

Tourism and Environmental Degradation in the Russian Federation

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Abstract

Mass tourism is one of the main factors that contributes to economic growth and is a major objective to most of the countries nowadays. It has a lot of positive impact on country's economic performance, however, there is always a trade-off between economic and environmental incentives. Therefore, mass tourism has a driving force to environmental degradation especially if its contribution to pollution exceeds the optimum level. The main aim of this paper, is to test the impact of tourism on the Russian Federation's environment, to see the major actions of tourists that lead to environmental deterioration during the 2000s and forward such as, dumping the garbage, harming the wildlife, emitting large gas emissions and energy consumptions. In addition, revealing Russia's problems with tourism development and ecological footprints. Finally, we are going to suggest some solutions to maintain sustainable development and conservation of resources including the usage of natural gases instead of electricity, using efficient light bulbs and water flow controllers in order to limit consumptions. Also, training programs are made by institutions to enhance the employees' skills and raise their awareness of modern technology. Lastly and most importantly, Russia turned out to be one of the top countries maintaining sustainable development and has good future to being green.

Keywords

Tourism, Environmental Degradation, Ecological Footprint, Sustainable Development

1. Introduction

Russia is one of the greatest countries in the world that has a huge influence on the globe. It has natural and water resources, enormous forest developments and has the potential to develop green economy. Moreover, it possesses over 808 million ha forested land in the world, representing 22% out of a total of 55 forests. Travel and tourism contribute to 1.5% of Russia's GDP [7]. It mainly objects to national, natural parks and protected areas. Recently, researchers found that foreigners spending would rise to 9.6% by the next 10 years, while domestic spending would rise by only 6.9% [7]. Since the 1990s, when Russia shifted to an industrial lifestyle, it hasn't since then developed to reduce emissions and pollutions caused by accommodations and transportations. This lack of environmental care, such as the

loss of green areas and biodiversity, high water and air pollution, can influence drop in tourism level as its development is dependent on social, cultural and natural environment.

One of the main sectors that largely affect the world's environment is the tourism sector. It can have a negative impact as well as a positive impact. Mass tourism can be a massive environmental problem if not practiced in a green or eco-friendly way. In this paper, we are going to explore the effect of tourism on Russian Environment and how we can adapt some of the practices to promote sustainable development and eco-friendly environment. Hence, the objective of this paper is to balance social and economic interests, by saving the environment from exploitation as much as possible, supported by real data and practices applied by some touristic hotels in Russia later on in section 4.

Moreover, my paper will proceed as follow; first I will begin with a literature review introducing the tragedy of the commons and provide some criticism. Then I will mention the impact of tourism on Russian Federation’s environment-affecting vegetation, water and air quality, killing the wildlife and decreasing biodiversity. Then, I will reveal impact of tourism on the man-made environment (hotel sector). In addition, I will mention the problems that Russia faces in tourism development and the ecological footprints. Finally, in section 6 we will recommend various solutions to maintain sustainable development and conservation of resources, followed by the results that I obtained throughout the whole research.

2. Literature Review: *Tragedy of the commons in tourism*

Tragedy of the commons was published by Garrett Hardin in 1968 based on making policies and formulations on private and public ownership. Hardin argues that when the ownership whether public or private is absent, the commoners exploit the resources in order to satisfy their own wants and interests by looking at the future gain from their property [2]. He supported his view by the example of an open to-all pastureland. A herdsman keeps on getting more animals on his land to maximize his benefits and positive utility. Hardin highlighted that such an action shows how people and the society believed in the freedom of the commons.

Such an action from the fist herdsman violates the resources left for the others [11]. This limit other’s opportunity to act freely on their own property as someone else used up their available space. As a result, an unhealthy competition would arise as each herdsman doesn’t know the intention of another and would only maximize his own benefit by adding more animals, leading to overgrazing and exploitation of the land available to others. Furthermore, a solution to this problem was suggested, which is the defection strategy [12]. This model says that each person who doesn’t know the intention of another defects and eventually they both get punished. Also, it argued that in order to eliminate such a problem, the government should gain control over the properties [11].

Hardin can be criticized for naming it the tragedy of the commons, but rather it should be called tragedy of the commoners. He assumed that the utilization’s values are universal, however, they are not. They are controlled by cultural values, norms and standards that determine where, when and how much of the land/ common should be used.

Lastly but most importantly, Hardin was wrong when he assumed that the common was unregulated or was an open access as it was the complete opposite- regulated and closed-access. It was only available to the people within the community.

3. Impact of Tourism on the Russian Federation’s Environment

3.1. Tourism and Vegetation

When we come and talk about Russia, the first thing that pops up on our minds is the beautiful and natural sceneries. It’s full of national parks and magnificent forests. Thus, vegetation is considered one of the greatest attractions to tourists, the grassland and the greenery in general is essential for touristic projects. However, tourism exploits this aesthetic by the construction of campsites, using fire in parks, picking up the flowers, as well as causing traffic and dumping garbage. All of these unfriendly actions deteriorate the environment and minimize the vegetation level in Russia.

3.2. Tourism and Water Quality

Some of the tourist projects are providing water activities such as swimming, fishing, diving and various types of boating. These activities accordingly require high quality water. The tourism comes and threatens these resources as well as wasting it. The introduction of this pollutants into the water can be both environmentally degrading and economically disastrous for water-based tourist resorts [13].

3.3. Tourism and Air Quality

Russia faces a huge problem which is its infrastructure. It has a very poor infrastructure and the places are too far away from each other. Therefore, tourists need to take a lot of transportations (motorcar, ship, train, bus or airplane) in order to move from one place to another, causing very high level of gas emissions, CO₂ into the atmosphere.

3.4. Tourism and Wildlife

Tourists have caused pressure on wildlife due to their behavior. For instance, taking photographs have caused the breeding process of coastal birds’ species to decline. In addition to damaging coral reefs by divers, causing frightened fish to escape. Likewise, urbanization and highways development replaced breeding areas, such as the grassland and forests, and therefore forced the wildlife to change their locations and habitat.

Table 1. Positive and negative impacts of tourism on the environment.

Positive impacts	Negative impacts
Incentive for resource management ex: waste removal	Beach degradation due to improper waste management by tourists
Improve environmental education	Ground water depletion due to increased local demands
Unique coral reef and island resources	Water scarcity due to over exploitation

4. Impact of Tourism on Man-Made Environment: *Hotel Industry*

Natural attractions themselves won't be sufficient to satisfy the tourists' needs and wants and thus, some other facilities should be provided in order to complement the natural attractions. For example, the development of hotels in cities and second home development in rural areas. Nevertheless, hotels' services are too poor and inefficient in Russia. It wastes huge amounts of resources due to deficiency in technology.

The following statistics were taken in 2016 and measured the consumption level of Russian touristic hotels. In terms of energy, blow dryers consume 9.6 million kwh/year. Televisions consume 64.5 million kwh/year. If hotels reduced their energy use by 10%, they would save 8.47 million kwh/year, which is relevant to the amount of energy consumed to complete 7000 trips. Likewise, in terms of water, Hotels consume 219 billion gallons/year which is equal to the amount of water wasted if one person took a shower non-stop for 277 years. Green hotels save 65.7 billion gallons/year which can fill 99,545 Olympic sized swimming pools. Lastly and most importantly, in carbon dioxide gas emissions, hotels emit 60 million tons in cars and coal-fired power plants Green hotels eliminate the output by 10% which is enough to planting 1.1 million acres of pine trees, which is equal to 22 national parks [6].

5. Problems with Tourism Development in Russia

5.1. Poor Transport Infrastructure

The places in Russia are too far away from each other and require a lot of transportation facilities in order to transport tourists to their required destinations. However, as an alternative to airplanes to reduce gas emissions and pollution,

railway transport wasn't the best option as it wasn't comfortable for the tourists. It could only transport them to limited regions due to the poor infrastructure of the Russian Federation. Likewise, the bus industry and individual automobiles tourism were limited due to the insufficient density of paved highways. For instance, in 2014, the total length of paved highways reached 56,664 km, which is 39% less than the region's area [15].

5.2. Poor Tourist Infrastructure

Majority of the Russian regions face deficiency in accommodation facilities for mass tourism. The main problem in the tourist infrastructure is that there is a high percentage of property deterioration in most hotels. The average wear factor of hotel stock exceeds 70% [15]. In addition, there are low quality catering services and lack of entertainment activities, which are significant for mass tourism.

5.3. Poor Customer Service

In Russia only 1/6th of the tourists in the cities take an advantage of the good quality services. The services are extremely expensive. Very small number of organizations provides high quality services that meet international standards and are only found in Moscow and St. Petersburg.

6. Ecological Footprint

Russia's ecological review rose from 1992-2009. However, it decreased drastically from 2009 to 2012. Russia has far larger ecological reserves than the rest of the countries and it is one of the less dependent countries on other nations' resources. Russia is known for its greenery and the forest land represents 64% of its total bio capacity. Forests are essential as they don't only provide services for local citizens, but also to the environment as it stores carbon dioxide and aids in climate stability. In figure 1 it is clear that Russia ranks the 4th top country in ecological footprint.

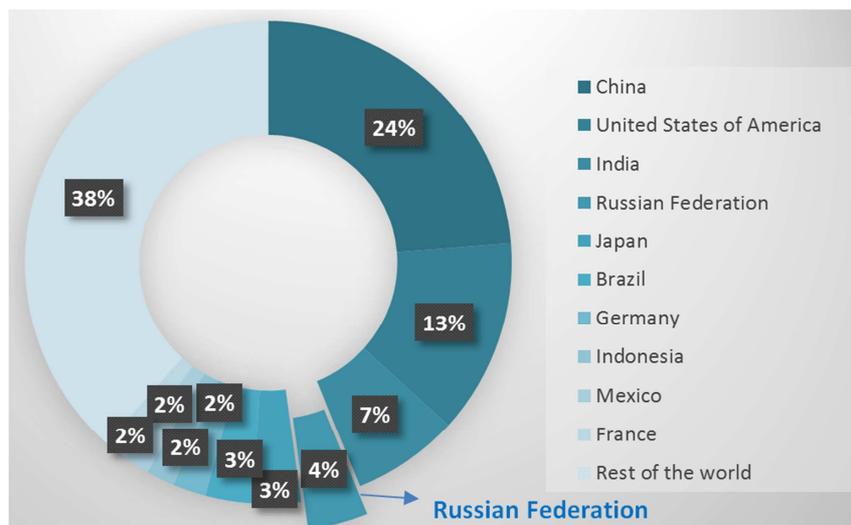


Figure 1. The Total top ten countries by Ecological Footprint in 2016.

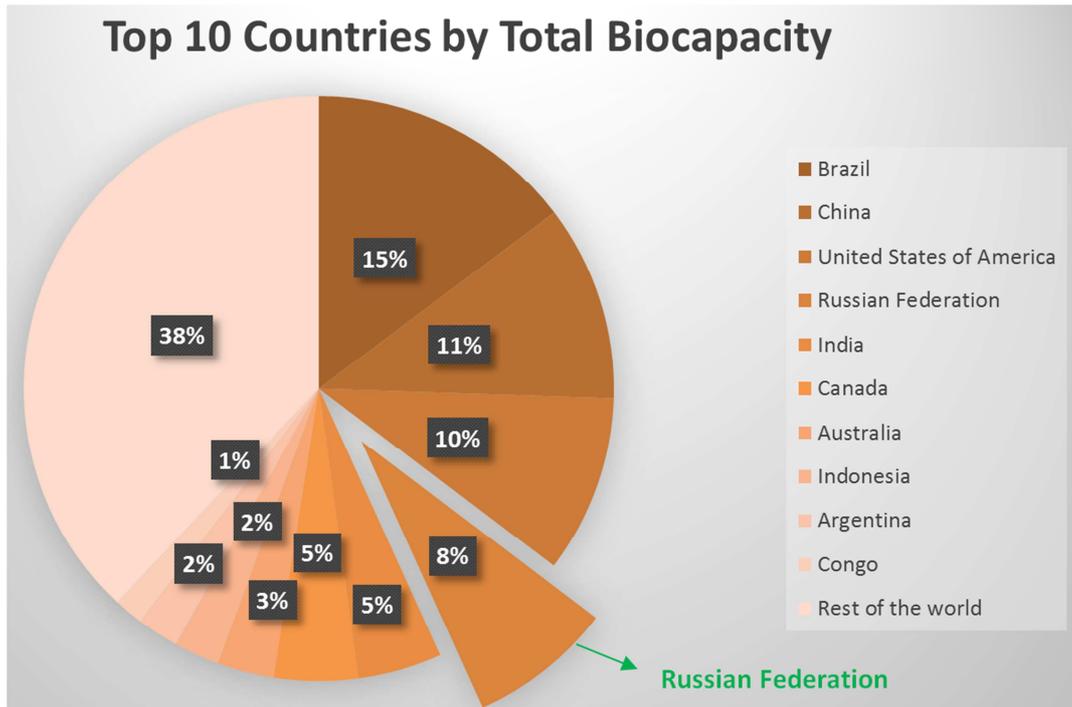


Figure 2. The Total top ten countries by the total Biocapacity in 2016.

Source: Global Footprint Network

7. Sustainable Development and Conservation of Resources

7.1. Sustainable Development

In order to implement such a strategy, we have to moderate the growth rates. People should put any non-monetary factors into consideration. For example, reduce adverse externalities such as, chemical, noise pollution, air and water quality. Furthermore, the cost of production should include both economic and environmental costs and analysis.

7.2. Conservation of Energy

In order to conserve resources, we have to use unarmful economic and environmentally friendly materials that can easily be recycled. We can also reduce waste by cutting consumption of available resources and energy.

7.3. Role of Producers Towards the Environment

It's vital to list down the practices and new actions to identify how unarmful they are to the nature and how they can maintain the tourism level [14]. Some of the best eco-friendly practices were compiled such as: Natural gas can be used instead of electricity by both domestic and international citizens as a source of energy for catering services, etc [6]. In this way, more energy can be saved. Also, efficient light bulbs can be used to control the energy use. In addition, water can be saved by using water flow controllers and faucet aerators. In addition, use eco-friendly alternatives to

chlorofluorocarbons (CFCs) in air-conditioning as they deplete the ozone. Hotels can install ozonizers to improve the air quality in the guest rooms. On the other side, knowledge should be improved by providing employees with trainings to develop their skills and so they can adapt to the new environmentally friendly actions. The government can design campaigns and raise awareness of sustainable development. Also charge high fares and taxes on unethical human behavior and actions.

7.4. Implementation of Actions by Russian Hotels

Moreover, here are some of the touristic hotels in Russia that implemented and applied some of the above eco programs:

Radisson Sonya Hotel: energy is electricity, motion sensors are installed virtually everywhere, thermoregulation and ventilation control system are settled. Aerators are installed to reduce water consumption. All employees undergo mandatory annual training on responsible business and environmental actions.

Baikaler Eco Hostel: energy is electricity, energy saving light bulbs are installed and thermoregulation system is settled. Pump station is switched off and water is fed by gravity, it helped to reduce consumption.

Park Inn Radisson Nevsky Hotel and Four Seasons: all employees undergo mandatory annual training on responsible business and environmental actions: conducting environmental activities - planting trees and cleaning up public parks.

8. Russian Driving Forces and the Environment

8.1. Energy Consumptions

Using fossil fuels is decisive for the formation level of carbon dioxide and therefore impacts the environment as well. The contribution of fossil fuels in the primary energy consumption is one of the major characteristics of energy system. Moreover, the carbon dioxide impact on the global environment is highly related to the outlet level of the carbon dioxide. Now, we are going to see the total primary energy consumption of Russia in 2011 in figure 3.

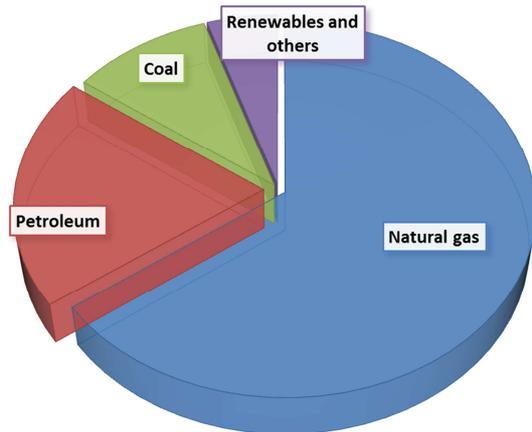


Figure 3. The total primary energy consumption in 2011, Russia.

Source: EIA, 2014a

In Russia, natural gas contributes to more than 50% of the total primary energy consumption, followed by petroleum reaching between 15% and 20%, totalling to 90% of the consumption is represented by fossil fuels. Recently,

pipelines for natural gas are built and Russia is going to expand the infrastructure to both Europe and Asia. In addition, Russia is the second largest producer of natural gas and ranks the 3rd when it comes to liquid fuels (EIA, 2014a).

8.2. Poverty

Poor people depend on various activities such as, agriculture, trading, transportations at low cost and wage labor for their livelihoods. In both rural and urban areas in BRICS countries, the environment affects both the health and economic conditions of poor people. These unfortunate people often depend on natural resources like, soil and fisheries for income-generation and subsistence. However, we have to make trade-offs as poverty alleviation conflicts with environmental protection. For example, industrial development introduces a lot of jobs but generates high pollution level. Also, oil exploration leads to water and soil contamination. Hydroelectric dam can generate revenue but on the other hand can flood a forest area. That's why, we need to save the environment and compromise between environmental degradation and revenue.

Time horizons is another conflict between the environment and poverty. For instance, decreasing income-poverty can have a positive or a negative impact on natural resources on the long run. This might be a case for coastal dweller who catch fish for supplemental food. If his income increases he can then buy a bigger boat, catch more fish to sustainable level. In this way, he increases his income but in the short term as it might affect the natural resources left for him and his children later on. Adversely, subsistence farmers whom land are prone to erosion, might when their income increases invest more in soil conservation measures.

Unfortunate people, particularly women are affected by environmental degradation and that common resources matter more to poor people than to rich people.

Absolute Poverty in BRICS countries

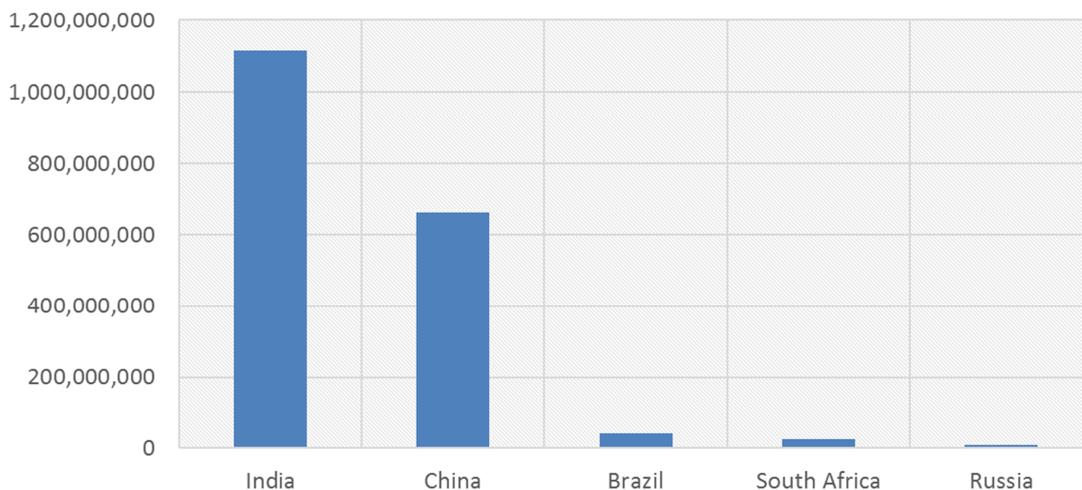


Figure 4. Absolute poverty level in BRICS countries (Russia).

Data shows that 1 in 4 people living in a BRICS country earns less than \$4/day

Source: World Bank Poverty and Inequality Database

8.3. Tourism and Trade

Tourism nowadays became an important aspect in international trade as it boosts the economy's level by increasing its foreign returns, improve standards of living and welfare of the society and the goods' production. This increase in foreign earnings solves unemployment problems, infrastructure and country's deficits. Tourism can stimulate economic growth by exploiting domestic economies of scale and enhancing efficiency between international tourists and local firms. Moreover, tourism and environment have a complex relationship as it's related with the country's stages of growth which promote conservation of natural resources in the form of reserves and national parks. In this way, it leads to the area development in the form of infrastructure and encourage forestation, direct and indirect employment.

In addition, we know that EKC (Economic Kuznet Curve) shows a positive relation between growth and pollution. Whenever a country's economy grows, or its GDP rises, its pollution level increases. Tourism increases, tourists number increases and lead to pollution and waste due to inadequate facilities. However, the countries reach a certain point of economic growth reaching the maximum level of pollution and then decreases due to advanced and new technology.

According to BRICS countries, they followed the tourism led-growth hypothesis, where when tourism increases, economic expansion happens. Therefore, they need tourism as economic growth is essential for them. Results indicate that BRICS nations are in developing stage and thus economic expansion and higher tourism level would lead to higher environmental degradation. However, studies should be made separately to each nation as all the five nations have different characteristics and structural GDP composition.

According to the comparative advantage, international trade stimulates diversification of the economy as it helps higher efficient production at lower costs and reduces the usage of certain resources. As a result, the economy's development is boosted, more job opportunities are created, poverty eradicated and prosperity maintained within the society. The GDP per capita has proven to be increased from \$325 to \$625 between the years 2000 and 2008, due to the increase in international trade and foreign investments [10].

Moreover, diversifying the economy is also essential in developing a sustainable and green environment. For example, between the years 2007-2011 the imports for environment goods such as, waste and water management and treatment and renewable energy has increased and especially grew faster due to the renewable energy (solar panels and photocells, etc).

9. The Future of Russia: Green Economy

Russia is the leading production country of commodities such as, steel, iron, oil and gas. In order to increase the overall economic efficiency, Russia wants to develop a green

economy. It showed its willingness to transform the economy to promote sustainable development. It signed agreements with some international organizations like UNEP, developed a large chain of environmental institutions and framework to encourage its green economy development. Nevertheless, the dominance of energy-intensive industries contributes to a constant environmental degradation and act as a barrier to developing a green economy. The lack of clarity in the country's policies slow down their plan and development.

10. Conclusion

This paper tackled the impact of tourism on the Russian Federation's environment and revealed how tourists exploit the natural resources of the country. Vegetation and biodiversity decrease due to the unethical and harmful behavior of the tourists. Also, the water and air quality deteriorated due to the high consumptions and emissions of gases. Moreover, we have also seen the problems facing the tourism development in Russia, including the poor transportation, tourist infrastructure and the poor-quality services. The hotel industry highly contribute as well to environmental degradation. However, some of them introduced solutions and eco-friendly programs to eliminate environmental degradation and waste of resources by using natural gas as an alternative to electricity, using efficient light bulbs and water flow controllers to control their consumption levels. Lastly, the Russian federation was proven to be the 4th top country in both bio capacity and ecological footprints in comparison to other major countries.

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