

Gaps in socio-economic research in Šumava National Park, Czech Republic

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Abstract

The currently prevailing approach to nature conservation aims to balance environmental protection with human well-being and economic welfare of local communities in protected areas and surrounding regions. However, maintaining environmental objectives while meeting the demand of local inhabitants for socio-economic development has proven difficult. In the Czech Republic, this holds especially for Šumava National Park (NP), which has been facing a continuous dissention in terms of the extent to which the local conservation regime influences economic welfare and socio-economic sustainability of the area. The first aim of this study was to review socio-economic research in Šumava NP since its establishment and identify its potential gaps. Second, we aimed to present a pilot summary of available socio-economic data for this study area, namely population trends, unemployment rate and municipal budget revenues, and to compare their levels with other protected areas in the Czech Republic, as well as non-protected areas and the national average. To achieve this, we conducted a systematic literature review and utilized publicly available statistical datasets and databases to derive socio-economic data between 1991 and 2011. The results showed that Šumava NP has undergone a moderate decrease in population in the study period, while the unemployment rate and budget revenues performed the same or better than in other protected and non-protected areas in the Czech Republic. The evidence presented in this paper is in line with previous studies suggesting that there is a gap between the socio-economic reality of the communities in Šumava NP and the prevailing way the quality of life is perceived by local inhabitants and presented in the media. The paper concludes that further systematic socio-economic research is urgently needed to support sustainable nature conservation.

Key words: socio-economic indicators, welfare, well-being, quality of life

INTRODUCTION

The paradigm of nature conservation, originally strictly focused on the preservation of natural assets, has gradually evolved to incorporate the aspect of human well-being and economic welfare (CHAN et al. 2007, WATSON 2013). It has become increasingly emphasized that nature protection should not only focus on maintaining the condition of ecosystems and levels of biodiversity, but also to enhance the welfare of human communities with respect to social and economic sustainability (UNEP 2010, EC 2011).

In the Czech Republic, this issue has become relevant especially in the case of the Bohemian Forest region (Šumava in Czech). The Bohemian Forest presents an area of exceeding natural value, characterized by pristine and semi-natural ecosystems and high biodiversity

levels. Šumava National Park (NP) was established in 1991 owing to its unique natural assets and high conservation importance. Its status has been recognized by IUCN (category II – National Park) and reflected in several international conventions, e.g. Ramsar convention, designating the most valuable peat bogs as wetlands of international importance. In addition, Šumava NP is a part of the Natura 2000, a European network of protected areas (EC 2016). The area of the NP is surrounded by a buffer zone in the form of a Protected Landscape Area (PLA).

Since the establishment of Šumava NP, the concept of the area's management and nature protection priorities have been repeatedly modified, which has resulted in several substantial changes in conservation approaches and park zonation (BLÁHA 2012, KŘENOVÁ & HRUŠKA 2012, KŘENOVÁ & VRBA 2014). The management of the national park has been the subject of strong disagreements concerning the level and character of nature protection and economic use of the area, especially between the administration of national park, environmental groups and NGOs, scientists and local interest groups, including representatives of municipalities and businesses, lasting for the last 25 years of the park's existence. Consequently, there has been a continuous discussion about the park zonation, the extent of first zones (i.e. the core zones with the most strict protection level), non-intervention zones and related legislation (KŘENOVÁ & VRBA 2014).

Šumava NP comprises the administrative area of several municipalities within its boundaries. Thus, the NP represents a very complex area, with contrasting priorities of a high number of involved stakeholders. Local communities, political representatives and other stakeholders have been involved in complex discussions and influenced by intensive media coverage in the past two decades, while one of the main points discussed has been the well-being of local inhabitants. Specifically, the current nature conservation regime has been viewed as threatening for socio-economic sustainability and welfare by some local inhabitants and political representatives and also presented as such in the media (KUŠOVÁ & TĚŠITEL 2014). Regardless of such a complex situation, research focusing on socio-economic and cultural phenomena has been remarkably scarce in the NP, compared with the neighbouring Bayerischer Wald National Park. Specifically, the effect of the national park on economic revenues and welfare of local communities has been a subject of a profound socio-economic research in Bayerischer Wald NP, including systematic monitoring of visitor counts (RALL 2008). On the contrary, similar relevant studies have not been conducted in the Bohemian Forest region since the establishment of Šumava NP, except for a limited number of case studies addressing this gap, e.g. through building future socio-economic scenarios (DICKIE et al. 2014, HARMÁČKOVÁ et al. 2016), or through testing the suitability of the multiplier technique to assess economic development in local conditions (ČERNÁ SILOVSKÁ & KOLAŘÍKOVÁ 2016).

The aim of our study was to (1) review socio-economic research in Šumava NP conducted since the park's establishment and identify potential gaps, and (2) present a pilot summary of available socio-economic data for this study area. Specifically, we focused on indicators (i) related to the socio-economic welfare of local inhabitants and (ii) relevant for the municipalities within the boundaries of Šumava NP, namely population trends, unemployment rate, and municipal budget revenues. Subsequently, we compared the indicator levels in Šumava NP with other Czech national parks, protected landscape areas, municipalities from non-protected areas, and the national average, to illustrate potential differences between Šumava NP region and other regions of the Czech Republic. Finally, in the discussion we put the results in broader context and further address their correspondence with local public opinion related to Šumava NP.

METHODS

Review of socio-economic research in Šumava NP

A systematic review of research studies focusing on the area of Šumava NP and nested in social-science and economic research fields was conducted for the period 1991 to 2016. The search was initiated using a single keyword of “Šumava”, in order to simplify the search process in national databases. In the subsequent analysis, we focused solely on articles studying the area of the national park. Finally, we limited the search to studies nested in social sciences and economics based on the research field of the original study.

In terms of research databases used, we first reviewed the Scopus database¹, as an international database of peer-reviewed research articles. Second, national databases of research projects and publications were used as sources for a systematic search, namely the Research and Development and Innovation Information System² (in Czech: Informační systém výzkumu, experimentálního vývoje a inovací, IS VaVaI) and its subparts:

- (i) Central Register of Research, Development in Innovation Projects (in Czech: Centrální evidence projektů výzkumu, vývoje a inovací, CEP);
- (ii) Index of Information on Results of Research and Development (in Czech: Registr informací o výsledcích výzkumu, vývoje a inovací, RIV).

Nevertheless, since the RIV database does not allow for advanced sorting of search results, the search outputs were merely indicative.

Pilot summary of available socio-economic data

The initial systematic review of socio-economic research literature, conducted in the previous step, showed a substantial gap in systematic social-science and economic research in the study area. Consequently, as described in the introduction, the area is currently lacking systematic socio-economic monitoring, capturing the influence of recent and current nature conservation regimes on local communities. Therefore, the second part of this study aimed to conduct a pilot summary of available socio-economic data, focusing on indicators related to the socio-economic welfare and well-being of local communities, namely population trends, unemployment rate and municipal budget revenues.

Concerning the population of Šumava NP, several municipalities are situated within the NP boundaries. Specifically, the administrative area of nine municipalities is comprised within the boundaries of the national park by more than 70% (Horská Kvilda, Kvilda, Modrava, Nová Pec, Prášíly, Rejštejn, Srní, Stožec, and Strážný). Hence, the pilot analysis of socio-economic data conducted in this study primarily focused on this selection of municipalities. Subsequently, we compared the trends in the selected socio-economic indicators in the municipalities situated within the boundaries of Šumava NP with municipalities situated in other protected and non-protected areas in the Czech Republic (as specified in detail for each indicator in the following sections).

In general, we focused on the first two decades following the designation of Šumava NP and framed the analyses by 1991 and 2011, i.e. by the years in which two nation-wide censuses were held. However, since we faced substantial constraints in terms of data availability and comparability, it was not possible to keep the same time span in all analyses. Each of the analyses required different sets of municipalities to be compared; therefore, we describe the selection parameters in each section of Methods separately.

¹<https://www.scopus.com>

²<https://www.isvav.cz/index.html>

Table 1. Specification of municipality groups in the population analysis.

Group name	Group description	Number of inhabitants in 2011	Number of municipalities
A _{<300}	Municipalities in Šumava NP. All municipalities with at least 70% of the administrative territory within the border of the NP.	0–299	7 (Horská Kvilda, Kvilda, Modrava, Prášíly, Rejštejn, Srní, Stožec)
A _{<700}		300–700	2 (Nová Pec, Strážný)
B _{<300}	Municipalities in other Czech NPs. All municipalities with at least 70% of the administrative territory within the border of the Krkonoše NP, Bohemian Switzerland NP, and Podyjí NP.	0–299	8
B _{<700}		300–700	3
C _{<300}	Municipalities in 25 Czech PLAs.	0–299	195
C _{<700}		300–700	191
D _{<300}	All remaining Czech municipalities under 700 inhabitants outside NPs and PLAs.	0–299	2155
D _{<700}		300–700	1649

Population

We assessed the trend in population numbers between 1991 and 2011 in municipalities situated within the boundaries of Šumava NP, and compared them with municipalities in other protected areas in the Czech Republic, as well as general national-wide population trends.

In order to compare population trends within Šumava NP boundaries to other regions of the Czech Republic, we limited the sample to Czech municipalities with less than 700 inhabitants (in 2011), since all municipalities in Šumava NP have less than 700 inhabitants and it was therefore unnecessary to include more populated towns and cities in the comparison. Subsequently, we aggregated Czech municipalities into four groups, namely the group of municipalities situated within the borders of Šumava NP (A) and other Czech municipalities within and outside protected areas (B, C, D; see Table 1 for details). Each of the four groups was further divided based on the number of inhabitants to (i) villages and small towns up to 300 inhabitants and (ii) towns hosting between 300 and 700 inhabitants.

Statistical data on population trends in the study period were gained from the Czech Statistical Office. Specifically, we used the Database of demographic data for municipalities in the Czech Republic (CZSO 2014) in order to gain annual information on groups A and B, while for groups C and D we interpolated data from 1991, 2001 and 2011 from national censuses.

We present the results in the form of an index of change I , defined as

$$I = \frac{p_2}{p_1}$$

where p_2 and p_1 represent the number of inhabitants in the end and in the beginning of the study period, respectively.

Unemployment

The second part of the study aimed to assess the levels of unemployment in Šumava NP and compare their trends with municipalities surrounding Šumava NP and municipalities in other Czech national parks (Table 2).

Since the methodology of calculating unemployment indicators used by the Ministry of Labour and Social Affairs and the Czech Statistical Office changed several times between

Table 2. Specification of municipality groups in the unemployment analysis.

Group name	Group description	Number of municipalities
I	Municipalities in Šumava NP. All municipalities with any proportion of administrative territory within the border of the NP.	22
II	Municipalities surrounding Šumava NP, i.e. located close to the border of Šumava NP and having similar population as the municipalities in group I.	22
III	Municipalities in other Czech NPs. All municipalities with any proportion of administrative territory lying within the borders of Krkonoše NP, Bohemian Switzerland NP, and Podyji NP.	29

Table 3. Specification of municipality groups in the budget analysis.

Group name	Group description	Number of municipalities
I	Municipalities comprised in Šumava NP, i.e. with at least 70% of the administrative territory within the borders of Šumava NP.	9
II	Municipalities surrounding Šumava NP, i.e. located close to the border of Šumava NP and PLA and having similar population as the municipalities in group I.	9

1991 and 2011, we focused on the period between 2005 and 2011, when a consistent indicator of unemployment rate denoted as “registered unemployment rate” was calculated on a monthly basis (MLSA CR 2014). This indicator is defined as

$$U = \frac{n_a}{(n_e + n_a)}$$

where n_a represents the number of job applicants out of work registered by the labour offices, and n_e represents the number of employed as obtained by the Czech Labour Force Sample Survey.

Municipal budgets

In the third part of the study, we compared municipal budgets within Šumava NP with the budgets of municipalities outside the national park (Table 3).

To analyse municipal budgets, we used data provided by the Ministry of Finance of the Czech Republic in the ARIS database (MF CR 2014). Specifically, we assessed consolidated budget revenues per capita, calculated as

$$B = \frac{R_t + R_{nt} + R_c + G}{p}$$

where R_t and R_{nt} represent tax and non-tax revenues, respectively, R_c represents capital revenues, G represent grants and p the population of a given municipality. The sum of R_t , R_{nt} and R_c is denoted as “non-grant revenues” in the results.

The difference between consolidated budget revenues in both groups of municipalities was tested using the IBM SPSS Statistics 21 (IBM CORP. 2012).

RESULTS

Review of socio-economic research studies in Šumava NP

Resulting from the systematic literature review, the final numbers of studies matching the search criteria were as follows. On Scopus, the initial search applying the key word “Šumava” and restricted to studies originating from the area of the NP resulted in 300 studies (37 studies on CEP, 601 studies on RIV). The subsequent restriction to studies in social sciences and economics decreased the number of studies to 31 on Scopus (10.3%) and 5 studies on CEP (13.5%). On RIV, searching studies based on research field is not available.

Evidently, the proportion of studies focusing on socio-economic and cultural phenomena presents a vast minority of all studies conducted in the area. In this section, the topics of these projects and studies are summarized.

The social-science and economic studies in the area of Šumava NP conducted since 1991 has focused on several issues, the primary being tourism and recreation, followed by perception studies of nature-conservation regime and national-park management, landscape development and demographic and economic studies. Nevertheless, these studies have been mostly scattered in terms of time, space and topic, and a systematic socio-economic research has been limited so far.

The intensity of tourism and visitation rates has been the aim of multiple studies by ČIHAŘ et al. (1999, 2000, 2001, 2002) and GÖRNER & ČIHAŘ (2012). However, the studies cover multiple localities and the time series captures only a part of the existence of the national park. The same collective of authors have focused on the perceptions of the intensity of tourist use in the study area (GÖRNER & ČIHAŘ 2011, GÖRNER et al. 2012). In terms of visitor use perceptions by local inhabitants reported by GÖRNER et al. (2012), a majority of local respondents were more concerned with the number of visitors in the proximity of their place of residence than on the hiking trails; nevertheless, in general they perceived the level of visitor use in Šumava NP positively. In this connection, tourism has been perceived as a favourable source of economic revenues (KUŠOVÁ et al. 2008). On the contrary, almost half of surveyed tourists evaluated tourism intensity as high and disturbing in Šumava NP (GÖRNER & ČIHAŘ 2011). The most widely stated motivation of visiting Šumava NP among surveyed tourists were pristine nature, sports and relaxing (ČIHAŘ et al. 2002). Since the quality of all these recreational activities is directly affected by the number of tourists concurrently visiting the area, the capacity of Šumava NP in terms of sustainable tourist use intensity remains questionable (ČIHAŘ et al. 2002). In addition, the potential for nature-based tourism and the distribution of accommodation facilities have been analysed by NAVRÁTIL et al. (2012, 2013). Tourists' motivation for visiting the study area were further examined by TĚŠITEL et al. (2003), focusing on the nationality of visitors, their perceptions and priorities.

Social perception of nature conservation and landscape-management regimes in Šumava and other Czech UNESCO Biosphere Reserves have been studied by several research collectives (KUŠOVÁ et al. 2008, PETROVA et al. 2011, GÖRNER et al. 2012, KUŠOVÁ & TĚŠITEL 2014). Consequently, socio-cultural phenomena related to selected place-based nature-conservation issues have been addressed in Šumava NP, such as the analysis of recent active pro-conservation protests and the motivation of protesters, or the character of local narratives of identity (FURLONG 2006, PELIKÁN & LIBROVÁ 2015).

The study area has been subject to a very limited number of studies focusing on its demographic trends, mostly focusing on population count and migration (NOVOTNÁ & KOPP 2010, NOVOTNÁ et al. 2013, KRĚNOVÁ & VRBA 2014). Scarce economic studies in the area have focused on the analysis of economically marginalized areas (LAPKA & CUDLÍNOVÁ 1998, LAPKA et al. 2001) and testing the applicability of the technique of local multiplier in the assessment

of local economic development (ČERNÁ SILOVSKÁ & KOLAŘÍKOVÁ 2016). Recently, several approaches have been applied to assess the economic value of nature-based recreation in the study area, namely applying the travel-cost method (KAPROVÁ 2015a,b) and stated-preference methods to assess willingness to pay for nature-based recreation (ANTOUŠKOVÁ 2012).

Finally, the perspective of socio-economic development was related to the local character of landscape change in several studies (KLAPKA et al. 2005, BREUER et al. 2010, PERLÍN & BIČÍK 2010).

Pilot summary of available socio-economic data

Population

Population trends in the group of municipalities situated within the borders of Šumava NP (A) and their comparison with other Czech municipalities within and outside protected areas (B, C, D) are shown in Fig. 1.

In Šumava NP, the trend differed for municipalities up to 300 inhabitants ($A_{<300}$) and from 300 to 700 inhabitants ($A_{<700}$). While the population in group $A_{<300}$ declined by 3.68% between 1991 and 2011, it increased by 5.56% in group $A_{<700}$. However, it should be noted that the sample in group $A_{<700}$ was rather limited (only two municipalities, Nová Pec and Strážný) and hence sensitive to local extremes.

For the municipalities in other Czech national parks, we found a noticeable rising trend for both population groups $B_{<300}$ and $B_{<700}$ (13.3% and 27.6%, respectively). Population trends in PLA municipalities (group C) and municipalities outside protected areas (group D) were similar, showing an increase of 4.51% and 8.82% for groups $C_{<300}$ and $C_{<700}$, and 2.50% and 9.69% for groups $D_{<300}$ and $D_{<700}$, respectively.

It should be noted that the municipalities within Šumava NP showed the lowest I , and group $A_{<300}$ was the only one with decreasing aggregated trend. However, when studied from a disaggregated time perspective, the population of group $A_{<300}$ has been moderately rising since 2008.

Unemployment

Fig. 2 shows the trend of registered unemployment rate from 2005 to 2011 in three groups of municipalities: municipalities within Šumava NP (I), municipalities surrounding Šumava NP (II), and municipalities in other Czech national parks (III). Additionally, we present the average national unemployment rate.

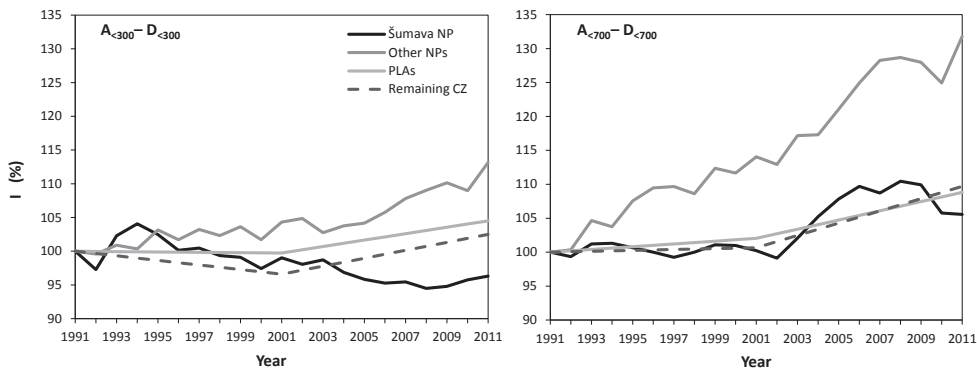


Fig. 1. Population trends in municipality groups $A_{<300}$ - $D_{<300}$ and $A_{<700}$ - $D_{<700}$ in 1991–2011. (Data source: Czech Statistical Office)

In general, the unemployment rate within Šumava NP corresponded to the national average. The results suggest that since 2008, municipalities in Šumava NP have had the lowest unemployment rates when compared both with surrounding municipalities and municipalities in other Czech national parks.

All time series analyses showed substantial seasonal fluctuations of unemployment rates, which were less distinct on the national level than for regional groups of municipalities I, II and III. Interestingly, the unemployment rates in Šumava NP exceed national average in winters, while summer rates were below the national level.

Municipal budgets

The results in this section present a time series of consolidated budget revenues in municipalities within Šumava NP (I) and selected municipalities outside the border of the national park (II) from 2001 to 2011.

Fig. 3 shows a time series analysis based on a calculation taking into account all but one (Modrava) municipality with at least 70% of the administrative territory lying within the borders of Šumava NP. Modrava presents a special case of a municipality in terms of budget, as its tax revenues have been exceedingly high since 2008 (8.99 million CZK per capita in 2009), which made it incomparable with other municipalities in the area. Fig. 3 suggests

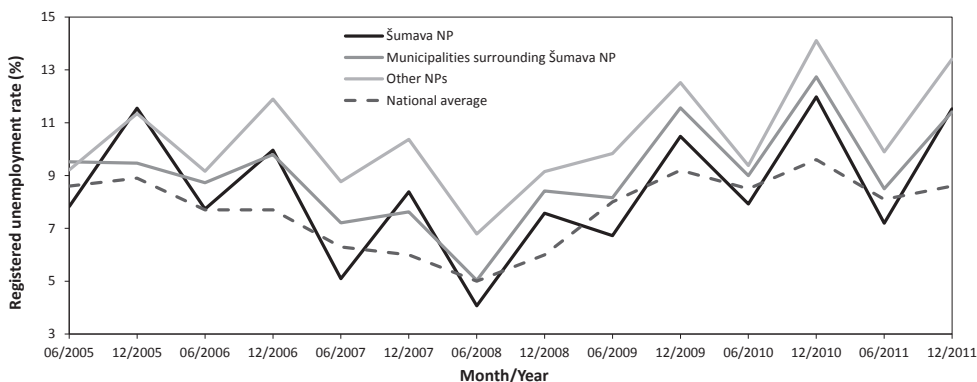


Fig. 2. Unemployment trends in municipality groups I–III and the average national registered unemployment rate in 2005–2011. (Data source: Ministry of Labour and Social Affairs of the Czech Republic)

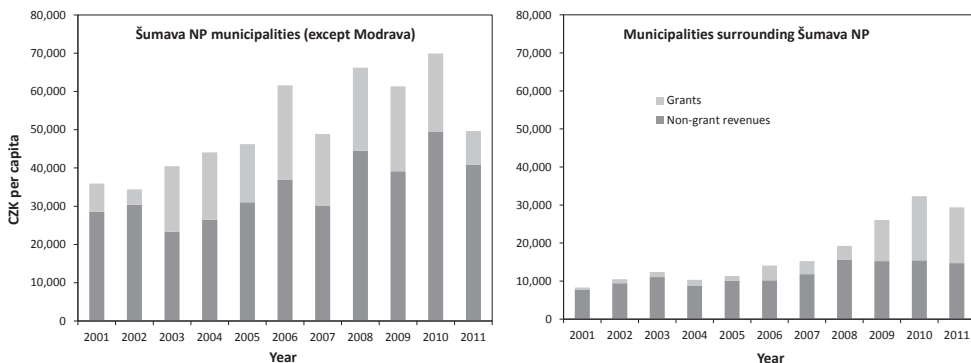


Fig. 3. Consolidated budget revenues in municipality groups I and II in 2001–2011 excluding the municipality of Modrava. (Data source: Ministry of Finance of the Czech Republic)

that both overall consolidated budget revenues and their proportion from grants were higher in Šumava NP municipalities than in surrounding municipalities in the whole study period (Mann-Whitney test, $p < 0.001$). The median of consolidated budget revenues was approximately 48,900 CZK per capita in group I and 14,100 CZK per capita in group II; median grant revenues accounted for approximately 17,600 CZK per capita in group I and 3,500 CZK per capita in group II).

DISCUSSION

Pilot summary of available socio-economic data

Population

The population within Šumava NP has decreased in the past two decades, although the population in corresponding municipalities of similar size in other Czech national parks and protected areas has been moderately rising in the same time period. Up till 2001, the population trend in Šumava NP was aligned with the overall national trend, with a decreasing population of small settlements and an increasing population in larger municipalities (BIČÍK & JELEČEK 2005). On the contrary, population within Šumava NP kept declining between 2001 and 2011, while on the nation-wide scale small settlements have started showing a rising trend (OUŘEDNÍČEK et al. 2013).

Concerning related population characteristics, PERLÍN & BIČÍK (2010) reported that the age structure among residents of Šumava NP did not significantly differ from the national average of correspondingly populated municipalities. In terms of migration, NOVOTNÁ & KOPP (2010) report a trend equivalent to the population dynamics in this study, showing that municipalities within the boundaries of Šumava NP had a negative migration balance of -43 inhabitants per 1000 inhabitants in 1991–2007. At the same time, these municipalities were characterized by a high intensity of migration turnover, indicating a low stability of communities in Šumava NP, which may have led to a lower attachment to and self-identification with the study area (PERLÍN & BIČÍK 2010).

According to KUŠOVÁ & TĚŠITEL (2014), local inhabitants perceive the lack of economic opportunities, together with strictly regulated spatial development and urbanization beyond the built-up area of municipalities' cadastral area, as the main reasons for population decline in the study area. On the other hand, the proximity of nature in Šumava NP presents a desirable feature for the local population (KUŠOVÁ et al. 2008).

Unemployment

The unemployment rate summarized in this study shows that although socio-economic conditions have been perceived as unfavourable by a certain proportion of local population within Šumava NP (GÖRNER et al. 2012), the local unemployment rate was comparable to the national average and was even lower than within other Czech national parks, though with seasonal variation. Interestingly, the unemployment rate within the boundaries of Šumava NP did not reach the level of surrounding municipalities, implying a positive influence of the national park on local unemployment rates, also reported by KŘENOVÁ & VRBA (2014).

Linking population trends with unemployment rates through research on migration was beyond the scope of the study. Although the prevailing interpretation explains low unemployment rates in Šumava NP by a positive influence of the national park on employment opportunities (KŘENOVÁ & VRBA 2014), another possible interpretation is that the unemployment rate has been lowered by outward migration of unemployed citizens, which would also

shed light on decreasing population levels in some types of local communities. Nevertheless, this issue presents a research gap and requires a more detailed study of migration rates and motivations in the study area.

Municipal budgets

Compared with municipalities surrounding Šumava NP, the municipalities within the boundaries of the national park gained much higher budget revenues per capita (as well as grant revenues in the vast majority of the studied period (2001–2011)). This conclusion holds both in the case that the municipality of Modrava (characterized by substantial tax revenues) was included into the analysis and in the case of analysing the remaining sample of municipalities without Modrava (cf. KŘENOVÁ & VRBA 2014). This result is in line with the findings of other studies (GÖRNER et al. 2012, KUŠOVÁ & TĚŠITEL 2014), suggesting that local population in Šumava NP tends to perceive local socio-economic conditions such as unemployment or financial revenues as unsatisfactory, which is, however, not supported by the comparison with adjacent regions of the Czech Republic.

Future socio-economic research in Šumava NP

The results of this analysis illustrate that Šumava NP represents a contested area, undergoing migration and population instability since the establishment of the national park. At the same time, the area is struggling with discrepancies in how the current conservation regime has been perceived by different interest groups, ranging from strongly positive to strongly negative perception. Last but not least, disagreements remain regarding how the current conservation regime influences the unemployment rates and economic welfare of communities in the national park.

In such a situation, extensive socio-economic research is needed to bring sufficient evidence on how the national park influences local welfare and well-being. Although a certain number of studies have been available in the study area, systematic socio-economic and cultural research and monitoring have been vastly lacking hitherto.

The neighbouring Bayerischer Wald NP on the German side of the border can serve as an example of profound socio-economic research, covering the whole time-span of the NP existence and building evidence base for its sustainable management. For instance, a recent comprehensive study initiated by the national-park's authorities summarizes economic research on how the last 25 years of existence of Bayerischer Wald NP and changes in conservation regimes have impacted economic welfare of local communities (JOB 2008, RALL 2008, MAYER et al. 2010). Socio-economic research is stated as one of the research priorities of the Bayerischer Wald NP Administrative (NPBW 2015).

The Bavarian example can also serve as an inspiration for future research direction on the Czech side of the transboundary NP, pointing out currently understudied socio-economic phenomena. In this respect, socio-economic research initiated on the German side of the Šumava/Bayerischer Wald transboundary national park introduces broader perspectives for the NP management, studying mutual perceptions of the two sides of the national park and potential implications for nature conservation and sustainable landscape management (ARNBERGER & SCHOISSENGEIER 2012). Furthermore, recent economic studies elucidate potential trade-offs between opportunities for nature-based tourism and wood-processing use of forests (MAYER & JOB 2011).

Evidently, there are multiple areas to target socio-economic research in Šumava NP in the future, which may help to facilitate communication between local communities, the nature conservation sector and multiple other stakeholders, and to mitigate controversies of nature protection in the area. Selected gaps identified by this study, which may be addressed by

systematic socio-economic research, are as follows:

- 1) Indicators of human well-being, together with the role of environmental well-being in forming human well-being in general.
- 2) Impact of the national park on the economic revenues and welfare of local communities.
- 3) Demographic mechanisms underlying decreasing population trends in local municipalities.
- 4) Migration trends and multiple types of their motivation.
- 5) Perception of current quality of life and employment opportunities by communities within the boundaries of the national park.
- 6) Tourism intensity and trends, visitor counts.
- 7) Mechanisms of public opinion-making in the study area.

These research gaps need to be addressed in the future, possibly within the framework of a local long-term socio-ecological research (LTSER) platform Silva Gabreta. Enhanced evidence of demographic and economic trends in the area, specific contribution of tourist spending on local sectors of the economy and its influence on jobs and income, systematic visitation surveys, together with broader analyses of the perception of local nature conservation regimes and tourism use, may build the basis for sustainable management of this valuable natural area.

CONCLUSIONS

The aim of this study was twofold, aiming to present a systematic review of available socio-economic studies focusing on Šumava NP, and to provide a pilot assessment of socio-economic indicators describing basic demographic and economic trends in Šumava NP. We illustrated that systematic socio-economic research in the area is lacking, leaving the question how current nature conservation regimes influence local communities largely unanswered. The pilot socio-economic analysis showed that the municipalities in Šumava NP do not substantially differ from the national average in most of the socio-economic sustainability indicators. Furthermore, in terms of budget revenues Šumava NP municipalities even exceed the per capita income in neighbouring municipalities outside the national park. The evidence presented in this paper is in line with previous studies suggesting that there is a gap between the socio-economic reality of the municipalities in Šumava NP and the prevailing way the quality of life is perceived by local inhabitants and presented in the media. However, the representation of different types of public opinions, the reasons for different views and possible solutions remain the major issues, requiring to be addressed in future research.

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