Tourism and the environment

Towards a reporting mechanism in Europe

ANNEX 10. Indicator assessment TOUR006
Water abstraction by tourism

ETC/ULS consortium partners: Environment Agency Austria, ALTERRA Research Institute, The Institute of Geodesy, Cartography and Remote Sensing (FOMI), space4environment, GISAT, The International Council for Local Environmental Initiatives (ICLEI), Universitat Autònoma de Barcelona (UAB), Universidad de Málaga (UMA)

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European Topic Centre on Urban Land and Soil Systems (ETC/ULS)
Departament de Geografia
Universitat Autònoma de Barcelona (UAB)
08193 – Bellaterra
Spain

Tel.: +34 935813520
Web: uls.eionet.europa.eu

Indicator name: TOUR006 – Water abstraction by tourism

Assessment

Indicator name
TOUR006 - Water abstraction by tourism

Key policy question
What are the environmental impacts of tourism on freshwater resources?

Key message
On annual scale in 2014, service sector in which tourism has the biggest share has used 9% of total water among other economic sectors. However, despite an increasing tendency in the number of tourist, tourism is not the largest water consumer compared to other economic sectors such as agriculture (51%), followed by water collection, treatment and supply (24%). Available references indicate overuse of freshwater resources by tourism industry particularly for hotels, swimming pools, golf courses and personal use. In addition, tourists use more water when on holiday than they do at home.

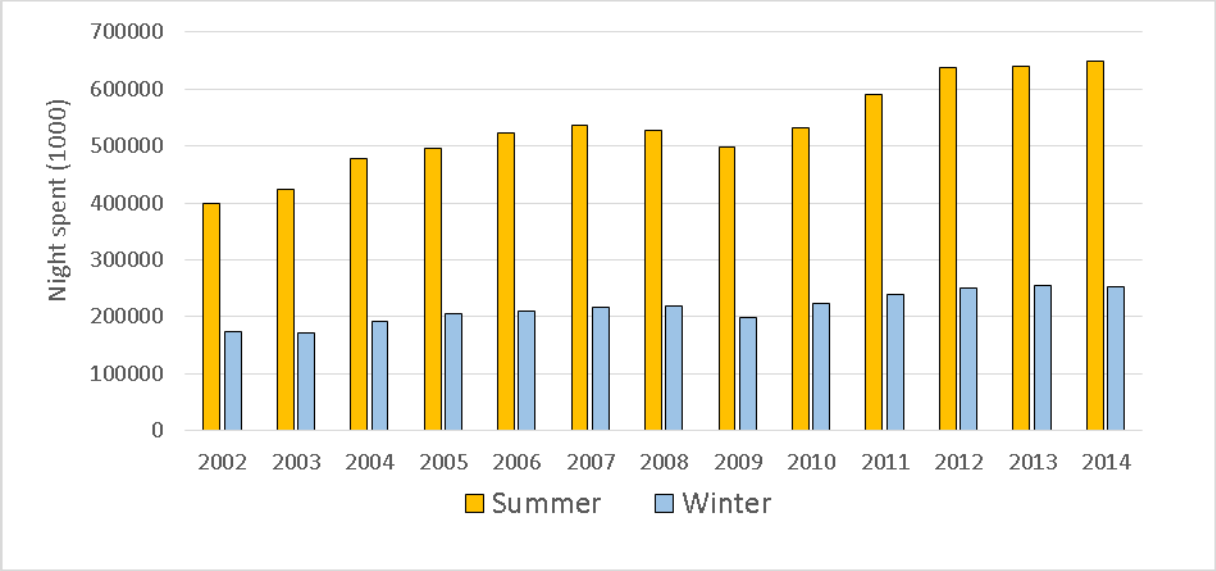
Around 60% of tourists come to Europe during the summer, while the rest 40% come in winter. Higher intensity of tourist in summer is also associated with increasing water demand of tourism that creates pressures over freshwater resources mainly in most coastal and small Mediterranean islands. For instance, Canary Islands, Balearic Islands, Barcelona and Andalusia from Spain are typical examples of densely tourism destinations associated with higher than 40% of water exploitation index in summer months. The estimations indicate that around 50-80 % of total water use in that Spanish islands are used by tourists. Similarly, Adriatic coastal areas of Croatia, Cyprus, Malta, and Greek Islands are also experiencing higher water scarcity conditions (higher than WEI+ 20) caused by more than half of water is abstracted for tourism. Some European capitals are also experiencing water stress conditions at the time when tourist density is peak in summer such as Paris, Brussels, London and Prague. Despite total water abstraction for tourism have been increasing over the time, eventually decoupling water abstraction from the number of tourists has been initiated since almost 10 years in Spain, France and Malta.

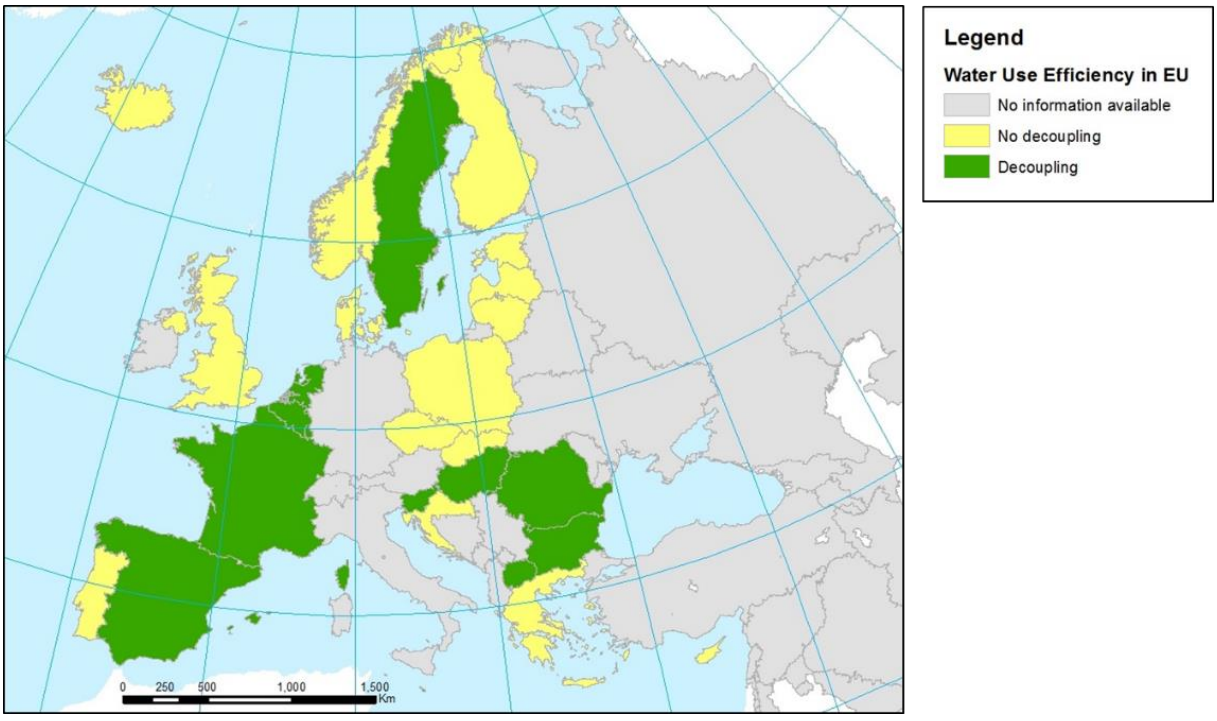
Key assessment
Tourism is one of the important economic sectors in Europe. Every year around 900 million of nights spent are occurring in many touristic destinations across Europe, which make a substantial contribution to the Europe's economy. Naturally tourism has a tendency to be in "good weather areas" with high appealing options, seasonally shared between summer and winter. This natural tendency increases density of tourists and tourism activities on relatively small areas, such as small islands in the Mediterranean or different altitudinal zones of the Alps, Carpathians etc.

Almost 75% of total nights spent across Europe are shared by six countries; Spain, France, Italy, Austria, United Kingdom and Croatia. Around 630 million nights are spent annually concentrating on certain small areas in those six countries. During 2002-2014, the Canary Islands received the highest number of overnight stays in tourist accommodation. The second most popular destination was the Italian region of Veneto and third the French capital region of Île-de-France. The remaining regions most popular with inbound tourists were generally regions with major cities (e.g. London), Alpine regions (Tirol) or coastal regions (Crete).

Tourism activities engage large volumes of water for recreational facilities, such as for swimming pools, water parks, golf courses and for other activities. Available literature (Essex et al, 2004; Cheng 2006; Eurostat 2009; De Stefano, 2004, EEA 1999) indicate that water use by tourists is nearly two times higher than the local residents.

Trend analyses have shown that number of tourist has increased 36% between 2002 and 2014 on annual scale. In the same period of time, summer tourists have increased 39%. The share of tourist between summer and winter has shown 3% increase for summer compared to winter.





Between 2002-2014 abstraction for water collection, treatment and supply has increased 5% while the share of water abstraction for tourist was around 10% in 2002. The share of water abstraction for tourist within total water abstraction for water collection, treatment and supply has increased about 17% in 2012. At the regional level, has the highest increase of water abstraction for tourist has occurred in Eastern Europe (18%).

Improving efficiency in total water abstraction and relatively decoupling water use from the number of tourists are crucial implementation in reducing the environmental impacts of tourism. In Spain, France and Malta, despite total water use for tourism have been increasing over the time, eventually decoupling the water use from the number of tourists has been initiated since almost 10 years. Similarly, in Bulgaria for example, despite the number of tourists is increasing over the years, due to decreasing in the total population of Bulgaria, it doesn't have significant impacts over the water abstraction. Romania, Slovenia, Hungary and Sweden are also among those countries having decoupled the number of tourists from the water abstraction. According to Gössling et al. (2012) in Spain, France and Germany the amount of water used by tourists has been substantially reduced close to the level of the local residents use.

Specifications

Indicator definition
The indicator defines total pressure of water abstraction for of water abstraction for tourism over freshwater resources and compare water abstraction per tourist with water abstraction per local inhabitant.

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Rationale
Existing literature suggest that the tourism industry generally overuses water resources for hotels, swimming pools, golf courses and personal use of water by tourists. Tourists often consume far more water than they do at home – and far more water than locals. The negative impacts from tourism occur when the level of visitor use is greater than the environment's ability to replenish the natural resources, creating enormous pressure on water resources.

Policy context
Water Framework Directive: 2000/60/EC.
COM(2014)86: A European Strategy for more Growth and Jobs in Coastal and Maritime Tourism.
The 7th Environmental Action Programme.
Resource efficiency roadmap (COM-2011/571).

Methodology for indicator calculation
Monthly data on number of tourist arrivals at NUTS 2 and nights spent at tourist accommodation establishments are the main input data from Eurostat. Then a proportional share of total population among the cities located in the same NUTS2 region is applied over the total number of tourists, to distribute the number of tourist into the local population of cities on monthly scale. Then the number of tourists is included as "resident" over the population of the respective cities while water abstraction use by households including service sector are quantified for that settlement areas.

Data sets uncertainties
The method applied in estimating water abstraction for tourism is a proxy with adoptions such as water consumption per tourist is equal to per local inhabitant in water treatment, collection and supply sector which should be interpreted as highly uncertain.

Ownership and contacts
EEA.

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Spain

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