

Effects of Global Warming on the Tourism Sector in Turkey

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Abstract: One of the most crucial problems in the world is global warming. In recent years mean temperature values are rising and downfall values are indicating substantial deviations as to years and months. Even small changes in climates affect many sectors. The leading sector affected by global warming is tourism sector. Tourism is one of the sectors in Turkey developing in the fastest way. Numbers of tourists visiting Turkey have been increased beginning from 2000 and exceeded 27 millions in 2009. Tourism revenue of Turkey has passed over 16 billions dollar. A large number of different sectors such as transportation, food and construction are connected with tourism. Tourism sector is very interested in temperature rise and prolonging of summer season. In sea tourism it is expected an expansion to west and north regions of Turkey as well as south shores. Extreme summer hot will set off immigration from seaboard to uplands and hinterland as well as increase water and electricity consumptions. Less cold in winter season, delay and decrease of snowfall will affect winter sports centers negatively. In this study positive and negative effects of climate changes caused by global warming on the tourism sector which one of leading sectors in Turkey are discussed.

Introduction

Tourism, which is frequently referred to as “flueless industry” is a substantial source of revenues and a strategic sector for some countries. When we take the fact of across the globe over a billion people is in tourism activity into consideration, we understand well how the tourism cake is so large and important. The number of countries that are getting a large share of the cake is rather limited. The components such as climate, latitude, coastal assets, cultural and historical values, transportation, safety, infrastructure etc. define the finiteness of tourism activity and determine the number of tourists and revenues.

Some determinants that might affect tourism in next years are misinvestments in tourism field, pollution, coasts turning into concrete jungles, dissolution of cultural values, destruction of vegetation cover, safety problems might occur in tourism centers and verious global changes ocured depending on climate change. Determinants except for climate change are the problems caused by local causes in the countries and regions where tourism is practised and their solutions are relatively easy. By means of correct planning and right management these problems can be easily avoided. On the contrary some points that appeared as problems can be changed into attraction for tourism as well. For example, cultural values under dissolution threat can be protected by restoring them and historical ruins buried in ground may come into light by archaeological studies. They all may gain advantageous positions by improvement made by the resources of countries or regions.

On the other hand, changes occurred in climate caused by global warming are not problems resulting from countries or tourism regions. They are global problems that are of particular concern to all over the world. Thereby, global problem caused by wrong applications that was experienced in the past and is existing in present time, will be a cause to more serious negatives as well as be a concern in our day.

Turkey is one of countries that might be affected by global warming at the most. Temperature rises and deviations occurred in downfalls affect a great number of sectors in Turkey directly or indirectly. Effects have been seen for years in the sectors of agriculture, animal husbandry and water. Although tourism is not affected much at present it is one of the sectors that will seriously experience results of global warming in the immediate future.

Global Warming and Turkey

Greenhouse gases hold infrared radiation reflected from globe and prevent them from escaping to space. Accordingly, they affect energy balance of the earth and cause increasing of surface temperature (Arıbaş and Kara, 2009, p.130). Temperature on the surface of the earth rises distinctively. Accordingly, changes occur in climates and the components of climate affect each other in a complicated way. Ultimately all living creatures take their shares from changes. While expansion in deserts is seen depending on drought living spaces become narrow, forests and vegetation cover are reduced, and living creatures migrate in order to keep pace with the new order.

As a result of global warming climate changes occur in the various regions of the world. Climate changes can be briefly described as changes in climate parameters (downfall, moisture, air movements, drought etc.) depending on global warming. As changes occurred in any region of the world induce other regions, effects of global warming are inclusive of not only certain countries or continents but all the globe. Turkey is one of the countries affected by global warming. Effects do not make themselves evident in short time. They appear in a long time period. Their boundaries are so wide that they affect all the fields from agriculture to animal husbandry, from desiccation to immigration and from sea level rising to tourism. For example, according to different scenarios it is estimated that average sea level rising in 2100 will be 15-100 cm in current climate modelling (Öztürk, 2002, Spence 2007 and Evans, 2009). Even only rising of 15-100 cm in sea level can make changes in the map of the earth and make away with some small island states.

The countries that are much damaged by climate changes are the ones having resources at the very least despite they have no negative contribution to climate changes. Intergovernmental Panel on Climate Change (IPCC) reported that “climate change will affect most developing countries in terms of loss of lives, investments and economy” (Dunn and Flavin, 2002, p.89). Even the factors causing global climate change would completely be eliminated the effects of the past will reveal themselves for 30-40 years.

Developing Tourism in Turkey

Turkey is a country industrializing rapidly in Western norms. Particularly in the last 20 years the aspects of development and change have been felt in every sectors. As of 2009 Turkey which is the 16. country with large economy in the world maintains development and targets to be in the first ten countries having strongest economies. One of the leading sectors in Turkey is tourism in terms of growing economy. Turkey is one of the countries in the world having highest tourism potentiality with its historical and cultural assets, unique nature, seas surrounding its three sides, safety and the people who lean towards tourism. Unfortunately, tourism in Turkey, which is frequently referred to as “flueless industry”, was scarcely any before 25 years. In last 25 years, particularly in last 10 years, tourism in Turkey has gained substantial speed (Table 1). Number of tourists, which was 2 millions per year in 1985, has reached 10 millions in 2000 and 27 millions as of end of 2009 (<http://www.tursab.org.tr/content/turkish/istatistikler/gostergeler>). Revenues of tourism have increased in paralel with the number of tourists and climbed over 16 billions dolar.

Years	1	2	3	4	5	6	7	8	9	10	11	12	Total
2000	334	354	435	721	986	1.079	1.526	1.419	1.369	1.178	602	424	10.427
2001	359	405	547	885	1.232	1.388	1.777	1.601	1.440	1.066	521	398	11.619
2002	307	426	676	853	1.326	1.458	1.897	1.900	1.771	1.420	663	560	13.257
2003	364	481	500	669	1.146	1.511	2.131	2.275	1.874	1.658	776	644	14.030
2004	534	608	784	1.104	1.799	1.898	2.591	2.493	2.125	1.842	950	789	17.517
2005	699	693	1.107	1.349	2.303	2.403	3.164	2.859	2.502	2.107	1.052	862	21.123
2006	667	627	922	1.373	1.919	2.369	3.110	2.906	2.267	1.714	1.020	927	19.819
2007	714	787	1.100	1.521	2.288	2.774	3.624	3.384	2.799	2.153	1.177	1.019	23.341
2008	783	896	1.305	1.648	2.749	3.306	4.085	3.762	2.981	2.462	1.268	1.091	26.337
2009	752	899	1.208	1.750	2.719	3.263	4.343	3.760	3.136	2.617	1.404	1.226	27.077

Table 1. Distribution of Tourists Visiting Turkey in Last 10 Years (a thousand persons).

In the ordering of countries attracting most tourists in the world Turkey was barely in the first 20 countries in 1990's and was 11. in 2005. In last 5 years she has deserved to be in the first 10 countries. While the countries such as France, Spain and the United States of America are by far in advance there is a little difference between the countries such as Britain, Germany, Mexico, Austria and Turkey in terms of tourist number. In short, if Turkey would keep the increasement pace and would not go wrong she will be of 5-6 countries attracting most tourists in the world in next 10 years.

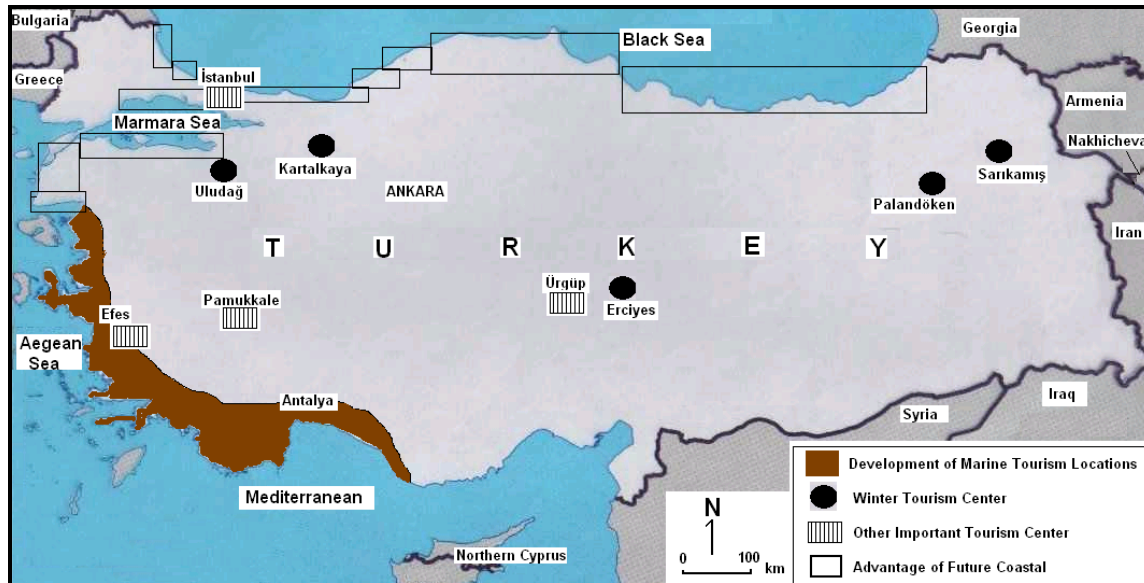


Figure 1: Turkey's Important Tourism Regions.

The sub sectors of tourism such as sea tourism (summer tourism), winter tourism, thermal tourism, upland tourism and religious tourism have been developed in Turkey. While the weight in sea tourism is on South Aegean-West Mediterranean shore corridor, the locations such as Alanya, Antalya, Kaş, Fethiye, Marmaris, Bodrum, Kuşadası and Çeşme are the most important vacation centers (Figure 1). While Bolu, Uludağ, Sarıkamış, Erciyes and Palandöken catch the attention in winter tourism, leading locations in religious tourism are İstanbul, Konya, Şanlıurfa and Selçuk. The leading natural beauties that have been visited much are Ürgüp surroundings and Pamukkale. In the Black sea region upland tourism has come into prominence in recent times and the provinces such as Trabzon, Rize, Giresun, Bolu and Ordu developed much in upland tourism.

Negative Effects of Global Warming on Tourism Sector

In recent times numbers of the studies on global warming have been increased as the effects manifest themselves. We have general studies in regard with tourism sector and global warming. However, they are not adequate in terms of Turkish tourism (Öztürk, 2002, Gülbahar, 2008 and Yıldız 2009).

Mean temperature rises have made evident themselves depending on global warming. According to the local and general studies it is certain that mean temperature rises gradually. Mean temperature rises have been increased as to the previous period. It has been revealed by various researches that mean temperature rises in Turkey in the last period of 30-40 reach 0,5 °C (Kadıoğlu, 2008). It is predicted that in the following years glaciers will melt away and sea level will rise about 1 meter. Undoubtedly, all glaciers will not melt away. However, it is certain that glacier dissolving will be experienced and sea level will rise about 1 cm in every year.

In many climate modellings it is predicted that as a result of global warming downpours will increased. In general terms, Turkey is located in Mediterranean climate zone in which—except for several areas- winters are rainy and snowy and summers are dry. Dry summers are an advantage for the areas having dense summer tourism. Summer precipitations affects tourism negatively. Deviations in precipitation despite dry summers, experiences summer downfalls and floods caused by cloudbursts will affect tourism regions. Instant floods will damage not only coastal areas but upland tourism, hunting tourism, golf tourism, mounting climbing and stream sports.

Number of tourists visiting Turkey has exceeded 27 millions. A large part of the tourists come from the countries which are located in North of Turkey and have relatively colder climates. Tourists prefer Turkey for hot summers, sea, sand and sun. Sea tourism focuses on Southern and Western coasts of Turkey such as Antalya, Muğla, Aydın and İzmir. As beaches are small and narrow a part of them will be left under the sea level when a rise occurs at sea level. Some small beaches might be disappeared completely and a part of large beaches might become smaller by overflowing (Photo 1). Undoubtedly all beaches would not be disappeared by the effects of global warming. There might be new beach extensions and formation while sea water is rising in a part of beaches. Beaches are considered to be equivalent with tourism all over the world. Unfortunately beaches in Turkey under the threats of erosion, climate change and sea level change. Rising in water level will affect not only beaches but settlements at coastal regions and touristic facilities as well. Touristic facilities, roads, ports, summer residences and other buildings at seaside and seafront will be at hazard by sea rising.



Photo 1: Small Beach in Southern Coast of Turkey Köyceğiz.

July and August in Turkey are the months in which sea tourism is very dense. About 30% of tourists who visit Turkey (8 millions tourist) prefer July and August. At the same time both are the the hottest months all over

Turkey. When June is added to them the rate of summer season exceed 40% (Figure 2). The more mean temperatures the more electricity and water consumptions. In a large part of touristic facilities in South and West regions air conditioners operate much due to hot. This means greater costs for the managements. The more hot the more electricity consumption and greater costs depending on airconditioning.

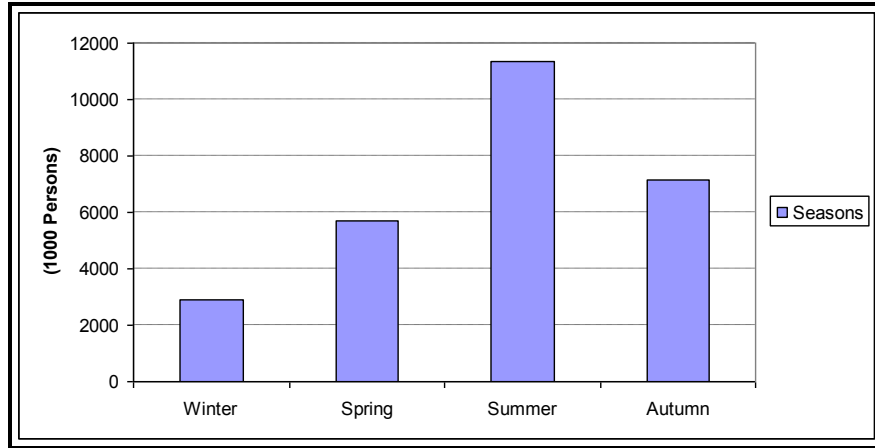


Figure 2: According to the Seasonal Distribution of Tourists Coming to Turkey (2009).

The most serious problem experienced in coastal regions in summer season is water supply. Providing fresh water in coastal regions is rather difficult. Water consumption contingent on temperature rise is highly increased in summer season. Increasing consumptions of both fresh water and potable water give rise to a rise in the costs of touristic managements. On the other hand, large green spaces and large gulf courses owned by many facilities will give rise to more water consumption. Therefore, finding new water sources and bringing water from long distances as well as new investments will be needed.

One of the tourism branches being in the ascendant in recent times in Turkey is winter tourism. Winter tourism centers such as Uludağ, Kartalkaya, Erciyes, Palandöken and Sarıkamış have been rapidly developed. Increasing in mean temperatures reduces snowfalls. As in some years snowfalls are so late maximum snow thickness can not reach 50 cm (Gülbahar, 2008, p.180). For this reason, winter tourism is much damaged and reservations are cancelled. Reduction of snow thickness and shortening time of snow staying on the ground deals death blow to winter tourism (Spence, 2007, p.90). Danger is more serious at the winter tourism centers having lesser elevation. The most important winter tourism centers in Turkey are in West regions. These centers take a risk as they have lesser elevations (Photo 2). Although Turkey has great winter tourism potentiality she takes small share from winter tourism as investments are not made in there due to the reasons such as important elevations are in East regions, safety, transportation and underdevelopment. Shortening periods of snow covering due to temperature rise in Turkey might give rise to instant snow melting and avalanches (Yıldız, 2009, p.83). Instant meltings are a great danger to both tourism centers and regional settlements.

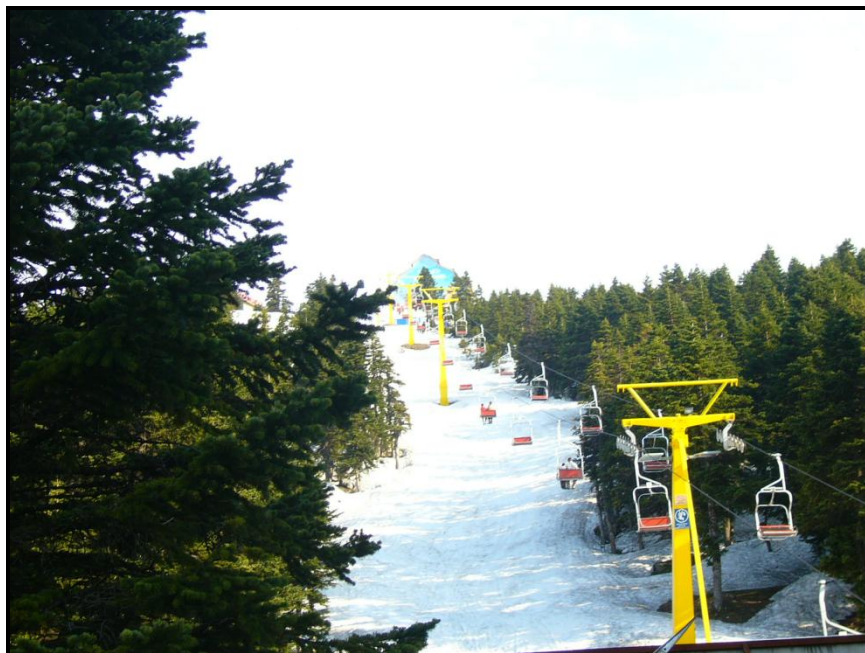


Photo 2: Places Will be Affected More Than Most Global Warming (Uludağ Ski Center).

Together with summer hot rise some streams will be dried wholly that have already lower water levels or their flow rates will be decreased. This will prevent some water sports such as rafting from practicing. Particularly, in the shores of Mediterranean rafting over some streams is an activity that have been in demand in recent years (Ertin, 1998, p.204).

While some new tourism centers will appear due to rise in temperature some old tourism centers will be diminished in importance. In this way, in the old tourism centers unemployment rate will be increased and this will induce immigration towards other areas. Nature will be under the threat of damage from the pressure of people due to the interest in new tourism spaces.

Thermal water might be affected as global warming will decrease water sources. Turkey is the most advantageous country in the region in terms of thermal sources. Turkey has more potentiality than that of countries which are more advanced in tourism than Turkey. Thermal sources of Turkey is a unique potentiality for the aging population of Europe. As thermal sources will become more important in the future it must give consequence this matter and the sources must be exploited productively.

Positive Effects of Global Warming on the Tourism in Turkey

Sea bathing duration in Turkey extends when we go towards Aegean and Black sea in North from the Mediterranean shores in South. While the sea bathing duration in Mediterranean is over 100 days it reduces a little in Aegean shores due to latitude and this figure is much shortened in Marmara and Black sea shores. While temperature rise affect the Mediterranean shores negatively the case in the North of Aegean, Marmara and Black sea shores is reversed (Yıldız, 2009, p.85). Rises in mean temperatures and sea water temperature particularly in Marmara and Black sea shores will make these shores an attraction center (Akıncı Kesim and etc., 2007, 465). In this way, new tourism centers will appear and the weight on the provinces located in the Southern Turkey will slide towards the shores of provinces located in the Northern Turkey.

The rise in sea water is an advantage for the shores in Turkey. In our days, due to the lower values in sea water and air temperature having a sea bathing in Black sea shores is impossible for a long time. Global warming will reverse the case in the long run. While Black sea shores will be changed into the current form of Mediterranean shores, sea bathing period in the Mediterranean shores will be further extended and spring and fall seasons will be appraised. Tourism season in all regions of Turkey will be extended. Sea, sand and sun tourism will go out of the frame and extend towards spring and fall seasons. In this way, a large part of Turkey will enjoy benefaction of tourism all the year round. Extension in tourism season will give an opportunity to the small tourism centers to grow and to obtain more revenues.

There are a lot of choices for tourism in Turkey in which average elevation is 1132 m. and land forms are changed in short distances. While some coastal regions in Turkey are effected negatively by the temperature rise, some regions in hinterland and some larger sections are effected positively. In this case Turkey will be a more advantageous country by the effects of global warming.

As rise in temperature in Egypt which is located in South of Turkey and in other Southern Mediterranean countries will create a sultry atmosphere the effects of global warming will be felt more seriously in these countries. The tourists who gave up to go to these countries probably would prefer to have their vacations in Turkey. As global warming will not only affect Turkey's shores, the countries such as Spain, France, Italy and Greece which attract more tourists and located almost in same latitudes as Turkey would be affected by temperature rise negatively. As there are no seas in the Northern parts of these countries just like Black sea in Northern part of Turkey, the most advantageous country in the most developed countries in terms of tourism would be Turkey. Turkey will be in with a chance to catch up with her important rivals in tourism field such as France and Spain.

Different tourism types will appear in Turkey which has a rich tourism potentiality by the effects of global warming. As long as Turkey could appraise correctly tourism planning and investments the negative effects of the global warming will be changed into positive effects in terms of tourism and will be in with a chance to obtain larger share from tourism sector that that of present time.

Conclusion and Suggestions

Turkey is one of the countries in the world having great economy which is rapidly developed. Tourism is in the leading role in her revenues. Tourism revenues of Turkey which is almost 20 billiards dollars are of importance in terms of economy. Global warming and climate changes affecting all the world is also important for Turkey and tourism sector takes its share from the effect. Number of people who participate in tourism activities is increased in every year. While the number of people who participate in tourism activities is increased thanks to economical improvements, transportation possibilities and organizations all over the world the tourism cake is also enlarged accordingly. Countries all over the world compete for attracting more tourists. When planning regarding the future is made global warming must be taken into consideration.

Turkey is bound to interest any more in the global warming which might affect particularly coastal areas and winter tourism centers and exert more efforts to make researches regarding the matter by finding the possible effects and taking necessary measures. It is possible to reduce the negative effects of climate changes and global warming and to turn disadvantages into advantages in Turkey which has rich tourism possibilities. We can make following suggestions regarding the matter:

- Units have to be set up to research the effects of global warming, changes brought about at sea level, and the matter of which regions to be under the risks.
- Coordination has to be supplied among the Turkish Republic the Ministry of Culture and Tourism, local administrations and the organizations related to tourism.
- Development plans at the coastal areas have to be arranged again and revised according to the effects of global warming.
- Road, tourism facilities and port constructions in the coastal settlements must be performed by taking consideration of the maximum sea level.
- Planning in regard with tourism investments has to be made by taking consideration of global warming in the future years and its possible effects.
- By keeping in sight that Tourism might show a tendency to slide towards the Northern and internal parts of Turkey the infrastructure of transportation network in these regions must be completed.
- By appraising the facts of distorted housing and allowing immigrants in the regions where tourism might be developed the previous defects and faults should not be repeated and necessary measures should be taken.
- Water sources and thermal sources should be used with more attention and wastes in sources should be prevented by showing regard to the source drought.
- Changes in snowfall must be taken into consideration in the investments regarding winter tourism.

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