

Regional economic impacts of tourism in German Biosphere Reserves

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Within the UNESCO Man and Biosphere program the concept of biosphere reserves aims as an innovative form of protected areas to achieve sustainable development in areas of cultural or/and natural importance. The apparent contradiction between protection and development is dealt with the help of a zoning model. Inside the development zone, surrounding the core and buffer zones of nature conservation, innovative approaches should be tested to strengthen a sustainable regional economy (KRAUS et al. 2014). Tourism can be seen as one important vehicle to achieve sustainable conservation and development outcomes, especially in UNESCO Biosphere Reserves (JOB et al. 2017).

For the evaluation of regional economic impacts of tourism, we must know: *how many tourists visit the biosphere reserve? How important is the biosphere reserve as a tourist attraction? And which economic impact does tourism generate in the biosphere reserve?*

In Germany there is so far no overall system to monitor the visitor numbers, structure or expenditures in protected areas. Therefore, in the years 2003-2005 a standardized method for the evaluation of economic impacts of tourism in German large scale protected areas was developed based on three case study regions (JOB et al. 2005). The method for the calculations is based on on-site countings to determine the accurate visitor number, short interviews to clarify the visitor structure (locals, day-tripper, overnight guests) and long interviews to gain more information on the motivation of visitors, the relevance of the protected area on their travel decision and the expenditures inside the region. Since 2006, the German Federal Environmental Ministry and the Federal Nature Conservation Agency as well as some of the local management bodies funded the application of the standardized method to all national parks and biosphere reserves by a series of research projects. While all German national parks (only exception is the 2015 designated Hochwald-Hunsrück Nationalpark) are already evaluated (JOB et al. 2016), the current research project focuses on the remaining German biosphere reserves. In evaluated national parks there are mostly no people living inside the PA and there are fewer entrance points which is why the calculation of the total visitor number is based on the on-site countings at the park entrances. In biosphere reserves it is more complex to differ between overnight guests, day-tripper or locals living inside the reserve. Therefore, we base our calculations of total visitor number on the percentage of locals, day-tripper and overnight guests which we received from short interviews and then weight the official tourism data in the biosphere reserve communities. For computing the regional economic impact of all our case studies in Germany we used value added analysis which is an easily understandable and comprehensible method and suitable for all individual segments of tourism (Job et al. 2013 & 2016).

Between 2011 and 2012 the first six biosphere reserves *Pfälzerwald, Rhön, Schaalsee, Spreewald, Südostrüßen* and the *Thüringer Wald* were investigated. JOB et al. (2013) calculated around 20 Mio. visitor days per year resulting in a total gross revenue of almost one billion Euros for these six biosphere reserves. The share of visitors who visited the

biosphere reserves because of its protected area label varied between 3.5 and 21.5 percent. The affinity for the protected area label is an important indicator to underline the regional economic impacts of tourism in protected areas as it shows clearly the effects that were only generated because of the existence of the label.

Since 2016 we concluded the field work in the remaining biosphere reserves *Bliesgau*, *Oberlausitzer Heide- und Teichlandschaft*, *Schwäbische Alb* and *Karstlandschaft Südharz*, investigating at the moment the *Schorfheide-Chorin* and *Flusslandschaft Elbe*. In late 2018 we will also start the survey in the newly designated biosphere reserve *Schwarzwald*.

	Pfälzerwald	Rhön	Schaalsee	Spree-wald	Südost-Rügen	Thüringer Wald	Bliesgau	Schwäbische Alb
Visitor days	5 715 000	6 370 000	490 000	1 943 000	5 288 000	487 000	3 887 000	7 124 000
Overnight guests	39.4%	31.9%	17.6%	51.3%	93.3%	35.9%	16.5%	19.5%
Day guests	60.6%	68.1%	82.4%	48.7%	6.7%	64.1%	83.5%	80.5%
Visitors with high affinity for the BR	3.5%	13.7%	21.5%	8.7%	4.9%	11.1%	18.1%	14.6%
Gross revenue in Mio. €	228.98	185.56	11.61	89.97	379.27	12.73	93.49	168.70

The gathered data can be seen as an important baseline for a national integrative monitoring system for protected areas which is planned to be implemented in 2020. It will contain several indicators for the regional economic impacts of tourism (GEHRLEIN et al. 2014).

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