

TOURISM ADAPTATION PORTFOLIO FOSTERING REGIONAL SUSTAINABILITY

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The regional, local level is exceptionally important in sustainability adaptation, as local communities are often able to adapt more flexibly to changes in the natural environment. Social, economic and environmental sustainability can be enhanced by adaptation approaches. Tourism industry needs to adapt to changing environmental and especially climatic factors. While the impact of climate change on tourism is a scientifically verified fact, the relevant research literature so far has put little emphasis on the supply aspects that typically tend to be local and small scale. The results of this analysis may contribute to fashion adaptation and mitigation portfolios in tourism that could provide local decision makers with valuable input for combating the effects of climate change at the local level in accordance with the aims of regional sustainability.

Keywords: sustainable development, adaptation types in tourism, Hungary

Introduction

Adaptation in the context of human dimensions of global change usually refers to a process, action, outcome in a system in order for the system to better cope with, manage or adjust to some changing condition, hazard, risk or opportunity (Smit & Wandel, 2006). The definition is approached from a broader aspect based on time horizon, the effected measures of adaptation directed at enhancing the ability to tackle with external stress, so it means taking preparations for the future impacts of climate change. Beside the anticipatory behaviour the adaptation does include minimising or reducing the unavoidable consequences of the altering process at the present (UKCIP, 2009).

Adaptive capacity can be examined at different levels, from national (Yohe & Tol, 2002; Haddad, 2005; Greiving et al., 2009; Westerhoff et al., 2011) to local. Adaptation decisions are context specific and the adaptation decisions are often made at the local level, thus the regional and local scales are particularly relevant for assessment of adaptive capacity (Storbjörk, 2007; Greiving et al., 2009; Engle & Lemos, 2010) as well as adaptation.

The number of National Adaptation Strategies (NAS) in Europe is increasing since 2004, when Finland's National Strategy for Adaptation to Climate Change was developed. Examinations indicate a gap between local, bottom up adaptation and national adaptation strategies (EEA Report, 2012). As the Finnish example shows local and regional adaptation strategies and measures can develop independently with very little linkages to national adaptation strategies. In the case of the Finnish NAS, the national focus was diminished the regional and local perspectives, making the strategy less interesting for local stakeholders (Juhola, 2010).

There are many issues that can lead to adaptation strategy development in European countries. It is possible to identify the key factors that play role in most countries, however the weight of these factors depends on the country (Swart et al., 2009). Among these driving forces are the international climate negotiations, EU policies, experience of extreme weather events, examples of adaptation actions in other countries, research on impacts and adaptation, assessment of the economic costs of inaction or recognition of the opportunities presented by climate change. The key facilitating factors can be also highlighted. These mean for instance the availability of knowledge, political will, good coordination between key actors and identification of compatibility with other policies. It can be stated that the key challenge for adaptation at the national level is to ensure it is integrated into sectoral policies (Swart et al., 2009). Our examination is focusing on a special sector also considering the aspect of regional sustainability.

The present EU Territorial Agenda 2020 (Hungarian EU presidency, 2011) notes that the different regional challenges highlight the territorial coordination of policies especially climate, energy, water management, agriculture, housing, tourism and transport (Szendrő, 2010). The adaptation of tourism industry is determined by the interdependency between the supply and demand sides, the possibilities of the actors are dissimilar while they are affecting each other as well (Figure 1). Climate change could inevitably alter the character of previous tourism resources generating new demand and product, or substitutes like the greening of the accommodations, other services or the wide range of extra insurance related to the increasing prevalence of weather extreme events.

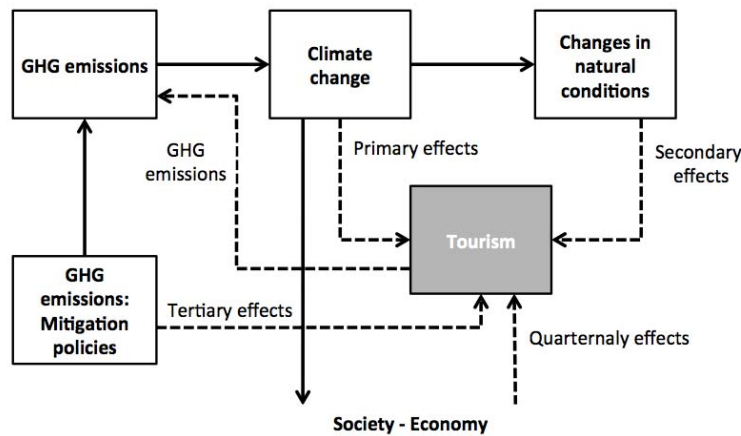


Figure 1. A model for analysing the relations between climate change, adaptation and tourism. Figure based on All & Høyer (2005).

It can be stated that adaptation process in the tourism industry is arising from a rational business response above all (Weaver, 2011). So it is not surprising that a distinction should be made according to the quality and environmental attributes as well. The specific set of adaptation form a highly heterogeneous group. The related determinants are the human resources, the improvement of raising awareness, technological and technical innovations, the proper selection of management tools, and its compliance with the external regulatory environment. All of these assume the flow of necessary information in a direct and an indirect way, the horizontal and vertical integration at regional and national levels, as well as the synthesis of individual adaptation's actions to a larger community system.



Figure 2. Adaptive capacity of tourism. Figure based on UNWTO (2008).

The capacity of adaptation to climate change is thought to vary between the sub-sectors of the industry; the most important difference is the relative capacity of the available resources (UNWTO, 2008) (Figure 2). While tourists have the greatest capacity with relative freedom to avoid destinations impacted by climate

change especially through their time, financial factors, knowledge and other flexible resource, but the service sphere does dispose moderate options to harmonise their activity to the changing conditions. For example large tour operators, who do not own the infrastructure, are in a better position to manage and gear their business to the new possibilities. The above mentioned group keep in touch directly with the clients, they could get and provide information to influence travel choices and respond to the constantly altering demand abridging the time of reaction.

Research Area

The study site is located in Central Hungary, in the neighbourhood of the capital city, Budapest. The territory belongs to the famous tourism resort, the Danube Bend. Due to the location of the sample territory the effected region is the Budapest and Central Danube region. In the light of the above, it is no startling that the destination has a remarkable role in the international and domestic tourism as well. It frames a coherent region from economic and environmental aspects; therefore it is important to consider a unit in the case of long-term developments.

The investigated area is based on planning-statistical administration division. The chosen micro-region is situated on the right bank of Danube Bend. In terms of natural features this spot is unique, where the river and the mountains meet, which determined the local historical, social and economic pattern. The analysis covered 13 settlements within the most visited Szentendre micro-region from the eight micro-regions of Danube Bend. The relevance of the choice:

- on the one hand there is a strong economic dependency on tourism activities;
- on the other hand due to the heterogeneous natural environment and rich cultural background the local tourism activities are not focused in only one, narrow segment, but provide a large number of tourism-related services and various kinds of tourism based on miscellaneous resources.

The wide range of tourism activities in the micro-region is presented in the developed thematic matrix summary as Table 1 shows. The values of the table are combined, so it is important to emphasize singular features of the three tourism centers such as the ethnographic outdoor museum in Szentendre, the complex skiing, hiking, and religious centre of Pilisszentlászló together with the architectural heritage of Visegrád (the citadel and royal palace) beside the significant role of thermal tourism.

Table 1
 Tourism activities in the micro-region Szentendre

Tourism activities	Budakalás / Csobánka	Duna-bogdány	Kisoroszi	Leányfalu	Piliszent-kereszt, Dobogókő	Piliszent-lászló	Pocsmegyer	Pomáz	Szentendre	Sigetmonostor	Tahitótfalu	Visegrád
castle, residence, palace												
hall												
church												
ethnographic collection, folk building												
museum												
monument, statue												
religious sight												
local historical collection												
lake, fishing-lake												
port, dock												
beach, river phase												
indoor swimming-pool												
outdoor swimming-pool												
thermal bath												
study path, hiking routes												
national blue trail												
botanical garden												
equestrian park												
golf												
ski-track												
cycle track												
toboggan run, canopy												
conference hall												
festivals, thematic programs												
qualified private accommodations												
commercial accommodation												
hotels												
qualified open-air school												
travel agency												
TDM organizations												

Note. Table based on Danube Bend Sustainable Tourism Development Strategy (2006).

Table 2
Interrelations between sustainability and Tourism Adaptation Portfolio in the examined micro-region

TYPES OF ADAPTATION	ASPECTS OF SUSTAINABILITY			
	ENVIRONMENTAL	ECONOMIC	SOCIAL	ENVIRONMENTAL
MANAGEMENT	<ul style="list-style-type: none"> Risk management Climate and environmental factors in decision-making Preparedness for extreme events (drought – climate local strategies) 	<ul style="list-style-type: none"> Diversification product and market, substitute products and services, regional diversification in business operations Avoid of overcapacity, regional product branding, promoting regional quality labels 	<ul style="list-style-type: none"> Risk management Climate and environmental factors in decision-making Preparedness for extreme events (drought – climate local strategies) Action plan for the quick response Training actors/people within different companies, organisations Suggesting optional programs Informing tourists especially of the current weather conditions 	<ul style="list-style-type: none"> Stimulating the sectoral collaboration against the negative impacts Implementation of Awareness and Preparedness for Emergencies at the Local Level (APELLE). This specific risk mitigating method is elaborated by the DNEP
BEHAVIOUR	<ul style="list-style-type: none"> Reducing green away from impacted areas Up-to-date information about the weather, UV-protection 	<ul style="list-style-type: none"> Special incentives (force majeure events) Suggesting and organising optional programs Personnel/actor substitute options Priority of local products, resources in case of procurement 	<ul style="list-style-type: none"> Informing tourists especially of the current weather conditions 	<ul style="list-style-type: none"> Development of behaviour management strategies Behaviour management techniques for adaptation
EDUCATION	<ul style="list-style-type: none"> Information Promoting the concept of soft responsible tourism, inspiring the tourists for environmental-conscious behaviour Providing eco-labels Promoting an attitude codes to service providers (water, waste management and other environmental aspects) 	<ul style="list-style-type: none"> Promoting an attitude codes to service providers (water, waste management and other environmental aspects) Tourist Destination Management - organisations Reducing regional climate-footprint, becoming 	<ul style="list-style-type: none"> Campaign, education, training about the new technologies, adaptation measures Regional tourism forums Inspiring the tourists and the staff for environmental-conscious behaviour 	<ul style="list-style-type: none"> Stimulating the collaboration, promoting best practices
POLITICAL	<ul style="list-style-type: none"> Investigate climate aspects and the concept of national development strategies Corporate Social Responsibility 	<ul style="list-style-type: none"> Active according to the law and other economic regulatory environment Fitting to the new conditions of the insurance industry (force majeure events) 	<ul style="list-style-type: none"> Active according to the law and other economic regulatory environment Integrating climate aspects into the concept of regional tourism development strategies Mapping the legal and financial subvention system, assistance to the regional maintenance operation 	<ul style="list-style-type: none"> Coordinating the political lobby Mapping the legal and financial subvention system, assistance to the regional maintenance operations
TECHNOLOGICAL	<ul style="list-style-type: none"> Concept of "green" office Technical optimization of offices Energy collection and water recycling systems Shading techniques against sun and heat, (tree) planting schemes Energy efficient and saving techniques (building, technical instruments, heating-cooling) Waste management (separate collection, white waste and recycling) Renewable resources (solar and geothermal systems) Water recycling and saving systems as a significant water conservation Smart-making, smart grid Integrate communication and protection against extreme weather events on the internet sites (emergency hot lines, precipitation) 	<ul style="list-style-type: none"> Concept of "green" office Energy efficient and saving techniques Improvement of (condition of) the tourism infrastructure (alternative transport possibilities) 	<ul style="list-style-type: none"> Shading techniques Installation of fire-breaking points, Providing shelters against extreme weather events 	<ul style="list-style-type: none"> Concept of "green" office Technical optimization of offices Enable access of early warning systems and collaboration with meteorological service Developing common webinars with practical information on adaptation measures to actors, territorial (micro-regions) informative system

Note. Own work

Method

The primary focus of our adaptation analysis is tourism activities and services based on local endowment. At first, the status of the micro-region related to the climate change and tourism was examined in order to detect the adaptation capacity and furthermore the vulnerability appointing the pillars of the local adaptation policy. Then, the conducted survey aim to reveal participants' knowledge of and attitudes to climate change, and further willingness to change their behavior, because beside the fixed capacity of resources these factors considerably influence the ability of adaptation. In a final section, the research elaborated by a potential practical toolbox of local adaptation on the basis of the present conditions and possibilities together with the motivation of the selected stakeholders. The survey covered three major subjects, namely

- the degree of knowledge on climate change;
- the extent of awareness of the possible impacts of potential changes on tourism;
- the capacities to adapt to the expected consequences; the adaptation instruments they currently possess; the main barriers to adaptation.

The selection of the stakeholders is justified, on one hand, by their lower adaptive capacity due to activities based on local resources, and, on the other hand, by the importance of the tourism sector in mitigating the risks of local climate security challenges due to increased involvement. As it was mentioned before, the presented research was conducted as a part of the first nationwide survey of the attitudes of the targeted segment. We selected 45 tourism stakeholders of the Szentendre micro-region, in view of their geographic distribution and the presence of major attractions. The response rate was 51% (23 questionnaires were returned). The responses were complemented with in-depth interviews. The distribution of responses shows the geographic distribution of the tourism capacities of the region, since 47% of them was from Szentendre, followed by 26% from Visegrád.

Results and Conclusion

Environmental security is one of the keywords in adaptation to climate change, the main objectives being the mitigation of projected risks by different activities and the provision of a relatively stable economic and social environment. Environmental security cannot be achieved with one-time measures. Climate change is a phenomenon whose mechanisms shift again and again, so the adaptation to these is also required to be continuous. In order to outline regional adaptation possibilities and proposals for a combination of tools is pivotal to inevitably map the knowledge and expectations of the actors concerned, as well

as the current stage of adaptation. Based on our research so far we can affirm that the tourism stakeholders of the Szentendre micro-region are already involved in certain adaptation procedures at an individual level. Our questionnaire survey showed that certain environmentally conscious behaviours have a secondary effect of promoting sectoral adaptation.

The most relevant cornerstone in environmental and climate security is the human dimension, both at individual and community level. The adaptation of the tourism sector is particularly difficult because it is extremely interdependent with the activities of other economic sectors, and because it uses resources which not only serve tourism purposes. The sector has a high responsibility, since tourism provides the basic conditions for the living standard of the local population and yields a significant part of its income. Besides, it places a charge on critical and wider infrastructure, which is especially vulnerable to problems related to climate change. This latter statement was affirmed by our survey, since respondents judged the roles of the state administration, the general public and the business sector to be more or less of the same extent. However, the issue of climate change is still in the attention and awareness raising stage in the micro-region in question, therefore adaptation is rather spontaneous.

We developed a sustainability based Tourism Adaptation Portfolio for the Szentendre micro-region in order to promote an efficient and sustainable adaptation (Table 2). It presents the potential tools for the different dimensions of sustainability according to the five types of adaptation (management, behaviour, education, political, technological). Beyond specific consideration for the characteristics of individual activity profiles, some universal, general procedures also appear. Some of the listed techniques are already present, but very often only as isolated activities, which are neither in accordance with the individual possibilities, nor are they part of a conscious, planned operation with an environmental point of view. It is pivotal that the organisations concerned recognize that it is their utmost interest to use and coordinate these tools in order to make their economic operation sustainable on the long run, safe and resistant to external environmental stress. The toolbox of the Regional Adaptation Portfolio might help other regions to find a way of practical adaptation.

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