

Chapter 14

Tourism, leisure and sport

- 14.1 Introduction
- 14.2 Tourism
- 14.3 Climate change and tourism
- 14.4 Case studies
- 14.5 General insurance implications
- 14.6 Conclusions and recommendations

14.1 Introduction

This chapter examines the issues that may face insurers through the interactions of climate change with the tourism, leisure and sport industry. Section 14.2 describes the sector briefly, and how insurance plays a role. The emphasis is on Tourism and Travel Insurance, but in fact there are many other interfaces between insurance and these businesses. Section 14.3 outlines how climate change is likely to alter the way that the tourism industry operates. Section 14.4 focuses on specific areas to demonstrate the higher level of analysis that may be required in future. Sport is given special attention, because of its growing importance, and close relation to leisure. Finally, Section 14.5 presents likely implications for insurers in terms of product design, again focusing on Travel Insurance, before concluding with recommendations in Section 14.6.

14.2 Tourism

Tourism is amongst the world's largest and fastest growing industries¹. In 2007, world Travel & Tourism employment was expected to reach 231.2 million jobs, representing 8.3 per cent of total employment worldwide (1 in every 12 jobs), while turnover was to contribute 3.6 per cent to world GDP (US\$1,851 billion). When considered as a single market, the EU is the largest travel and tourism economy in the world, representing 35.2 per cent of global activity. Within EU, travel and tourism accounts for over 25 million jobs (1 in 8 workers). Half of international journeys are for leisure and tourism, with the rest being for business, family visits, religious purposes, etc². Projected climate change will change the tourist resources of different regions and countries and thus alter their competitive positions as leisure destinations. Tourism can be seen as a voluntary and discretionary activity and therefore, particularly at the whims of fashion and the image of destinations. In 2005, of the world's top 10 destination countries, 6 were in Europe and a total of 441 million tourists visited the continent.

Any tourist destination requires three categories of capital: natural capital, man-made capital and human capital³. Natural capital contains natural resources such as water, scenery and climate, and climate change will directly impact on these. Sea level rise will diminish beach resources in many resorts. Man-made capital covers structures such as all infra-structure and the cultural heritage, whilst human capital includes service levels, health and safety issues.

Tourism has been shown to contribute to three major areas of global environmental change.

1. Tourism is a major contributor to greenhouse gas emissions and aviation emissions are the fastest growing source. Leisure-related travel accounts for about half of all journeys in industrialised countries.
2. The spread of infectious diseases to new areas through human mobility. Tourists bring back exotic pests and diseases, and climate change may mean they can survive or even breed.
3. Tourism can exacerbate water stress leading to conflicts over water resources⁴.

Tourism is also impacted by political, economic and cultural globalisation, information technology and other social and environmental change issues⁵. One example is the increasing age of the population, who with increasing affluence, may wish to travel more. This could lead to more frequent cases of older people being exposed to disease, heat or injury.

Organisational issues

The tourist industry is primarily composed of small and medium size enterprises (SMEs). Many lack institutional robustness and are vulnerable to climate change, such as weather related events.

A five fold division of stakeholders in the tourist industry can be recognised:-

1. The individual tourist
2. Generic service providers, e.g. tour operators, emergency assistance networks
3. The transport sector, e.g. charter airlines, cruise companies
4. Destination resort. The range of scale and planning horizon of individual stakeholders is considerable and is much longer in the case of resort developers or public authorities, compared with individual hoteliers
5. Trade associations, e.g. ABTA (Association of British Travel Agents) The Sports Council

¹ World Tourism and Travel Council, 2008. Progress and Priorities 2007/2008

⁴ Gossling, 2002

² Ehmer and Heymann 2008, reporting UN World Tourist Organisation

⁵ Hall and Higham, 2005

³ Amelung, 2003

There are a relatively small number of corporations and multinationals involved in the tourism industry. They generally have longer term strategies than SMEs and are at risk from longer term climate changes. They are more amenable to addressing climate change issues in relation to infrastructure plans, e.g. new resorts and major capital developments, such as marinas. Such developments have long projected life times (30 years or more) and will be subject to climate change impacts and associated changes in risk for the medium term.

Insurance services

All stakeholders identified in the section on Organizational issues require insurance services. A number of traditional insurance products associated with the tourist market are likely to be affected by climate change. These include comprehensive travel-medical and death expenses, personal liability, personal accident compensation cancellation/curtailment and related expenses, personal accident and sickness, and event cancellation/postponement.

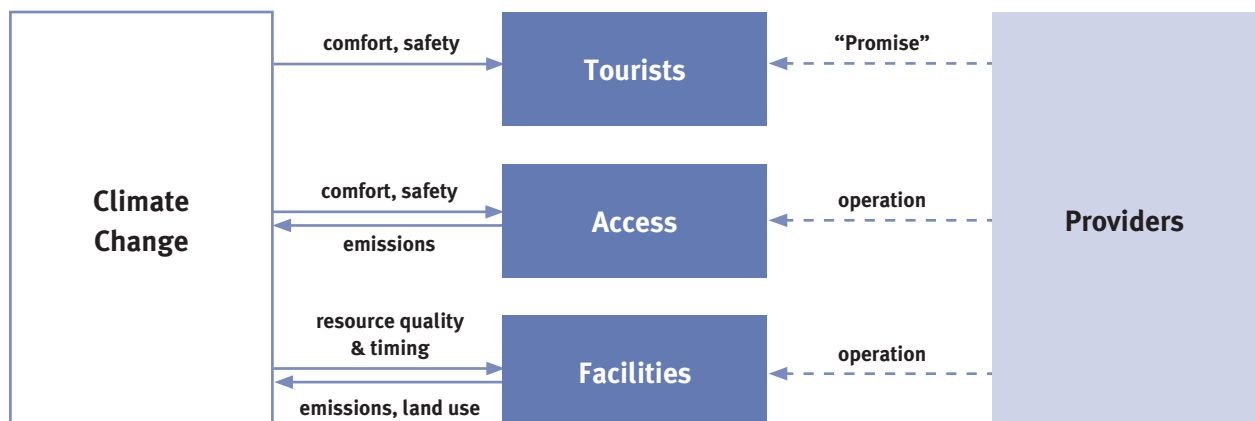
Climate change has been identified as a potential hazard⁶ with “many island and coastal resorts under threat in which no institutional or industry response has been forthcoming.” Clearly the insurance implications of this could be very large indeed for the supply side of tourism. The problems of Caribbean hotels in finding insurance are perhaps a foretaste. To keep a manageable scope, this chapter will focus on Travel Insurance, i.e. the demand side. Many of the implications for tourism businesses reflect those discussed in other chapters for SMEs and corporate business.

In 2007, the UK travel insurance market was worth more than £700 million in premiums. This was generated by over 21 million policies, more than half of which were annual, rather than single-trip. In the UK, there has been a trend towards tourists having more than one holiday a year, and making their own arrangements, rather than “package holidays”. This has meant an increasing diversity in the distribution channels used for Travel Insurance, though Travel Agents are still the single most common one. After many criticisms, the FSA is taking over regulation of all Travel Insurance, so that policyholders are given adequate service at the purchase and claims stages⁷.

14.3 Climate change and tourism

Both demand and supply aspects of tourism are likely to be affected by climate change, but just as importantly tourism has direct and indirect affects on climate change itself (see Figure1).

Figure 1: Tourism and climate change



This means that tourism will be affected by policies aimed at abating climate change. The scale of the tourist industry is too diverse to examine all of the issues surrounding tourism, insurance and climate change, so we shall outline some issues relating to natural disasters and possible changes in demand, and then explore a couple of areas in more detail for illustration in Section 14.4.

⁶ Hall 2004

⁷ Travel Insurance, in General Insurance publ by Key Note 2008 pp51-59

Natural disasters

Tourism development is frequently located in areas which are exposed to, or are likely to be, exposed to sudden-onset disasters, in particular in beach and coastal areas, river valleys and mountain regions. Seventy per cent of holidays are coastal-orientated and much of the rest are related to natural attractions. Easily developed flat land is often used for new tourist infrastructure, whilst environmental degradation through deforestation may increase the flood risk, and contribute to events such as landslides and avalanches. Because tourists do not necessarily speak the language of the country they are visiting, prompt communication of imminent disasters is often a problem. Tourists are also more vulnerable than local residents because they tend to be less familiar with the places they are visiting. The environment, and not least the climate, is considered a resource to be exploited in many tourist areas. A clear majority of the natural disasters that threaten and hit tourist areas are, in one way or another, related to climate. Tourists, especially campers, walkers and climbers, may also be geographically isolated and out-of-touch from the administrative machinery monitoring disasters. This would be particularly true of rapid-onset disasters such as forest fires where only very short-term forecasts are possible. There is little research into the socio-psychology of tourism and natural disasters⁸ but disaster mitigation may be hampered by a lack of preparedness and an inability to recognise the high-risk elements of the landscape. Steep gorges, river valleys, and ski slopes, attract tourists for both active and passive tourism. The visitor may be unfamiliar with the landscape, and unable to perceive the risk from rare events like intense convective storms. Low-rainfall areas may incorrectly be seen as no-rainfall areas whilst cost-cutting by developers means that tourism can be located at high-risk sites. Possible increases in the frequency of major damaging hurricanes might be of particular concern in island communities, e.g. in the Caribbean, where evacuation is impossible or extremely difficult. Tour operators have a “duty of care” to clients, and may face an increasing insurance problem.

In mountainous areas many avalanche-prone areas are popular tourist resorts and as a result of the increasing number of people exposed to danger in these areas, mostly tourists on winter sports holidays, warning and avalanche control have become vitally important. In the Alps, while avalanche control procedures are well established, changing environmental conditions, such as periods of rapid thaw, and changes of slope stability, could lead to legal challenges after fatalities. Avalanches are often triggered by skiing and other mountaineering activities. The artificial triggering of avalanches and the marking of pistes for powder snow skiing pose insurance risks if accidents result from poor decision making by officials. Failure to adequately provide avalanche warning bulletins, signs and barriers as well as local forecasts carry a similar risk.

Tourism is a competitive business and marketing any particular destination is often shared by local and state tourism industries. Marketing after disasters involves re-launching an area and developing advertising strategies for specific calamities. A good recent example was the cancellation of the 2006 Hogmanay celebrations in Edinburgh and the New Year celebrations in other cities in Northern England because of high winds and driving rain. In the case of Edinburgh this was the second such cancellation in recent years, and with winters forecast to become wetter and stormier such events may not be able to obtain insurance in the future. Attendance at the 2007 event was also noticeably lower. This shows that it may be necessary to address the changing conditions when issuing Pluvius insurance, which has relied on past average statistics when setting premiums.

Changes in average conditions may well be less important for tourism than greater variability and frequency of extreme events, which are closely related to issues of safety and damage to facilities.

Changes in demand

In addition to the changes in risk, climate change will also have a huge impact on the demand for travel, and hence travel insurance. Figure 2 shows that more countries will lose than gain. For example, projected climate change suggests that tourism resources will expand in northern Europe and contract in southern Europe.

The key impacts will be:

- Traditional summer holiday destinations, such as the Mediterranean, will become too hot in summer, leading to tourism to these regions moving into the “shoulder months” (spring and autumn)⁹. The first indications of this were seen in the very hot summers of 2003 (western Europe) and 2007 (south-eastern Europe);
- Traditional winter skiing destinations, such as the Alps, become too warm for reliable snow. The total amount of snow in the Alps is expected to reduce by 30% by 2030 and 50% by 2050. This will restrict the number of skiing resorts,

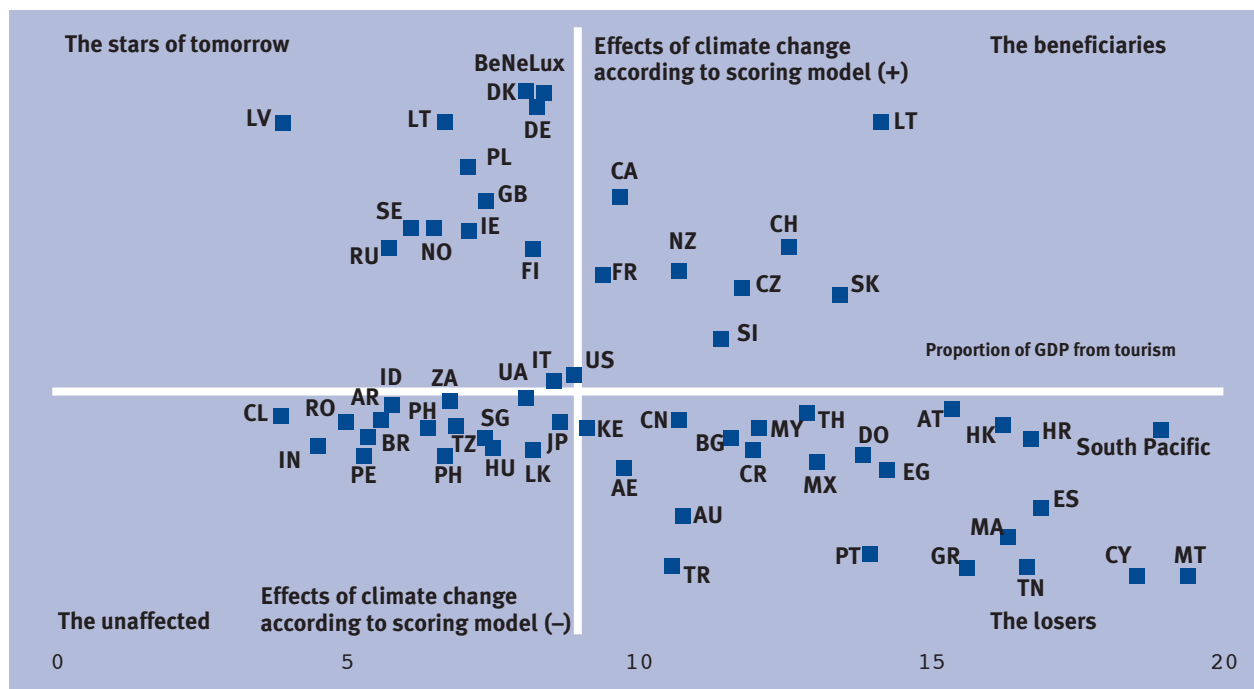
⁸ WTO1998

⁹ Agnew and Palutikof, 2006

meaning that skiing will become a more and more expensive pastime. It could, however, open up more reliable ski resorts to increased travel, e.g. many UK skiers could head for Colorado instead of the Alps (causing more carbon emissions in the process);

- Hotter summers will lengthen the season for outdoor recreation in the north but inhibit outdoor recreation in the south in the summer months. We are likely to be on the verge of a renaissance of the British seaside resort. Scandinavia, Russia and Canada are also likely to develop as tourist destinations;
- Freshwater supplies will become more strained in many resorts, especially in warmer and less well developed regions. This will lead to tourists becoming less welcome or more separate from local people in these areas;
- Sea-level rise will impact beach resorts across the world, particularly where the hinterland is very flat and the sea starts to encroach into the resort itself. This will lead to a redistribution of destinations for beach holidays;
- A lengthened hurricane season will mean that travel to tropical regions may need to be restricted to other times of year, or tourists may simply switch to other destinations, e.g. Kenya, New Zealand, etc;
- Travel itself will become more expensive, as the price of oil rises, either due to taxation to mitigate the impact of climate change by governments, or simply due to restrictions in supply as Peak Oil is reached, likely to be around 2012. This could lead to a restriction, or at least a restraint, on the travel market.

Figure 2: More winners than losers



Source: Deutsche Bank Research. Assessment based on the effects of climate change according to the DBR scoring model (ordinate) and % of GDP from tourism (abscissa: global average: 9%)

Changes in supply

The industry has had to adapt to a number of major changes in recent years including the success of low cost carriers and new distribution channels such as the internet, both of which have had insurance implications for the consumer.

Recently Deutsche Bank Research has compared the most important countries in the tourism sector with the aid of a scoring model¹⁰. This model is based on four parameters, which have assessed, quantitatively or qualitatively, for all the countries: firstly, direct climatic effects; secondly, substitution effects resulting from climate; thirdly, regulatory burdens, i.e., higher prices of mobility due to fiscal burdens, and consequent geographical substitution effects; and fourthly, the possibility of each country having to adapt to climate effects. The parameters were assessed with different weightings and broken down into subcategories, in order to differentiate better among the countries.

The time horizon is 2030. In a subsequent step countries were identified in which economic reliance on climate-relevant tourism is particularly high, as the overall economic effects are particularly relevant for these.

¹⁰ Ehmer and Heymann 2008

Those that could gain include the Benelux countries, Denmark, Germany and the Baltic countries. France and Italy will be slightly favoured, due to the diversified structure of their tourism offerings.

Canada, New Zealand and the USA are the only three further countries outside Europe whose tourist industries will be on the winning side. The reverse conclusion is that the tourism sector in all countries surveyed in Africa, Latin America and Asia will more or less suffer from climate change in the next few decades. The overall inference is that the supply side of tourism will shrink.

14.4 Case studies

Sports

Watching professional sport and activity holidays are forming an increasingly important segment of leisure. More leisure time and affluence together with a greater concern for personal fitness could lead to an increasing demand for sporting facilities. Research has concentrated on the effect of climate on winter sports activities, such as skiing, in part because of the importance for mountain areas, but environmental change, for example, in river valleys, could affect fishing and boating activities and could be highly damaging to local economies.

1. There are likely to be changes in sports preference (see Box 1). Substitution of activities might occur as climate changes, with extension or contraction of the season over which the sport is played. In general, it could be assumed that warmer conditions in summer might favour more water-based sports and recreation. There could be a need for more outdoor swimming facilities open for a longer season. Specific threshold weather conditions, both permissive and prohibitive, are applicable to specific sporting activities. Quite often these thresholds are merely the subject of value judgements by individuals. Each sport is affected by a particular level of severity of weather. Even apparently low risk recreational pursuits such as hill walking can be dangerous in certain conditions, and the frequency of occasions when an activity becomes dangerous may well change over time. The recent case of the North East run where several fit people were adversely affected by the prevailing warm conditions highlights the issue of organisers' liability. Any change in the frequency of events, which themselves may not be severe could have implications for safety and the insurance industry. There will be changes in the risks from sports like caving and potholing, and new activity sports are growing fast for which there is little information about risks. For group and team activities specialist staff such as grounds-men or referees may take decisions on behalf of players. Weather affects the turf and soil and hence the playability of the surface. Warmer summers might dissuade sportsmen from using indoor leisure centres unless there was more widespread air conditioning. The economics of running and operating leisure centres could thus change.

BOX 1

Winter sports adapt to climate change

In 2006, snowmobile manufacturer Polaris had 40 percent lower sales in the U.S. than in 2005, and the International Snowmobile Manufacturers Association reported annual sales were down well over 50 percent from 1997. This has been offset somewhat by growing sales in Canada and Russia for six years, and a rise in the popularity of all-terrain vehicles.

The skiing industry is suffering too. In New Hampshire, there were 65 downhill ski areas in the 1970s. Twenty remain. To cope, some resorts have diversified and, during warmer months, offer a mix of entertainment and outdoor recreation like an alpine slide, miniature golf, climbing wall, bumper boats, bluegrass concerts and even ventriloquists. Skiing attendance is at 120,000 annually, but an additional 55,000 to 70,000 come during warmer weather.

Since 2000, 184 ski areas around the country adopted the Environmental Charter to raise awareness of global warming on winter sports and call for greenhouse gas reductions. In addition, the National Ski Areas Association has launched a "Keep Winter Cool" campaign with the slogan, "Stop Global Warming or the Snowman Gets It." Aspen itself has introduced numerous environmental reforms, as have other resorts, such as Jiminy Peak in Massachusetts which installed a wind turbine to become the first resort that produces its own electricity.

There is evidence that local tourism operators may be overstating their adaptive capabilities to snow deficiency conditions.

2. Cold-weather sports dependent on a grass turf surface could find that less disruption from snow and ice would result in less postponements, abandonments and suspensions of fixtures so that the economics of sports like horse racing could benefit. Such disruption can not only play havoc with the fixture list but also result in huge financial losses. Often it is the quality of play that is diminished by the results of bad weather on the playing field. Mud-soaked fields, blizzards, fog and strong winds affect the style of the game, the degree of ball control and the overall performance of the players and have personal accident insurance issues. Many snow-based sports will be adversely affected by warmer winter conditions and many travel policies at present include cover for lack of snow. At present many insurance policies specify that all pistes have to be shut for a period of at least 12 hours before a customer can make a claim. Most insurers will then cover the cost of transport to another resort. This type of policy will need to be re-written, perhaps to only include high level resorts. The lack of snow in the 2006/7 winter at many Alpine resorts, especially over the important New Year season highlights these problems.

3. Summer sports: Cricket and outdoor tennis are particularly weather sensitive. Rain, bad light and the state of the pitch or court are highly influential. Both sports when played professionally tend to be lengthy; for example Test matches and Wimbledon are spread over several days or weeks. Thus there is considerable potential for disruption.

Heat can upset players and spectators in crowded stadiums, whilst drought can influence the playing surface. Financially, this can be disastrous for tour organisers, sponsors, and the media.

It is an interesting paradox that while sport is perceived as a healthy activity, more people are killed in developed countries from severe weather events like lightning, while engaged in activities like playing golf or fishing, than in almost any other outdoor activity. If convective summer storms become more severe or more frequent this toll could rise. Similar storms, leading to flash flooding could make extreme sports like caving, potholing, kayaking and rafting more dangerous.

4. Deterioration and Destruction of Sports Infrastructure. Many sports facilities such as race tracks (at Newton Abbot, Windsor, Worcester and Perth in the UK) as well as athletic stadiums, are situated in flood prone areas. Climate changes that might include more winter rainfall could mean periods when flood plain resources are unusable. Coastal golf links are subject to coastal erosion accelerating as a result of rising sea levels. In the UK the Royal West Norfolk Golf Course spent £165,000 in 1990 to improve sea defences¹¹. Re-alignment of the coast could impact further on coastal courses. The costs of upkeep of sports facilities could change with changes in site drainage and irrigation needs in winter and summer respectively, changing. Operational decision-making on course and pitch maintenance will need to be reviewed. Expertise by sports professionals in this area, e.g. the golf industry should be passed on to others involved in areas like parks and gardens management on best practice in turf management. There could be issues of professional liability if organisers, designers and maintenance staff do not anticipate and react to climate change. The impact of climate change on golf was considered in detail in a previous CII report on climate change¹².

5. The economics of weather-proofing, including stadiums with retractable roofing, and pitch protection systems could change. The more sophisticated the weather-proofing, the more expensive the cost of adapting the proofing¹³. The economics of using artificial grass and under-pitch heating systems could also change.

6. Micro-second timings. Conditions are most critical when the margin of victory or defeat narrows to hundredths of a second. This would apply to sports such as athletics and motor racing. Changes of conditions can be extremely influential in such sports and winning may be down to anticipating the most likely climate conditions when training for an event, and studying the actual weather when the event takes place. Climate change could affect the future likelihood of breaking world records in such sports.

7. Some sports involve the fauna and flora in the natural environment. Climatic changes that alter the balance or number of species could have an impact. Examples would include fishing, a very popular sport in many industrial countries, and shooting. Marine tourism would also fall into this category if there are changes to the underwater environment and hence impacts on diving and snorkelling sports. Already several parts of the globe have reported adverse effects from very warm sea temperatures, such as coral bleaching.

Engaging in, and watching sporting events, is likely to grow further in popularity as the population ages, but becomes more health conscious, and wishes to stay fit and trim. Climate change will offer threats and opportunities to the whole sports provision industry as changes develop in the supply side. Tastes and preferences of the public are likely to change and there will be a considerable need to monitor and to anticipate what facilities are likely to be most in demand.

¹¹ Perry 2001

¹² CII, 2001

¹³ Taylor 1979

Travel disruption

Travel is a key element of most tourism, so any cause of disruption can be critical. Travel providers are at their most vulnerable at times when the infra-structure is being “sweated” most, that’s to say at times of peak demand. A good example was the disruption to flights, especially those operated by British Airways as a result of persistent fog in South East England in December 2006. Most affected were domestic and short-haul operations and BA estimates that it lost £40million as a result of the need to cancel several hundred flights. Whilst there is no evidence from the climate models that the conditions that prevailed on this occasion are likely to become more frequent, the episode illustrates the potential costs and disruption from a particular event.

The transport infrastructure operates at close to capacity in the UK both on the ground and in the air, so the impacts of events, which themselves can be quite trivial, such as minor fall of snow, can be out of all proportion to the severity of the event itself.

The increasing popularity and promotion of ecotourism is likely to continue and to become more widely subsumed into the mainstream tourist product. Insurance issues could include not providing the level of “green tourism” expected. Greenhouse Gas mitigation policies will impact on tourism perhaps tending to reduce the amount of leisure flying and expanding tourism based on transport such as coaches, rail and sea travel. Any move towards personal carbon footprints will accelerate these moves.

14.5 General insurance implications

Changes in travel insurance risk

A recent report¹⁴ has noted “as an industry, travel insurance needs to prepare for the impact of climate change and constantly analyse these new risks”.

The key risks covered by a travel insurance policy are as follows:

- Cancellation, curtailment or delay of holiday due to circumstances outside the control of the policyholder.
- Medical emergency and repatriation needs whilst travelling abroad.
- Personal Accident, disablement or death whilst travelling abroad.
- Loss of personal effects or money.

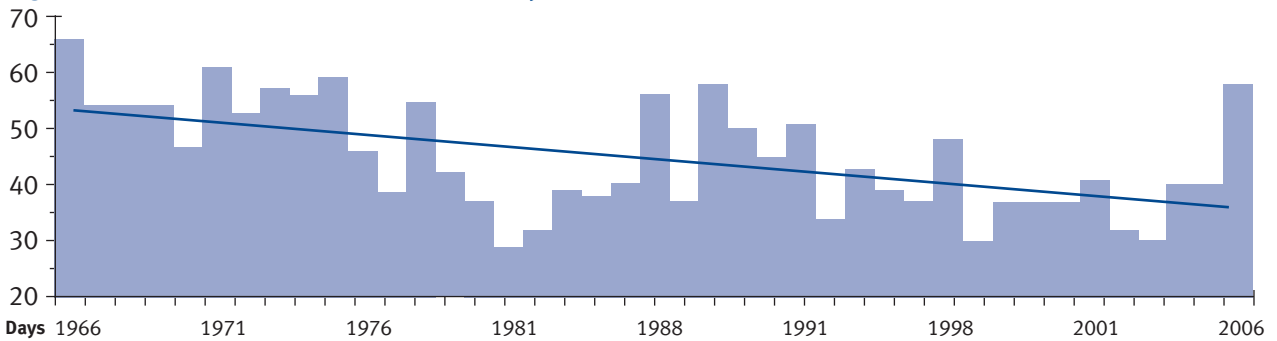
Climate change will have a significant impact on the first three of these risks. The key changes will be:

- Increased frequency of severe weather events, such as hurricanes in areas like the Caribbean, tropical monsoons in SE Asia and forest fires in the Mediterranean (fires in Greece in summer 2007 caused extensive damage to tourist destinations). Where tourist resorts become temporarily uninhabitable, or unsuitable as a holiday destination, holidays will be cancelled or curtailed. Tour operators usually provide a refund in these cases. However, if they are not UK-based, or the holiday has been booked independently, often no refund will be available and travel insurers will need to pay the cost of this. Although policy wordings generally exclude such an event, they can cause negative publicity, and so travel insurers will usually cover the cost. If these events become more common, there will probably be demand to write such events into policy wordings. Therefore this is likely to become a more significant proportion of the travel insurance claims cost, hence increasing premiums, and also a more volatile one, increasing the capital requirement for writing this class of business.
- These severe weather events could also cause injury or death, which are covered, usually to set limits, under the travel insurance policy. The levels of benefit provided are usually high in comparison to the premium paid, so this is a major new risk for travel insurers.
- Policyholders are also covered for the cost of repatriation to the UK when these events occur, so this total cost is also likely to increase.
- Severe weather events in the UK are also likely to become more frequent. This could lead to airports, ports and motorways becoming more frequently impacted, leading to travel delays, or even cancellations.
- Increased frequency of tropical diseases in regions that have not previously been exposed to them. It is likely that travel insurers will move to mitigate this risk via policy wordings.
- Drought or freshwater failure in holiday destinations leading either to cancellations, curtailment or sickness. Note again that this formally falls under the tour operators’ remit to reimburse, but often will be paid for by the travel insurer.

¹⁴ Halifax Travel Survey 2007

- Heat exhaustion could become much more common, particularly among the elderly or children. Temperature alone is not the best measure of human climatic tolerance. Among the more sophisticated indices that take account of humidity, windiness, etc, is physiologically equivalent temperature (PET). At Siofok, on Lake Balaton in Hungary, the number of comfortable days in the holiday season (when PET is between 18°C and 23°C) has declined by one-third in 40 years due to increasing temperatures (see Figure 3).

Figure 3: Trend in number of comfortable days at Lake Balaton, 1966-2006



Source: Variations of Thermal Bioclimate in the Lake Balaton Region Nemeth, Schlanger¹ and Katona in Matzarakis et al 2007

- Snowfall in winter skiing results becoming more erratic and less reliable. This is likely to lead to skiers taking risks on slopes that do not have adequate snow cover, or snow melting and re-freezing and becoming more icy and dangerous. In addition, avalanches are expected to become more frequent. Ironically, climate change could mean that there are occasional immense ‘dumps’ of snow at skiing resorts that may lead to resorts being shut, or snow becoming unstable.

Insurance for operators

As Figure 4 implies, increased weather variability or unfamiliar conditions have repercussions for the tourist value creation chain. With more choice and improved information technology, holidaymakers can wait until they have a clearer idea of weather conditions at home and abroad before committing themselves. However, the providers are not so well-placed; they have to have staff and plant in place, and local communities just have to work around their local conditions. Capital is invested all year round but, for many activities and destinations, the operating period is limited and profits must be made in a short period of time. Furthermore, use is further peaked in a limited number of holidays and weekends, and a few inclement weekends may tip the balance between profit and loss¹⁵.

Figure 4: Adaptability of the actors in the tourism industry



Apart from developing tourist attractions that are less weather-sensitive, the risk of abnormal weather or poor holiday conditions could be diminished by the use of financial products like weather derivatives, promising tourists financial compensation in the event of “bad weather”, or offsetting the additional operating costs for the provider¹⁶. For example, in New England, the 2001-02 skiing season experienced average winter temperatures 8°C higher than average greatly increasing the necessity of snowmaking and the cost of snowmaking. Operating profits for the 2001-02 season were between 19 and 32% lower than during a climatically average season¹⁷. Ironically, the same happened when protracted good summer weather in UK led to an increase in demand for holidays at home and a reduced demand for overseas holidays. There was a need to extensively discount the price of Mediterranean holidays, even in the peak season, and this widespread discounting

¹⁵ G. Wall The Tourism Industry and its Vulnerability to Climate Change in Amelung, Blazejczyk, Matzarakis, 2007

¹⁶ Ehmer and Heymann 2008

subsequently led to the financial failure of a number of small and medium size operators¹⁸.

Insurance for general leisure and sport

As indicated in Section 14.4, Sports, climate change could mean more frequent unexpected conditions for professional sport and outdoors leisure activities. In the former case, the organisers, sponsors, and media could face large falls in revenue, or unexpectedly high costs (even to the extent of having to award too many prizes for superlative performances!). With amateur participants, there could be a higher incidence of injuries, leading to liability claims against facility managers.

14.6 Conclusions and recommendations

Climate change can be expected to fundamentally alter holiday and recreation habits and it is likely that in as little as 25 years patterns of holiday-making will have changed dramatically from those of today. The frequency and nature of extreme conditions such as excessive heat and violent storms will almost certainly change. At the same time, the financial importance of the tourism, leisure and sporting industries is now huge, so that disruption from abnormal weather is extremely expensive.

Travel insurance

The response of travel insurers to these changes in risk and demand is likely to be:

- Increased need for capital to allow for the additional volatility, or alternatively well-designed reinsurance programmes or the equivalent.
- Increased travel insurance premiums to pay for the additional risk and cost of capital¹⁹.
- Changes to policy wordings to allow for changes in risk, e.g. with regard to tropical diseases or new skiing risks.
- Changes in sales and service resourcing across the calendar year to allow for changes in times of peak travel.
- Additional service infrastructure to cope with new combinations of destinations and activities.
- Peak activity planning for repatriation and claims service of customers caught up in severe weather events.
- Some insurance providers are now producing probability risk profiles which factor in extreme weather conditions that will become more likely as our climate changes, and such studies are very necessary in relation to tourism and holiday insurance. As noted earlier, it is important to use the appropriate indices when considering, e.g. the effects of heat on the human body.
- Profiling countries and industries in the way that Deutsche Bank Research has done could provide a useful starting point for deeper analysis.

BOX 2: Adaptation to the risk of hurricanes

The Caribbean Tourism Organization and individual member states have begun to actively market themselves as four-season destinations. This means coping with the problem of summer holidays interrupted or spoiled by hurricanes. The hurricane guarantees or waivers differ slightly from company to company, but basically provide a replacement stay of the same duration and equivalent value as the one originally booked. The strategy has proven successful as summer occupancy rates at beach resorts are approaching or equalling winter season in many destinations. Following a sequence of four hurricanes in 2004, the State of Florida developed a weather insurance program for convention organizers, where it pays the premiums for US\$200,000 insurance coverage for rescheduling costs associated with hurricane disruption.

¹⁷ Dawson, Scott and McBoyle Using an Analogue approach to Examine Climate Change Vulnerability of the New England (USA) Tourism Industry in Matzarakis, de Freitas, Scott, 2007.

¹⁹ UNEP 2008

¹⁸ A. Perry Summer (2007) set in with its usual severity (Coleridge) – Impacts on Tourism in Matzarakis, de Freitas, Scott, 2007

Insurance for tourism providers

The research here indicates that there is a growing market for business interruption and increased costs of working insurance to guard against abnormal weather and environmental conditions. Much of this may require alternative risk transfer (ART) products, such as weather derivatives, since there may often be no material damage to assets. Designing these could be a challenge, since the conditions that give rise to disruption could be many and varied, historic data may not be available, and/or future conditions may differ considerably from past patterns due to climate change.

- Again, the DBR approach is a promising way to identify likely areas for development.

Insurance for sport and leisure activities

The preliminary research here suggests that climate change could be a material risk for professional sport and organised amateur outdoor activities. Insurers and brokers with clients in these areas should therefore research this issue, to ensure that their own risks and their clients' risks are understood and managed adequately. Again, it is probable that ART could be a major component in managing these risks.

References

- Agnew M D and Palutikof J P, 2006 Impacts of short term climate variability in the UK on demand for domestic and international tourism *Climate Research* 31 109-120
- Alternet 2007 Winter sports
- Amelung B, 2003 Research developments and interactions. ESF Exploratory workshop Position Paper 3 Milan
- Amelung B, Blazejczyk K, Matzarakis A, 2007: *Climate Change and Tourism – Assessment and Coping Strategies*
Maastricht – Warsaw – Freiburg, 2007 ISBN: 978-00-023716-4 227pp
- Ehmer P, and Heymann E, 2008 Climate change and tourism: winners and losers. Deutsche Bank available at http://www.dbresearch.com/PROD/DBR_INTERNET_EN-PROD/PROD0000000000222943.pdf
- Gossling S, 2002 Global environmental consequences of tourism. *Global Environmental Change* 12 283-302
- Halifax Travel Survey 2007 Holiday 2030. UCL Hazard Research Centre
- Hall M, 2004 Space-time accessibility and the tourist cycle of evolution: the role of geographies of spatial interaction and mobility in contributing to an improved understanding of tourism, in R. Butler “The Tourism Area life-cycle” Channel View
- Hall M and Higham J, 2005 Tourism, recreation and climate change, in “Tourism Recreation and climate change” ed Hall and Higham Channel View publications 3-28
- Matzarakis A, de Freitas CR and Scott D (Eds.) 2007 *Developments in Tourism Climatology*
- Proceedings of 3rd International Workshop on Climate, Tourism and Recreation Alexandroupolis, Greece 19 – 22 September 2007, Commission on Climate, Tourism and Recreation 289 pp 2007
- UNEP2008 Climate change: adaptation and mitigation in the tourism sector
- University of Oxford UK 152 pp
- Winter Sports In A Warming World
- World Tourism Organization 1998 Handbook on natural disaster deduction in tourist areas. 121pp
- World Tourism and Travel Council, London, 2008 PROGRESS AND PRIORITIES 2007/2008 36pp

Useful resource

eCLAT Experts in Climate Change and Tourism <http://www.e-clat.org/>

Biography

Dr Allen Perry

Dr Allen Perry is currently a visiting senior lecturer at the University of Swansea. He is author and co-author of a number of books on climatology and has written a number of papers on the links between climate change and tourism, especially with regard to the likely impacts of a changing climate on Mediterranean tourism. He is a Fellow of the Royal Meteorological Society and has contributed to a number of studies on the impacts of climate change in the UK and Europe.

David Rochester

David has worked in the Insurance Industry for 17 years and has experience in home, travel, motor, creditor and commercial property lines.

Currently he works in Pricing and Underwriting for household and travel insurance. He is a member of the Institute of Actuaries Climate Change Working Party and was a founder member of the ABI Working Group that set up the ClimateWise initiative.

David lives in North Yorkshire with his wife and 3 children. He is adapting to climate change by trying to grow a grapevine in his garden and encouraging his children to switch the TV off.