

Better water, better destination: the importance of healthy water in sustainable destination development

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Abstract: Clean waters are significant for everyday life as well as for the tourism industry. This article reports on research that reviews some qualitative viewpoints on the topic of water in the Municipality of Brežice, Slovenia, where the tourism sector is by far the most important economic sector. Despite the fact that, according to the official records of the water safety measurements, drinking water is safe and clean in the municipality, 46 per cent of the respondents are worried or very worried about the possible pollution of water due to the tourism infrastructure in the municipality. The Municipality of Brežice is a typical rural area with emphasised sustainable tourism development in the tourism strategy. In the light of sustainable destination development, it is thus of great importance that the majority of its inhabitants (91 percent of the respondents) drink tap water every day or at least occasionally. 64 per cent of the inhabitants even believe that the right to drinking water needs to be enshrined in the Slovene Constitution.

Keywords: water, sustainable tourism, literature, sustainable destination, Brežice, Slovenia

I love the water of wells and springs ... (Wendel Berry)

Introduction

Environmental problems can be described as issues of a particular concern, since global awareness in the field of environmental protection tends to grow (Navickas & Malakauskaite, 2009, 41) and so does the importance of healthy water. In a constantly growing number of tourism destinations, water demands exceed available water supplies from sustainable resources. Consequently, the topic is gaining importance among interested stakeholders in most parts of the world. Water shortage, however, is not yet an issue in Slovenia, but the awareness about the importance of drinking water is rising also in this part of Europe.

The drinking water should be clean, adequate in supply and safe for human consumption (Consad, 2014). Clean waters are significant for everyday life, as well as for the tourism industry. Tourism has a strong impact on the economy. Namely, tourists demand numerous goods and services, and one of them is also clean and fresh water. As the quality of tourist destinations is also influenced strongly by their natural environment, the promotion of sustainable and responsible tourism is gaining importance (Obrecht & Rosi, 2016, 80, 82).

According to (Mihalič, 2000, 66) environmental quality as an important tourist demand, is a crucial part of the quality of the natural attraction and it refers to the quality of the natural features of the destination like fresh air, clean water, beautiful scenery, natural hydrologic structures etc. All these features can suffer from pollution and could lead to losing their attractiveness. Namely, the competitiveness of tourist destinations is also related to the development of their infrastructure that can be measured through different indicators, and one of them is also the quality of water intended for household consumption (Navickas & Malakauskaite, 2009, 41).

There is no need for additional emphasising of the significance of clean water for everyday lives and, consequently, also for the tourism industry. In tourism planning the consumption of water is becoming increasingly important. What is more, a shortage of water can undermine the sustainable development of destinations (Tapper et al., 2011). Thus, tourism is dependent on clean drinking water. Tourists consume water and the water resources also need to support a wide range of destination-based activities, such as swimming, surfing and fishing, and also maintaining gardens and the tourism infrastructure (Moore, 2015, 1; Gössling et al., 2012, 4). This awareness is also significant in the case of Brežice, where sustainable tourism is the only possible tourism supported by all the stakeholders involved in the regional tourism development. According to Gössling's estimations (2002), in comparison to agriculture, which constitutes an estimated 70% of total water consumption, tourism is far less relevant at 1%. At the regional levels, however, tourism and leisure activities can also represent a major factor in water consumption (Gössling, 2002).

Since tourism causes an increased consumption of water and tourists require constant access to water (Frone & Frone, 2012, 142), concerns about supply and quality of drinking water do matter and there is no need for additional emphasising of the significance of clean water for everyday lives and, consequently, also for the tourism industry. Changes in the availability and quality of water can have very negative impacts on tourism, and ecological restoration of ecosystems such as the Great Lakes in North America represent enormous costs (Gössling et al., 2012, 4). But what is perhaps even more important because it affects every tourist, is the fact that healthy drinking water is significant in food preparation. Estimations show that daily water requirements needed to satisfy human diets range from 2,000 to 5,000 L of water per person per day, with an estimate of 1 L of water for 1 kcal of food (Gössling et al., 2012, 8). Despite the fact that water is essential in tourism, tourism-related water use is still under-investigated in comparison to other economic sectors, such as agriculture, for example (Gössling et al., 2012, 7).

In order to emphasise the overall importance of water, the United Nations (UN) celebrate World Water Day every year on 22 March. Since water is an essential resource in Slovenia, acknowledged also by the National Assembly of the Republic of Slovenia, which, in July 2016, voted to start a procedure to enshrine the right to drinking water in the Slovene Constitution (Delo, 2016), we did a research that reviews some qualitative viewpoints on the topic of water in the Municipality of Brežice, Slovenia.

Methodology

The research for the paper was conducted in the Municipality of Brežice in the first half of 2016. The Municipality of Brežice is a typical rural area. It is located in the southeastern part of Slovenia along the rivers Krka and Sava, in the Region of Posavje, and it stretches over 268

km². The town of Brežice is the economic, administrative and cultural centre of the municipality (RRA Posavje, n.d.; Komočar, 2009: 14). Brežice is also among the most successful tourist resorts in Slovenia according to the number of tourist overnight stays and tourist arrivals, mainly due to the Spa Centre of Terme Čatež (Škerbinc, 2014: 15).

The methodology for the research has been developed from a review of available approaches for assessing water issues. In the first half of 2016 in the Municipality of Brežice 134 local inhabitants were asked to fill out a questionnaire with several questions regarding their perception of the issues of drinking water. The respondents, who were all over 18 years old and residents of the Municipality of Brežice, were hand-picked by the students of the Faculty of Tourism in various public places of the Municipality of Brežice. Further on in the research, the codification was conducted and gathered data were supplemented with additional information from the Public company Komunala Brežice. The results and interpretation of the analyses are presented in the paper.

The quality of water in the Municipality of Brežice

In the Municipality of Brežice the drinking water supply is operated by the Public Company Komunala Brežice. In 2015 the drinking water was supplied to residents from eight different water systems: Brežice, Mokrice, Pišce, Sromlje, Stojanski Vrh, Križe, Mrzlava vas and Mrzlavski Gaj-Stankovo-Vitovec.

The basic task of the operators of the drinking water supply systems is providing an uninterrupted and safe supply of appropriately healthy drinking water.

In 2015 an internal control was implemented by the National Laboratory for Health, Environment and Food Novo mesto (NLZOH Novo mesto) according to the HACCP system, which is essentially responsible for the implementation of preventive measures which ensure the health suitability of drinking water. Internal control includes, in accordance with the Rules on Drinking Water (Off. L.RS, Nos. 19/04 as amended) and HACCP Guidelines, all phases of the distribution of drinking water from its sources to the tap consumers. In 2015, a total of 251 samples of drinking water were collected for microbiological testing, 99 samples for sanitary-chemical investigations, and 4 additional samples for targeted chemical investigations on the Sromlje water supply system. 7 samples taken were non-compliant (of which 1 sample was contaminated with *E. coli*, in 4 the presence of coliform bacteria was detected, 1 was inadequate for the opacity, and 1 with an elevated concentration of deethylatrazine). In all cases, measures were implemented in accordance with the HACCP and instructions by NZLOH Novo mesto and the National Institute of Public Health of the Republic of Slovenia, such as preventive chlorination, rinsing networks in certain sections of the discharges into the hydrants, regular cleaning of storage tanks etc. The sample contaminated with *E. coli* was taken in the raw water wells at Mokrice before disinfection and, because all the samples were taken at the same time, there was no risk to consumer health.

Preparations of water with chlorine or the gas sodium hypochlorite is present on all plumbing systems, except for the water supply system at Brežice. It should be noted that the water after chlorination, despite having the smell of chlorine, is safe to drink. In 2015, within the framework of the national monitoring of drinking water in the Municipality of Brežice 28 samples were collected and none of them was non-compliant. (Komunala Brežice, d. o. o.)

Table 1: Overview of microbiological and chemical quality of drinking water in the reservoirs and in the network in the Municipality of Brežice in 2015

Water system	Microbiological analyses					Chemical analyses				
	N. of samples	A	%	I	%	N. of samples	A	%	I	%
BREŽICE	178	174	98%	4	2%	66	66	100%	0	0%
MOKRICE	22	21	95%	1	5%	11	11	100%	0	0%
SROMLJE	15	15	100%	0	0%	7	6	86%	1	14%
PIŠECE	16	16	100%	0	0%	6	6	100%	0	0%
STOJANSKI VRH	7	7	100%	0	0%	3	2	67%	1	33%
KRIŽE	5	5	100%	0	0%	2	2	100%	0	0%
STANKOVO	5	5	100%	0	0%	2	2	100%	0	0%
MRZLAVA VAS	3	3	100%	0	0%	2	2	100%	0	0%
Skupaj 2014	251	243	97%	5	2%	99	95	96%	2	2%

A - adequate sample, I - inadequate sample

A few years ago contamination of drinking water by atrazine (a herbicide, which has been banned since 2003) was detected in the water supply system in Sromlje so, consequently, stricter control over the above-mentioned contamination was implemented in this area. A total of 4 samples were taken. Concentrations of atrazine were below the prescribed limit (0,10 µg/L). Concentrations of deethylatrazine in 1 of 4 samples exceeded the prescribed concentration, but NLZOH Novo mesto estimated that the water was safe for consumers and that it did not increase the risk to their health, because contamination with atrazine is decreasing slowly and does not pose an increased risk to human health. In the water from water systems in the Municipality of Brežice there was no faecal contamination which could pose a serious health risk, because neither sample detected parasites and their developmental forms.

Results and Discussion

Despite the fact that, according to the official records of the water safety measurements, drinking water is safe and clean in the municipality, 46 per cent of the respondents are worried or very worried about the possible pollution of water due to the tourism infrastructure in the municipality. Thus, it can be concluded that the awareness of the importance of healthy drinking water and/or risks for health presented by polluted water is high among the inhabitants of Brežice. Thus, clean and healthy water is not taken for granted by 46 per cent of the respondents. 23,8% (32) of the inhabitants of Brežice believe that drinking water from local water systems (Brežice, Mokrice, Sromlje, Pišece, Stojanski Vrh, Križe, Stankovo, Mrzlava vas) influences their health in a negative way. Considering the official records of the water safety measurements this result is surprising, but it could be explained by the fact that some respondents do not trust official records on the safety of drinking water. The research has showed that 9,7% (13) do not trust the experts responsible for the analysis of the drinking water. 13,4% (18) believe that bottled water is safer than tap water.

In the light of sustainable destination development, it is thus of great importance that the majority of its inhabitants (91 percent of the respondents) drink tap water every day or at least

occasionally. 64 per cent of the inhabitants even believe that the right to drinking water needs to be enshrined in the Slovene Constitution.

Conclusion

The inhabitants of the Municipality of Brežice are aware of the fact that water is a limited natural resource, essential for the health of the local community and for the development of the tourism in the region. A healthy environment is becoming a value and a privilege. The limitation of this research is that it did not include the tourists spending their time in Brežice. Nevertheless, it is assumed that healthy drinking water and a healthy environment in general are also very important values among tourists. It should be observed that sustainable tourism can only be achieved in a sustainable destination environment. Thus, it is encouraging for Brežice as a sustainable micro-destination that the majority of its inhabitants (91 %) drink tap water every day or at least occasionally. To encourage the development of sustainable tourism further it is important that, in the future, tourism plays an active role in supporting the local community to engage in the sustainable or at least more sustainable business practices.

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