

The importance of water in tourism in the sector of accommodation services

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ABSTRACT

Water is a key resource for any entrepreneur, whether it is for food, clothing, mining, or any other industry. It is also an indispensable source in the field of business focused on providing accommodation services. This article deals with the importance of water, its necessity and actual water consumption in accommodation facilities. The study is focused on three districts: Rožňava, Rimavská Sobota and Revúca, which together belong to the region of Gemer.

Key words: water, tourism, accommodation, consideration

INTRODUCTION

Each person needs water for his daytime operations. He needs it for drinking, personal hygiene, cooking, and for the countless other activities. Apart from the needs of human, incredible amounts of water are required for industrial activities. As an example, the production of a single sheet of paper consumes 10 liters of water. If we take into account the production of plastic material weighing 500 grams, water consumption is now 91 liters of water. It is evident that the development of industry increases labor productivity, creates employment opportunities and thus reduces unemployment, but also increases the demands on water resources. According to estimates, the amount of water used in industry will increase by 400 % by the year 2050. In the case of the food industry, we can conclude that for one calorie of food it should be consumed only one liter of water. The opposite is true because in practice it is consumed over 100 liters of water for one calorie of food. Taking into account the fact, that by 2050 it is expected increase in demand for food by 60 %, in developing countries by 100 % hence we can expect that the consumption of water in agriculture

will grow (Kahan, 2015).

All these data say about the ever-increasing consumption of drinking water, and we took into account only the two basic industrial sectors to point out this state. Various forms of traditional and non-traditional tourism, whether it is tourism or geotourism, imply specific needs (Kršák et al., 2015). However, all the needs of tourism initially begin with the need for water. So if we talk about a business area of accommodation services, we can assess that this area is not up to such a massive consumer of water because its consumption worldwide is only one percent, but it is necessary to think ahead and realize the importance of water in hotels now.

MANAGEMENT OF WATER RESOURCES IN THE SECTOR OF ACCOMMODATION SERVICES

Accommodation facilities have significant business and moral responsibility in the use of water. The purchase price of water is one of the main factors since bills for the water in these facilities are up to 10 % of their total costs. The greater part of the facilities pays for the water even twice,

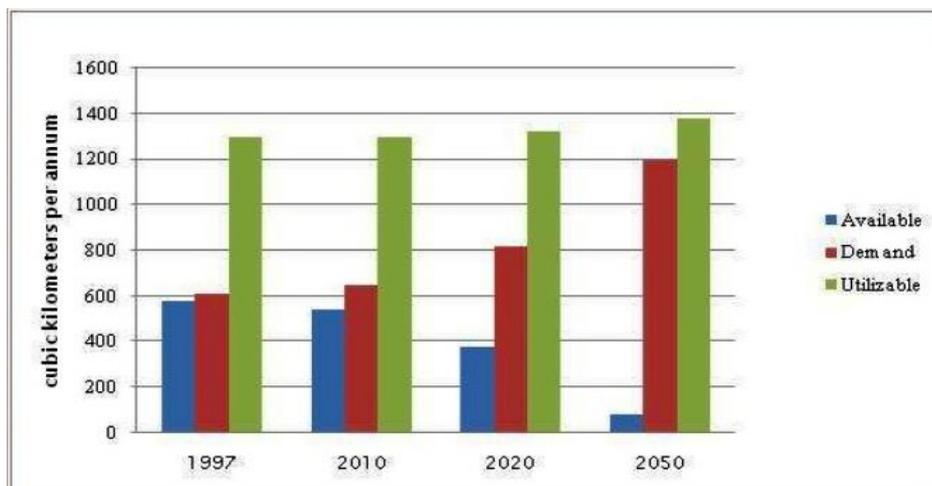


Fig. 1 Available water, demand and utilizable water reserves in the world (source: Zafar, 2015)

for the water they consume and also for the waste water. According to the UK's Environment Agency, hotels depending on their rational use of water can reduce its consumption by up to 50% of water consumed per guest per night (Tuppen, 2013). In accommodation facilities, it is higher consumption of water particularly by tourists than water consumption of the domestic population. The average European tourist spends per day in averaged 300 liters of water compared to an ordinary citizen of the European Union, which spends 100 to 200 liters of water per day (EEA, 2009; Eurostat, 2011; Gossiling et. al., 2011).

There are several reasons for the higher consumption of water particularly by tourists in accommodation facilities, namely the following: maintenance of areas, irrigation, daily cleaning, daily washing, intensive activities of the kitchen, intensive use of bathroom by guests, and also maintenance of swimming pools (Eurostat, 2009). Water consumption in accommodation facilities usually comprises 10 % of all water consumed in the city where the facility itself is located. Various types of facilities, however, consume different amounts of water, for example, guests staying at the hotel spends on average 312 litres of water per day, in the apartment (Holiday House) it is 273 litres, in Campsite it is 148 litres, and in Group Accommodation it is 115 litres of water

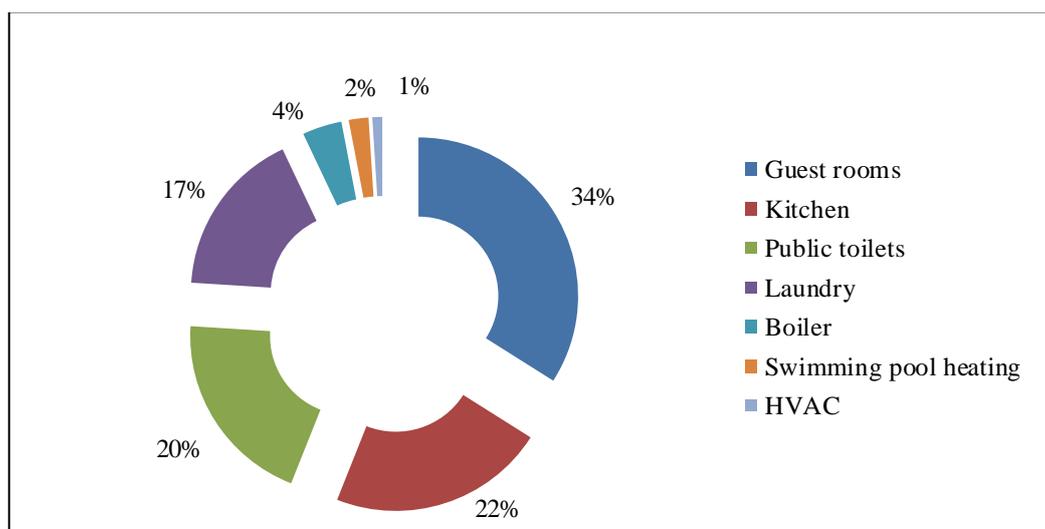
(Styles, D.; Schönberger, H.; Martos, JLG, 2014). In general, water in the various accommodation facilities is also used by other components or subjects, which is essential for the overall operation of the facility (Tab. 1). At the same time, it is important to mention that various activities associated with the consumption of water vary according to the actual type of accommodation (Styles, D.; Schönberger, H.; Martos, J.L.G., 2013).

Tourism is largely concentrated in the destinations, although the share of tourism in the global water consumption is less than one percent, it significantly contributes to water shortages especially in the active sites of tourism. Water consumed in accommodation facilities (ITP, 2008) is divided into (Fig. 2):

- rooms for guests – 34 % of water consumed,
- kitchen - food preparation, dish washing machines – 22 % of water consumed,
- toilets in the hotel (except guest rooms) – 20 % of water consumed,
- laundry service – 17 % of water consumed,
- boiler – 4 % of water consumed,
- swimming pool heating – 2 % of water consumed,
- HVAC (Heating, Ventilation, and Air Conditioning) – 1 % of water consumed (ITP, 2008).

Tab. 1 Areas of water consumption in tourism enterprises (according to Styles et al., 2013)

Service/Activity	Main environmental pressures
Administration	Office management Reception of clients
Technical services	Producing of hot water and space heating/cooling Swimming pools Green areas
Restaurant/bar	Breakfast, dinner, lunch Beverages and snacks
Kitchen	Food conservation Food preparation Dish washing
Room use	Use by guests Housekeeping
Laundry	Washing and ironing of guests' clothes Washing and ironing of
Activities	Outdoor activities Indoor activities
Additional services	Spa and wellness Hairdresser, etc.
Building and construction	Repair of existing areas or services Construction of new areas or services

**Fig. 2** Different components of the water consumed in accommodation facilities (source: ITP, 2008)

MONITORING OF THE STATE OF CONSIDERATE USE OF WATER IN THREE SPECIFIC DISTRICTS IN EASTERN SLOVAKIA

For example, it is stated a study conducted in three districts of the region Gemer, namely in the districts of Rožňava, Rimavská Sobota, and Revúca. The study was performed based on the field research by asking questions related to saving water directly in accommodation facilities

specifically aimed at providing accommodation services. An important role is played by the fact that in Slovakia there are no statistics that focus on the consumption of drinking water only in the accommodation facilities itself. Therefore, this article tries to point out the necessity of obtaining such data to determine the actual impact of individual accommodation facilities for the water consumption and thus the sustainability of tourism in the research area. Despite this fact, it is possible at least

partially point out the water consumption for one overnight visitor at the accommodation facility in all three districts as follows: *Consumption of drinking water in total without households* per year and data *Number of overnight stays of tourists at accommodation facility* per year (Tab. 2). For a specific example it was set the year 2012 (Enviroportál, 2013).

For possible demonstration, it is also necessary an element of Primary consumption of water of other subjects per one day in the Slovak Republic, which reflects the value of 177,8 liters of water / one inhabitant in 2012, which is representing a consumption of water without households (Enviroportál, 2013).

In the case of the district Rožňava, the amount of water consumed by one overnight visitor in accommodation facility presents a figure of 226 litres of water per day, in district Rimavská Sobota it is 385 litres of water for one overnight visitor per day in the AF and in the district Revúca it is 236 litres of water for one overnight visitor per day in the AF. All these figures are higher than the stated average of 177,8 liters.

However, at the same time, they are approaching the European average water consumption of tourists per day, as already mentioned above. However, it is the place to note that this calculation is only

approximate and indicative, as there are no statistics that would monitor the amount of water consumed in the accommodation sector. In the case of a field research conducted by questionnaire survey, it was not possible to verify these data not even directly in individual accommodation facilities, they lacked their very willingness to provide information of this type, or did not have the statistics processed at all.

Consumption of drinking water in individual districts presents data that has been calculated as the difference: Consumption of drinking water in total for each district minus Consumption of drinking water in households for each district (Tab. 3).

Questions that were selected to detect the state of the water saving were set as the following:

- Installed their own solar panels for heating water in the summer months,
- Toilets with the option of economical flushing system (dual-flush),
- Use of taps with water saving system flow rate,
- Considerate change of towels, bed linen regarding the water saving,
- All waste water is processed by the device itself or by the sewage treatment facility.

Tab. 2 Water consumption for one overnight visitor in AF (according to Datacube, 2015)

Year 2012	District		
	Rožňava	Rimavská Sobota	Revúca
Consumption of drinking water in total without households (Megalitre)	481	690	272
Number of overnight stays in AF	39 804	97 039	23 469
Water consumption for one overnight visitor at AF	226 l/day/1 visitor	385 l/day/1 visitor	236 l/day/1 visitor

Tab. 3 Consumption of drinking water in total without households in the districts of Rožňava, Rimavská Sobota, Revúca (ŠÚSR, 2015)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
District Rožňava	619	597	576	610	551	466	687	651	918	481
District Rimavská Sobota	1371	1361	1240	3055	842	821	745	722	705	690
District Revúca	409	375	328	434	294	300	388	294	579	272

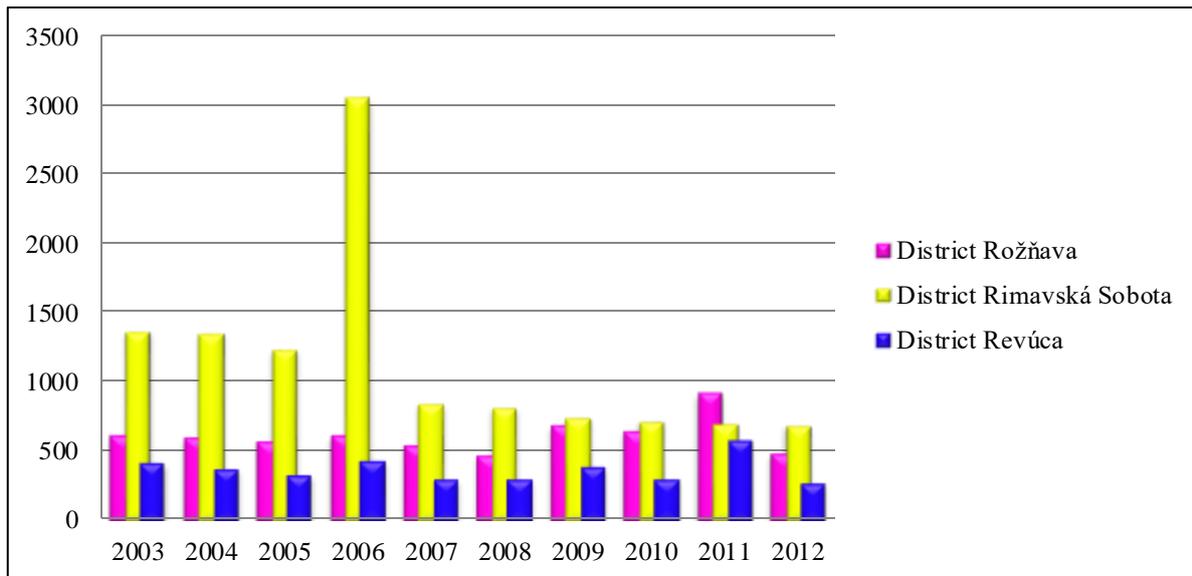


Fig. 3 Consumption of drinking water in the districts of RV, RS, RA, processed by author according to (ŠÚSR, 2015)

Tab. 4 Results of responses in individual districts

Questions	Rožňava		Rimav. S.		Revúca	
	Yes	No	Yes	No	Yes	No
Installed their own solar panels for heating water in the summer months	4	4	3	16	1	8
Toilets with the option of economical flushing system (dual-flush)	54	54	11	8	3	6
Use of taps with water saving system flow rate	7	7	4	15	0	9
Considerate change of towels, bed linen regarding the water saving	56	17	13	6	7	2
All waste water is processed by the device itself or by the sewage treatment facility	31	42	11	8	8	1

These questions were selected based on a comparison of individual data relating to the water saving in different accommodation facilities all over the world that meet stringent criteria and effectively contribute to the reduction of water consumption.

In the district of Rožňava, there were on the category of questions relating to water consumption answered 73 questionnaires / 73 accommodation facilities (Tab. 4). Among explicitly positively answered question in this case in the district Rožňava were included only two, namely: the question of *Toilets with the option of economic flushing system (dual-flush)* with the number of answer YES 54, and the second was the question of *Considerate change of towels, bed linen in terms of the*

water saving with the number of positive response 56. The last three questions were of a negative nature of the response. The question *Installed their own solar panels for heating water in the summer months* reached the number of NO up to 69 times, achieving the highest number of negative responses in the category Water. Followed by the question of *Use of taps with water saving system flow rate* with the number of NO 66, and finally, the question of *All waste water is processed by the device itself or by the sewage treatment facility* with the number of negative responses 42.

In the district of Rimavská Sobota were on the category of questions relating to water consumption answered 19 questionnaires / 19 accommodation facilities (Tab. 4). Among the positively

answered questions in the district Revúca unlike in the district Rožňava, there were included up to three. The question with the highest number of positive response was a *Considerate change of towels, bed linen regarding the water saving* with the number of YES 13. Followed by the questions *Toilets with the option of economical flushing system (dual-flush)* and *All waste water is processed by the device itself or by the sewage treatment facility* that equally reached positive responses of number 11. While this question *All waste water is processed by the device itself or by the sewage treatment facility* reflected positively in the district Revúca, in district Rožňava it had a negative result. Significantly negative influence had the question *Installed their own solar panels for heating water in the summer months*, which reached the number of negative responses of 16. The final question in that category was **Use of taps with water saving system flow rate**, which reached the number of negative answers only by one less, which is 15.

In the district of Revúca, there were on the category of questions relating to water consumption answered nine questionnaires / nine accommodation facilities (Tab. 4). Based on the results we can conclude significant differences in the responses because in the questioning there were evaluated only nine facilities, which is a considerable disparity on the other two district Rožňava and Rimavská Sobota. In the case of Rimavská Sobota it is only about a half, but compared to the district Rožňava it is just one-eighth. We can qualify two positively answered questions here. One was the question of *All waste water is processed by the device itself or by the sewage treatment facility* with the number of answer YES 8, which also represents the highest number of positive responses for the entire category. The second was the question of *Considerate change of towels, bed linen regarding the water saving* with the number of positive responses 7. It logically follows that there

were three negatively answered questions in the category. Most answers of NO were reached on the question *Use of taps with water saving system flow rate* with the resulting number 9, where at the same time did not occur a single positive response. Another question was *Installed their own solar panels for heating water in the summer months* with the number of NO 8. The last of negative answers was the question *Toilets with the option of economic flushing system (dual-flush)* with the number of NO 6.

In a joint evaluation of the three districts, we can note that among the questions that were positive in all districts it was included only one, specifically the question *Considerate change of towels, bed linen regarding the water saving*. For a completely negative result, we can consider the question of *Installed their own solar panels for heating water in the summer months*, as it was reflected negatively in each of the districts. It should also be noted that regarding saving water in these districts there are still many questions that need to be targeted and consequently introduce a policy aiming at a reasonable management of water resources.

DISCUSSION ON POSSIBLE SOLUTIONS TO WATER SAVING IN ACCOMMODATION

Tourists who stay in accommodation facilities like to have their comfort, also about the fact that they are paying for the room. For the price, they expect hot heat water, suitably lit room with the possibility of ventilation through the window even during the winter months. Although the hotel managers are still interested in reducing energy consumption, water saving, the comfort of accommodated guests should not suffer because of that. Today's modern building management systems offer the possibility of reducing the cost of energy, economical use of water without compromising the comfort of

guests (Lütz, 2008).

To prepare as well as to achieve realistic goals for cost-effective management of water resources in the sector of accommodation service it will be necessary to invest not only time but also the financial resources to careful planning, training, and at the same time monitoring the objectives that were set. The first step in real water savings should begin with monitoring water consumption and setting specific goals. It is important to know the starting point, which is the detection of the current state of spending water in the facilities. Regular readings of water from various activities performed in accommodation facilities enable to find out where the largest water consumption is.

The next essential step is to know the costs for water and then find out where can be obtained water saving potential. Economical use of water has not only a positive effects on the financial costs of actual accommodation facility but also contributes to environmental protection.

Hence, if in different accommodation facilities will increase interest in considerate use of water, it is possible to follow several steps:

- Create realistic goals for saving water at individual departments in accommodation facilities,
- Leading management of the facility to save water, and the remaining staff,
- Ask employees about their own proposals to reduce the amount of water consumed,
- Include regular monitoring and reporting on the amount of water consumed by the worker, when in the case of saving the amount of water this information acts as the correct employee motivation.

An important role also plays detection of which sections of accommodation facility spend the largest amounts of water, whether it is a guest bathroom, laundry, kitchen, cleaning section, irrigation of land or if the facility has a swimming pool.

Finally, it is necessary to realize that water plays a crucial role not only for hotels

but globally it is a major commodity, which is not available equally and to all.

CONCLUSION

Water is the world's indispensable source of human existence. The need for water itself affects all of us. Its deficiency increases from year to year. The water consumption in the area of accommodation services is not yet alarming, but despite the fact, it requires to focus on the saving now. Some hotels have in their marketing plan as a key priority to save water, but there are also those, which there are significantly more, that yet do not pay any or only minimal attention to this subject. Evaluation of the state of water treatment in accommodation facilities requires analysis of a large number of factors that are related. This article highlights the condition of water saving in three districts, in which there is so far no shortage of drinking water. Based on the results we can say that the saving is not exactly the most effective and it is necessary to deal with this issue further.

REFERENCES

- Datacube** (2015) Počet návštevníkov [online]. Available at: <<http://datacube.statistics.sk/TM1WebSK/TM1WebLogin.aspx>> [Accessed 5. April 2015].
- Enviroportál** (2013) Špecifická spotreba vody na obyvateľa [online]. Available at: <http://www1.enviroportal.sk/indikatory/detail.php?kategoria=2&id_indikator=508#0> [Accessed 15. April 2015].
- European Environmental Agency (EEA)** (2009) Water resources across Europe — confronting water scarcity and drought. EEA, Copenhagen, 60 p.
- Eurostat** (2009) MEDSTAT II: 'Water and Tourism' pilot study. Eurostat, Luxembourg, 44 p.
- Eurostat** (2011) Water statistics. [online] Available at: <http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Water_statistics> [Accessed 4. July 2011].
- Gössling, S., Peeters, P., Hall, M., Ceron, J.P.,**

- Dubois, G., Lehmann, L.V. and Scott, D.** (2011) Tourism and water use: supply, demand and security. An international review, *Tourism Management*, pp. 1-15.
- International Tourism Partnership (ITP)** (2008) *Environmental Management for Hotels*. ITP, London UK. Chapter 3, 48 p.
- Kahan, J.** (2015) Týždeň pre vodu 2015 – pripomenutie. [online] Available at: <<http://stromzivota.sk/blog/2015/02/tyzden-pre-vodu-2015/>> [Accessed 24. February 2015].
- Kršák, B., Sidor, C., Štrba, E., Molokáč, M., Hvizdák, L., Blistan, P., Kol'vecková, G., Liptáková, E., Delina, R. and Mesároš, P.** (2015) Maximizing the potential of mining tourism through knowledge infrastructures. *Acta Montanistica Slovaca*, pp. 319-325.
- Lütz, H.** (2008) Energetická hospodámosť v hoteloch. [online] Available at: <http://www.buildingexperts.info/uploads/tx_clbuildingexperts/paper/cl-energy-hotel-1008-sk.pdf> [Accessed October 2008].
- Styles, D., Schönberger, H. and Martos, J.L.G.** (2013) Best Environmental Management Practice in the Tourism Sector. European Union, 721 p.
- Styles, D., Schönberger, H. and Martos, J.L.G.** (2014) Water management in the European hospitality sector: Best practice, performance benchmarks and improvement potential. *Tourism Management*, pp. 187-202.
- ŠÚSR** (2015) Spotreba pitnej vody [online]. Available at: <<http://datacube.statistics.sk/TM1WebSK/TM1WebLogin.aspx>> [Accessed 23. March 2015].
- Tuppen, H.** (2013) Water Management and Responsibility in Hotels. [online] Available at: <<http://www.greenhotelier.org/know-how-guides/water-management-and-responsibility-in-hotels/>> [Accessed 22. March 2013].
- Zafar, S.** (2015) Imminent water crisis in India. [online] Available at: <<https://www.linkedin.com/pulse/imminent-water-crisis-india-sultan-zafar>> [Accessed 6. September 2015].