CHAPTER 1
INTRODUCTION

About the chapter

The chapter gives a brief introduction about the tourism industry in India. It also emphasizes on the various climate change aspects happening around the world in general and Jammu and Kashmir in particular. As the study is about the behavior of tourist towards climate change, it also details out perspectives of attitude and perception towards climate change. Further climate change impacts are also discussed in brief in this chapter.

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1.1 Brief About Tourism Industry

Tourism is one of the largest and fast growing industries of the world. It is also the most climate-dependent economic sectors as tourism activities are directly interrelated with weather and climate of a destination. The tourism industry is a large contributor both globally as well as an individual perspective in terms of economic benefits. Many regions of the world rely on the tourism industry as a main source of income and livelihood. The World Tourism Organization recorded a total number of 1235 million international tourist arrivals in 2016 (UNWTO 2016). International tourist arrivals grew by 4.5% in 2016, marking the sixth consecutive year of significant growth with international arrivals increasing by 4% or more every year since the post crisis year of 2010. The World Tourism 2020 Vision forecasted that this figure of tourist arrivals will reach to 1562 million in 2020 (Jain, D. 2009). This steep growth in tourism industry throughout the globe is encouraging and various nations are becoming more concerned to attract more people to their destinations and trying to promote this sector as a major source for the development of the economies. India is not left untouched by this trend. Kashmir being called as “paradise on Earth” is one of the major tourist attractions in the Indian subcontinent (Jain, D. 2009).

In many parts of the globe, tourism has come up with negative impacts for the natural environment. However, at the same time tourism can be used as a tool towards the conservation of natural environment and habitats (Swarbrooke, 1999). In financial terms tourism is a major industry and foreign exchange earner providing livelihood to a large number of people. However, these economic activities do not always benefit the host community, because of multiple reasons like who is employed in tourism and the degree of
leakage from the local people. Recently the concept of sustainability of the tourism industry has moved up in the public agenda. The basic reason for this is the fact that a change in climate is happening at a rapid pace and its outcomes should be disastrous if not taken care of (Lane, 2009). These changes in weather and climate could affect to a large extent the tourism industry and its growth. For the first time since, 1960 tourism growth rates are being very much threatened, and for some areas the very existence of the tourism industry will be in danger because of the severe impacts of climate change. Climate change is one of the issues facing sustainable tourism and therefore, tourism research began to examine this topic on a full time basis (Lane, 2009).

Tourism in one or other way is dependent on climatic and natural resources irrespective of the type of destination and tourism product. Beaches, forests, deserts, lakes, oceans, mountains, hills, rivers, seas are very crucial to the attractiveness of all destinations worldwide (Gossling and Hall, 2006). The quality of these natural resources directly influences the quality of the tourism product, particularly so for mountain and hill tourism. Climatic changes often threaten these very basics of the tourism industry at some destinations, especially in the mountain areas. As a result of this change in climate, the features that are the cause of attractions for many tourists may be compromised and tourists are forced to take the substitute way. Although a huge research is still needed on this topic, one thing that is very evident is that the tourism industry must address the effects of climate change because in the long run these effects will damage the very basic nature of the whole tourism industry and its subsidiaries as well. These issues are not just important for the tourism industry but for the communities that are dependent on tourism related businesses.

Climatic considerations can play a very key role in choosing destinations for holidays. Climate can act as both a pull and push factor, and climate change may lead to changes in seasonality at various tourism destinations. Therefore, it is estimated that climate change will affect travel behavior of the tourists globally. According to Gossling and Hall (2006) there
are two types of publications on this topic. One assesses the consequences of climate change for the tourism industry in relation to supply and demand and the other focuses on tourists and their response to climate change and global warming.

The Fifth Report of the Intergovernmental Panel on Climate Change (2014) contained the following sobering statement; “human influence on global climate is clear, and recent emissions of green house gases are the highest in history of mankind”. It further observed that the last thirty years have been successively warmer since 1850. Changes in many extreme weather events have been recorded since about 1960. Some of these changes have been attributed to human activities, including a decrease in cold temperature extremes, an increase in warm temperatures, an increase in high sea levels and an increase in heavy precipitation in a number of regions. The list of expected impacts of climate change include: shifts in the range of some species, longer and more severe drought, flooding, sea level rises, reduced summer flows of snow feed rivers in many areas, coral bleaching, increasing acidification of the oceans, more intense fire events, retreating glaciers, reduced snow fall in some areas and so on and so forth. The severe nature of the changes predicted in the report should be a cause of concern for all the tourism stakeholders. All of the preceding impacts are likely to cause severe dislocation in many areas. Less snow fall for example will affect ski tourism while coral bleaching will harm reef based tourism activities.

There is almost a universal agreement between the scientific and academic arena that the impacts of climate change will be very severe (Matzarakis, 2002; Braum et al. 1999). The steps taken by the industry to combat climate change are typically based on mitigation, defined as strategies to reduce the emissions of green house gases, and adaptation, defined as strategies to adjust temporarily to climate change. As the concerns about the climate change increase, the tourism industry will be compelled to contribute to mitigation and be forced to adjust through adaptation strategies.
However, there is a risk that failure by some segments of the tourism industry to develop and adopt an understanding of the likely impacts will create large scale disturbances in many tourism markets. Given the grave nature of the problem it is a bit surprising that little of the work undertaken so far has acknowledged that tourism is essentially a demand-driven sector, heavily influenced by the choices of tourists in source markets. Given the role of demand as a factor in assessing the size of tourism flows and the products and services consumed, a detailed evaluation of tourist behavior in relation to climate change is required and is the focus of this study.

The relationship between climate change and tourist occurs is dual. Firstly, the pull factor or attractiveness of destinations may alter as weather patterns and sea levels change. Research pointed out that many tourism destinations will suffer directly from the effects of climate change. Studies of skiing destinations (Koenig & Abegg, 1997; Elasser & Burki, 2002; Scott et al., 2003; Becken & Hay, 2007) show that short snow seasons will affect operations. Similarly, unstable environmental and climatic conditions will increase the level of risk for beach tourism destinations (Gable, 1997; Hoegh-Guldberg, 1999; Becken & Hay, 2007).

Secondly, tourism is a direct contributor to climate change through carbon emissions and is also a major user of fossil fuels for transport etc. Estimates suggest that tourism contributes 5% of greenhouse gasses (Becken & Hay, 2007). As our awareness of climate change impacts increase and efforts to combat these impacts are stepped up, a greater consciousness of tourism’s role may come into play.

Few researchers have examined the future of the tourism sector in an evolving political and moral environment, where both an increase in frequency and severity of current natural disasters are expected (Becken & Hay, 2009). Recent research suggests that the models published by the IPCC may underestimate the severe nature of climate change rather than overestimating it, as past changes indicate that the climate has changed far more rapidly than
is currently envisioned in the IPCC. One of the areas of real concern is the likelihood of “surprises” or tipping points that may accelerate predicted or unpredicted changes.

1.2 Tourism Industry in India

India’s indigenous traditions and rich cultural heritage are closely related with the development of the tourism industry. Its magnificent architecture attracts a huge number of tourists from all over the globe. The scenic landscapes, the architectural monuments, the music, dance, customs and languages all these go to make India as a tourist paradise.

India is a land of geographical diversity, blessed with a history of very rich civilization and culture. It is a potential tourism paradise with a variety of tourism products ranging from exotic beaches, serene hill stations, forts, monuments, fairs, festivals, crafts, culture, forest, wildlife, and religious centers etc. India has one of the world’s richest natural heritages consisting of 65,000 species of fauna.

The temples trails in India like Gurudwara in Amritsar, Tirupati Balaji in Andhra Pradesh, Vrindhavan in Mathura, Badrinath, Haridwar and Rishikesh. The hill stations like Shimla, Kullu, Manali, and Mussoorie in the north, Shilling and Darjeeling in the east, Ooty, Kodaicanal, and Munnar in the south and Mahabaleshwar, Matheran, Chikaldara, and Amboli in the central. All these tourist places world famous and attracting huge number of tourists.

The tourist industry of India had its beginning from the year 1945. A committee was appointed in 1945 under the Chairmanship of Sir John Sargent by Government of India. The Sargent Committee submitted their interim report on 23 October 1946, but implication given by this committee was implemented after independence. As per the report of Sargent Committee, the Tourist Traffic Committee was appointed in 1948. On the recommendation a Tourist Traffic Branch was setup in 1949 with regional offices at Kolkata and Chennai. The tourist traffic branch was further expanded from one branch to four branches in 1955-56 and
hand over separate functions to them viz. 1) Tourist Traffic 2) Tourist Administration 3) Tourist Advertisements 4) Distribution Section.

On March 1, 1958, a separate Department of Tourism was created in place of a Tourist Traffic Branch under the Ministry of Transport and Communication which provides services such as accommodation, food facility, hospitality, etc. A committee was appointed in March, 1963 under the Chairmanship of L. K. Jha. This Committee made a number of recommendations to boost tourist flow in India. ITDC was set up 1966 and is the main agency of the Ministry of Tourism and Civil Aviation, which promoted tourism in India.

Regional offices are located in all capital cities in India. Besides, there are several other offices at the focal point of international tourist interest like airports and prominent railway stations. Tourist destinations in the country are provided with more facilities to attract the foreign tourists. India is a land of great variety and contrast. Its unique cultural mystique, exotic heritage, aesthetic environment and outstanding natural resources have attracted international tourists. Tourism has emerged as one of India’s most important economic sector. Today, tourism is a major source of foreign exchange earnings and employment providing livelihood to a large population. India is a huge market for international as well as domestic tourism.

The year 2015 witnessed a growth rate of 10.7% in terms of foreign tourist arrivals in India. During 2016, foreign tourist arrivals were 88.9 Lakh as compared to 80.3 Lakh in 2015 with a growth rate of 4.5% over 2014. The foreign exchange earnings from tourism in terms of rupee during 2016 were Rs. 1, 55,650 with a growth rate of 15.1% as compared to Foreign Exchange Earnings of Rs.1,35,193 crore during 2015 with a growth of 9.6% over 2014 (Ministry of Tourism, Govt. of India 2016-17). Domestic tourism continues to be an important contributor to the tourism sector. As per the data furnished by State/UT Governments and other information available with the Ministry of Tourism, the domestic
tourist visits during the year 2015 were 1432 million as compared to 1282.8 million in 2014 registering a growth of 11.63% over 2014. The numbers of Indian Nationals Departures from India, during 2015, were 20.38 million as compared to 18.33 million, during 2014, registering a growth of 11.1% over 2014 (Ministry of Tourism, Govt. of India 2016-17).

1.3 Defining Terminology

1.3.1 Climate and Weather

Climate is a measurement of precipitation, temperature, humidity, and other atmospheric conditions, and is very distinct from weather though it is based upon the same variables (De Freitas, 2001). Weather is understood as the condition of these three variables in a given location over a short period of time, such as days or months. In addition to representing average conditions, climate in a region can also be composed of specific weather events that have a higher probability of occurring there than in other places. Finally, climate can exist on multiple scales, from global to regional to local such as specific valleys or hillsides that have their own localized conditions (De Freitas, 2001).

1.3.2 Climate Change

United Nation Framework Convention on Climate Change (UNFCCC) has defined climate change as a process of change of climate that is attributed directly or indirectly to human activity that changes the composition of the global atmosphere and that is in addition to natural climate variability recorded over comparable time periods.

For this research purpose definition given by Intergovernmental Panel for Climate Change (IPCC) has been used, which defines climate change as a phenomenon of change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for a longer period, typically decades or
longer. It refers to any change in climate over a period of time, whether due to natural phenomenon or as a result of human activity.

1.3.3 Perception

As Ban and Hawkins (2000) define perception as the process by which we receive information from our environment and transform it into psychological awareness. It is really interesting to see that an individual infer about a certain situation differently using the same or different sets of information. Saarinen (1976) talks about perception as an extremely complex process and confines it to social perception which is concerned with the effects of social and cultural factors on cognitive structuring of our physical and structural environment. This varies with the individual’s past experiences and present attitudes acting through values, needs, social circumstances, and expectations (Saarinen, 1976, Cited by Banjade, 2003).

The perceptual process relies on the customer using his five senses to be aware of the environment around him. Basically, the process goes from what the customer will see, smell, hear, touch and taste – from sensation, to perception.

1.3.4 Attitude

According to Moutinho (1993, p.19) attitude is a “predisposition, created by learning and experience, to respond in a consistent way toward an object, such as a product.” Attitudes are linked to the beliefs of the consumer, which then have a direct influence on the purchase behaviour (Ajzen and Fishbein, 2000). Most researchers agree that an attitude has three components:

- Affect: the way a consumer feels about the product
- Behaviour: the consumer’s intention
- Cognition: the beliefs of the consumer
1.3.5 Climate Change Impacts

The effects of global climate change on natural and human systems (IPCC, 2007). Depending on the consideration of adaptation, one can distinguish between potential impacts and residual impacts:

- Potential impacts: all impacts that may occur given a projected change in climate, without considering adaptation.

- Residual impacts: the impacts of climate change that would occur after adaptation.

1.4 Brief Introduction about Climate Change

Climate change has become a very serious global issue and occupies a top position to the international political agenda over the last few years. It has been suggested that climate change is the greatest challenge facing our generation (Benn 2007). According to the Inter Governmental Panel on climate change (IPCC 2007), the fact that climate system is warming is unequivocal as is now evident from increases in global average air and ocean temperatures, widespread melting of snow and rising sea levels. The IPCC (2007, p.13) warns that:

“Continued GHG emissions at or above current rates would cause further warming and induce many changes in the global climate system during the 21st century that would very likely be larger than those observed during the 20th century”.

As a result of concrete scientific evidence, various agencies have started to address the problems of global climate change. The adoption of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 was the first step in the process of stabilizing GHG emissions. Under the Kyoto protocol, which came into force in 2005, developed nations pledged to cut carbon emissions as measured by six GHGs by at least 5% in the five year commitment period. As GHG emissions continue to rise, more ambitious action and targets are required. The European Union (EU) has pledged to reduce GHG
emissions by 20% by 2020, compared with the base year of 1990 (European Commission 2007). In the United Kingdom (UK), the Climate Change Act 2008 outlines targets to reduce GHG emissions by 80% by 2050 against the base year of 1990 (Climate Change Act 2008). It is estimated that the tourism sector currently contributes 5% of global CO2 emissions (UNWTO-UNEP-WMO 2008), with the majority of these emissions coming from air travel (Peeters and Dubois 2010). The contribution of tourism to global carbon emissions is widely predicted to increase in the future as the emissions from aviation continue to grow whilst other industry sectors reduce their emissions (Dubois and Ceron 2006; Anable and Shaw 2007; Bows and Anderson 2007; Anger and Kohler 2010). It is estimated that the tourism sector contributes 5% of global carbon emissions (UNWTO-UNEP-WMO 2008), with the majority of these emissions coming from air travel (Peeters and Dubois 2010).

Global climate change has its own implications for the each sector of tourism industry. The impacts of changing climatic conditions at tourism destinations could have devastating impacts on the tourism industry in the coming decades. In spite of the high-risk scenarios for the tourism, until recently little attention was paid to tourism and climate change (Becken 2007; Hunter and Shaw 2007). Early researchers initially focused on the threat of climate change to tourism destinations (Koenig and Abegg 1997; Wall 1998; Breiling and Charamza 1999). Researchers have also investigated the impacts of global climate change on tourism flows and seasonality (Maddison 2001; Gössling and Hall 2006; Amelung et al. 2007). However, the relationship between tourism and climate change is not one-way. Whilst changes in global climatic conditions will undoubtedly have an impact on the tourism industry, the tourism industry is itself having a direct impact on climate change.

According to the literature (see, for example, Becken 2007; Randles and Mander 2009; Cohen et al. 2011) the emissions from air travel dominate the overall GHG emissions from the international tourism industry (UNWTO-UNEP-WMO 2008; Peeters and Dubois 2010). Hence the focus of these studies has been on consumer attitudes towards flying. This research
study differs by focusing more specifically on perception and attitudes towards climate change rather than attitudes towards air travel.

1.5 Tourism Industry Contribution to Climate Change

Tourism is one of the biggest energy-intensive industries and has only recently received attention from researchers as an important contributor to climate change through GHG emissions. In last few years, academic research has begun to investigate the impacts tourism is having on global climate change (Gössling et al. 2005; Becken and Patterson 2006; Dubois and Ceron 2006). World bodies have also recognized the importance of climate change to the tourism industry and have held a number of conferences and programs to debate this issue. In 2007, the United Nations World Tourism Organization (UNWTO), the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO), with the support of the World Economic Forum (WEF) and the Swiss Government, convened the Second International Conference on Climate Change in Davos, Switzerland (UNWTO 2007). The Second Conference built on the results of the First International Conference held in Djerba, Tunisia in 2003. Whilst the First Conference acknowledged the two-way relationship between tourism and climate change and accepted that the tourism industry has an obligation to minimize its emission of greenhouse gases, the Djerba Declaration (UNWTO 2003), focused its message on adaptation to climate change rather than mitigation of the industry’s impacts. In contrast, the declaration from the Second Conference, the Davos Declaration (UNWTO 2007), called for governments and international organizations, the tourism industry and destinations, tourism consumers, and research and communication networks to work towards mitigating greenhouse gas emissions from tourism, particularly from transport and accommodation.
1.5.1 Hyper-mobility and Increasing Volumes of International Travel

The World Tourism Organization recorded a total number of 1184 million international tourist’s traffic in 2015 (UNWTO 2015). International tourist arrivals grew by 4.4% in 2015, marking the sixth consecutive year of above-average growth with international arrivals increasing by 4% or more every year since the post crisis year of 2010. With the exception of global financial meltdown that led to a decrease in international travel, international tourist arrivals have shown virtually uninterrupted growth from 277 million in 1980 to 528 million in 1995, and 1184 million in 2015 (UNWTO 2015). Tourism in developed nations has changed to a great deal in the past decade, with a general trend towards more frequent, but shorter trips, and trips to more distant locations (Gössling and Peeters 2007), a pattern referred to by Hoyer (2000) as hyper-mobility. Hyper-mobility has been facilitated by the availability of relatively low-fare air travel. This low-fare air travel has given birth to the idea that international travel is possible at virtually no monetary cost (Gössling and Hall 2008). Air travel in the Europe has been made very easier by the cheaper and more abundant flights with the added convenience of flying from regional airports (Chapman 2007).

In the UK, low-cost airlines have opened up new ways for international tourists and middle-income groups that were previously excluded from air travel due to higher air fares (Shaw and Thomas 2006). In the UK, access to air travel has become affordable to many residents; one half (50%) of adults flew in 2008, with 23% making one return flight, and 27% two or more return flights (Department for Transport 2008). Internationally air travel has turned from a luxury form of mobility for the wealthy into a contemporary form of transport for the masses, as a result of the low air fares. The growth in low-cost carriers across the world has resulted in a reduction in air fares for passengers and has increased the opportunities to travel (Nilsson 2009). This concept of low-cost carrier was developed by Southwest Airlines in the USA in 1971, and the model has been adopted by other airline operators throughout the globe (Liang and James 2009). Since 2003, low-cost carriers have grown substantially in Asia, with
the most dynamic growth in India (Liang and James 2009). A number of low-cost carriers have also launched in China, but it was the decision of the Malaysian airline Air Asia to reposition itself as a low-cost operator that has had the most marked impact on the Asian airline market (Liang and James 2009).

The motivation for increasing demand for holidays is driven by a number of factors, including rising disposable income, decreasing insularity and more frequent exposure to the exotic sights through television and the Internet (Shaw and Thomas 2006). In addition, extended travelling is seen to reflect social status (Dubois and Ceron 2006b). It can be argued that access to tourism has become viewed as a right by consumers in the developed world (Becken 2007; Gössling et al. 2009; Barr et al. 2010). As Böhler et al. (2006, p.652) suggest: “Holidays and short stay trips have become a part of modern societies. Whereas in the past travelling used to be a privilege, nowadays tourism is a mass phenomenon of the western world”.

1.5.2 Potential Options for Reducing Tourism’s Contribution to Climate Change

There is a dire need for tourism industry to reduce its GHG emissions if it is to move onto a sustainable path. This view is echoed by the UNWTO’s Davos Declaration which states that: “The tourism sector must rapidly respond to climate change, within the UN framework and progressively reduce its GHG contribution if it is to grow in a sustainable manner” (UNWTO 2007a, p.2).

As air travel contributes the major portion of GHG emissions, aviation has been identified as the predominant area for reducing these emissions. There have been a number of potential options proposed for reducing the impact of air travel on climate change. These include technological changes, market-based policy changes and behavioral (lifestyle) changes (Peeters et al. 2006; Gössling et al. 2007).
1.5.3 Technological Changes to Aviation

A number of technical and infrastructure innovations could potentially help in reducing the emissions from aviation. These include engine performance, airframe design, air traffic management, increasing load factors, use of slower non-jet aircraft, use of larger jet aircraft, changing cruise altitudes, fuel efficiencies and low-carbon fuels (Williams et al. 2002; Bows and Anderson 2007; Green 2009; Lee et al. 2009; Morrell 2009; Givoni and Rietveld 2010). The UK Government is involved in collaborative programs with Airbus in the design of next generation composite wing aircraft, and with Rolls Royce in the development of low carbon engine technologies (Department for Transport 2012). However, the impact of all of these potential technological and infrastructural innovations is widely considered to be limited and not sufficient to address the increasing levels of GHG emissions from the aviation industry (Peeters et al. 2006; Lee et al. 2009). It has been predicted that the aviation sector will not be able to reduce emissions by more than 1% to 1.5% per km flown per annum from improvements in fuel efficiency using current technologies (Anger 2010).

Alternatives to kerosene, such as liquid hydrogen and bio-fuels, are only prospects in the longer-term (Bows et al. 2009b; Lee et al. 2009). Lee et al. (2009) highlight fundamental questions in terms of the future viability of liquid hydrogen and bio-fuels. The production of liquid hydrogen would need to be carbon neutral (energy from renewable sources) in order to offer any real advantages over kerosene in terms of mitigating future climate change impacts from aviation. There is consensus that development of liquid hydrogen technologies is at least a decade away and will only be pursued if there is a more general move to a hydrogen-based fuel economy (Lee et al. 2009).

There are concerns regarding the economic and ecological feasibility of producing significant quantities of environment friendly fuels in developing nations (Bows et al. 2009b; Lee et al. 2009). Test flights incorporating non-kerosene fuel have taken place (Bows et al. 2009). A
significant point, raised by Bows and Anderson (2007), is that the long design life of aircraft locks the industry into current technology for the next 30-50 years. Bows and Anderson (2007) argue that although there are a number of technical options available for improving aircraft fuel efficiency and de-carbonizing the fuel source, the impacts will be incremental and unlikely to have a significant effect on aircraft fleets before 2030 at the earliest.

Penner et al. (1999) in his special report for the IPCC, conclude that emission reductions from technological changes to aviation industry could be in the order of 20% by 2050. Similar figures are given by Peeters et al. (2006) who suggest technology improvements are likely to lead to efficiency gains of less than 25% by 2040-2050. Although the efficiency of aviation industry is getting better year-on-year, emission rates are still high due to the huge number of flights. As a result, future aviation emissions will depend more on the growth rates of air travel and less on the rates of technological changes (Lee et al. 2009). Given that air travel is estimated to increase by 5% per annum on average for the next 20 years (Gössling and Peeters 2007) and that efficiency gains to reduce GHG emissions are estimated to be between 1% and 1.5% per annum (Anger 2010), it is clear that technological changes in aviation alone will not be sufficient in solving tourism’s climate change problem.

1.5.4 Market-Based Changes

There are certain limitations with the impacts market-based policy changes could have on carbon emissions from air travel. Market-based changes, such as taxes on jet fuel or aircraft emissions, are hugely unpopular with the airline industry and politically very difficult to enforce due to a 1950 resolution by the International Civil Aviation Organization (ICAO) to exempt fuel for international air travel from taxation (Michaelis 1997). Despite debates on market-based options taking place within the ICAO, so far consensus amongst the global members of the organization on the introduction of economic instruments has not been reached (Lee et al. 2009). Research shows that even if emission or fuel taxes on civil aviation
were introduced, they would have to be very high in order to have a serious impact on the demand for air travel (Michaelis 1997; Olsthoorn 2001; Brons et al. 2002; Dubois and Ceron 2006b; Tol 2007). According to Brons et al. (2002), the price elasticity of demand for air travel is directly related to the possibilities of substitution. Long-haul flights suffer from a smaller number of substitute modes than short-haul flights, particularly for intercontinental ocean crossing flights, so travelers become lesser price sensitive as flight distances increase (Brons et al. 2002). Therefore, price increases as a result of environmental taxes would have to be substantial in order to curb demand for air travel, especially for long-haul flights.

Government forecasts for air passenger demand at UK airports, which include adjustments for passengers paying increased air fares in the future to reflect climate change costs, predict that annual passenger numbers will increase from 228 million in 2005 to 490 million in 2030 (Department for Transport 2006). Although the UK Government introduced, and then increased, the Air Passenger Duty it has been criticized for implementing “a revenue-raising tax reform, promoted under the guise of climate policy” (Mayor and Tol 2007, p.512). In their study, Mayor and Tol (2007) found that the UK Air Passenger Duty has the perverse effect of increasing CO2 emissions from aviation, albeit only slightly, because the relative price difference between short-haul and long-haul holidays is reduced. They suggest that rather than operating a boarding tax, the UK Government should introduce an emissions tax if their aim is to reduce emissions from air travel.

Although air travel has been protected from international agreements designed to reduce GHG emissions, a number of individual governments and the European Union are attempting to start integrating aviation into international climate change policy. In 2006, the EU voted to integrate all domestic and international flights between EU airports into the EU Emissions Trading Scheme (ETS) in 2011, with all international flights departing from or landing at EU airports being covered from 2012 (European Commission 2006). However, the inclusion of aviation in the EU ETS will not necessarily limit total GHG emissions from aviation. As the
EU ETS is a ‘cap and trade’ scheme, it is predicted that the CO2 emissions from aviation will continue to rise and the industry is expected to cover its increasing emissions by purchasing allowances from other sectors (Anger 2010; Department for Transport 2012).

The inclusion of aviation in the EU ETS is not expected to reduce demand growth or carbon emissions significantly in the future (Scheelhasse and Grimme 2007; Anger and Kohler 2010). Based on future scenarios for aviation growth in the EU, Anger and Kohler (2010) predict that aircraft emissions will account for the majority of CO2 emissions covered by the EU ETS by 2020. If international air travel continues to be allowed a softer treatment than other sectors, over-proportionally large reductions in GHG emissions by other sectors will be required if the EU is to meet its climate change reduction targets (Gössling et al. 2007).

Although including aviation in the EU ETS could be viewed as a step in the right direction towards making the industry more accountable for its emissions, it appears that current market-based policies will not be sufficient in curbing the increasing levels of GHGs emitted by European air travel.

Another form of market-based mechanism, albeit a voluntary one, that has been proposed as a means of curbing GHG emissions from aviation is carbon offsetting. Providers of carbon offset schemes offer to neutralize emissions caused by a flight through compensation in another sector, for instance by investing in renewable energy, energy efficiency or reforestation projects (Gössling et al. 2009). A number of airline companies, including British Airways and Qantas, offer the purchase of voluntary carbon offsets at the click of a button during the online booking process (Mair 2011). Despite the ease with which carbon offset purchases can be made, tour operators and airlines offering voluntary carbon offset schemes report that customers show limited interest in them (Gössling et al. 2009).

The uptake of voluntary offset schemes is very low and the amount of aviation emissions currently compensated for by these providers is negligible (Gössling et al. 2009). Carbon
offset schemes could, thus, be considered as being of minor importance in tackling aviation’s contribution to global climate change (Gössling et al. 2007). Whilst research has shown that a majority of air passengers are prepared in principle to purchase carbon offsets (see, for example, Brouwer et al. 2008; Gössling et al. 2009; MacKerron et al. 2009), when it comes to actually following up their intentions, only a very small minority of air passengers actually do so. In their survey of Swedish air passengers, Gössling et al. (2009) found that only 2% had previously offset their flights. In their study based in Canada, Dodds et al. (2008) found that there was a relatively low overall awareness of the concept of carbon offsetting amongst tourists and within the travel trade. This supports the findings of Beeken (2004) and Gössling et al. (2007) that there is a lack of knowledge amongst tourists when it comes to carbon offsetting.

In addition to low levels of awareness, part of the reason for the low uptake by air passengers of carbon offsets could be due to some of the criticisms regarding the credibility of the schemes. There are substantial differences in the approaches of the various carbon offsetting organizations to calculating and compensating for emissions (Boon et al. 2007; Gössling et al. 2007). These differences in calculations, along with different pricing levels and degrees of accountability, affect the credibility of the schemes (Gössling et al. 2007; Daley and Preston 2009). Voluntary carbon offset schemes have also been criticized for fostering the idea that there are simple solutions to unsustainable lifestyles, although they could be argued to have educational benefits in terms of creating more carbon conscious societies (Gössling et al. 2007; MacKerron et al. 2009).

Gössling et al. (2009) argue that carbon offset schemes do nothing to reduce emissions or reduce the volume of air travel taking place, and should not become a means of justifying further growth in air travel. Böhler et al. (2006) and Mair (2011) suggest that offsetting schemes could increase the volume of air travel taking place by removing the guilt from excessive individual flight-taking. Academics researching carbon offsetting schemes for
aviation are in general agreement that voluntary offsets on their own are not a solution to the climate change problems associated with air travel (Böhler et al. 2006; Boon et al. 2007; Gössling et al. 2007; Dodds et al. 2008; Broderick 2009; Daley and Preston 2009; Gössling et al. 2009; Mair 2011). Whilst there are some benefits to carbon offsetting schemes, offsetting should be accompanied by measures aimed at changing holiday travel behaviour (Böhler et al. 2006). An avoided flight is better than a compensated flight for climate change (Gössling et al. 2009).

1.6 Behavioral Change Possibilities

The third of the options, behavioral (or lifestyle) change, is considered to have the most important role to play in leading to reductions in GHG emissions from air travel associated with tourism (Dubois and Ceron 2006b; Gössling et al. 2007). Chapman (2007) concurs with this view and argues that behavioral change is the key factor for reducing GHG emissions from the transport sector. Peeters et al. (2006) stress the importance of changing the behaviour of hyper-mobile tourists towards less energy-intense patterns, while also preventing less frequent travelers from entering hyper-mobile lifestyles. Peeters et al. (2006) argue that individual choices, which are ultimately embedded in lifestyles, can have a substantial impact on the overall emissions caused by tourism. Although behavioral change has been identified as potentially a key policy option, inducing behavioral change amongst tourists in the developed world will not be an easy, straightforward task. Böhler et al. (2006) argue that the potential to alter tourist behaviour might be small due to the high individual and social importance of holidays. In addition, they suggest that the current conditions of relatively low priced air fares, increasingly flexible working hours and the symbolic dimension of holiday destinations stimulates short stay holidays to long-haul destinations facilitated by air transport (Böhler et al. 2006). Whilst major societal changes in tourism consumption behaviour may be unobtainable in the near future, there are still a number of
potential behavioral changes available to tourists that do not require them giving up their freedom to travel or right to fly.

Changes in tourism behaviour by individuals such as taking fewer holidays a year of longer duration, travelling shorter distances to destinations, and using alternative modes of transport to air travel could, if adopted by a significant proportion of travelers, have a substantial impact on tourism GHG contributions (Böhler et al. 2006; Peeters et al. 2006; Miller et al. 2007). One area where GHG emissions could be reduced is by using rail travel, rather than air travel, for short-haul trips. Chapman (2007) argues that there is a pressing need to make long distance rail travel more financially attractive than short-haul flights in order to induce a change in travel behaviour. A study by Kemp (2009) suggests that for journey lengths between 200 and 1,000 kilometers alternative ground transport modes, such as rail and coach, can be time-competitive with air travel. Kemp (2009) argues that the alternatives facing a tourist may not necessarily be a choice of transport modes to the same holiday destination, but may involve a choice between different destinations accessed by different modes – each providing an equally satisfactory holiday experience.

Encouraging behavioral change through the substitution of rail travel for air travel will be more likely if ground transport modes are able to compete more effectively in terms of price and travel time. For this to happen considerable investment in rail infrastructure will be required and governments may need to subsidize fares (Chapman 2007). Peeters et al. (2006) and Peeters and Schouten (2006) recommend that innovation in the tourism sector should be directed at the development of less long-haul trips in favor of short-haul trips by rail and coach, as well as increases in the length of stay of trips. The transformation of holiday products offered by the industry, brought about by infrastructure innovations, may be as important as changes in the mindset of individual travelers in bringing about significant behavioral change. As a way of encouraging trips with a longer length of stay, Peeters et al. (2006) suggest the tourism industry advertises holiday prices based on ‘per trip day’ rather
than the current method of price ‘per trip’. This would have the effect of longer stay holidays appearing as the lowest price offer, rather than short stay holidays; a reversal of the current situation whereby short duration trips are marketed as the cheaper option. The benefits of slow travel, such as the ability to stop at multiple points on the journey to the eventual holiday destination when travelling by train, and to gain a more authentic travel experience, could also be promoted by tour operators and travel agents (Dickinson et al. 2010).

Engaging the tourism industry in encouraging tourists to change their current holiday behaviour, in providing the infrastructure enabling lower carbon holiday options, and disrupting the status quo, may prove a challenge. This point is illustrated by examination of the current stance of the UNWTO. The Davos Declaration (UNWTO 2007a) calls for tourists, when choosing their holiday destination and choice of travel mode, to consider the climate, economic, societal and environmental impacts of their options before making a decision and, where possible, to reduce their carbon footprint or offset emissions that cannot be directly reduced. However, there is a potential conflict of interests with the main priority of the organization, which is to promote tourism as a driver of economic growth, inclusive development and environmental sustainability (UNWTO 2011). This is illustrated by the statement presented at the United Nations Conference on Climate Change in Bali in December 2007 by the Secretary-General of the UNWTO. In his published statement, the Secretary-General declared:

“Those who say: “do not travel far from home and avoid taking planes to save several tons of carbon emissions”, should think twice. Because these long-haul trips are often to countries that are home to the planet’s poorest populations, which – we know – will already be the first victims of warming. These communities, like Bali, would be doubly affected if we also deprive them of the economic contribution of tourism” (UNWTO-UNEP-WMO 2008, p.21).
1.7 Climate Change in Kashmir Valley

For a few years now, the Kashmir valley is showing signs of steady change in its climate patterns. It is witnessing snowless ‘Chilla-i-Kalans’ (the 40 day harsh winter period starting on 21 Dec every year) for many years now. According to many scientists and climate experts, if such trends continue in future, it will have serious ramifications for the tourism industry of Kashmir valley. Kashmir is getting more snowfall in the comparatively warmer months of February and March now, while earlier, it used to be in the month of December and January. The volume of rainfall has also increased considerably.

An international organization, ActionAid has in its climate change report on Kashmir stated that temperatures on an average in the Kashmir region have shown a rise of 1.45 Celsius while in the Jammu region the rise is 2.32 Celsius for the past four decades. The Indian meteorological department’s monitoring testifies that temperatures are increasing in all the three regions of Jammu, Kashmir valley and Ladakh, with an increase in maximum temperature of 0.05 degrees Celsius per year. The rising temperatures in these mountain and hill regions could directly affect the snow and glacial cover of mountains. A prominent climatologist (Shakil Romshoo, 2010), said that the mountainous regions are generally more prone to the climate change impacts, and climate change is going to affect every aspect of environment; social and economic systems. The increasing temperatures and changing precipitation patterns could adversely hit many climate-sensitive sectors of the economy like agriculture, tourism and forestry which is the basis of livelihood, for a large number of people in Kashmir region.

According to the study ‘Recent Trends in Meteorological parameters over Jammu and Kashmir’ (1976-2007) by Jaswal A.K. and Prakasa Rao G.S. 2009 of the Indian Meteorological Department, temperatures are increasing in this part of the world, often likened to Switzerland for its alpine charms and snow capped mountains. The study showed
an annual increase in the maximum temperature in the Kashmir region from 0.04 to 0.05 degrees Celsius over the period and a corresponding rise in the minimum temperature in the Jammu region from 0.03 to 0.08 degrees per year. The study further argued that the annual rainfall and rainy days are decreasing in Kashmir region of the state while in Jammu rainfall trend is significantly increasing (12.05 mm per year). Once associated with snow peaks and picturesque winters that rival Switzerland, a report by Jammu and Kashmir monitoring bureau warns that temperatures in Kashmir are likely to rise 2 degrees by 2030. This heating, largely due to greenhouse gases and global warming will have a catastrophic effect in the region.

A study by the Snow and Avalanche Study Establishment in 2008 finds that:

“Climate profile of Jammu and Kashmir indicates variation in climate characteristics over the years. There is increase in average temperature in J&K. Kashmir valley has shown rise of 1.45 degree Celsius and Jammu region 2.32 degree Celsius over the last two decades”.

Section B: Rationale of the Study

1.8 Statement of Problem

Worldwide, many researchers concluded that problems have started occurring due to global climate change during several winters, and together with a much matured market and an increasing global competition, have affected many tourism destinations in the world. According to several authors (Weiermair & Fuchs 1999 in Matzler, et al., 2007; Unbehaun, et al., 2008) the dilemma for winter tourism destinations is that tourists are willing to travel further to holiday destinations with low impacts of climate change like sufficient snowfall and favorable temperatures.

As the concerns for the natural environment are becoming more and more significant in the society, it seems that individuals are moving towards more sustainable and environmentally
friendly attitudes, behaviors, and values (Holden, 2000). Therefore, environmental attitudes and environmental behaviors have received growing interest among social science and consumer behaviour research (Roberts J. A. & Bacon, D. R. 1997), and it is particularly true within the field of tourism research.

It is argued by the scientists that human-induced climate change has intensified since the start of industrialized civilization (IPCC, 2014). Global climate change has resulted in a series of profound changes in the earth’s ecological system, which has affected the political and socioeconomic globally. In June 1992, Agenda 21 was adopted in Rio de Janeiro to counter the threat of climate change through human effort (Greaker, M.; Stoknes, P.E.; Alfsen, K.H.; Ericson 2013). It described a blueprint for a plan of global action against climate change for the 21st century. Since then, the climate change issue has become an increasingly significant agenda of international politics. Despite the withdrawal of the U.S. from the Paris Agreement, it remains undeniable that climate change constitutes one of the biggest threats facing humankind. David King, the Chief Scientific Advisor to the U.K. government, has even argued that climate change poses a greater security threat than terrorism. As the world’s largest industry, tourism will be affected dramatically by climate change (Scott, D.; Hall, C.M.; Gössling, S 2016) because of its reliance on the attractiveness of the environment in many destinations, especially in coastal and high-altitude regions (Zhang, Y.Y.; Wu, X.; Qi, 2016).

1.9 Significance of the Study

In the context of the phenomena of climate change and global warming going on today, sustainable tourism development has received great attention in research during the past twenty years. For many reasons, emphasize has been put on environmental attitudes and environmental behaviors of tourists. In general, a growing awareness among the lay public has been noted through research (Hudson, 2000) which has also identified the beginning of
green consumerism in the late 1980’s. Although the society gives the impression to move towards more sustainable values, individuals do not react the same way with regard to environmental values, and do not adopt the same attitudes and / or behaviors (Hudson 2000).

On the issue of climate change, there is a lack of research and knowledge pertaining to motivational drivers and behaviors (Scott et al. 2007). As tourism is one of the fastest growing groups of consumers, the research aims to provide a general understanding of how tourists at tourist resorts behave to climate change.

The present study is an attempt to investigate into the perception and behaviour of tourist’s towards climate change. This study also proposes to define climate change as a hurdle in the development of tourism. There are no significant studies available on tourism in Kashmir valley, which is proposed to be taken as the study area of this research. This study will be one of kind to explore the phenomenon of climate change and behaviour of tourist’s towards it. It is anticipated that the outcome of this research would be important in developing tourism and in gaining a tourist perception of the hazard of climate change. Overall, this research is intended to contribute to the growing body of climate change and tourism literature. Finally, the research also seeks to confirm findings from other researchers working in the area of sustainable consumer behaviour, and to provide a foundation for further research into the area ski tourism destinations and climate change.

1.10 Objectives of the Study

1. To understand tourist perception towards climate change on a tourist destination.

2. To determine tourist attitudes with regard to the phenomenon of climate change.

3. To suggest and recommend the various mitigation strategies respond to climate change on the tourist destinations.
1.11 Hypothesis

H1: Tourists’ have positive perception towards the climate change on tourist destinations.

H2: There is a positive attitude of tourists’ towards the climate change.

1.12 Outline of the Thesis

The study is structured in five major chapters. Each of these explores and presents a different aspect of the research investigating the attitudes and perceptions towards climate change of tourists’ at different tourist places of Kashmir valley.

Chapter 1 - Introduction - provides an overview of the thesis research. First, it provides general information regarding the tourism industry and the development of tourism industry in India. Next, it gives an insight about the issue of climate change, impacts vulnerability etc. It also highlights the climate change issues in Kashmir valley. In the concluding section, the general framework for this research is presented and the objectives of the research are established which would be attained by finding answers to some key questions. In this part the major hypotheses of this research are formulated and the important contributions of the study to the field of climate change are underlined.

Chapter 2 - Literature Review - contains a thorough examination of previous research relevant to this study. Previous literature is examined as it pertains to the history of climate change and issues faced by various world bodies to overcome the problem of global warming. The studies related to the impacts of climate change in various parts of the world like Europe, America and India are also examined thoroughly. The research regarding the attitudes and perceptions of either local residents or tourists toward changing climatic patterns have been detailed out. In this chapter I am looking to provide the background of the How (How did the issue of climate change emerge?), Which (Which are some of the major
climate change issues currently faced by humans?), What (What are the attitudes and perceptions of local residents and tourists toward global warming?) and Why (Why are perception studies and attitude valuations of climate change important for the future?) questions.

**Chapter 3 - Methodology** - provides a general overview and a better understanding of the research methodologies used to fulfill the purpose of this study. Research methodologies refer to strategies used in designing and carrying out this research, such strategies as the ones used in identifying the research areas and the population of interest, designing tools for gathering all necessary information and the implementation of data collection methods. Furthermore, this chapter also provides a thorough description of the statistical analysis techniques used for processing quantitative data collected via a self-administered questionnaire and providing a clearer view of these data through statistical outputs.

**Chapter 4 – Analysis and Interpretation of Data** - presents and discusses the results of the assessment undertaken in Kashmir valley. The results of the analysis are summarized according to four major categories: demographic characteristics, perception and attitude of the target population.

**Chapter 5 – Implications and Conclusion** - provides a summary of the study by presenting the final conclusions drawn from this research. Based on the results of this research, various implications for the tourism industry are discussed. Also, based on the weaknesses of this study important recommendations for future research are discussed in this concluding section.