

Relationship between rural tourism and environment

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Abstract

The article reveals both positive and negative effects of interaction between rural tourism and the environment, enumerates basic normative acts which regulate these relations in the Republic of Moldova and emphasizes the dependence of tourism resources on the preferred forms of tourism. There are described various kinds of tourism activities in rural areas in terms of their effect on the environment, as well as various environment components that influence greatly human health. We have also provided some activities of a number of Moldovan rural complexes and examples of the resulting interdependence of environmental quality and the demand for recreation in the region.

Key-words: rural tourism, environment, tourism resources, forms and types of tourism.

Introduction

Rural tourism is more closely associated with the environment than any other type of tourism. When tourists choose the rural type of recreation, living in the lap of a beautiful landscape away from cities, privacy, clean air, natural and healthy food, presence of water bodies or woods are the most important factors.

Thus, successful development of rural tourism depends greatly on environmental quality.

There are many definitions of environment: some of them define environment as the entire complex of natural resources which surrounds the humanity. According to the others, it is the whole world that surrounds us, including both natural and anthropogenic environment.

The most frequently used definition that can be met in international agreements is the following:

The environment is a concept that applies to all natural conditions on the Earth or in its region, where living beings or things evolve. Atmosphere, temperature, light, landscape, water, soil, etc., and living beings are among these conditions.

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Since the development of rural tourism, which includes a wide range of different types of tourism, is based on the use of the natural resources mentioned above, its impact on the environment is undoubted.

Material and methods

From the methodological and theoretical points of view this study is based on provisions of essential laws that regulate organization and development of tourism business of the Republic of Moldova "Act of organization and implementation of tourism activity on the territory of the Republic of Moldova 352-XVI" of November 24, 2006, Land Code No. 828 of December 25, 1991, Law on Environmental Protection of the Republic of Moldova No. 1515-XII of June 16, 1993.

We have used systematic analysis to examine the relationship between rural tourism as a combination of elements and the environment, as well as an overview and the empirical method that allows explaining the cause-effect dependence of demands for recreation in rural areas on environmental quality.

Results and discussions

In the last twenty years rural tourism has become an independent highly profitable tourism industry in Western Europe and the USA. According to the ITO estimates, rural tourism is one of five main strategic directions of tourism development in the world until 2020. This fact proves that the impact of tourism activities on the environment will have both positive and negative consequences. Moreover, they will be noticed at different levels: at the level of natural resources and legislation, at the social level, etc., which can be clearly seen in the following table:

Table 1. Positive and negative effects of rural tourism activities on the environment

Effect	Positive	Negative
On the environment	Growing awareness about the environment and its elements	Abandoned or destroyed crops Disturbances in flora and fauna of the region All forms of pollution
On legis lation	Developing legislation on rural tourism	Farmers' responsibility for the services provided

	Compensation / aid to farmers for modernization and maintenance of environmental conservation activities	
On the society	Changes in residents' mentality Rural-urban interaction Existence of "refuges" for urban dwellers Involvement of local / regional authorities in various activities	Different tourists' and locals' attitude Stress for farmers due to the increased number of crowded areas Changes in lifestyle Certain seasonal activities

Source: Butler, R., Hall M., Jenkis J. – Tourism and recreation in rural areas, John Wiley and Sons, London, 1997

The basic premise that motivates rural tourism entrepreneurs to pay more attention to the need to preserve the environment is the fact that tourists are increasingly looking for attractive and unpolluted places to visit. The countryside is undoubtedly among these places. Authorities and economic entities engaged in entrepreneurial activities in rural areas are aware of the need:

- to maintain natural resources, flora and fauna in order to improve the cognitive and aesthetic value of rural areas for tourists;
- to maintain landscape areas;
- to maintain land plots in order to provide residents of rural pensions with ecologically pure food products;
- to preserve favourable conditions of lakes, streams, small rivers, groundwater and natural biota in order to create good conditions for tourists;
- to reduce negative environmental effects of too intense activities at popular tourist centres due to the outflow of tourists into the country.

As the environment of high quality is the key component needed for the development of rural tourism, it can be the factor that has additional political and economic influence on environmental protection.

Thus, relations between people and the environment are regulated by the Constitution, the Law on Environmental Protection of the Republic of Moldova 1515-XII of June 16, 1993 and other laws and legislative acts that take into account the issue of environmental protection and rational use of natural resources.

According to the Law on Environmental Protection of the Republic of Moldova 1515-XII of June 16, 1993, environmental protection is a national priority that directly concerns living conditions and health of the population, social and economic interests and sustainable development capabilities of the society in the future.

Knowledge in the field of environmental protection and rational use of natural resources is a qualifying condition required for executive positions in all public bodies.

Economic entities engaged in reception, accommodation and food catering for tourists in rural areas need to know the legal framework that regulates the use of natural resources.

The activity of rural tourism complexes should be carried out within the legislation framework, which corresponds to the services that are provided. For example, rural pensions, specialized in holidays near water bodies must be guided by the Law on Water Resources of the Republic of Moldova No. L 327/1 of December 22, 2000. Camping sites, specialized in hiking, when the following activities are provided: halts, overnight stops, rural pensions concentrated on such activities as picking berries and mushrooms, medicinal herbs, horse riding, etc. should be guided by Forest Code No. 887 of June 21, 1996 and Land Code No. 828 of December 25, 1991, etc.

There are also a number of moments when rural tourism can contribute to the improvement of the environment, mainly due to its socio-economic impact. These include the following:

a) Providing a direct source of income needed for environmental conservation. National parks and reserves do not get sufficient financial support from the state in many countries and they are largely dependent on the income received from visitors in the form of entrance fees and other incomes, so that they can be engaged in environmental conservation. Donations made by visitors and sponsors from the industry sector play their role here too;

b) Providing a source of revenue for rural communities, for instance it concerns the area of food catering, accommodation in rural guesthouses, guides' work and sale of handicrafts, which cause less environmental damage than other sources of income, such as slash and burn agriculture, extractive industries and the industries that pollute the environment;

c) Providing a more complete awareness of visitors and host villages regarding the quality of the environment and its social, cultural and economic impact, which should increase interest and extend the support that is provided.

The conclusion is that rural tourism is one of the factors, which contributes to the environmental conservation and harmonious relationships between the humanity and nature.

Rural tourism, despite its closeness to nature and demands on environmental quality, is an industry, which makes extensive use of various kinds of resources, depending on the proposed forms of tourism, carried out in rural areas. The

following table presents American scientists' research results. You can easily see the dependence of various tourism resources on the preferred forms of tourism (ranked and expressed as a percentage).

Table 2. Preferred forms of tourism and natural resources in rural areas

No.	Preferred tour forms	Rating (percentage), %	Natural resources
1.	Visiting parks	55.8	Parks, forests
2.	Hiking	55.0	Forests, steppe landscapes, land, geological formations
3.	Visiting areas of special protection	47.8	Forests, steppe landscapes, land, geological formations, conservation areas, ecosystems, water bodies and water resources, etc.
4.	Birds watching	19.5	Forests, steppe landscapes, land, geological formations, conservation areas, ecosystems, water bodies
5.	Bicycle tours	18.7	Forests, steppe landscapes
6.	Freshwater fishing	17.9	Lakes, rivers
7.	Visiting wetlands and marshes	12.0	Wetlands, ecosystems
8.	Mountain and rock climbing	11.6	Geological formations
9.	Canoeing, kayaking, rafting	9.2	Lakes, rivers
10.	Living at farms	4.0	Land, forest, steppe, geological and water resources
11.	Camping	2.0	Land, forest, steppe, geological and water resources
12.	Visiting natural sights	1.2	Forests, steppe landscapes, land, geological formations,

			conservation areas, ecosystems, water bodies and water resources, etc.
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(Note: the total sum exceeds 100%, because they could give more than one answer)

Source: Александрова А. География туризма. М.: КНОРУС, 2009, - 592 p., p. 530-531

As one can see in the table, the majority of tourists prefer to visit national parks and other conservation areas. The use of natural objects (along with the absence of proper planning and management) is not always beneficial for the environment.

We can distinguish the following types of negative impacts of rural tourism on the environment:

- Sewage and garbage pollution in the areas with high concentration of tourists;

- Coast (beach) erosion because of levelling;
- Overuse of natural areas (forests, hillsides, lakes);
- Destruction of natural areas because of new objects of rural tourism;
- Violation of natural links in the chain: air, water, land and living organisms;
- Impact on the local people's culture;
- Loss of historical and architectural heritage;
- One-time increase of the population density in recreation areas;
- Worsened economic and social tensions;
- Increased child labour.

This is just an incomplete list of negative effects of rural tourism. You can often improve a situation or diminish a problem. Thus, you can find different types of negative effects of tourism activities in the countryside on the environment in the table below, which also include information regarding the measures of environmental protection.

Table 3. Influence of rural tourism on the environment

The discussed issue	Connection with rural tourism	Connection with major ecological problems
<i>Category A</i>		
Hunting and fishing	Increased tourist activity in some rural areas	Loss of biodiversity
Energy production and consumption	Tourism will lead to the use of an increased number of vehicles in the countryside	Green house effect Destruction of the ozone layer Air pollution

Use of water for human activities	Increased consumption of rare resources during travel seasons	Lack of resources
Land use and environmental restructuring	Construction of tourist reception structures in rural areas, campfires, access roads and other infrastructure objects	Loss of biodiversity and humus, soil erosion
Flora and fauna	Soil compaction and excessive hunting will have negative effects, but they can also lead to better management of resources	Loss of biodiversity
Gases in the atmosphere, water and soil	Increased number of people in tourist places implies increased gas emission	Air, water and soil pollution
Category B		
Modified biological resources	Hunting, fishing, land use environmental restructuring can lead to assaults on ecosystems and species	Loss of biodiversity Soil pollution
Air pollution	Increased number of vehicles can lead to the increased amount of emitted gases and other air pollutants	Greenhouse effect Destruction of the ozone layer Air pollution
Water quality	Increased number of people in a certain area can lead to sewer infiltration	Water pollution
Soil quality	Increased number of people in a certain area can lead to the increased number of pollutants and soil erosion by compaction and construction of new buildings	Soil pollution and erosion
Human health and ecological disasters	Noise and gas emissions because of traffic will affect human health and lead to	Noise and air pollution

	the destruction of buildings of cultural value	
Category C		
Resource management	Increased revenues from hunting and fishing can lead to better resource management. The visitors' interest in flora and fauna in protected areas may increase.	Loss of biodiversity Soil pollution and erosion Lack of resources
Pollution monitoring and control	Need for water of high quality may lead to a better monitoring	Air, water and noise pollution
Category D		
Flora and fauna	Soil compaction and excessive hunting will have negative effects, but they can also lead to better management of resources	Loss of biodiversity
Hydrologic systems	Amount of precipitations may influence tourism demand	Soil erosion Lack of resources
Atmospheric systems	Temperature and air pollution can influence tourism demand	Air pollution
Lithospheric systems	Topology and soil types can influence tourism demand	Soil erosion
Ecosystems	Such ecosystems as forests, marshes, mountains, etc. can influence tourism demand	Lack of resources Loss of biodiversity

Category A describes different types of effect on the environment

Category B describes changes in quality parameters of environmental elements

Category C includes information about environmental protection

Category D includes information about climatic conditions and biological resources, etc.

Source: developed by the author according to the data from

<http://www.rasfoiesc.com/business/afaceri/turism/Impactul-socioeconomic-al-turismului-13.php>.
(visited on December 20, 2015)

According to the table mentioned above, rural tourism is an industry that depends on biodiversity, and it, as such, is also affected by climate changes and the environment. The following are the examples of how climate changes may affect tourism and leisure time: extremely high temperatures (as it was in Europe in summer 2010) or abundant rainfall; deterioration of key tourism resources such as dried forest and steppe lands; forest fires (for example, as it was in Portugal in 2005); the lack of snow cover in mountains; restrictions on water consumption (as it is now in the region of Odessa, Ukraine).

Thus, successful development of rural tourism depends on the environmental health.

Water and water resources are the most exploited elements of the environment in rural tourism of the Republic of Moldova. This is due to the fact that the greatest flow of tourists going on vacation in the countryside is observed in summer, when the demand for water and water bodies is highly increased.

According to Article 46a of the Law on Environmental Protection of the Republic of Moldova No.1515-XII of June 16, 1993 and the Law on Water Resources No. L 327/1 of December 22, 2000, local authorities and economic agents in rural areas have to permanently monitor the state of springs, streams, small rivers, groundwater, their natural biota and adjacent areas, to apply measures in order to prevent their pollution and degradation and to restore affected biosystems.

Careful attitude to water resources of the Republic of Moldova is also due to the fact that there are only 472 km² of surface water resources of the total surface of 33,842 km², which are used in tourist activity.

The Nistru, Prut and Raut are the main rivers of the Republic of Moldova. These rivers contribute to the development of the following forms of tourism: beach, sports and recreation tourism, fishing, etc.

There are only few natural lakes in the Republic of Moldova: Belev, Manta, Antonesti in the lower course of the Prut and Bac, Crasnoe in Valea Nistrului), they are small and people use them for fishing.

The Republic of Moldova has a network of over 1,600 man-made (artificial) lakes. The biggest ones are located in Costesti on the Prut (7,700 ha), at Dubasari Hydroelectric Power Station (6,750 ha) and Cuciurgan Thermal Power Station (2,800 ha), in Taraclia (1,129 ha), Ghidighici (900 ha) and Ialoveni (708 ha). Fishes of high quality are grown in many of these lakes, for example silver carp, which is demanded everywhere. Sometimes yields reach up to 50 quintals per hectare. Valea Iazului (district of Straseni, village of Greblesti) is an example of a rural tourism complex, where fishing is the main service provided for tourists.

Over 3,000 springs are of great importance for recreation, particularly those with mineral water. Mineral waters that are mostly valuable for health care include about 20 water bodies, for example those located in Cahul, Harjauca, Kamenka and Vulcanesti. Water from Chisinau and Varnita springs is marketed as drinking water. Many water bodies are commonly used as resting areas along tourist routes; some

of them (over 30) are protected by the state.

Tourism development in rural areas of the Republic of Moldova can have a negative impact on water resources without proper supervision and administration. Thus, unsystematic fishing can lead to the overfishing of water bodies that specialize in this kind of activity. Excessive use of water resources in tourist pensions, swimming pools, fountains, lawn irrigation, etc. often leads to the depletion of water resources and overloading of sewer systems. Waste treatment plants do not always cope with a large volume of wastewater in the middle of the season and wastewater is discharged into rivers and lakes, causing a negative effect on flora and fauna.

The use of motor boats in recreational activities promotes coastal erosion, dispersion (spreading) of water weeds and chemical contaminants, turbidity in shallow waters. It is not by accident that according to Art. 49 of the Law on Environmental Protection of the Republic of Moldova No.1515-XII of June 16, 1993, economic agents who own ships and floating platforms have to equip them with stop systems or systems to treat wastes and wastewater as well as connectors to discharge them in bank or floating installations, in accordance with international and national regulations on water pollution prevention.

Careful attitude to water resources of the Republic of Moldova is consistent with the UN General Assembly resolution recognising access to clean water, adopted in 2010, as well as the provisions of the 6th World Water Forum and the APEC CEO Summit, where the following statistical data were presented:

More than 700 million people (World Bank, 2010) lack fresh water on our planet. According to the World Health Organization (WHO), 800 million people face this problem.

The World Bank predicts that the number of the people that lack fresh water can reach three billion by 2025.

The lack of drinking water is critical in 43 countries.

- The world's population has grown by 4 times over the past 100 years, which results in increased water consumption (by 7.5 times), and these figures will grow on. In particular, it is reported that in forty years the world's population demand for drinking water will increase by at least 40%.
- Experts of the UN World Economic Forum 2008 stated that, according to their forecasts, 50% of the world's population will lack water by 2025 and 2/3 of the world's population will lack it by 2050.
- Experts believe that any person needs at least 20 litres of water per day. At the same time they use daily 200-400 litres of water in developed countries and they use only 5 litres of water per person in under-developed countries per day.
- About 1.1 billion people do not have access to clean water and sanitation on our planet.
- Every year about 5 million people die from diseases caused by the lack of clean water, half of them are children.

- Some experts have suggested that in about 15 years there will be "drinking wars" in the world. They may be both local and global, affecting a large number of countries.

The data provided above show that the need for water resources will always remain one of the basic needs of the humanity. Tourists visit the countryside, looking for unpolluted water bodies, drinking water, recreation at lakes and rivers, so it is necessary to do our best in order to neutralize the negative effect of human activity on the environment.

Land resources are an important element of the environment, used in the organization of tourist activity in the countryside. These include agricultural lands, which provide tourists with ecological food; forests that are rich in flora and fauna, landscapes, conservations and national parks, where they organize (except conservations) such activities as hiking and hunting, adventure, sports, and other types of tourism.

In the Republic of Moldova protection of land resources is provided by numerous legislative acts, the most important of them are Land Code No. 828 of December 25, 1991, Forest Code No. 887 of June 21, 1996, Law of the Republic of Moldova on environmental protection No. 1515-XII of June 16, 1993.

In accordance with the Law on Natural Areas Protected by the State No. 1538 of February 25, 1998, in the Republic of Moldova these areas are presented as scientific reserves, national parks, natural monuments (geological, paleontological and botanical), nature, landscape and biosphere reserves, botanical gardens, zoos, etc.

In the Republic of Moldova there are 5 scientific reserves (with the total area of about 19,400 ha), 63 natural forest, medicinal herbs and mixed reserves (over 8,009 ha), 41 landscape reserves (34,200 ha), 13 resource reserves (523 ha), 288 natural geological, paleontological, hydrological and botanical monuments (2,906 ha). Moreover, there are 433 ancient trees taken under state protection and 269 animal and plant species included in the Red Book of the Republic of Moldova.

Forest plantations, according to researchers, do not exceed 9% of the country's territory, 5% of which are under state protection.

Land resources mentioned above are good to use as the basis for the development of different types of rural tourism, included in tourist tours, elements of environmental and general education, promotion of healthy lifestyles.

The strongest effect of tourism on wildlife is associated with hunting and fishing, which reduce populations of certain animal and fish species. However, it is known that the mere presence of people is also able to destroy wildlife habitats, especially birds and large mammals. Animals often feel inconvenient because of both people themselves and the equipment they use being on vacation. Thus, animals are highly disturbed by the noise made by radios and car engines, which affects their reproduction.

Recreational activities can also influence the composition of plant species. This is especially true for the surface layer affected by trampling in areas of

intensive recreation, which results in the vegetation degradation. People get used to trampled forests, bare sand, damaged trees, and thereby their attitude to nature and its protection is distorted, and, consequently, the quality of recreation and its social impact is reduced.

Collecting plants in herbaria and bunches leads to extinction of some plant species, as they are often uprooted. Tourism vehicles harm plants too. Thus, unsystematic fires associated with insufficient recreation infrastructure damages black soil, while one needs hundreds of years to restore several centimetres of it.

Engineering structures (for example, speleological equipment in Emil Racovita and Pester Minunilor caves), intensive construction of rural tourism complexes, roads, related to tourism and recreation, and use of soil as a building material to construct housing infrastructure directly influences natural resources and leads to their depletion and degradation. This applies to both renewable and non-renewable resources. Forests often suffer from tourism activities associated with collecting firewood and land clearing.

Erosion is another important problem of interaction of rural tourism and the environment, as it is the result of irrational household activity and construction of rural pensions very close to water bodies, which changes the natural state of soil and often leads to erosion. In the Republic of Moldova there are erosion formations, called Gyrtopy. Some of them are so large that they are able to host villages with the same name "Gyrtop Mare" and "Gyrtop Mic"

Healthy food is one of the most attractive recreation elements in the countryside. Production of organic food is becoming part of rural tourism in many countries. Retail prices for such products are quite high in urban areas; tourists can purchase them at a lower price in the country. "Casa Fermierului" rural tourism complex (village of Braviceni, district of Orhei) offers fresh fruit and vegetables that can be picked up by any tourist right in the garden/orchard; "Costesti" rural tourism complex (district of Ialoveni) offers polenta with grilled fish caught by tourists from the lake as well as salads made with vegetables from their own beds. They entertain their guests with zama cooked with chickens raised on their own farm at "Butuceni" agricultural pension, etc. There are a great number of examples like these. Moreover, most rural complexes of the Republic of Moldova provide their tourists with delicious dishes cooked in furnaces according to old technologies. Therefore, one can easily explain the demand for recreation in the countryside. One of the important tasks of entrepreneurs in rural areas is the rational use of land resources in order to grow ecological vegetables, fruits and forage.

Thus, land resources that, first of all, allow providing the world's population with food, require our careful attitude. This can be confirmed by the following statistical data:

- At present 0.5 billion people starve and about 1 billion people are regularly malnourished.
- The world's population daily lacks 230 billion calories for a balanced diet, which is equivalent to the lack of 37 million tons of wheat per year.

- Annual population growth rate is about 80 million people. Even if we preserve the current level of food supply, global agriculture should annually increase its production by 24-30 million tons.
- Each new inhabitant of the planet requires on average 0.3 hectares for food production and 0.07-0.09 ha for life.

Conclusions

These data highlight a need to have careful attitude to land resources of our country, which provide both us and our tourists with food.

The quality of recreation in rural areas is influenced by the following environmental elements: climate, atmosphere, temperature, light, etc., which have a significant impact on human health.

The entrepreneurs who are interested in attracting tourists to the countryside should be aware that the demand for recreation in the region depends on the environmental quality. Sometimes it is not easy to achieve. The following funds may ease the financial burden in order to ensure environmental quality:

- European Regional Development Fund (ERDF)
http://ec.europa.eu/regional_policy/thefunds/regional/index_ro.cfm
- European Social Fund (ESF) <http://ec.europa.eu/esf/home.jsp?langId=ro>
- Social Cohesion Fund (SCF)
http://ec.europa.eu/regional_policy/thefunds/cohesion/index_ro.cfm
- European Agricultural Fund for Rural Development (EAFRD)
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http://europa.eu/legislation_summaries/agriculture/general_framework/160032_ro.htm
- Agency for Payments and Intervention in Agriculture (APIA)
<http://www.apia.org.ro/ro/despre-apia/prezentare-apia>
- European Fisheries Fund (EFF)
http://ec.europa.eu/fisheries/cfp/eff/index_ro.htm

Thus, if one makes efforts to improve recreational amenities, one can both increase the flow of tourists into the country and raise environmental awareness and desire for a healthy lifestyle, characterized by harmonious co-existence of people and the environment.

If tourists are aware of the fact that living in rural tourism pensions in harmony with nature, healthy food, joining certain types of agricultural activities, active ways to spend time, etc. – all these improve our health, refreshes our bodies and contributes to an increased interest in rural tourism both in our country and in the world.

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