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Review

The Influence of Environment and Energy Macro Surroundings on the Development of Tourism in the 21st Century

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A B S T R A C T

Trying to anticipate the future of tourism may be a particularly fraught task. However, this does not mean that trying to predict the future of tourism is not without value. From a business perspective, examining the future enables firms to anticipate new business conditions and develop new strategies. From a destination perspective, reflections on the future enable consideration of how to maintain or improve the qualities of a destination. The paper is focused on an analysis of the impacts of the energy and ecological macro environments on tourism trends in 21st century. Mass international tourism has thrived on the abundant and cheap supply of energy, and this may be about to change as the world moves towards 'Peak Oil'. The resultant scarcity and high price of all energy fuels will produce changes in human activities, specifically in tourism. The basis of the health of the economy is the health of the environment. Therefore issues of global environmental changes are increasingly influencing consideration of trends in tourism. In this looming transitional era tourism needs to make some dramatic changes to harmonize with the new realities of a post-energy world affected additionaly by global warming and other environmental changes.

Key words: *tourism, trends, environment, energy, change*

Introduction

Attempts to predict what will happen in the future have become essential to tourism management. This is due to the need to establish a certain level of control and certainty in tourism management process, and the wish to realize the positive effects of tourism development. However, attempts to predict the future of tourism have turned out to be especially difficult due to the occurrence of the so called 'wildcard' events. These are 'events of low probability, but of a high impact on the lives of people and their activities'[1,2], which disturb the process of production and consumption of tourism services. In the period after 2000 there have been a number of 'wildcard' events, which have disturbed tourism activities at the global level. They include:

- terrorist attacks, such as those on September 11, 2001 in the USA or bomb explosions on Bali;
- intensive outbreak of pandemic diseases, such as SARS (Serious Acute Respiratory Syndrome), bird flu, swine (Mexican) flu and similar outbreaks of diseases;
- economic occurrences, such as the rapid increase of crude oil prices and oil derivatives or the emergence of the global economic crisis in 2008;
- political events in terms of more stringent passport control, border crossing and plane boarding due to security reasons. This includes sudden decisions to change regulations concerning hand luggage and objects that can be taken onboard a flight.

Apart from 'wildcard' events, existing trends that affect contemporary tourism and the business environment and make it more complex should be noted. These are[3,4]:

- demographic changes in developed countries, such as population aging and the increase of the number in single-member households;
- accelerated growth rates of the population in developing countries;
- the increase of urbanization at the global level;
- global environmental changes, including climate changes, problems of fresh water supply and depletion of overall fresh water resources;
- the increase of production costs and use of energy, with crude oil price increasesof the greatest significance.

All the above-mentioned trends disrupt the process of production and consumption of tourism services. The

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production is disrupted in terms of the resource basis for tourism development being changed, while the consumption arena suffers direct and indirect impacts. Indirect impacts can be seen in the increase of expenses to reach certain destinations due to the rise of crude oil prices. This means that the affordability of a destination is less often understood in terms of spatial proximity of emitting and receptive tourist destinations, but in terms of economic expenses of travelling from the place of residence to a tourist destination. Collateral impacts of the above-mentioned trends on tourism consumption are observed in the fact that deterioration of the overall socio-economic situation in the countriessending tourists abroad produces a decrease in travelling of their citizens to foreign countries. The fact that a stable and developed economy is not possible without a protected environment, has to be kept in mind, thus taking global changes of the environment into consideration when estimates about trends in tourism development are being made[5].

Anticipating the future of tourism is a very demanding and complex task which, undoubtedly, has its purpose and significance. From a business point of view, research and estimates of the future enable companies to predict new business environments and therefore adapt their strategies for development. Taking destinations into consideration, reflections on the future enable evaluation of the ways to maintain or improve the quality and market image of destinations, as well as to direct future developments toward achieving these goals. It is especially important that predictions and estimates of the future add to a more comprehensive contemplation of 'wild card' events and social trends, which simultaneously offer opportunities and present challenges. What presents a threat to one destination or to one companycould be an opportunity for development for another destination or another company[6]. Likewise, 'wild card' events at a local level might cause serious damages to the tourism system of that area, but at the same time they might bring benefits to other local communities in which tourism will flourish.

Increase of the International Tourism and Deepening of the Global Environmental Changes

Estimates by the World Tourism Organization indicate that international tourist arrivals will reach almost US $ 1.6 billion by 2020[7]. Realization of these estimates means that the volume of international tourism would exhibit a dynamic growth rate, and that the increase of air traffic will report a multifold rise compared to land traffic. Two leading aircraft manufacturers in the world – Boeing[8] and Airbus[9], make the same argument, claiming that the volume of air traffic will grow at a rapid rate in the next two decades, with an average growth rate of 5.0–5.2% by 2022. By the same year, the global air fleet should increase by 90% and reach the number of 20,500 planes equipped with 4.5 million seats, which will be twice as many as the number at the beginning of the 21st century[9]. Boeing also anticipates that market competition will become more fierce, as the result of continuous economic growth of the key markets, and further deregulation of the air traffic market will result in an increase in the number of airline companies, lower tariffs, strengthening of business integrations and foundation of networks. As a result of the increase of the number of planes in operation and the increase of demand for travelling, the average flight length in the world would rise from 1,437 km in 2002 to 1,516 km in 2022[9]. Besides, it is expected that the major part of the air fleet (60%), which was deployed in 2003, will also be in operation in 2023[8].

Although on the one hand, intensive development of international tourism and significant opportunities to reduce poverty through tourism activities are predicted, on the other hand, anxiety rises because of the negative implications of unpredictable political events, costs and availability of energy resources, and global changes of the environment on the tourist industry[10]. Having in mind that despite a considerable increase of the air fleet, by the beginning of the third decade of the 21st century, the older types of planes whose fuel consumption is still high, will be also deployed, it is indisputable that a high growth of global tourism will be achieved at the cost of environment destruction[6,11]. It is important to emphasize that within a complex of global climate changes, global warming is considered as the most dangerous change, and whose negative impacts will emerge sooner than it was considered. In this respect, in the Fourth Report of the Intergovernmental Panel on Climate Changes, it is indicated that[10]:

- the incidence of hurricanes and storms will increase dramatically;
- sea levels will rise about half a meter during this century;
- snow cover will remain only at the highest mountains;
- desert areas will spread;
- ocean acidity will increase, that will lead to destruction of coral islands and coral reefs;
- deadly heat waves will become prevalent.

Undoubtedly, these changes will destroy significantly the attractiveness of many destinations, thus presenting a problem already being discussed in business and economic circles. For instance, the British travel insurance company Churchill has already devoted two of its reports to analyzing the future of tourist destinations. In Gupta's report[12] it is indicated that due to climate changes and overwhelming number of visitors, certain famous and attractive destinations are doomed to disappear after 2020. The following destinations are mentioned in the same document as well as the various reasons (climate, enormous increase of visitors, beach erosion, etc.) why they are considered to be endangered:

- Puerto de Mazarron (south-east Spain): spread of malaria, increasing danger of torrential floods, heat waves and forest fires;
- Everglades (Florida): increasing danger of hurricanes;
- Athens in Greece: rise of summer temperatures;

- Crete in Greece: increase of high temperatures, increasing desertification and water scarcity;
- Cologne Cathedral: pollution of the environment;
- Dalmatian coastline: increase of the number of visitors;
- Kathmandu Valley (Nepal): increase of the number of visitors;
- Great Barrier Reef (Queensland, Australia): increase of the number of visitors;
- Amalfi and Toscana region (Italy): increase of heat waves;
- Goa (India): increase of beach erosions;

Taj Coral Reef (the Maldives): increase of beach erosion and coral reef degradation.

Citing the above examples, the authors of this report indicate the existence of conflicts between the groups which are focused on preservation of the environment and those who have commercial interests when the protection of the Great Barrier Reef in Australia is in question. Bearing in mind that the Great Barrier Reef attracts 1.8 million visitors a year and brings 5 billion Australian dollars revenue, it is not surprising that the Queensland Tourism Industry Council (QTIC) has rejected a proposition to close parts of the Great Barrier Reef for tourist visits. At the same time, this does not mean that tour operators and other companies involved in tourism business are not worried about the future of the Great Barrier Reef because of the global warming which can induce multifold negative effects on their business activities[13], such as:

- vanishing / disappearance of the Great Barrier Reef;
- negative publicity around the world;
- a drastic decrease in the number of visits.

With the aim to alleviate these and some other negative impacts, in recent years tour operators have directed their efforts toward improving marketing activities and strengthening relationships with the media and the public, so as to maintain a sufficient number of tourist visits and the satisfaction level of tourists. However, these activities can affect the expectations and satisfaction of tourists, but they cannot solve the problem of climate changes.

Winter Tourism

Problems that coastal areas face, such as stability and long-term tourism development, can also be detected at other destinations whose attraction is based on certain elements of nature. Alpine and high mountain destinations are especially vulnerable[14,6]. Susceptibility of the Alps to climate changes is particularly connected with the fact that this European mountain eco-system has registered the rise of temperatures more than three times as high as the global average. The years of 1994, 2000, 2002 and 2003 were the warmest in the Alps over the last 500 years and climate model projections indicate that even greater changes might take place in upcoming decades, during which the amount of snow at the low altitudes of the Alps will decrease and the melting of glaciers will continue. From 1850 to 1980 the glacier areas in this mountain macro region decreased by 30–40%, and by some 20% more since 1980. The estimates show that by 2050 around 75% of glacier areas will disappear, while in 2100 there will not be any glaciers will exist in the Alps[15]. This gloomy scenario has prompted some people to think that 'grandchildren of today's skiers would see the pictures of white mountain tops in the Swiss Alps only on the packaging of chocolates and other sweets'. This scenario is especially inconvenient for the tourism industry, if we consider the fact that the Alps attract 60 – 80 million tourists annually, who spend around 160 million ski days in the resorts of Austria, France, Germany and Switzerland[15].

By the end of 2006, about 90% of medium-sized and big ski resorts in the Alps had a usual snow cover duration of a 100 days per year. However, climate changes in the years to come may bring a decrease in the number of 'reliable and high quality ski resorts', with the German Alps facing the biggest threat because of the fact that the increase of just 1°C of average annual temperature might lead to a decrease in a number of natural and high-quality ski resorts of 60% in comparison to the present situation. In the event of a worst-case scenario that predicts the rise of average annual temperature of 4°C, natural ski resorts of reliable quality would not exist in Germany anymore[15].

Tourism business entrepreneurs have already started to adjust to the idea of raising snow limits to higher elevations and shortening of the winter season, even though most of them still rely on using certain technologies rather than on changingbehaviour patterns. Artificial snow-making is a predominant adaptation strategy and in terms of costs it is affordable for tourism suppliers, ski resort management and other stakeholders involved in the winter sport tourism. Nevertheless, this strategy increases the need for water and energy supplies, thus degrading eco-systems and landscapes. The costs of artificial snow-making will show a non-linear increase with the air temperature rise, making this solution unsustainable if the temperature exceeds a certain limit. Sophisticated modification of ski slopes can compensate for the scarcity of snow needed for skiing at the maximum depth of 10 to 20 centimetres[16]. It is obvious that this strategy can not be efficient in case of significant decrease or disappearance of snow cover.

In their efforts to confront the dangers of climate changes for winter sport tourism, municipal officials in the popular Swiss ski resort of Andermatt have decided to experiment with high-technology cover in order to protect the Gurschen glacier from melting[14]. However, the surface that can be covered and protected in this way is very limited. By purchasing insurance (a measure recently practised), financial losses can be reduced in situations when there is a snow deficit during winter period, but nothing can be achieved to prevent the long-term trend of winters becoming warmer[10].

It can be concluded that market factors condition how previously mentioned and some other strategies of adaptation focus more on maintaining the *status quo* rather than on a transition which is financially and politically more demanding in the short term. On the contrary, po-

tential to change behaviour patterns of tourism demand are substantial, and the insurance company[12] has emphasized that the effects of climate changes will bring about various types of ski tourism travels (at least where British tourists are considered), so that we could expect that by 2050 the following ski destinations to become the most popular:

- Valle Nevado, Chile;
- Mt. Xiling, China;
- Mt. Hutt, New Zealand;
- Mt. Hermon, Israel;
- Manali, India;
- Oukaimeden, Morocco;
- Tiffindell, South Africa.

A survey conducted among the British ski tourists in 2006 by the previously mentioned insurance company[12] shows that almost a half (48%) of the participants satisfy their skiing needs at the traditional Alpine destinations (France, Switzerland, Austria, Italy). Additionally, almost 96% of the interviewees stated that they did not know about the ski destinations in Israel and Morocco and half of them reported they may possibly visit these destinations in the future.

Not so long ago, winter sport and mountain tourism were justifiably considered to have a relatively short movement radius due to the dispersion of distinctive tourist attractions. Nevertheless, climate changes can modify the prevailing attitudes because people will go skiing to dispersed and remote destinations in relation to the main European emitive regions of demand.

Predictions and Responses to Changes

Generally speaking, air traffic is the key factor for the need to developenvironmentally sustainable tourism due to the fact that transportation is accountable for 75–90% of gas emissions that produce the 'green house effect' in tourism industry[11]. As a transportation mode in tourism industry, air traffic accounts for about 75% in the emission of greenhouse gases[6]. However, the contribution of air traffic in the emission of these gases is not equally distributed around the world since wealthier countries, which are, at the same time, the leading emitive regions for producing tourism demand, contribute in higher extent to such emissions. For instance, in Great Britain, the share of air traffic in the overall emission of greenhouse gases in 2000 accounted for 15%, while the estimates predict that by 2050 its share will rise to 66%[10], because of expected rise of air traffic in For these reasons, many environmental non-government organizations think that airline companies should pay fuel taxes as a form of compensation for causing environmental pollution. Members of the organization 'Friends of the Earth' claim that the imposition of air fuel taxes will lead to an increase in air travel expenses. In turn, they argue, this will lead to a reduction in travel demand, fewer flights and less emissions of carbon dioxide and other harmful gases. According to Friends of the Earth, many air routes across Europe can be replaced with high-speed trains. This is confirmed by the following example: when travelling by train from London to Edinburgh, 11.9 kg of carbon dioxide per passenger is emitted, when traveling the same distance by airplane, 96.4 kg of carbon dioxide per passenger is emitted[17].

The responses of the travel and tourism industry spokespeople to the above mentioned reporst and claims of environmental organizations are negative (primarily because of the need to protect their own financial interests). The industry claims that air traffic has immense economic relevance and accounts for 4.5%, both directly and indirectly, in the global GDP. Therefore, the airline industry argues,its further development should not be restrained by the new financial burdens[18]. Soon after the G 8 summit in Scotland took place in 2005, a group of tourism and traffic associations Pacific Asia Travel Association (PATA), The International Air Transport Association (IATA), Airports Council International (ACI), etc., resisted to idea to impose air traffic taxes of any kind, proposed for the purpose of providing financial means to help develop poor countries. This attitude is explained by the fact that any additional tax will diminish the results of business activities of airline companies and reduce traffic and tourism demand, whereas it is precisely the tourism industry which is the key stimulus for the economic development of many poor countries around the world. 'Airline companies, airports and air traffic overall, are catalysts for economic development in the world, including the non-developed parts of the world (creating jobs, fostering new forms of entrepreneurship, connecting traffic, hospitality and trade...) and, therefore, other mechanisms to aid the poorest regions, should be developed'. These are the words of one executives of IATA and they reflect a unanimous point of view of airline companies towards the initiative to introduce air traffic taxes[10].

A similar negative reaction of airline companies responded to the idea of initiating a pilot project, by the governments of France and Italy, through which the imposed taxes on air tickets would support the realization of particular developmental projects in poor African countries, where negative effects of climate changes are the most evident. Expressing their dissatisfaction with such ideas, spokespeople of airline companies accentuated that it would be more justified to impose these taxes on oil companies for example, British Petroleum or Shell which generate record profits, or on bus service providers that also pollute the environment[10]. Furthermore,data demonstrate that air traffic exceeds all other modes of transportation in terms of emission of greenhouse gases, and that African countries suffer the greatest consequences of global warming.

Regardless of the expressed anxiety over the scale of climate changes, it is difficult to predict precisely the impacts of these changes on tourism. What seems to be most unlikely at the moment is that climate changes will cause linear changes in the behaviour of tourists (i.e. that temperature changes can directly and entirely influence the way tourists choose their destinations). This claim can be supported by the facts that, apart

from temperature, the relationship between tourism and climate is determined by some other climatic factors and elements, such as rain, storms, humidity, insulation, wind intensity, air pollution, and the role of available information on weather conditions in travel decision-making[6,19]. Furthermore, the choice of destination depends on the impact of non-climatic factors, such as the stay expenses, affordability, destination perception and image, safety, amount of money and time available and needed for a particular tourist destination.

Even though some climate changes can bring about changes in tourist behaviour, it does not necessarily mean that the overall number of visits of a certain destination will decrease. Tourists might decide to choose another period of the year to visit a particular destination instead of travelling to a new destination. Accordingly, many outcomes depend on the elasticity of demand typical for different forms of tourism business. Travel and holiday-making are characterised by maximum flexibility in terms of choice of destination and time of travelling, whereas degree of flexibility is much lower when business trips and visits to relatives are in question. It should be borne in mind that some destinations might benefit from climate changes. When it comes to winter sport tourism, destinations and ski resorts which will have a satisfactory depth of snow cover over a sufficient duration, will garner bigger revenues. Also, new mountain destinations will emerge and offer summer recreational activities (horse riding, mountain biking, walking tours, trekking and the like). Likewise, even in the case of a dramatic decrease/melting of ice on the Arctic, which will endanger the survival of endemic species (e.g. polar bears), there will be certain advantages connected to significant tourism development in the Arctic. In short, the North Pole will become more easily accessible to tourists due to climate changes[21].

Tourism and Crude Oil

The opinions that the world today is at the beginning of the new stage known as the 'Peak Oil' are more evident than ever. This stage signifies that humankind has consumed half of the available crude oil reserves and that its production is at the highest level[21–23]. From that moment on, the production level of crude oil begins to fall, while, simultaneously, the trend of constant rise of crude oil prices continues, as well as the increase of production of the alternative fuels. The decline in production, together with the shortages of crude oil and an increase in prices, have long-term negative consequences on all human activities, including international mass tourism. The expansion of mass tourism in the second half of the 20th century was boosted by cheap crude oil, as the main source of energy.

In accordance with the aforementioned, apart from the climate changes and other global environmental changes, grave problems that tourism faces today, and will face particularly in the future, are connected to the rise of costs of energy consumption and its availability. According to the Energy Committee at the Royal Swedish Academy of Sciences[24], humankind is entering a period of great challenges in terms of energy supply, due to limited reserves of conventional crude oil and problems in its production. About 40% of the global energy needs are satisfied by the consumption of crude oil, while 57% of it is used to produce energy in the traffic sector. The Committee claims that in the years to come, additional measures need to be introduced and efforts stepped up, in order to provide a continuous supply of liquid fuels, particularly for the traffic needs. The use of fuel will be more efficient in air traffic in the years to come, due to technological innovations which will enable the fall of energy consumption per passenger – kilometre. Nevertheless, technological advances are limited because the overall increase of flight hours resulting from a greater number of flights and longer flight times, will mean that fuel consumption will also increase, as well as the emission of harmful gases into the atmosphere[11]. In the long-term perspective, completely new energy solutions are needed, if we intend to decrease of conventional crude oil resources (key problems of crude oil supply are presented in the table below).

Experience and practice show that not even one source of energy can adequately replace conventional crude oil. Whatever alternative fuel is used, it can only partially and at minimal degree solve the problem of depletion of conventional crude oil resources. None of the energy sources that can be used for traffic, offers a sufficient amount of energy per unit mass. Nuclear energy is not only dangerous due to of potential industrial accidents, natural disasters (the accident at nuclear power plant in Fukushima, in Japan of March 2011 proves this claim) or terrorist attacks. Nuclear energy can only partially help in overcoming energy shortage in the next few decades. It also produces enormous amounts of hazardous waste, for which humankind will need thousands of years to dispose of. Alternative sources of energy have serious drawbacks if we take into account some of the following factors[24]:

- extensive environmental pollution (tar sands, oil shale);
- forming of hazardous waste (nuclear energy);
- the need for technological advances and development as a precondition for efficient production of energy (solar energy, wind energy, wave energy, geothermal energy);
- these types of energy can be used only for production of public electricity (coal, hydro power plants, nuclear power plants, geothermal sources, wave power, ocean thermal power);
- these types of energy can be produced at finite locations (tar sends, oil shale, waves, wind, geothermal energy).

In the near future, the effects of the increase of crude oil prices on tourism will not be significantly evident. The World Tourism Organization (UNWTO) indicates that the impact of the rise of crude oil prices on international tourism, have been limited so far. The effect of the growth of crude oil prices, for example in 2005, on the increase of costs of international travels amounted to somewhat below 5%[7]. However, if domestic travels are considered as well, the overall effects of the increase of crude oil prices on tourism and tourist behaviour, are even

more evident. According to a survey conducted in Australia in 2006, the rise of crude oil prices was a significant factor in planning travels in households with the lowest incomes (less than 50 thousand Australian dollars per year), and almost a marginal factor in the social classes with the highest income (over 100 thousand Australian dollars *per* year)[5].

Key conclusions about the investigation of the impacts of climate changes and the increase of crude oil prices are as follows people will continue to travel, but the degree of attractiveness and accessibility of particular destinations in comparison to others, will change. This does not mean the end of tourism; quite the contrary, it will present new opportunities for development of destinations and tourism business. In such dynamic surroundings, offering high quality services, quality experiences as well as sophisticated marketing, will become even more prominent than it is today. Destinations and companies will undoubtedly face more serious demands to understand and consider key elements of business surroundings correctly, including changes in consumers' lifestyles and the introduction of new regulatory mechanisms by governments in order to manage mobility of people in the time of increased anxiety about energy security and environment protection[26].

In predicting development trends of tourism in the 21st century, some authors claim that international mass tourism 'has come and will go away'[21]. This 'universal' phenomenon which emerged soon after the end of the World War II, exploited the advantages of technological development (jet plane construction, cheap energy sources) and exhibited spectacular growth in the period after 1960. However, the decrease of crude oil resources and overall instability in energy supply will take humankind into a post-energy era that is marked by the scarcity of energy fuels, as well as higher prices for goods and services. Accordingly, humankind has to introduce dramatic changes in order to become less dependent on securing huge amounts of cheap energy. Patterns of behaviour, manners and ways of organizing lifestyles must be adapted to match the situation in which energy sources are expensive and scarce.

In accordance with the aforementioned, tourism will have to change considerably, and adjust to new social conditions and limits that it faces. Therefore, new tourism will get a new definition that can be described as 'return to the future'. Average travels will be characterized as relatively local, which means that they will be shorter (road, rail and water traffic will dominate) and more modest accommodation facilities will be used, without lavish attractions and activities. A 'golden era' of more economical tourism of a new type is coming, when hospitality and interpersonal communication will take a central role. We should start to plan activities now so that transition toward new global tourism might be relatively easy and comfortable[27].

TABLE 1
PRODUCTION OF OIL IN THE WORLD[25]*

Year	Production (million barrels *per* day)
2005.	73,81
2006.	73,54
2007.	73,27
2008.	74,48

*Stagnation in the production of conventional crude oil, which can be seen in the table, exhibits disparity with a high demand for this energy sourse around the world, especially in China and India, which register enormous consumption at one hand, but achieve high economic growth, with the annual growth rate at about 9 % on the other. Besides, maintaining a high level of economic development in powerful economies that grow at a slower pace (Europe and USA) also means a high demand for crude oil

New Social Conditions and New Tourism

Undoubtedly, humankind has to adjust to a new macro environment, in which there will not be huge supplies of cheap energy, on the basis of which industrial civilization developed expansively. People have to reduce drastically their needs for energy. The future society will be marked by concentration/convergence of local communities, which will become independent and self-sufficient, as far as objectively possible, with their economies based on agriculture accompanied by local industries, trade and other service industries. Decentralized society, with local and self-sufficient communities, will have as its consequence a drastic reduction in the number of leisure and business travels, as well as activities connected to packing, loading, unloading and transportation of goods, which will all result in reduction of energy consumption[27].

A locally organized and mostly self-sufficient community will not be able to offer a relatively high standard of living appropriate for the 21st century, unless people are ready to make further changes in lifestyles and everyday behaviours. New social conditions demand alternatives for those activities that once required an enormous consumption of energy. A high quality lifestyle can be obtained in post-crude oil era, only if some essential changes of life goals and the value system of humanity take place. A way of life in complete harmony with the natural principles of the environment requires that a significant proportion of the population will be healthier and will not need as extensive a medical supervision as they do today. The emphasis will be on solidarity and cooperation instead of competition and fighting, since new, low-energy and self-sufficient local communities can only function successfully within non-conflict social surroundings. The issue whether we want to take this new path and change the way we live or not, is irrelevant, since there is no alternative.

To aknowledge a final depletion of crude oil reserves simultaneously means to announce the end of industrial civilization and the way of life that we know today. Classical ideas and principles of economic growth, whose starting point lies in the availability of cheap crude oil and other sources of energy, will soon become essentially historical artifacts. A completely novel approach to development and a new way of thinking are necessary in order to establish sustainable way of a high quality of standard of living in this new society.

TABLE 2
KEY ISSUES ASSOCIATED WITH OIL SUPPLY (ADAPTED FROM[5,24])

Shortage of oil	The global demand for oil is presently growing by almost 2% *per* year with consumption at the end of 2005 set at 84 million barrels *per* day (1 barrel = l59 litres) or 30 billion barrels *per* year. Finding additional supplies is increasingly problematical since most major oil fields are well matured. Already 54 out of the 65 most important oil-producing countries have declining production and the rate of discoveries of new reserves is less than a third of the rate of consumption as of the end of 2005
Reserves of conventional oil	A conservative estimate of discovered oil reserves and undiscovered recoverable oil resources is about 1200 billion barrels, according to the US Geological Survey; this includes 300 billion barrels in the world's, as yet unexplored, sedimentary basins
Unconventional oil resources	There are very large hydrocarbon resources, so-called unconventional oil, including gas, heavy oil and tar sands, oil shale and coal. Problems with unconventional resources include long lead times in development, environment, environmental impacts and the availability of water and natural gas for the production process
Immediate action on supplies	Improvements in the search for and recovery of conventional oil as well as the production rate of unconventional oil are required to avoid price spikes, which would lead to instability of the world economy over the next few decades
Liquid fuels and the transport system	Oil supply is a severe liquid fuels problem and less of a general energy supply problem; 57% of the world's oil is consumed in the transport sector. Alternatives need to be developed to oil in the transport sector otherwise not only will there be increased oil prices but also increased competition between transport and other oil users
Economic considerations	In the long run, the price of crude oil will be determined by the price of substitutes. Continued high oil price are anticipated as long as the pressure from the expanding Asian economies is maintained (primarily China and India)
Environmental concerns	Unconventional oil will significantly extend the length of the hydrocarbon era and its subsequent contributions to GHG ('Green House Gasses') emissions. Constraints similar to those imposed on other fossil fuels will be necessary and provide major challenges for industry

Tourism as a form of human activity has always functioned and will continue to function within the framework of overall social conditions. For instance, the economic growth obtained over the last fifty years on the basis of cheap energy, created a high-tech consumer society characterized by various services, welfare benefits, paid holidays, curiosity and urge for exotic adventure. This way of living was strongly encouraged by advances in informatics and the entertainment industry. In the future, many of these social features will be reduced and transformed into new and more modest activities and attractions due to the decrease in global wealth and increase in prices.

In accordance with the aforementioned, tourism will have to be modified so as to adjust to the new social context, that is, to a new way of living and restrictions imposed by the changed social surroundings. Combined trends of crude oil scarcity and its price increasewill cause negative effects on many human activities, among which the most effected will be those that depend on the supply of huge amounts of energy. This means that our present way of living, which is dependent on the consumption of immense amounts of energy, will have to be altered. Therefore, the way tourism has developed so far, with its dependence on the use of huge amounts of energy, will be strongly disrupted in the post-energy era. Demands of tourism for energy consumption, in particular crude oil, will have to be considerably more modest in the future. Suggestions for the change of tourists' behaviour under the altered conditions of their social surroundings are proposed by various authors[28,29,27,30]. These authors, based upon their research, observe the close relationship between tourists' spending and behaviour with the prices of crude oil and oil derivates.

Which specific and crucial changes will tourism face? Which factors condition those changes and can they be anticipated now? Definitely, the most important ones can be specified. This includes those that derive from realistic expectations which indicate that energy sources will be in short supply and expensive, and which are not a consequence of potential dramatic geopolitical conflicts and natural disasters (if such conflicts or disasters occur, the tourist industry will face even more severe problems). In such a situation context, it is realistic to expect that the following factors will initiate dramatic changes in the field of tourism business:

Every type of tourism that demands huge amounts of energy will be very expensive and will serve a select clientele. Despite the fact that in the future there will be extremely lavish attractions and services intended for exceptionally rich individuals, who will continue to use air traffic for their travels,for most people travelling by plane and luxurious accommodation and catering facilities will not be affordable.

- Travelling by plane, which demands consumption of huge amounts of energy, will be reduced to a great extent due to high expenses, and will be affordable only to individuals with the highest financial means.
- The majority of people will travel using other modes of transportation, such as rail, bus and ship transport for intercontinental travel, although the prices of maritime traffic will be rather high as well.
- Demand for local journeys will increase. Most people will spend their holidays in swim or ski centres near their place of residence.
- Popular tourism will have to be more modest, less luxurious and based on local journeys, which will not require huge expenses.

- Highly commercialized mass tourism will face a drastic decrease, while local travels and accompanying manufacturing and service industries will exhibit aconsiderable increase.
- Generally speaking, people will travel less and will be satisfied with more modest and less expensive touristic offerings.

During last two decades people have been more mobile than ever before, particularly in terms of long-distance travel. Many believe that they have the right to this degree of mobility, but at the same time, there are indications that this kind of mobility will become increasingly constrained in the future. Nevertheless, as people themselves create their future, it should not be looked upon as an eternal picture carved in stone. Challenges and risks that await us in the future may, to some extent, become a source of new development opportunities.

REFERENCES

1. PETERSEN JL, Out of the Blue: How to Anticipate the Big Future (Madison Books, Boston, 1999). — 2. BARBER MP, Journal of Future Studies, 11 (2006) 87. — 3. HALL CM, Tourism: Rethinking the Social Science of Mobility (Prentice Hall, Harlow, 2005). — 4. WTTC, World Travel & Tourism Council, Progress and Priorities 2007/8 (WTTC, London, 2007). — 5. COLES T, HALL M, International Business and Tourism (Routledge, London, 2008). — 6. GOSSLING S, HALL CM, Tourism and Global Environmental Change (Routledge, London, 2006). — 7. UNWTO, The Impact of Rising Oil Prices on International Tourism, Special Report no. 26 (UNWTO, Madrid, 2006). — 8. BOEING, Current Market Outlook 2003 (Boeing Commercial Airplanes Seatle, Marketing, 2003). — 9. AIRBUS, Global Market Forecast 2003–2022 (Airbus S.A.S, Blagnac, 2003). — 10. COOPER C, HALL CM, Contemporary Tourism – an International Approach (Butterworth-Heinemann, Oxford, 2008). — 11. PEETERS P, GOSSLING S, BECKEN S (2007), International Journal of Innovation and Sustainable Development 2 (2007) 184. — 12. CHURCILL INSURANCE, The Future of Skiing: France and Austria make way for Marocco and Israel (Churcill Insurance, 2006). — 13. GUPTA S, Queensland vehemently quashes concerns pertaining to the Great Barrier Reef (http://www. travelwireness.com/cgi-script/csArticles/. Accessed the 12 October 2009). — 14. BENISTON M, Climatic Change 59 (2003) 5. DOI: 10.1023/A: 1024458411589. — 15. AGRAWALA S, Climate Change in European Alps: Adapting Winter Tourism and Natural Hazard Management (OECD, Paris, 2007). — 16. UNEP, Industry and Environment, 17 (1994) 54. — 17. FRIENDS OF THE EARTH, Friends of the Earth's Annual Review 2009–2010. Accessed the 4th April of 2011). Available from: URL: Http:// www.foe.co.uk/resource/reports/annual_review_0910.pdf. — 18. ENVIRONMENTAL TRANSPORT ASSOCIATION, Recession Revives 1950s Holiday Habits. Accessed the 21st of February 2010. Available from: URL: http://www.eta.co.uk/ Recession-Revives-1950s-Holiday-Habits/node/ 11888. — 19. GOELDNER C, RITCHIE J, Tourism: Principles, Practices, Philosophies, 10th ed., (Wiley, Hoboken, 2006). — 20. ARCTIC CLIMATE IMPACT ASSESSMENT, Impacts of Warming Arctic (Cambridge University Press, Cambridge, 2004). — 21. LEIGH J, The Open Geography Journal 1 (2008) 15. DOI: 10.2174/18749232008 010 10015. 22. RICHARDS B, History of Crude Prices (Http://www. ioga.com/. Accessed the 4th of October 2010). — 23. WILLIAMS J, Oil Price History and Analysis (Http://www. wtrg.com/prices.htm. Accessed the 19th of July 2009). — 24. ENERGY COMMITTEE AT THE ROYAL SWEDISH ACADEMY OF SCIENCES, Statements on Oil (Energy Committee at the Royal Swedish Academy of Sciences, Stockholm, 2005). — 25. US ENERGY INFORMATION ADMINISTRATION, Annual Energy Outlook. Accessed the 5th May on 2011. Available from: URL: http://www.eia.doe.gov/forecasts/aeo/pdf/0383% 282011%29.pdf. — 26. RUSSO A, SEGRE G., Annals of Tourism Research, 36 (2009) 587. DOI: 10.1016/j.annals.2009.2004.002. — 27. LEIGH J, Tourismos, 6 (2011) 165. — 28. STEINNES D, Journal of Travel Research, 7 (1998) 21. — 29. YEOMAN I, Tomorrows's Tourist: Scenarios and Trends (Butterworth-Heinemann, Oxford, 2008). — 30. JOVICIC D, Coll Antropol, 35 (2011) 599.

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UTJECAJ EKOLOŠKOG I ENERGETSKOG MAKRO OKRUŽENJA NA RAZVITAK TURIZMA U 21. STOLJEĆU18

SAŽETAK

Pokušaji predviđanja budućnosti turizma, predstavljaju složeno pitanje. Ipak, to ne znači da ovakvi pokušaji nemaju svoju vrijednost i značenje. S motrišta biznisa, ispitivanje i procjena budućnosti turizma omogućava kompanijama da predvide nove uvjete poslovanja i prilagode tome svoje strategije razvitka. Iz perspektive turističkih destinacija, refleksija budućnosti omogućava razmatranje načina kako održati ili popraviti kvalitetu destinacija. Ovo istraživanje je fokusirano na analizi utjecaja energetskog i ekološkog makro-okruženja na trendove razvitka turizma u 21 stoljeću. Masovni turizam je ostvarivao veliki napredak na temelju dostupnosti znatnih količina jeftine energije, ali takav trend će se vjerojatno promijeniti, glede svijeta koji se približava »naftnom vrhuncu«. To podrazumijeva oskudicu i visoke cijene naftnog goriva, što će promijeniti mnoge ljudske aktivnosti, uključujući turizam. Osnovu zdrave i prosperitetne ekonomije čini zdrava i očuvana životna sredina. Zbog toga, utjecaji globalnih promjena životne sredine imaju posebno značenje u razmatranju budućih trendova turizma. U predstojećem tranzicicijskom razdoblju turizam mora pretrpjeti krucijalne izmjene, kako bi se prilagodio novoj realnosti post-energetskog svijeta koji dodatno pogađaju globalno otopljavanje i druge ekološke promjene.