destination attractiveness;
- the extent to which polar tourism experiences creates environmental advocates from those who participate in polar activities;
- the impacts of environmental change on place promotion;
- the effectiveness of tourism codes of conduct in managing operator and tourist behavior;
- the role of tourism as a vector for the introduction of invasive species;
- the potential environmental impacts of cruise ships in polar regions;
- the role of tourism in polar governance and sovereignty issues
- the role of tourism in the socio-cultural resilience of indigenous peoples and remote communities in the Arctic;
- the role of tourism in economic development and diversification

Given that tourism is such a significant economic activity and, as Stewart *et al*. (2005: 383) noted even a 'desired industry in some communities,' it is clearly vital that a deeper understanding of the complexity of polar tourism be achieved in terms that are useful for policy-makers, especially when tourism is also integral to climate and environmental change adaptation and mitigation. Among the destinations presented in the 2011 offer from the TUI catalogues there are also countries from Polar Regions as for example Norway, Sweden, Greenland, Artic, Antarctica.
The transport to these destinations can be chosen by the tourist, from tourism packages including only airplane or train, bus or ship or combination of these. The presented destinations are classic following a popular route with well known sights, but also special natural sights and adventurous one. The main trips in the Polar Regions are:

Region	***Route***	***Average duration (days)***	***Average price (€)***
Norway Hurtigruten	Bergen-Kirkenes-Trondheim	15	2600
	Kirkenes-Bergen	8	1200
	Bergen-Kirkenes-Bergen	14	1500
	Bergen-Kirkenes-Svolvær	12	2200
	Round trip of the island	12	4000

Region	*Route*	*Average duration (days)*	*Average price (€)*
Spitzbergen	The North Sea	10	3500
Greenland	Disko Bay Expedition	9	4500
	The South of Greenland	12	4500
	The East of Greenland-Svalbard	15	6500
Arctic	Murmansk – The North Pole – Murmansk	15	19000
	Around the Arctic Region	67	55000
	The North-East Passage	25	25000
	Canada-Greenland- Arctic Russia	25	20000
Antarctica	Ushuaia–Beagle channel- Drake passage - Ushuaia	13	6500

Source: TUI Katalog, Hurtigruten Arktis Antarktis 2011- 2012

The first attraction in the TUI catalogue for 2011 in a far place is in Norway on the route Bergen-Kirkenes-Trondheim. The trip lasts for 15 days and represents a cruise trip on 2500 miles on Norway's coast, with nights of accommodation in the towns Oslo and Bergen and stops in 34 harbours. Another destination offered by TUI is the Svalbard island, attractive both due to the polar fauna with rare animals but also the glacier landscape in a proportion of 93%.

The next destination in the cold regions where TUI offers full travel services is Greenland where tourists can admire the polar fauna with rare animals and the glacier landscape in a proportion of 83%. The largest island, Greenland has lots of sights: deep fjords, icebergs, the largest iceberg in the world.

On of the most attractive holiday choices is Iceland. The Iceland trip includes visiting many cities as for example Reykjavik the capital city and Ilulissat, the third largest city in Iceland, situated 350 kilometres from the Artic Circle. After visiting these cities, there is the trip to the glaciers where the main attraction is the Glacier Fjord which belongs to the UNESCO patrimony since 2003. The next day goes on with a trip to the Oqaatsut colony, where in 2008 there were only 52 inhabitants. For centuries this was the place where the Danish whale hunters gathered. The next days are booked for the visits of small but wonderful towns and stops at the Gooafoss waterfall; the myths say that the ancient Nordic gods are watching the country from this place. There will be stops at the largest glacier in Europe– Vatnajokull, at the glacier lagoon, the oldest church in Iceland and a walk of the Feroe Islands.

One of the most expensive offers of the German company TUI in the far areas is the expedition in the Arctic region, which lasts for 67 days and costs approximately 55.000 euro.

The rebound in growth in the main emerging market countries has significantly outpaced that seen in the main industrialised countries over recent months. However, there are some cautious grounds for optimism that the major economies may not be left hopelessly trailing behind in 2010. In Europe, orders data and surveys have tended to be stronger than output numbers, suggesting faster growth ahead – some of the recent weakness in output can be attributed to short-term factors such as weather and the winding down of car scrappage schemes. Rapid emerging market growth will also provide a boost.

European airlines have posted consistent gains in Revenue Passenger Kilometres (RPK) for most of 2010. According to data from the Association of European Airlines (AEA), RPK has grown in eight of the first eleven weeks of 2011 compared to the year earlier and in 13 of the last 17 weeks. The trend is not limited to intra-European routes – routes between Europe and Asia and Europe and North America have experienced similar patterns of growth. Passenger load factors continue to increase as well. More encouraging, these increases are driven more from the demand side than the supply side. Over the past year, airlines cut capacity significantly. This trend has slowed significantly with some capacity recently added within Europe.

The United Nations Environment Program (UNEP), The United National Education, Science and Culture Organisation (UNESCO) and the World Tourism Organisation (WTO / OMT) are preoccupied at the same time by: the protection of the natural environment and the cultural patrimony;
Cooperation with the local communities and people,
Encouraging the tourists to respect the local lifestyle ;
Preserving the plants and animals, the protected areas and landscapes;
Respecting the integrity of the local cultures and social institutions;
Development of the activities according to the local laws, national and international regulations in force;
Active opposition against the illegal, abusive or exploiting types of tourism;
Close collaboration with the business partners, local authorities, regional and national governments and other organisations for the purpose of the sustainable development of tourism;
Supplying with information regarding the development and encouragement activities for sustainable development and tourism management ;
Communicating the progress of the participants to the initiative of taking this commitment.
It is also well know the fact that the objective of tourism sustainable development cannot be achieved without the help of the stakeholders, including the clients.

Conclusions

There is a lack of studies of how tourists and other players in society will react and adapt to a changed climate. Research shows that there is a great need of increased interdisciplinary knowledge and detailed impact studies of how tourism in Europe will change in relation to climate change and sustainable development. That is why, this paper analyse tourism in the cold environments, which is expected to increase while in others it will presumably decrease or change, and this will have a great effect on the economy. Is Europe prepared for this change? What can we do to increase our preparedness? On the other hand, individual weather events cannot be specifically connected to climate change; they do act as indicators of a potential future for high latitude climates as well as being potential evidence some of the greater variability of weather events that has been forecast as part of climate change. During future hot summers, more and more European tourists will want to come north. How will this affect the economy, environment and social development of European cities? Urban tourism in Europe has increased over the past few decades, and tourism as a whole is today one of the largest segments of the business sector. In a report from 2000, the European Commission writes that tourism has a strategic role for urban planning and urban development, and that European cities must work to ensure that they can cater better for both the expectations of tourists and the wellbeing of the urban population. One good example is the City of Göteborg whic has developed a clear strategy to attract visitors to the city. This represents an investment which has evidently paid off. Göteborg won the 2007 Prize as the best tourist organisation in Europe when the European Cities Tourism Awards were distributed for the first time by the organisation European Cities Marketing (ECM). The question of, 'isn't the weather strange lately?' seems to be increasingly asked in these days of conjecture about the effects of climate change.

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