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The effect of climate change on tourism industry.

Tourism is one of the largest global economic sectors and it plays an important role in many national and local economies. For example, travel and tourism industry contributed 44.5 per cent of Macao Gross Domestic Product, 22.7 per cent of the Maldives GDP, 22.2 per cent of the Bahamas GDP, and 22.1 per cent of the Seychelles GDP. The tourism contribution to the Russian GDP is 1.5 per cent (2015).

Tourism and travel have been developing at a high scale. According to the latest report of the UNWTO, in 2015 international tourist arrivals reached record 1.2 billion.

The tourism industry is highly dependent on climate. The climate determines the length and quality of a tourist season (e.g. winter sports and beach holidays), affects tourism operations (the supply of water, heating or cooling rooms, irrigation, etc.), determines the environmental resources (wildlife and biodiversity, water level and quality), and environmental conditions (they can alienate tourists, for example, infectious diseases, forest fires, algal blooms, insect or pests, hurricanes).

But the climate has been steadily changing. Over the last 100 years the average surface temperature rose by 0.74 ° C, and it still increasing. According to the forecasts of the Intergovernmental Panel on Climate Change (IPCC) - the most authoritative international organization in the field of climate - in 20 years the growth of the temperature will reach about 0.2 ° C, and by the end of the 21st century, the Earth's temperature can rise by 1.8 to 4.6 ° C. The British scientists say that from January to September 2015 the average daily temperature exceeded the average of the XIX century (1850-1900 years) to 1.02 ° C. According to the observations of Russian meteorological stations, the average annual air temperature in Russia has grown by 1 ° C over the past 100 years (which is significantly higher than the world average). The main reason of climate change is greenhouse effect resulting in large amounts of carbon dioxide emissions into the atmosphere.

Climate change affects all the spheres of our life, including the tourism industry.

There are four broad pathways by which climate change affects the global tourism and travel sector.

1. Direct climate impacts: changing the length and quality of the tourist season. Raising temperature reduces the tourist season at ski resorts and worsens the conditions of the beach tourism. In addition, this will lead to the increase of natural disasters such as floods, earthquakes, tornadoes, tsunamis, etc. These disasters disrupt the tourist infrastructure, which leads to additional expenditure of travel providers and tour operators.

2. Indirect effects of environmental change. In a number of regions, tourism develops due to their beautiful, unique, and untouched nature. These may be mountain landscapes, seas, beaches, wild animals and rare plants. Climate change is leading to a deterioration of water quality, loss of biodiversity, reduction of landscape aesthetics, the deterioration of agricultural products (e.g. wine tourism), coastal erosion and floods. All these changes can deter tourists.

3. Impact on the tourism industry due to policy measures to mitigate climate change. Leaders of the tourism industry, as well as authorities are aware of the problem of climate change so they try to impact tourism flows by causing an increase in transport costs.

4. The indirect impact of social changes. The impacts of and adapting to climate change will have their economic cost. If not tackled, climate change may also threaten future economic growth and even political stability of some nations.

Tourism is one of the most climate-sensitive sectors of the economy. At the same time, tourism and travel contribute to the emission of carbon dioxide. For example, about 5% of global carbon dioxide emissions are produced by this sector. Transportation of tourists to and within destinations accounts for 75 per cent of all carbon dioxide emissions by the tourism sector, with air travel making up about 40 per cent of the total.

Thus, tourism and climate changes are interdependent. So, it is possible to reduce carbon dioxide emissions and mitigate or reduce the impact of climate change. So, a number of international agreements have been adopted obliging the nations to reduce emissions by 50% by 2050. Tourists can compensate the emissions produced by aircraft during their flights. But all these measures are voluntary. To cope with the impacts of climate change we need to work together.

There are also a number of mechanisms that could be used for addressing greenhouse gas emissions including:

1. Reduction of energy used. This should be the main and fundamental tool in the fight against climate change.
2. Improving the efficiency of energy use. Technology developments can help to reduce carbon emissions, for example, in aircraft, reducing fuel consumption and improving aircraft design.
3. The use of renewable energy. This is particularly important for the tourist industry, for example, the use of solar panels, water recycling, passive heating and cooling rooms.
4. Recycling carbon dioxide through greenery.
5. The use of environmentally friendly transportation for tourists within destinations.