Abstract: "Mainstreaming sustainability" means to rise to the challenge of the mass tourism market. It is a well-known fact that tourism involves commercial exchanges, commitments, development and cultural sustainability, towards the tranquillity and the satisfaction of the people's aspirations.

The world crisis means a moment of incertitude, but opens, also, immense possibilities. It is true that we face one of the highest economic deficits from the last half a century, with an economic disorder, with the increase of the unemployment and the decrease of the trust in the market, all these generating a recession whose end is not entirely known.

The fact that this crisis overlaps the problems caused by the climate changes determines increased difficulties in the creation of new workplaces, in the imperious attempt to reduce poverty.

This crisis places, at the same time, a constant pressure on tourists, but also on the employees from the tourism industry and the tourist market, considerably threatening the policies and the actual practices. But, as Phoenix bird that rises again from its own ashes, tourism has constantly proved a remarkable capacity of recovery and it has done that even more powerful, proving that it is a perfectly viable sector.

Post-crisis challenge for Romania is the organization and development of its natural and cultural resources in a range of tourism products with a wide appeal to the public, and transforming these attractions in a flow of tourists and benefits for the country. This requires an integrated product development and strategic marketing approach, and more attention to the environmental problems and sustainable development of tourism and environment. This study uses a framework developed from the industrial ecology literature to assess the impacts of the tourism industry on the environment.

Three categories of impact are discussed: direct impacts, including impacts from the tourism to a destination, the tourist activities in and of themselves at that destination, and from the creation, impacts, resulting from travel service providers’ ability to influence suppliers; and another category impact, where service providers can influence the behaviour or consumption patterns of customers.

Educational efforts to promote environmentally responsible tourism should be framed in accordance with the targeted audience (e.g., tourists, industry sectors). Tourists may be more receptive to educational efforts that focus on the environmental benefits of altering their behaviour than to regulatory prohibitions per se. The greening of tourism, which involves efficiency improvements in energy, water, and waste systems, is expected to reinforce the employment potential of the sector with increased local hiring and sourcing and significant opportunities in tourism oriented toward local culture and the natural environment. Green tourism embraces all aspects of sustainable tourism, based on four basic principles (UNWTO): environmental, social, economic and climate (i.e. the “quadruple bottom line” of sustainable tourism). Green tourism minimizes the environmental impact of tourism and maximizes its adaptation to climate change. However, educational efforts geared towards...
industry sectors seem most effective when cost savings and the marketing benefits of “being green”\(^2\) are emphasized in this article.

**Key-Words:** tourism, green economy, crisis, environment, impact, consumer, destination, prognosis.

### 1 Introduction

After a useful and necessary previous reflection on notional interpretations of the new type of tourism, and clarifying the “multi-expressive” use for another type of tourism, which we use in various names such as: sustainable tourism, responsible tourism, social tourism, solitary tourism, integrated tourism, fair tourism, community tourism, etc., the article examines the compatibility between tourism and the controversial notion in the literature, that of sustainable development and environment, the various constraints posed by financial profitability, tourism market requirements, tourist resource management shortcomings and good practices to be established for tourism to become truly a sustainable development and solidarity activity.

However we analyze this problem, a question still is posed: are sustainable development, environment and tourism compatible concepts? Economically, there is no doubt. But the answers are more reserved for those including in sustainable development respect for local communities, their culture and way of life, and economic orientation to the satisfaction of own local needs.

Tourism consists of the activities undertaken during travel from home or work for the pleasure and enjoyment of certain destinations, and the facilities that cater to the needs of the tourist (Mathieson & Wall, 1982, p.1; Power, 1996, p.214).

Ecosystems and natural habitat can be damaged by tourist infrastructure, tourist activities, recreational boating, and the cruise industry. Recreational boats and cruise vessels can damage aquatic vegetation by cutting it with their propellers or otherwise damaging it when running aground. Wetlands have been destroyed in order to build tourist-related infrastructure, such as airports, roads, and marinas (Andereck, 1993, p. 29) and (Mazilu, 2011, p.212).

Tourism can diminish the aesthetic appeal of a destination through the construction of buildings that clash with the surrounding environment, creating “architectural” or “visual” pollution (Andereck, 1993, p. 30; Mathieson & Wall, 1982, p.121).

The high-rise hotels along the coastal zone of Atlantic City and Miami are examples, as are several high-rise hotels in Jerusalem, whose construction arguably damaged the city’s architectural beauty (Bosselman, 1978, pp. 26-7).

### 2 Problem Formulation

However, the debate remains open to all. The exigencies of environmental protection must be concomitantly achieved both at micro and macroeconomic levels, at individual and national states and international communities’ levels. No matter the scale we refer to, there should be taken strict actions meant to modify the present tendencies of environmental deterioration in order to permanently maintain an equitable balance between satisfying the more and more diverse necessities of present society and protecting all components of environment.

Although it is difficult or, in some cases, even impossible to establish their appearance within time and space coordinates, the majority associates them with the period of industrial revolution, because the man’s wish of a better, more sustainable life has uncontrollable effects on the environment, or the climate. Thus, the change with its multiple faces and components remains a priority for the protection of the environment and of the sustainable development, and people face the most important choice of their long history.

One with paradigmatic values – having rational, ecologic, protectionist, emotional, educational valences – generated by the troubling metamorphoses like: the exhaustion of natural resources, “baby-boom” beyond any control, the


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ecologic unbalances, the inequality of chances when education, health and carrier are concerned.

Some global problems, like the warming of the atmosphere, the hole in the ozone layer or the cutting of the rainforests, show in the most impressive way the globalisation phenomenon, because it is about the global problems, which need a global approach. Of course in the field of the environment there are regional and local problems, even if these have a feature which exceeds borders, like pollution of the rivers. There are other situations, which are not connected to time and space elements.

The geographical expansion of the tourism sector and that it needs, by nature, many employees drives the unbalanced distribution of labour, in particular, especially in isolated rural areas, where more poor people live. Reducing poverty has become a prerequisite in the fight for peace, environmental protection and sustainable development, except that it is also an issue and an ethical obligation in a world of abundance, in which, in recent years, the fracture, rupture, gap between poor and rich countries appears to have worsened.

Even the World Tourism Organization statistics show the strength and increasing contribution of tourism in developing countries.

Tourism remains a climate change factor and by this it causes great environmental disruptions

A favourable climate in tourist destinations is primordial in attracting tourists, especially for coastal tourism, which remains the dominant form of this activity not only for Romania but also for other countries. Tourism practiced in mountain areas and winter sports tourism depend also greatly on climate and weather conditions.

In general, all forms of tourist activity practiced outdoors, information on the climate and weather from the tourist destination, are fundamental in the preparation and making trips and tourism programs.

Climate may have an effect on a whole range of other natural resources, considered the basis for tourism, like fresh water or thermal water, which requires availability and quality to certain parameters set by the authorized bodies.

Poor weather conditions may impair seriously tourist and local host communities activities that depend directly from them. Directly, climate variability and of weather conditions can influence tourism planning programs, even bother tourists who change their travel decisions, and end up by disrupting tourist flows.

Indirectly, climate change is likely to have considerable repercussions on the tourism activity, transforming the natural environment, which is also an important center of tourist attraction but also a fundamental resource.

It is known that a tourist spot does not appear anywhere, but only in those places where nature “offers” agreeable climate conditions for curative and recreational purposes or spectacular natural elements that excite and maintain tourists’ curiosity (rare weather phenomena, elements of special vegetation and wildlife, unique landforms, etc.). Even if today’s mass tourism also requires the use of unsuitable places (for example, the northern beaches, or deserts), the natural environment especially by its climatic composition is largely responsible for the current spatial distribution of those tourist activities using its elements.

Indispensable for helio-marine cures or winter sports remain the sun and snow because “since the 8th century, the British aristocracy appreciated the climatic comfort of wintering on the Cote d’Azur or Italy because of outstanding sunshine (over 2,000 hours annually) and heat gentleness (7°C in January), unusual conditions for the north-west of the continent. Today, permanent summer islands (the Canaries, Madeira, Bermuda) attract many tourists from regions with a cold season.”

Or global warming, which most experts consider being an ongoing process, will stop and undoubtedly affect not only other parts of the planetary environment, but human society, too.

Note that “a correct assessment of the effects of climate change on human society is practically impossible, on the one hand due to the extremely large and complex variables involved in the process and their interaction, and, on the other hand, insufficient knowledge we have on them, given the scale of the climate change process and the not too long time that has passed since it came to the attention of specialists.”

Even if there are multiple difficulties, identifying regions and human activities most vulnerable is possible… this is because studies through modelling the effects that produce the positive deviations of air temperature in the current “climate anomalies”, as reactions of human society, can be extrapolated at the large temporal and regional scales for global climate change. Undoubtedly that global warming is causing significant changes in important areas such as water


resources, agricultural production, human settlements, distribution of various diseases, all inter-conditioning tourism, creating real difficulties for the economies of affected countries, diminishing significantly their ability to support their populations and tourism programs.

The impact of climatic elements (climate warming, especially) with impact on tourism frequency are:

1) seasonal rainfall differences (between the two hemispheres with the seasons reversed)
2) diurnal thermal variations
3) the atmospheric humidity
4) climate diseases
5) wind
6) the brightness and colour of the atmosphere
7) spa and heliotrope comfort index.

Of course, global climate warming will increase precipitation in some areas of the planet and decrease them in others. But the intensification of evaporation due to temperature increase will lead to increased drought in many countries.

The dynamics of the extent, duration and thickness of the snow, and ice caps decrease, will cause a corresponding attenuation of discharge, especially in summer when water supplies are also substantially reduced.

In recent decades, severe droughts frequently affected large areas of Australia, Brazil, China, U.S. and Southeast Asia, but Africa was the continent worst hit by this scourge. From Mauritania to Sudan, nine African countries that in 1998 amounted to 40,000,000 inhabitants (in 2050 it is expected they shall count for about 105 million) were enveloped by prolonged drought, which reduced by 40% the annual average precipitation.

Drastic reduction of food resources, raw materials and energy would entail their prices increasing and thus fewer jobs in those sectors of the economy (tourism, agriculture, industry, etc.). As a result of prices rising, increasing unemployment and declining incomes, which would quickly depreciate living (by malnutrition, limited access to adequate resources for water and sanitary facilities, etc., with negative passed on the tourism phenomenon and public health etc.), social unrest would achieve tremendous increase. On the other hand, governments of affected countries will be faced with sensitive reduction of revenues from taxes, together with total increases of welfare demands and of ensuring a minimum number of resources for food and essential medicines.

Climate comfort in tourism is different from that for other activities. Dependant as economic activity by the artificialization of human existence, tourism has with “unpredictable” weather events and climate change an ambiguous relationships. What is desirable for a heliotrope successful tourist stay (persistent heat), for mountain tourism can become an obstacle.

3 Problem Solution

However, the desire to control climate (pertinent strategy in the WTO) determines, in fact, the artificialization of the tourist infrastructure (air conditioning, snow production facilities – also available on Romanian slopes – planting of exotic trees, etc.) are extremely expensive (especially in countries with tradition in the tourism industry).

Even more, climate becomes important where it is manifested by phenomena in the risk and natural hazards category (hurricanes, floods) whose frequency cannot be predicted exactly... hence the negative impact on tourism.

In this way, sustainable protection is mandatory, as well as ensuring tourism infrastructure against the “unleashing”, “climate change” of nature, or “for tourism to turn from a chance for the economy into a risk for all the community it is good for everything to be made with measure”.

Although the impact of climate change is not questioned by any specialist, insofar this constitutes a violation of human rights is very difficult to determine due to the lack or insufficiency of legislation that would regulate this matter in each state. One of the conclusions of the OHCHR report is however “… international cooperation is not only expedient but also a human rights obligation and that its central objective is the realization of human rights.”, which means that emphasis will be on international cooperation to establish a legal framework with common denominators in terms of climate change and human rights issues.

Climatic conditions must be known by tour operators to support the viability of tourism, to generate economic and social benefits to local communities and to improve the life experience of tourists. Thus, there should be education for tourists and tour operators on the knowledge of weather conditions and even climate change to ensure the implementation of adaptation measures and for the new opportunities to be maximized.

Because Romanian relief runs from 0 m to 2,544 m in altitude, there are no restrictions in terms of atmospheric pressure. However, in mountain regions, at higher altitudes, due to lower atmospheric pressure (rarefied air), weather-sensitive tourists can be affected by the occurrence of headaches, palpitations, dizziness, insomnia, heart rate, mountain sickness, especially above 1,000 m in altitude. These reactions occur because of rarefied air and partial decrease in the amount of oxygen. Regional and local climate conditions change will affect ecosystems, human settlements and infrastructure. Expected changes in temperature and precipitation can lead to change of vegetation periods and displacement of the lines between forests and grasslands. Extreme weather events (storms, floods, droughts) will be able to appear more frequently, and the associated risks and damage will become more significant. Drought affected areas have expanded in recent decades in Romania. The most vulnerable areas to drought are found in the southern and south-eastern part, but almost the entire country has been affected by prolonged drought. Along with floods, long periods of drought lead to significant economic losses in agriculture, transport, power and water supply, health and households. Predictions based on global climate models indicate that we can expect a more frequent occurrence of extreme weather events. Population of over 100 localities in 20 counties has suffered from floods triggered on May 24, 2012, which occurred due to heavy rainfall. In total, over 800 households and household annexes were affected, according to data from the General Inspectorate for Emergency Situations (GIES).

In Bucharest, in only 24 hours, fell more than half the average amount of precipitation in a month (NMA, May 28). The fact is that **Romania is among European countries with high risk of flooding**, as it results from a study published in 2007 and which analyzed the situation of 10 countries in the region. The analysis was conducted by the Institute for Population Protection and Safety, at the European Commission’s order.

Specifically, the **flooding hazard maps** – to be finalized until the end of 2012 – are made by the National Administration Romanian Waters (ANAR) and shall provide accurate information on flooding, including expansion of the flooded area, water velocity, water depth at floods, corresponding to certain flows.

**Risk maps** – with a 2013 deadline – will be made by the County Councils and will be able to indicate the damage that will occur in floods and population evacuation areas in case of flooding.

Their consequences require rapid changes in concept and mode of action in the fight against natural disasters and climate warming management on tourism and more.

Romanian authorities’ response, expressed in adopting a national strategy on climate change, with a perspective of about 20 years and an estimated cost of about 200 billion Euros, shows that joint efforts are needed to assess the phenomenon and to develop on this basis measures on the short, medium and long term, linked to regional and global efforts in this field.

The **Adaptation component of the National Strategy on Climate Change** for the period 2012-2020 is the result of the Romanian-Dutch cooperation in G2G08/RM/6/2 Project “**Improving the effective capacity and developing policies on adapting to climate change effects in Romania**”. The intergovernmental project was initiated by the Ministry of Environment and Forests (MEF) and the Agency for Sustainability, Innovation and International Cooperation of the Dutch Government (Dutch Agency), in order to provide expertise to decision-makers in Romania on adapting to climate change (ASC2012-2020).

The tourism sector in Romania was affected by heat waves during each year’s summer, on a sample period of 2007 to 2012, snow low levels and persistent reduction in winter and extreme weather events (floods, heavy storms, etc.) that affected tourist infrastructure and tourist motivation to travel. Although there are assessments of the overall impact of climate change on specific tourist areas, there is no damage assessment of the entire tourism sector. However, experts agree that the sights most affected are coastal, mountain, and winter sports resorts.

Researchers in tourism consider that some regions in Romania will suffer losses as a result of climate change, while others shall register gains.

In terms of loss, we mention the recent drought of July 2012 (July 2012 was considered the driest month of the last 60 years), a phenomenon which made the Danube level in Romania to drop even by 2 meters, cruise ships with foreign tourists not being able to travel up to the Delta, tour operators estimating that Romania will thus lose more than 3 million Euros if the authorities do not drag the river. By joint effort, Romania and Bulgaria can provide uninterrupted navigation on the Danube, attracting tourists and bringing unexpected benefits to the area. It would be a good start for understanding that, rather than competing, Romania and Bulgaria could work together to attract tourists from other parts of the world in our part of the continent, not less
spectacular than the rest of Europe. Unfortunately, however, last year there were similar problems in September and more than 70 cruises were canceled. To be mentioned is another paradox of climate change turned into a gain: the heat wave in July 2012 provided for the Romanian seaside the largest growth rates.

Thus, the Romanian Black Sea coast has recovered dramatically this year – 2012 – the occupation degree over the weekend of August 4-5, 2012, being one hundred percent and about 98% during the week, according to figures provided the hoteliers of the Employers Federation of Tourism.

EFTS argues that the success of the Romanian seaside this year exceeds even that of 2008, when Romania was not yet aware of the economic crisis and people’s purchasing power was much higher. Other losses in the tourism sector are, for example, most of the ski slopes of the Postavaru and Bucegi mountains area are at low altitudes, which means that more investment is needed to produce artificial snow to counteract mountain climate warming. On the other hand, ski slopes at higher altitude (Sinaia, Balea) will benefit from an increased influx of tourists. In terms of tourism, snow is the main resource of winter climate. Referring to the seasonal average number of days with snow in the mountains there are very favourable conditions to practice tourism, at all the 14 meteorological stations studied being recorded more than 64 days with snow. But bear in mind that too much thick snow impedes other forms of tourism, such as trekking.

Overall, the main impacts of climate change (rising temperatures, reduced snow, increased frequency and intensity of extreme events, sea level and sea temperature rise, biodiversity reducing, larger and more frequent fires in forests, etc.) will have negative effects on the tourism sector in Romania:

- tourism activities will have a different seasonality;
- tourists will experience thermal discomfort. For example, thermal comfort index exceeded the threshold of 80 in several parts of the country (July 25, 2102). Southern Romania is the most affected in July 2012. – see fig. 1
- there will be more health risks;
- resorts will record higher costs for heating/cooling and air conditioning depending on their specificity;
- resorts will be overcrowded in some areas and largely unoccupied elsewhere;
- income from tourism will drop in the affected areas, but could increase in advantaged areas;
- winter sports resorts will have less snow and record additional costs for producing artificial snow;
- winter tourist season will be shorter;
- tourist facilities will have higher costs related to insurance and limiting of activities;
- extreme weather events will affect infrastructure, historical heritage, architectural heritage and seasonality;
- tourism in coastal areas will be affected by the loss of beach areas and coastal erosion due to higher maintenance costs of the shore (for example, on July 24, 2012, the Romanian seaside in one part was experiencing a heat code, and in the other strong winds and waves which engulfed the beach. By far the most affected beach is the one in Costinesti, where the portion of land at the wreck of Costinesti disappeared completely. At Eforie, beach erosion effect is even more visible. With each wave that breaks on the banks, a bit of beach disappears. 30 meters of beach disappeared only during July 27, 2012. Specialists say strong wind is a rare phenomenon for this time of year and that there had not been any such phenomenon in recent years;
- natural attractions will suffer damage.

Despite these potential hazards, there are no studies indicating a possible reduction in the total volume of tourism, but rather a restructuring of the tourism sector (seasonal and geographical redistribution). Tourists have the greatest capacity to adapt, based on three key resources: money, time and knowledge. They may change their travel preferences to avoid bad weather conditions and
seek favourable areas. However, tourism service providers have less capacity to adapt.

Meanwhile, transport, which condition tourism, constitute a clear threat, not only for air transport, very scrutinized for its emissions of greenhouse gases, but also road or rail transport, which weigh heavily in the development of intra-regional and domestic tourism, and cruise ships, which, recently, is one of the tourism sub-sectors rapidly growing. In this context, the World Tourism Organization is committed, in particular, to work closely with the Civil Aviation Organization for it to have real evidence of the tourist size of this type of transport and its contribution to tourism development.

At the same time, climate change may also become the opportunity to restructure tourist demand and supply. For example, high temperatures during the peak season of coastal tourist destinations could determine tourists to change their decision to spend their holidays in that place, but this phenomenon can mean, in turn, an increase in travel between seasons or in warmer winters; it could also guide tourists to the interior of continents and to mountain coastal regions with lower temperatures. In mountainous areas, summer may be extended, which would cause an increase in demand, but, at the same time, it could have extremely negative consequences on the environment. The extreme temperatures August 7, 2012, registered in Romania, of over 42 degrees Celsius, is the highest temperature registered in July in Romania in the last 61 years. On July 24, 2007, the temperature has reached 44.3 degrees Celsius at Calafat, which is an absolute maximum of July for Romania. In Oltenia, a region located in the southern part of Romania, tourists and locals are dressed as Bedouins from the heart of Africa to more easily bear these hot temperatures, crying in unison: Romania’s Sahara! 46 degrees in the air, and 65 degrees on the ground.

The rise in prices of agricultural products, due to the drought that swept the country, plus the massive depreciation of the leu, will seriously affect Romanians’ pockets. Although it promised to be a good agricultural year (not as good as 2011), which was exceptional), 2012, marked by a prolonged drought that has engulfed the country, could be one of the worst years for Romanian agriculture, implicitly for tourists’ food. The recent drought also damages tourism, making the Danube level in Romania to drop even below 2 meters, and making it impossible for cruise ships with foreign tourists to travel up to the Delta; tour operators are estimating that Romania will lose more than 3 million Euros if the authorities no not drag the river. “The problem is mainly on the Bulgarian side, between Turnu Magurele and Giurgiu, where there is a threshold that can be crossed very difficultly because of very low levels of about two meters. According to Mediafax, it is estimated that, according to the weather forecast or Danube water levels, tourist cruises will no longer be able to reach the Delta in the end of summer 2012. Also it is estimated that tour operators will bear additional costs. Last year there were similar problems in September and more than 70 cruises were cancelled. They improvised some cruises with transports of tourists by bus to Bucharest and, of course, there were complaints. But many cruises were cancelled. Only the Karpaten tour operator has to do, between August 1 and early November, 304 cruises up the Delta, each with 135-150 of tourists, so a minimum of 41,000 people is due to reach the Delta this year on cruises. Besides this, there are another 60 vessels in the portfolio of other companies due to arrive in the Delta. Most tourists (80%) are Germans, and about 10-15% come from the U.S. Most cruises start at Passau (Germany), but there are some cruises coming from Budapest. The year 2012 may be a first in terms of growth in tourism, with the peak recorded in 2008 being exceeded this year. Statistics show that we are starting to record real growth in tourism, after the last years were marked by the recovery of decreases recorded immediately after the onset of the economic crisis.

In 2008, Romania recorded a maximum of 7.12 million tourists, but during 2009 to 2011 the total number of tourists who visited Romania has consistently been below that level.

Number of nights spent in the first half of 2012 exceeded seven million, an increase of 8.1% over the same period in 2011, shows the data recently published by the National Institute of Statistics. Of these, 5.59 million were Romanian tourists and 1.45 million were foreign tourists.

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In nocte - numărul de nopti de pământ turistic
accommodation functions registered increases of 12.7%, compared to 8.1%, NIS data show.

4 Conclusion
On the one hand, an unpolluted environment is vital for tourism sector within the EU; the community politics for environmental protection is relevant for tourism and make reference to water quality, reduction of air pollution or improvement of urban environment quality. The fifth EU programme of action identified tourism as a potential threat for environment, as well as transports (seen as related to tourism), and established different action directions that must be fully taken into consideration in all the fields of politics, including tourism.

There are three main directions of action of EU politics in the field of tourism that encourages:

- a better planning, development and management of mass tourism especially in case of coast and alpine areas;
- development of sustainable tourism and different types of activities and products in other areas;
- changes of tourist behaviour and getting tourists aware of the environmental issues.

Despite the reassuring figures, tourist Romania should not rest on its laurels. Asian destinations are growing rapidly and are becoming serious competitors for European destinations. Tourism specialists therefore decided to concentrate on the quality, sustainability and modernization of tourist services. Specifically, they will be studying the links between competitiveness, skills and information technology in this field, developing guidelines to improve regulations in the sector, focusing on the famous directive concerning “services”. Finally, they will even try to set in motion a sustainable development strategy in this field, too exposed to polemics, placing tourism, sustainable development and the environment in which they occur in a relationship of compatibility.

References: