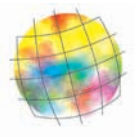
FOLIA GEOGRAPHICA

ACTA FACULTATIS STUDIORUM HUMANITATIS
ET NATURAE UNIVERSITATIS PREŠOVIENSIS

PRÍRODNÉ VEDY

FOLIA GEOGRAPHICA

VOLUME 58, 2016, No. 2



VYDAVATEĽSTVO
PREŠOVSKEJ
UNIVERZITY

PREŠOV

Vedecký časopis pre teóriu, výskum a prax geografie a príbuzných disciplín /
Scientific journal for theory, research and practice of geography and related disciplines

**FOLIA GEOGRAPHICA,
ACTA FACULTATIS STUDIORUM HUMANITATIS
ET NATURAE UNIVERSITATIS PREŠOVIENSIS, PRÍRODNÉ VEDY**
VOLUME 58, 2016, NO. 2

Vydavateľ / *Publisher:*

Vydavateľstvo Prešovskej univerzity v Prešove, Ulica 17. novembra 15, 080 01 Prešov, Slovensko / *Publishing University of Prešov, Ulica 17. novembra 15, 080 01 Prešov, Slovakia*

ISSN 1336-6157 (Folia Geographica)

ISSN 1336-6149 (Acta Facultatis Studiorum Humanitatis et Naturae Universitatis Prešoviensis, Prírodné vedy)

EV 4949/14

OBSAH / *CONTENT*

Folia geographica, Acta facultatis studiorum humanitatis et naturae Universitatis Prešoviensis,
Prírodné vedy Volume 58, 2016, No. 2, FHPV PU Prešov. ISSN 1336-6157

THE NUMBER AND SPATIAL DISTRIBUTION OF THE ROMA POPULATION IN HUNGARY – IN THE LIGHT OF DIFFERENT APPROACHES

István Zoltán PÁSZTOR [1] ***– János PÉNZES*** [1] ***– Patrik TÁTRAI*** [2]
Ágnes PÁLÓCZI [1]

Abstract: *Measuring the number of ethnic minorities is one of the greatest challenges on the field of demography and ethnic geography. This is especially true for Roma whose census number does not coincide with estimated number by external observers. Several datasets and surveys are available to count the number of Roma people in Hungary, however they resulted in different numbers. The present study targets to overview these surveys, their approach and method and aims to provide a brief summary about the recent survey of the University of Debrecen based on the personal and electronic questioning of local representatives about the number of Roma. This study is also an attempt to show regional distribution of Roma population in Hungary. As a result, the estimated number of the Hungarian Roma community is 876,000 that is one of the highest values published so far and exceeds census number almost 3 times. The spatial patterns of Roma show their intense segregation, peripheralization and the phenomenon of ethnic change primarily in North-East and South Transdanubia.*

Key words: *census, ethnicity, Hungary, Roma, survey*

INTRODUCTION

Current paper is dealing with the issue of ethnic data collection with special attention to the Roma population. The number of Roma is a highly debated issue not only among scholars but among the public and politicians as well. The number of ethnic Roma by self-identification (for example, the numbers provided in censuses) has always been far fewer than the number of Roma estimated by experts (see e.g. Kocsis and Kovács, 1991, 1999; Ladányi and Szelényi, 2001; Kemény and Janky, 2005; Hablicsek, 2008). Consequently census results regarding the number of Roma have been considered 'unreliable' and, in order to fill the gap, there have been many surveys to measure their numbers and characteristics since the 1970s. These surveys showed that Roma number according to external identification is about 2-3 times higher than census results, thus Roma population is sometimes called as *"hidden minority"*.

1 ***István Zoltán Pásztor, PhD., János Pénzes, PhD., Ágnes Pálóczi, MSc.,*** *University of Debrecen, Department of Social Geography and Regional Development Planning, H-4032 Debrecen, Egyetem tér 1., e-mail: pasztor.istvan.zoltan@gmail.com; penzes.janos@science.unideb.hu; palocziagnes89@gmail.com*

2 ***Patrik Tátrai, PhD.,*** *Geographical Institute of the Hungarian Academy of Sciences, RCAES, H-1112 Budapest, Budaörsi út 45., e-mail: tatrai.patrik@csfk.mta.hu*

Nevertheless, significant differences can be detected even among the surveys from the same period. For example the number of Hungarian Roma population counts 315,000 by the 2011 census; demographic estimate for the same date calculated from the 2003 national survey indicated 658,000 Roma people (Hablicsek, 2008) and the survey of University of Debrecen resulted in 876,000 Roma inhabitants few years later. These differences derive from the different survey methods and basically it is back to the uncertain boundaries of the Roma ethnicity (i.e. who is Roma?) (see Ladányi and Szelényi, 2001).

The objective of this paper is to make an overview about the different data sources about the Roma population and to give a short evaluation about them. The paper also aims at to highlight the causes of the uneven numbers by the different methods and surveys. Besides the introduction of the available data sources, the objective of the study is to present the latest national estimate surveyed by the University of Debrecen and to make a comparative analysis about the geographical patterns of Roma distribution.

ROMA POPULATION IN HUNGARY AND THE DILEMMA OF MEASURING

Roma population growth in the light of the censuses

In Hungary ethnic composition of the population is generally studied by census results based on self-declaration – as censuses are considered to be regular, detailed, comprehensive, easy available and complete database with more or less similar methodologies in the neighbouring countries (Papp, 2010; Kapitány, 2013). Several studies apply census data to analyse the spatial pattern or demographic changes of the Roma population as well (e.g. Kocsis, 2010). However, it should be mentioned that an essential change in the Hungarian census methodology took place in the turn of the millennium. Before 2001 censuses intended to measure ethnic attachment by questions focusing on ethnicity and mother tongue. Answering the questions was compulsory and only one answer could be given for a question (Tátrai, 2015).

The 2001 census underwent significant changes compared to the previous practices. Besides the questions focusing on ethnicity and mother tongue, questions regarding the cultural attachment and the language used in communities of family and friendship were also asked. For each of the four questions three answers could be given. It was also an important innovation of the 2001 census that answering the questions of ethnicity and religious denomination was not compulsory. The 2011 census generally used the same method as ten years earlier, but at some points it differed from the previous one. Ethnicity gained a bigger attention, as this year two questions focused on this topic. Besides, the number of the possibly chosen answers was reduced from three to two, and the question about cultural attachment was removed from the census. Furthermore, the questionnaires could be filled in both online and on paper. The paper-based filling in could be carried out both with the help of official interviewers, and also alone, which gave the complete freedom to undertake any identities (Tátrai, 2015). The above factors should take into account when ethnic data of the censuses are analysed.

Based on the census results, *Roma population is the largest ethnic minority in Hungary* seeing any kind of sources or literature and the only ethnic group with increasing number and ratio among the total population (Figure 1). According to the 2011 census in Hungary, the number of ethnic Roma population increased by 63 per cent in ten years to 309 thousand persons. The aggregate number of those who declared Roma affiliation exceeded 315 thousand persons or 3.2% of the total population. As it is possible to declare multiple ethnic identities since the 2001 census, most of those expressing Roma affiliation self-identified Roma and Hungarian ethnicity simultaneously (about 74% of the total Roma affiliations). At the same time, only 54 thousand persons (17.2 percent of the whole Roma community) declared Roma mother tongue due to their long-standing linguistic assimilation, while 61 thousands spoke Lovari, Romani or Bayash language within their circle of relatives or friends (19.4 percent of the whole Gypsy community).

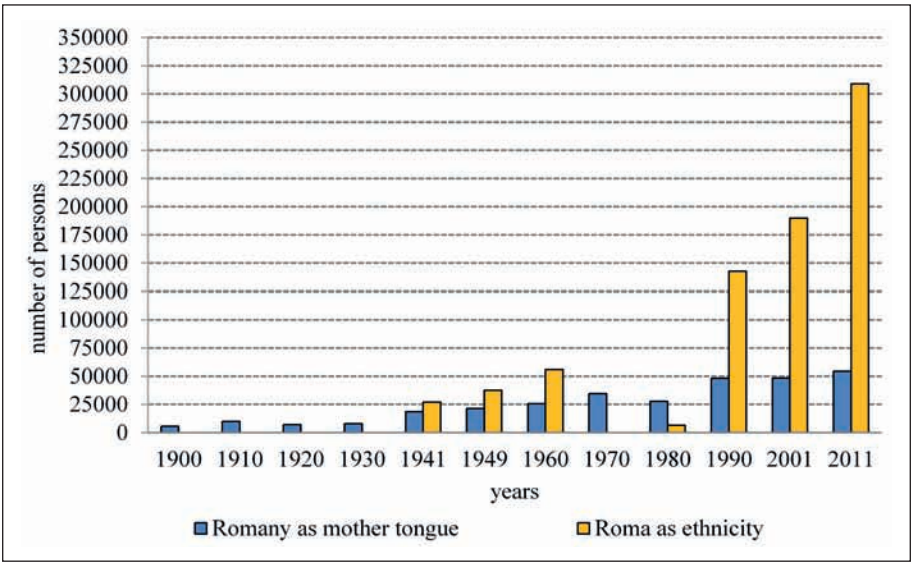


Figure 1: *The number of Roma population in Hungary by mother tongues and ethnicity*
Source: edited by the authors by the censuses from the HCSO

The Roma population growth is originated from objective and subjective factors. The salient increase in the number of Roma in the past decades is the consequence of both the above-mentioned changes in census methodology, and the high fertility rate of the Roma outstripping the respective data of any other ethnic groups. However, the growth in their number was much higher than their estimated fertility would have generated (Hablicsek, 2008), thus we argue that the census number of Roma depends primarily on the subjective nature of self-identification influenced by the diverse Roma identity constructions and the contemporary social conditions (including their stigmatized being, discrimination, etc.) (Csepeli and Simon, 2004; Tátrai, 2015).

Due to the above factors, the declaration of ethnicity is far from unambiguous in the case of the Roma population. Their intra-ethnic differences hamper them to form a compact and homogenous community. According to the mostly mutual opinion of the experts – Roma population can be divided into three large groups (see e.g. Revenga et al., 2002; Kemény and Janky, 2005):

– Hungarian Roma – in Romani: Rumungro – have been living in Hungary for centuries constitute the largest group with their share of approximately 70 per cent. Hungarian has become their native language for many generations now. At the time of the censuses, their majority declares themselves not Roma but Hungarians;
– Wallach Roma moved to Hungary from Wallachia mainly during the 19th century, and they constitute approximately 21 per cent of the total Roma population in Hungary. Their language – the Lovari dialect of the Romani language – is spoken by most of them even today;
– The Bayash group represents approximately 8 per cent of the Roma living in Hungary. Their language is the archaic Banat dialect of Romanian;
– The remaining 1 per cent is represented by the small Roma communities (Sintos, Vend Roma) living mainly along the western border of Hungary (Vekerdy, 1989; Süli-Zakar, 2012).

The listed Roma groups are sometimes sharply segregated from each other and these communities significantly differs in their social and cultural characteristics (Lengyel, 2004; Fónai and Vitál, 2008; Süli-Zakar et al., 2013; Pénzes, 2016).

Estimates and surveys to count the number of Roma population

As there are a huge gap between the number of Roma by self-identification and by ascription by external observers, researchers are interested to measure "objective" number of Roma since the second half of the 19th century but especially since the 1970s. This discrepancy is not a Hungarian phenomenon – it can be detected in the whole East Central European region (e.g. Ladányi and Szelényi, 2001; Dolná, 2009; Kyšela, 2015; Molnár et al., 2016; Szilágyi, 2016). As the task is complex, the number and method of approaches to measure Roma population are manyfold.

Due to the complexity and costliness of national surveys based on representative or non-representative population samples, they are rarely carried out and their spatial decomposition is very limited. Such surveys were implemented in Hungary in 1971, 1993 and 2003 with a two per cent sample for the first two time and only one per cent sample in 2003 (Kemény and Janky, 2005). These investigations defined Roma those who are identified as Roma by non-Roma external observers (experts) primarily based on anthropologic character, way of life and ethnic descent (Kemény and Janky, 2005). These surveys revealed the clear trend of Roma population growth (Figure 2), however, other surveys with similar method resulted in different numbers. For example 1993 national survey by Kemény and his colleagues (see Kemény and Janky, 2005) estimated Roma population share as 4.7 per cent, while the estimate by the Central Statistical Office in the same year reported about 3.9 per cent (Mészáros et al., 1994). Both results exceed the census numbers about 3 times.

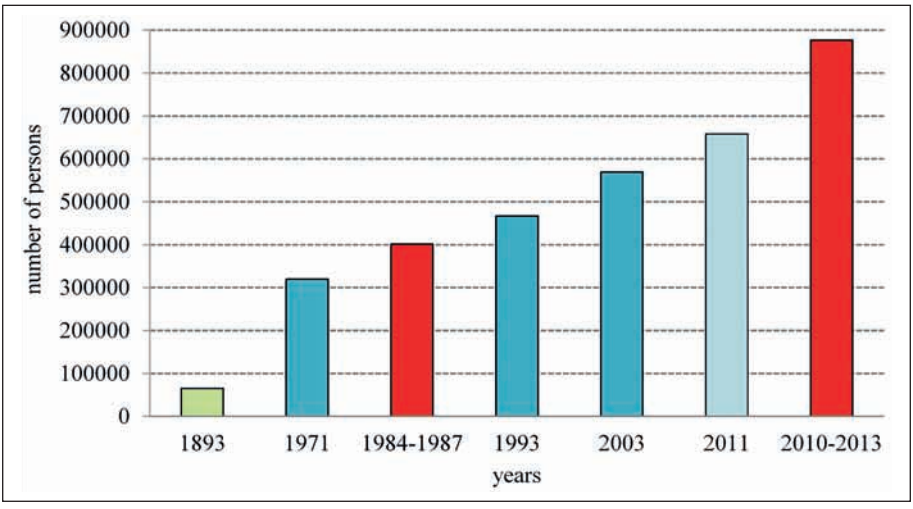


Figure 2: *The number of Roma population in Hungary according to surveys and estimates*
Sources: ***1893****: A Magyarországban…, 1895;* ***1971, 1993, 2003****: Kemény and Janky, 2005;* ***1984-87****: Kocsis and Kovács, 1991;* ***2011****: calculation by Hablicsek, 2008;* ***2010-13****: survey of the Universtiy of Debrecen*

Another survey from the 1980s applied a quite different approach. Similar to the method by Kemény and Janky (2005), the so-called CIKOBI dataset (Committees for the Coordination of Gypsy Affairs – former unit of the county councils during the socialist era) applied the external classification of Roma, however it applied territorial approach instead of representative sample, and data were collected in every settlements in Hungary. The survey was carried out between 1984 and 1987 by the questioning of local councils. Due to its method (external categorization by local experts) it worked well in small sized settlements, but resulted in uncertain figures in urban neighbourhoods. The data of Budapest was especially distorted. The total number of Roma population was 400,000 after the collection ended (see Kocsis and Kovács, 1991; Kertesi and Kézdi, 1998), which is still significantly higher than that of the 2011 census found two and half decades later.

Beyond national surveys regional or local *surveys targeted the segregated Roma colonies,* where Roma live in a compact area with colony-like circumstances. The objective of these surveys is to detect the health problems and living conditions of the communities (Kósa et al., 2007; Szakmáry et al., 2012). They are not appropriate to create a comprehensive overview about the whole Roma society.

Databases are created by the primary schools could provide interesting and important information about the number of Roma pupils by their ratio. Through these data the ethnodemographic processes (Papp, 2012) and the ethnic segregation might be detected. Before 1992, all primary schools filled out a compulsory questionnaire that contained, inter alia, the total number of students and the number of Roma students in the school. This data collection is ceased to be continued after 1992. The data

on the number of Roma students are available from 2006 in the Hungarian National Assessment of Basic Competences (NABC). School-level data are provided by the school principal estimating the ratio of Roma students in the school (Kertesi and Kézdi, 2012). This database more or less subjective as it depends on the assessment of the school principals and it covers only a small segment of the total population.

Minority local government elections are held at the time of the local governmental elections. Citizens from ethnic minorities must sign up to the minority register to vote. This list should contain at least 30 persons – except for special cases – to organize elections on a settlement. The number of registered minority voters is an important and available data, however the values might be distorted by the possibility to vote in a given location irrespectively the place of living. It is important to emphasize that this database depends significantly on the political activity but general spatial relationships can be detected on its basis comparing with other resources – namely its territorial pattern is more or less similar (Pásztor and Pénzes, 2013).

Other possibilities are provided by the analysis of the *activities of non-governmental organisations* – e.g. associations or foundations dealing with cultural and educational roles or other development tasks. However, these sources are really mosaic-like and Roma NGO activities also depend on the identity or qualification.

Data of birth/marriage register is rather appropriate to carry out historical research (Demeter and Bagdi, 2009). The identification of ethnicities by surnames and first names resulted in satisfying conclusions in the case of different nations. This way of data collection about the Roma population requires considerable experiences about a given territory due to the large scale mixing of the names (Süli-Zakar et al., 2013).

Complex approaches use more sources simultaneously and compares various types of data. Some of such research compares census data and *data collected on the field by households.* They are relevant and very precise in local level but covers only few settlements, thus they are not appropriate to give national overview (Keményfi, 2002; Tátrai, 2010; Pásztor, 2013; Balizs, 2014).

NUMBER OF ROMA POPULATION ACCORDING TO THE LOCAL REPRESENTATIVES' OPINION

The survey of the University of Debrecen and its methodology

Our research aimed at to find out the number of Roma by applying external categorization – almost ten years after the last comprehensive survey in 2003. By that time estimates about the number of Roma varied from 500 000 to one million. Our research applied similar method to the above-mentioned CIKOBI-survey; the colleagues of Department of Social Geography and Regional Development Planning at the University of Debrecen made an extended survey by personal and electronic questioning (primarily via telephone or by e-mail) of local self-governments of every Hungarian settlement to ask the number or ratio of the local Roma. It was supposed that local representatives have – in an ideal case – complex overview about their settlement and the number of local Roma population. This kind of data collections had been successfully applied in smaller territorial units (Baranyi et al., 2003; Filepné

Nagy, 2005) or even in whole countries (Matlovičová et al., 2012; Mušinka et al., 2014). This approach seems to become important in the Central and South Eastern European countries from Romania to Slovenia where recently extended research projects were initiated. Our database dates back between 2010 and 2013 and it is appropriate to make a comparison with the CIKOBI database from the mid-1980s.

Despite the common methodological basis, the survey applied a bit different methodology due to practical reasons emerged during the field work. As not all local councils showed willingness to answer, the query was forwarded to the local minority self-governments approximately in every tenth settlement. Moreover, some of the majors were ethnic Roma as well, so the original viewpoint was modified and we defined Roma those who were identified as Roma both by non-Roma *and Roma* experts.

The experiences were similar to the CIKOBI survey, namely the experts were uncertain concerning the number of local Roma mainly in the large towns. For example, the overall data for Budapest gave the interval between 105400 and 128,500. In order to be comparable and to be able to map the data, the Roma population in Budapest was determined in 120,000 that gave the "maximum likelihood" by the districts according to the data reporters. On the contrary, experts in smaller settlements provided rather confident classification, thus such data can be regarded as precise. After the data of 2011 census became available, the extremely distorting data was filtered out and data requests were sent again.

As the result of the survey of the University of Debrecen, the number of Roma was estimated in 876,000 or 8.9 per cent of the total population in Hungary. This figure is much higher than it was expected and what would have concluded from the previous surveys, however the method allows comparing only to the CIKOBI-survey: our research show that the number of Roma inhabitants was more than two times higher than the CIKOBI sum in 1987. This relatively high figure does not necessarily means "measurement error", rather it reflects the current social circumstances in Hungary. However the following factors can be considered as obstacles during the survey.

Migration causes problems in the creation of a precise overview. International migration is hardly traceable. Official statistics show insignificant degree of international migration (see Tóth and Vékás, 2013), nevertheless literature reports on Roma migrant flows to UK, Canada and Germany (Vidra and Virág, 2012; Pénzes, 2016).

It seems that non-Roma in *intermarriages,* and descendants of ethnically mixed couples are considered as Roma apart from the person's self-identification by the non-Roma (Ladányi and Szelényi, 2001; Csepeli and Simon, 2004; Kemény and Janky, 2005). This statement was also confirmed by our research experiences.

The third factor highlighted here is that imposed ethnic identity is sometimes based on social status. This means that poverty is associated with Roma, thus poor people may be categorized as Roma (Ladányi and Szelényi, 2001). Some of our informants reckon *poor people as Roma* and use equal terms with them. This characteristic could also have effect on the number of the estimated number of Roma community (Velkey, 2014).

Result of the survey in territorial decomposition

The territorial pattern of latest census data and the dataset based on the survey of the University of Debrecen represent spectacular spatial disparities. These datasets provide the detailed territorial decomposition on the LAU II (settlement) level but a comparison is expedient to make. Since rest part of the previously introduced surveys is available on the level of NUTS II regions (in which the data of Budapest and Central Hungary are united) a general overview can be accomplished on this territorial level (Table 1). The number of Roma pupils in primary schools (Kertesi and Kézdi, 2012) covers only the 6-14 years age group and the number of registered voters on the Roma minority elections includes the adult population (Minority elections, 2014).

Table 1: *Territorial division of Roma population by different resources**

Regions/data sources	CIKOBI, 1984-1987	Census, 1990	Kemény-Kertesi, 1993	Census, 2001	Kemény-Janky, 2003	*Kertesi-Kézdi, 2011*	Census, 2011	Hablicsek, 2011	UD, 2010-2013	*Minority election, 2014*
Central Hungary and Budapest	17,46	10.38	15.31	12.87	14.12	*15.05*	12.95	20.21	21.65	*11.19*
Central Transdanubia	5,14	4.08	5.20	4.57	6.52	*5.29*	5.13	6.08	6.12	*4.04*
Northern Great Plain	22,52	29.14	25.10	24.63	16.77	*25.66*	26.10	21.99	23.83	*28.35*
Northern Hungary	28,06	32.25	27.56	33.64	32.07	*30.71*	29.57	27.66	24.45	*26.90*
Southern Great Plain	8,04	7.21	7.90	7.53	12.40	*7.40*	8.20	7.40	8.82	*9.92*
Southern Transdanubia	13,67	12.70	13.98	12.84	12.37	*11.35*	13.77	12.10	10.93	*14.54*
Western Transdanubia	5,10	4.23	4.95	3.90	5.74	*4.53*	4.27	4.57	4.20	*5.07*

Source: by Kertesi and Kézdi 1998; Kemény and Janky, 2003; Hablicsek, 2008; Kertesi and Kézdi, 2012; survey of the University of Debrecen, census data from the HCSO
** Dataset about one given subgroup of the Roma population with Italics style*

The regional distribution of the censuses, surveys and registers represents some spectacular distortions – e.g. the share of Central Hungary and Budapest is ranging from 10 per cent to almost 22 per cent or the ratio of the Northern Great Plain is varying in the 17 and 29 per cent interval. These cases are not reasoned by temporal changes but clearly demonstrate the significantly different characters of the data collections. At the same time considerable uncertainty is represented by these values

in the evaluation of tendencies. For instance increasing share of Roma population is demonstrated by the census values in the case of Central Hungary and Budapest, which is confirmed by the surveys based on the estimates of local representatives (CIKOBI and the survey of the University of Debrecen). On the contrary, the surveys by Kemény and his colleagues in 1993 and 2003 show decreasing share. Similar discrepancies can be detected in the case of Northern Hungary while fluctuating values appears at the Northern Great Plain region.

The absolute numbers of results are represented on the NUTS III level by thematic map on the basis of the CIKOBI survey, the last sociological survey, the census in 2011 and the survey of the University of Debrecen (Figure 3). Figure 3 shows that outstanding values can be detected by the 2003 survey (Kemény and Janky, 2005) in the case of Heves and Békés counties. Among the four database compared it is the 2010-2013 survey (University of Debrecen), which found significantly higher values, however the territorial pattern is similar to the previous surveys.

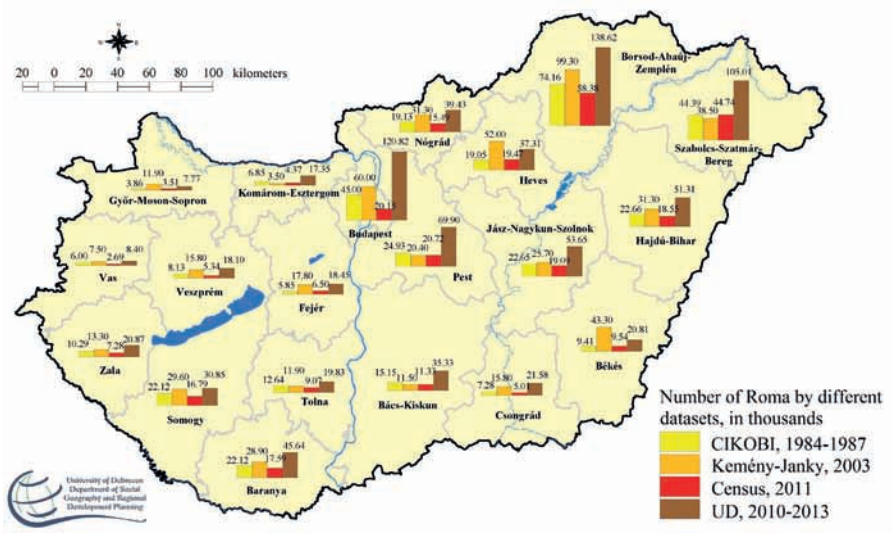


Figure 3: *The number of Roma by different datasets on NUTS III level, in thousands*
Source: edited by the authors data from Kocsis and Kovács, 1991; Kertesi and Kézdi, 1998; Kemény and Janky, 2003; the HCSO census and the survey of the University of Debrecen (UD)

The background of differences among the analysed surveys should be explained mainly by methodological reasons, nevertheless outstanding values by the 2003 research may be in connection with low sample size and thus low territorial representation.

The territorial presence of the Roma population is clearly seen on Figure 4 edited by the LAU II level data of the last census. A similar but hard-contrast pattern is illustrated by the survey of the University of Debrecen (Figure 5) that resulted in higher values in most cases. Beyond the different methodology which caused the sharp differences in the figures, the territorial pattern shown by the census and our

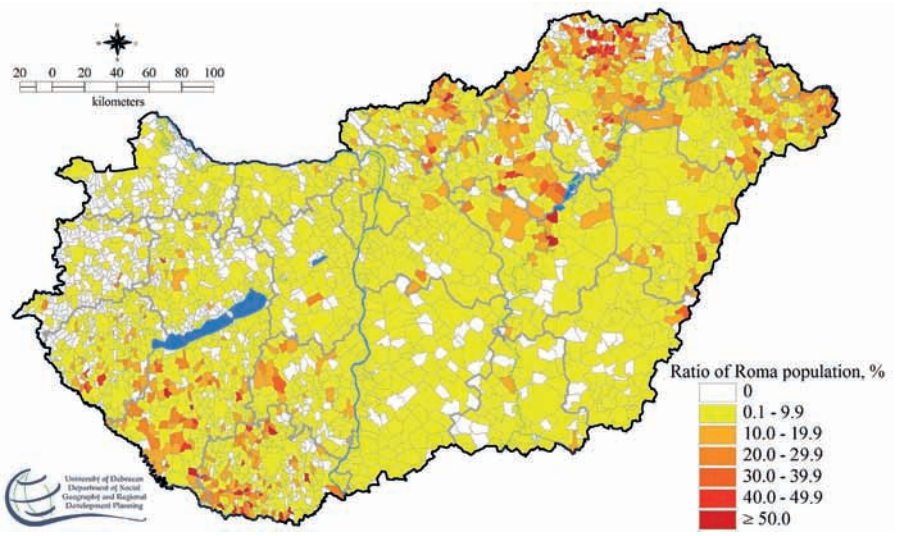


Figure 4: *The ratio of the Roma population in the Hungarian settlements in 2011, %*
Source: edited by the authors by the census data from the HCSO

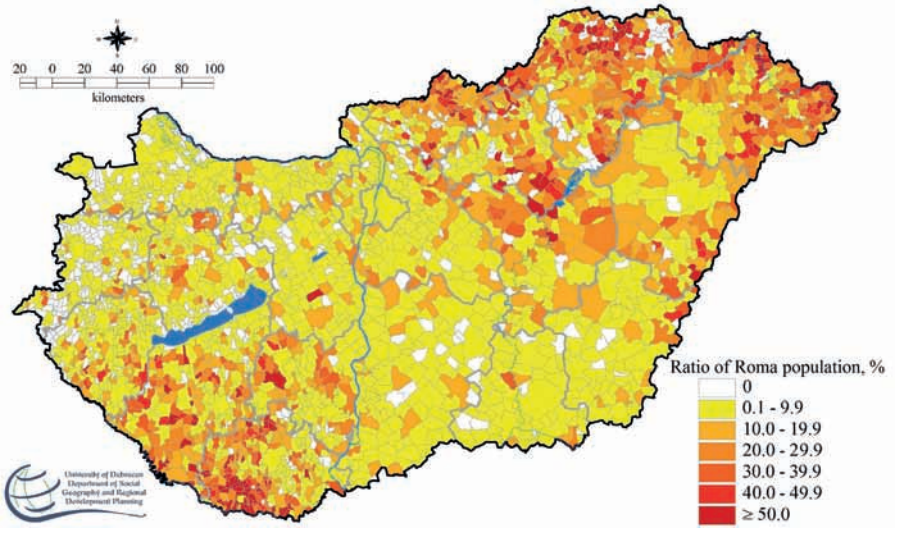


Figure 5: *The ratio of the Roma population in the Hungarian settlements in 2010-2013, %*
Source: edited by the authors by the survey of the University of Debrecen

survey is quite similar. The results of the survey by UD between 2010 and 2013 were confirmed by a recent research project (in 2016) focused on two NUTS III counties – by the questioning of the local self-governments and by the Roma minority self-governments as well (Pénzes, 2016).

The results of the 2010-2013 survey unambiguously outlines contiguous areas where demographic and social-economic trends resulted in the rapid growth of Roma population (marginalization and rising unemployment during the market transition period, a growing number of Roma moved back to depopulating, peripheral, backward villages, which in some cases contributed to selective migration, ethnic change and rural ghettoization – Virág, 2006; Pásztor et al., 2012). Due to these processes the concentration of Roma population became more visible mainly in the underdeveloped North-East Hungary (Kozma, 2008; Bujdosó et al., 2013) and South-Transdanubia.

One of the most important differences between the census data and the survey of the University of Debrecen is expressed by the number of settlements with Roma population over 50 percent (Figure 6). The ratio of Roma population was above 50 percent in 31 settlements on the basis of the census data from 2011. According to the survey of the University of Debrecen this number was 137 (including every settlement from those were characterized by Roma majority by the census) and ongoing ethnic change can be detected in the case of 102 others (ratio of Roma inhabitants above 40 percent).

Figure 6: *The process of ethnic change by the databases from the recent years*
Source: edited by the authors data from the HCSO census and the survey of the University of Debrecen (UD)

Characteristic changes are demonstrated by the results in the ethnic structure of Northeastern and Southwestern Hungary. According to the experiences during the survey the introduced results tend to be relevant as repliers from smaller settlements could provide more precise overview about the number of the local Roma population and small villages are mostly influenced by the illustrated demographic trends of these parts of Hungary.

CONCLUSION

Measuring the number of ethnic minorities is one of the greatest challenges on the field of demography and ethnic geography. This is especially true for Roma whose census number does not coincide with estimated number by external observers, therefore Roma are sometimes regarded as a 'hidden' minority. Researching the number of Roma is further hampered by their segmentation into sup-groups, by which Roma do not form a homogenous ethnic group and have no uniform ethnic identity. These features make the issue of Roma identity more complex and uncertain at the same time. Besides, there are more other factors (e.g. migration patterns or specificities of external categorization) that mean significant obstacles to create a precious overview or estimation about the number of Roma population.

Results of the censuses and the surveys carried out in the past 50 years can be considered as inconsistent, however they all report about the same tendency, the increase in the number of Roma. Census data are based on the self-declaration; surveys build on external categorization of interviewers (and other experts) and the surveys with territorial approach apply external categorization by settlements collecting the local representatives' estimates.

The survey of the University of Debrecen became more complex with the extended range of repliers (non-Roma and Roma as well). According to the specific features this methodology resulted in the largest number (876,000) of Roma population in Hungary, which is almost three times exceed the 2011 census number and higher than it was counted/estimated from the previous surveys. Our survey revealed the territorial patterns of Roma population and show Roma concentration in regions characterised by social problems and cumulative backwardness, where selective migration and ageing of non-Roma changes the ethnic proportions. However, the relatively high figure of the survey by UD or the inconsistency among the results of other research should be attributed less to some kind of measurement error, rather it is the result of the different methodology, and the different classificatory systems. Eventually, the discrepancy of the figures by the particular surveys, the several obstacles of the measurement and the different Roma definitions suggests us that the ethnic boundary of the Roma are somewhat blurred and thus it is not possible to provide a completely precise or objective number of Roma. Notwithstanding, every survey is an important contribution to the Roma issue and every result means an important fact about the contemporary social circumstances in Hungary.

REFERENCES

BALIZS, D. (2014). Felsőőr átalakuló etnikai és vallási térszerkezete [Changing ethnic and religious pattern of Oberwart], Földrajzi Közlemények, Vol. 138, 2014, No. 4, pp. 306–321.

BARANYI, B., G. FEKETE, É., KONCZ, G. (2003). A roma-szegregáció kutatásának területi szempontjai a halmozottan hátrányos helyzetű encsi és sellyei-siklósi kistérségekben [Territorial Aspects of the Research of Roma Segregation in the Cumulatively Disadvantageous Small Regions of Encs and Sellye–Siklós] Kisebbségkutatás, Vol. 12, 2003, No. 2, pp. 344–362

BUJDOSÓ, Z., PATKÓS, C., KOVÁCS, T., RADICS, Z., BAROS, Z., DÁVID, L. (2013). The Importance and Public Acceptance of Biomass and "Green Energy" – the Example of an Underdeveloped Hungarian Region, Journal of Central European Green Innovation, Vol. 1, 2013, No. 2, pp. 13–25

CSEPELI, G., SIMON, D. (2004). Construction of Roma Identity in Eastern and Central Europe: Perception and Self-identification, Journal of Ethnic and Migration Studies, Vol. 30, 2004, No. 1, pp. 129–150

DEMETER, G., BAGDI, R. (2009). The Effects of Migration and Settling Policy on the Ethnic and Demographic Structure of Szatmár/Satu Mare County 1715-1992. In Migráció és asszimiláció Északkelet-Magyarországon és a Partiumban (1715-1992), edited by Demeter, G., Bagdi, R. Studia Historico-Demographica Debrecina, Vol. 1, 2009, pp. 261–271

DOLNÁ, Z., (2009): The demographic situation of the Roma minority in the micro-region" Stráže", Folia Geographica, Vol. 49, 2009, No. 14, pp. 74–82

FILEPNÉ NAGY, É. (2005). Nemzeti és etnikai kisebbségek Szabolcs-Szatmár-Bereg megyében [National and Ethnic Minorities in Szabolcs Szatmár-Bereg County], In: Kisközségtől az eurorégióig [From small village to the euroregion], edited by Czimre, K. Didakt Kiadó, Debrecen, 2005, pp. 218–227

FÓNAI, M., VITÁL, A. (2008). A tiszavasvári magyarcigány és oláhcigány lakosságszociális helyzete és egészségi állapota [Social status and health conditions of the Romungro and Vlach Gypsy population in Tiszavasvári], A Falu, Vol. 23, 2008, No. 4, pp. 63–82

HABLICSEK, L. (2008). The development and the spatial characteristics of the Roma population in Hungary. Experimental population projections till 2021, Demográfia, Vol. 51, 2008, No. 5, English Edition pp. 85–123

KAPITÁNY, B. (2013). Kárpát-medencei népszámlálási körkép [A census survey in the Carpathian Basin], Demográfia, Vol. 56, 2013, No. 1, pp. 25–64

KEMÉNY, I., JANKY, B. (2003). A cigány nemzetiségi adatokról [On Gypsy minority statistics], Kisebbségkutatás, Vol. 12, 2003, No. 2, pp. 309–315

KEMÉNY, I., JANKY, B. (2005). Roma Population of Hungary 1971-2003. In: Roma of Hungary, edited by Kemény, I.., Atlantic Research and Publication, Highland Lakes, 2005, pp. 70–225

KEMÉNYFI, R. (2002). A gömöri etnikai térmozaik [Ethnic mosaic of Gemer]. Komárno – Dunajska Streda: Forum Institute for Minority Studies – Lilium Aurum, 2002.

KERTESI, G., KÉZDI, G. (1998). A cigány népesség Magyarországon, dokumentáció és adattár [Gypsy population in Hungary, documentation and database], Socio-typo, Budapest, 1998, 467 p.

KERTESI G., KÉZDI, G. (2012). Ethnic segregation between Hungarian schools: long-run trends and geographic distribution, Hungarian Statistical Review, Vol. 90, 2012, No. 16 s. 18–45

KYŠELA, S. (2015): The population development in the Levoča Mountains (Slovakia), Folia Geographica, Vol. 57, 2015, No. 1, pp. 108–122

KOCSIS, K. (2010). Changing Ethnic Patterns in the Carpatho-Pannonian Region (1989-2002), Minorities Research, 2010, No. 7 pp. 7–28

KOCSIS, K., KOVÁCS, Z. (1991). A magyarországi cigánynépesség társadalomföldrajza [Social geography of the Hungarian Gypsy population]. In: Cigánylét [Living as Gypsy], edited by Utasi, Á. and Mészáros, Á. MTA Politikai Tudományok Intézete, Budapest, 1991, pp. 78–105

KOCSIS, K., KOVÁCS, Z. (1999). A cigány népesség társadalomföldrajza [Social geography of the Gypsy population]. In: A cigányok Magyarországon. Magyarország az ezredfordulón, edited by Glatz, F. MTA, Budapest, 1999, pp. 17–20

KÓSA, Z., SZELES, G., KARDOS, L., KÓSA, K., NÉMETH, R., ORSZÁGH, S., FÉSÜS, G., MCKEE, M., ÁDÁNY, R., VOKÓ, Z. (2007). A comparative health survey of the inhabitants of Roma settlements in Hungary, American Journal of Public Health, Vol. 97. 2007 No. 5, pp. 853–859.

KOZMA, G. (2008). Characteristic Features of the Economic Management of local Authorities in the Western and the Eastern Border Areas of Hungary. In: Neighbours and partners: on the two sides of the border, edited by Süli-Zakar, I. Kossuth Egyetemi Kiadó, Debrecen, 2008, pp. 19–26

LADÁNYI, J., SZELÉNYI, I. (2001). The Social Construction of Roma Ethnicity in Bulgaria, Romania and Hungary During Market Transition, Review of Sociology of the Hungarian Sociological Association, Vol. 7, 2001, No. 2, pp. 79–89

LENGYEL, G. (2004). Tiszavasvári cigány népessége [Gypsy population of Tiszavasvári]. In: A magyarországi cigányság 1971–2003 [Gypsy population in Hungary], edited by Kemény, I., Janky, B., Lengyel, G. MTA Etnikai–nemzeti Kisebbségkutató Intézet, Gondolat Kiadó, Budapest, 2004, pp. 157–180

A MAGYARORSZÁGBAN 1893. január 31-én végrehajtott czigányösszeírás eredményei [Results of Roma survey in Hungary in 1893]. Magyar Statisztikai Közlemények, Új Folyam IX. 1895.

MATLOVIČOVÁ, K. MATLOVIČ, R, MUŠINKA, A., ŽIDOVÁ, A. (2012). The Roma population in Slovakia. Basic Characteristics of the Roma Population with Emphasis on the Spatial Aspects of its Differentiation. In: Roma population on the peripheries of the Visegrad Countries – Spatial Trends and Social Challenges, edited by Pénzes, J., Radics, Zs. Didakt Kiadó, Debrecen, 2012, pp. 77–103

MÉSZÁROS, Á., CZIBULKA, Z., FÓTI, J., NAGY, O., SZŰCS, Z. (1994). A cigányság helyzete, életkörülményei 1993 [The status and living conditions of Roma]. Budapest: KSH, 1994.

MINORITY ELECTIONS (2014). <www.valasztas.hu> cit.: 12.12.2015

MOLNÁR, J., CSERNICSKÓ, I., BRAUN, L. (2016): Cigányok Kárpátalján [Gypsies in the Transcarpathian region]. In: Roma népesség Magyarország északkeleti határtérségében [Roma population in the North Eastern border area of Hungary], edited by Szilágyi, F. and Pénzes, J. Partium Kiadó, Oradea, 2016, pp. 91–108

MUŠINKA, A., ŠKOBLA, D., HURLE, J., MATLOVIČOVÁ, K., KLING, J. (2013). Atlas rómskych komunít na Slovensku 2013. Bratislava: UNDP, 2014. 120 p.

PAPP Z., A. (2010). Az etnikai adatgyűjtés módszertana a Magyarországgal szomszédos országok népszámlálásaiban [Methodologies of the collection of ethnic data in the censuses in the neighboring countries of Hungary], Statisztikai Szemle Vol. 88, 2010, No. 1, pp. 5–28

PAPP Z., A. (2012). Ratio of Roma students in Hungary and some characteristics of schools. In: Roma population on the peripheries of the Visegrad Countries – Spatial Trends and Social Challenges, edited by Pénzes, J., Radics, Zs. Didakt Kiadó, Debrecen, 2012, pp. 31–59

PÁSZTOR, I. Z. (2013). Társadalomföldrajzi vizsgálatok az északkelet-magyarországi cigányság körében (Létszámváltozások, önkormányzatiság, kisebbségi választások) [Social geographical studies regarding the Roma population in northeastern Hungary (Number of Roma people, their local governments, minority elections)]. Doctoral thesis, DE Földtudományi Intézet, Debrecen, 2013, 179 p.

PÁSZTOR, I. Z., PÉNZES, J. (2013). Studying the number of the Gypsy minority in Hungary and their involvement in local governments on the example of the North Great Plain Region, Revista Română de Geografie Politică (Romanian Review on Political Geography) Vol. 15, 2013, No. 1, pp. 307–314

PÁSZTOR, I. Z., PÉNZES, J., BÁNTÓ, N.Z., (2012). Investigation of peripherization in Northeastern-Hungary by spatial demographic and income tendencies with special attention to the Roma population. Eurolimes, Vol. 13, 2012, pp. 149–165

PÉNZES, J. (2016). A cigányság területi-települési viszonyai Hajdú-Bihar és Szabolcs-Szatmár-Bereg megyékben [Spatial and settlement characteristics of the Roma population in Hajdú-Bihar and Szabolcs-Szatmár-Bereg counties]. In: Roma népesség Magyarország északkeleti határtérségében [Roma population in the North Eastern border area of Hungary], edited by Szilágyi, F. and Pénzes, J. Partium Kiadó, Oradea, 2016, pp. 9–47

REVENGA, A., RINGOLD, D., TRACY, W.M., (2002). Poverty and Ethnicity. A Cross-Country Study of Roma Poverty in Central Europe. Washington D.C: The World Bank, 2002. 44 p.

SÜLI-ZAKAR, I. (2012). The question of the roma's integration in Europe and Hungary. In: Roma population on the peripheries of the Visegrad Countries – Spatial Trends and Social Challenges, edited by Pénzes, J., Radics, Zs. Didakt Kiadó, Debrecen, 2012, pp. 9–30

SÜLI-ZAKAR, I., PÁLÓCZI, Á., SZABÓ, D. A. (2013). Társadalomföldrajzi vizsgálatok Északkelet-Magyarország cigány lakossága körében [Social geographical investigations among the Gypsy population of Northeastern Hungary]. In:

Emberközpontú társadalomföldrajz, edited by Kozma, G. Didakt Kiadó, Debrecen, 2013, pp. 148–170

SZAKMÁRY, É., HEGEDŰS, I., PAKSY, A., MORVAI, V., RUDNAI, P., UNGVÁRY, G. (2012). Level of education and unemployment in Roma communities living in Roma-colonies and colony-like conditions in the years preceding the financial-economic world crisis. Central European Journal of Occupational and Environmental Medicine Vol. 18, 2012, No. 1-4, pp. 3–13

SZILÁGYI, F. (2016): Roma népesség a partiumi határmegyékben (Bihar, Szatmár) [Roma population in the border counties of the Partium region (Bihor, Satu Mare)]. In: Roma népesség Magyarország északkeleti határtérségében [Roma population in the North Eastern border area of Hungary], edited by Szilágyi, F. and Pénzes, J. Partium Kiadó, Oradea, 2016, pp. 49–90

TÁTRAI, P. (2010). Az etnikai térszerkezet változásai a történeti Szatmárban [Changes of the ethnic spatial pattern in the historic Sathmar]. MTA Földrajztudományi Kutatóintézet, Budapest, 2010, 208 p.

TÁTRAI, P. (2015). Transformations of the ethnic structure in Hungary after the turn of the millennium. Human Geographies Vol. 9, 2015, No. 1, pp. 79–96

TÓTH, Á., VÉKÁS, J. (2013). A magyarországi nemzetiségek létszámváltozása 2001 és 2011 között [Change in the number of ethnic minorities in Hungary], Statisztikai Szemle, Vol. 91, 2013, No. 12, pp. 1256–1267.

VEKERDY, J. (edit.) (1989). Erdős Kamill cigánytanulmányai [Gypsy study from Kamill Erdős]. In: A Gyulai Erkel Ferenc Múzeum Kiadványai Vol. 78, Békés Megyei Tanács, Békéscsaba, 1989, 265 p.

VELKEY, G. (2014). A helyi foglalkoztatás és a közfoglalkoztatás legfontosabb jellemzői egy empirikus kutatás tükrében [Most important characteristics of local employment and communal work in the light of an empirical research]. In: Polarizáció - függőség - krízis: Eltérő térbeli válaszok, edited by Nagy, E., Nagy, G. MTA KRTK RKI Alföldi Tudományos Osztály, Békéscsaba, 2014, pp. 28–39

VIDRA, Z., VIRÁG, T. (2012). Some hypothesis and questions on the new wave of Hungarian Roma migration to and from Canada. In Roma migration to and from Canada: The Czech, Hungarian and Slovak case, edited by Vidra Z. CEU-CPS, Budapest, 2012, pp. 129–162

VIRÁG, T. (2006). The regional ghetto. Review of Sociology of the Hungarian Sociological Association, Vol. 12, 2006, No. 1, pp. 51–70

SUMMARY

THE NUMBER AND SPATIAL DISTRIBUTION OF THE ROMA POPULATION IN HUNGARY – IN THE LIGHT OF DIFFERENT APPROACHES

The evaluations for the number of Roma population tend to represent large dispersion due to several reasons. The Hungarian Roma population is called as hidden minority because of their language use and double identity. The changing declaration of the identity, the existence of Roma sub-groups, the migration make this issue more complicated. Census data are based on the self-declaration; surveys build on external categorization of interviewers (and other experts) and the surveys with territorial approach apply external categorization by settlements collecting the local representatives' estimates. In the case of the external classification of local representatives the mixed marriages and the problem of social and territorial segregation might influence the estimations about the number of Roma population. Several existing datasets are overviewed in the study with special attention to those ones with territorial decomposition. The latest complete and settlement level estimations are available in the survey of the University of Debrecen (2010-2013). The summarized number of Roma inhabitants exceeded 876,000 people according to this survey. This value is 2.8 times higher than the census data from 2011. The territorial pattern of these datasets are similar but major differences are detected primarily by the settlements with Roma majority. The summary of this phenomenon draw the attention to one the most important social processes in Hungary with its spatial disparities at the same time.

Folia geographica, Acta facultatis studiorum humanitatis et naturae Universitatis Prešoviensis,
Prírodné vedy Volume 58, 2016, No. 2, FHPV PU Prešov. ISSN 1336-6157

BABIA GÓRA NATIONAL PARK AS A BUSINESS PARTNER IN THE LOCAL ECONOMY: EXPLORING COOPERATION FACTORS AND BARRIERS

Mirosław MIKA[1] *– Bernadetta ZAWILIŃSKA*[2]

Abstract: *The article is an attempt at diagnosing the factors and barriers of a national park's commercial cooperation with market operators. For the case study, Babia Góra National Park (BGNP), located in Polish Carpathian Mountains, was selected. The exploratory research was conducted through an interview survey in a group of 50 local market operators who engaged in transactions with BGNP. Diverse legal, organisational, spatial and human factors were identified, which affected the scope and type of these operators' business cooperation with BGNP. Certain cooperation factors and barriers are universal and are an illustration of issues encountered by Polish national parks in their operation within the new legal environment.*

Keywords: *national park, business cooperation, local economy, Babia Góra National Park*

RESEARCH PROBLEM

Growing pressure from local communities, local authorities and some international institutions on national parks to undertake more social and economic responsibilities makes the issue of economic function of protected areas particularly important today. The model of protected areas' (including national parks') operation recommended by the International Union for Conservation of Nature provides for combining nature conservation purposes with social and economic objectives in local development (Beltrán 2000; Borrini-Feyerabend et al. 2004, 2013; Phillips 2002, 2003; Stolton, Dudley 1999; Thomas, Middleton 2003). This is expected to result in a growing number of areas of natural value coming under legal protection with the acceptance of local communities.

There are 23 national parks in Poland, with a total area of 314,700 hectares, thus covering approx. 1% of Poland's area. Each of them has a buffer zone. The combined area of all parks' buffer zones is 448,000 ha, thus exceeding the area of the parks themselves. All Polish national parks are also European Union-designated Natura 2000 areas. The respective parks' areas vary widely, from 2,100 ha (Ojców NP) to 59,200 ha (Biebrza NP).

1 ***Dr hab. Mirosław Mika****, Jagiellonian University in Kraków, miroslaw.mika@uj.edu.pl*

2 ***Dr Bernadetta Zawilińska****, Cracow University of Economics, bernadetta.zawilinska@uek.krakow.pl*

Polish national parks are part of the public finance sector and currently operate as State-owned legal entities. A public finance reform introduced between 2010 and 2012 significantly affected the organisation and funding of national parks. Since 2012, national parks have enjoyed broad autonomy in terms of organisation and funding. Legal changes enabled national parks to engage directly in business, including in areas not closely related to nature conservation (*Ustawa z dnia 16 kwietnia 2004 r. o ochronie przyrody…*). Prior to 2011, business operation was conducted by "auxiliary holdings" associated with the national parks. They ceased to exist at the end of 2010 (Zawilińska 2015).

The national park may be seen both as an area and as an entity. In geographical spatial terms, the national park is an area of outstanding natural value, protected by law, with specific protection regimes in place within its boundaries. In organisational terms, the national park is a legal and organisational entity established by competent authorities for managing the national park's area. The park's managing body is empowered to take decisions and has assets, human resources and funds at its disposal to carry out tasks specified in the Nature Conservation Act.

The park's natural resources are managed directly by the park's management. The 2010-2012 legal reform gave the national parks' managing bodies far-reaching organisational and financial autonomy. Currently, national parks in Poland are financially self-governed and fund the costs of their statutory nature conservation activity and their operating expenses with their own funds and revenue. Viewed as an entity, the national park can be considered part of the institutional system of the local economy. Besides being the managing body of an area, the national park is also an active business entity. Within its local social and economic system, the park is an employer, an investor, a customer for services and goods, and a supplier of services (such as education, tourism services, environment information) and goods (wood, publications, etc.) (Mika et al. 2016; Mika, Zawilińska 2015).

The economic and business significance of national parks is determined, on the one hand, by its natural resources which may be traded, and on the other, by the parks' funds. These funds come from three basic sources: (a) the State (government) budget, which provides funds to parks through subsidies; (b) the parks' own business activities bringing them funds known as their "own revenue", and (c) funds raised by the parks through grant projects, including EU-funded (for which the parks must compete with other applicants). National parks in Poland continue to be financed predominantly from public funds. However, in recent years the proportion between funds provided directly by the State budget and funds raised through grant projects has been changing. The share of revenue obtained directly from the State budget in the Polish national parks' total budget is decreasing systematically, in line with the trend observed in other countries worldwide (Athanas et al. 2001; Emerton et al. 2006; López-Ornat, Jiménez-Caballero 2006). On the other hand, the parks' own revenue, i.e. proceeds from their business, is not constant: it may differ largely in each year, as it depends on the extent and amounts of services and goods offered by the park.

The national parks' operation as a business partner on a local market is a new issue in Poland. Also internationally this subject has very rarely been discussed. Most studies on the economic aspects of national parks' operation have focused on the

assessment of their areas' economic value under the Total Economic Value (TEV) paradigm, the concept of ecosystem services (Costanza et al. 1997; Mizgajski et al. 2014; Phillips 1998; Żylicz 2012), the development of partner cooperation networks, and the exploration of the scale and importance of visitors' spendings in the parks' surroundings (Cullinane Thomas et al. 2015; Driml 2010; Huhtala et al. 2010; Job et al. 2009; Saayman, Saayman 2006). This study wants to provide an analysis of the national parks' business cooperation and its determinants, which has thus far been lacking.

PURPOSE OF THE STUDY

As mentioned above, under the current legal regulations, Polish national parks may conduct their own business on market terms. This has enabled them to enter into dynamic economic relations with market operators, on a local scale and beyond. This article aims at identifying the factors which determine the initiation and development of commercial cooperation between market operators and a national park as a business partner in a local economy. Babia Góra National Park (BGNP) has been selected for the case study.

Babia Góra National Park is located in the Beskid Żywiecki range of Outer Western Carpathians in southern Poland (Fig. 1). It covers an area of 3,394.3 ha. In terms of administrative subdivisions, its area covers parts of three communes (*gmina*) within the Małopolska region: Zawoja (in Sucha Beskidzka county) and Lipnica Wielka and Jabłonka (in Nowy Targ county). Since 1977, BGNP has been a UNESCO-designated international biosphere reserve.

Fig. 1: *Location of Babia Góra National Park*
Source: own work.

RESEARCH METHODOLOGY

A group of 50 market operators engaging in transactions with BGNP has been selected for the study. The sample has been selected to include business operators registered in localities adjacent to the Park. The survey was conducted in 2015 through direct interviews with the use of a questionnaire.

In an attempt to identify the factors as well as barriers and limitations of the surveyed operators' business cooperation with BGNP, the respondents were requested

to freely give their opinions on the subject, based on their experience to date. Further, the respondents were requested to assess, on a five-point scale (1 to 5), selected issues quoted in the questionnaire, potentially important for their cooperation with the Park.

SAMPLE CHARACTERISTICS

In terms of the legal status of business operators, as many as 80% of the sample were sole proprietorships; the remaining 20% were partnerships and companies (four civil-law partnerships, three registered partnerships and one joint-stock company). In terms of the operator size (number of staff), the majority (28 operators, 56%) employed 2 to 9 persons; 12 operators employed 10 to 50 persons; 9 operated as a single person and there was one operator with the number of staff between 50 and 200. In terms of turnover, for the vast majority of operators (47) the total value of their transactions in 2014 had not exceeded PLN 8 million. Two operators declared turnover between PLN 8 million and 40 million; one declared the interval between PLN 40 million and 200 million.

Most operators included in the sample operated on a regional scale, limited to a single administrative region (Małopolska only – 66% of the operators) or two regions (Małopolska and either Śląsk or Podkarpacie – 16%); there were several operators (4%) operating in a number of neighbouring regions in southern Poland. Only three operators of the sample declared operating nationwide; two engaged in transactions in the neighbouring Slovakia.

RESULTS

Characteristics and scope of the operators' cooperation with Babia Góra National Park

Most of the surveyed operators had cooperated with BGNP for years. Only two of them had only a one-year history of transactions with the Park; 9 had cooperated for two to five years; 23 had cooperated for five to ten years and 16 had cooperated for ten or more years. However, not all operators' commercial contacts with BGNP were permanent. 23 operators cooperated permanently with the Park; 12 operators declared their trade contacts with BGNP to be "frequent" and 15 described theirs as "occasional".

From the BGNP's perspective, there were two categories of partners among the businesses surveyed: one of them was related to the Park's expenditure (i.e. they were the Park's service providers) and the other was related to the Park's revenue (i.e. they were the Park's customers). The group of service providers for the Park numbered 31 operators. Among them, a slight majority (16 operators) operated each in a single area of services, while 15 had a diverse range of services. These operators represented 10 categories of business activity: construction, trade, forestry, wood processing, crafts, tourism, culture, education, transport, and agriculture. Their cooperation with the BGNP covered a wide range of activities, from executing investment projects undertaken by the BGNP management, to renovation and repair works, forest works, financial services, running BGNP entry fee collection points, and geodetic surveying

services. The group of BGNP's customers numbered 19 operators, including 9 operating only as wood processors and 10 providing transport, trade or craft services besides wood processing. The business scope of operators in this group was less broad, limited to four activity categories. Their transactions with the Park were limited exclusively to purchase of wood.

The surveyed operators engaged into transactions with BGNP either as a result of having won calls for tenders announced by the Park (40% of operators), or only by executing contracts awarded directly by the BGNP (34%), or both (26%). Most of the surveyed operators engaged in transactions directly with the Park; only three operators had cooperated with BGNP in the past as subcontractors for other service providers.

Importance of cooperation with the National Park for the business operators

When asked to assess, on a five-point scale, how important the cooperation with BGNP was for them (1: very little importance; 5: very high importance), most respondents (46%) chose either "high importance" or "very high importance" (Fig. 2). "Moderate importance" was selected by 36%; "little importance" or "very little importance" by 18% of the respondents. The sample's mean score on this scale was 3.4 points. Importantly, there was no statistically significant difference concerning the assessment in this question between the two groups (the Park's service providers and the Park's customers). The respondents further declared that, in their view, the quality of cooperation with the Park was not deteriorating compared to previous years: 66% declared it to be stable and 15% found it to be improving.

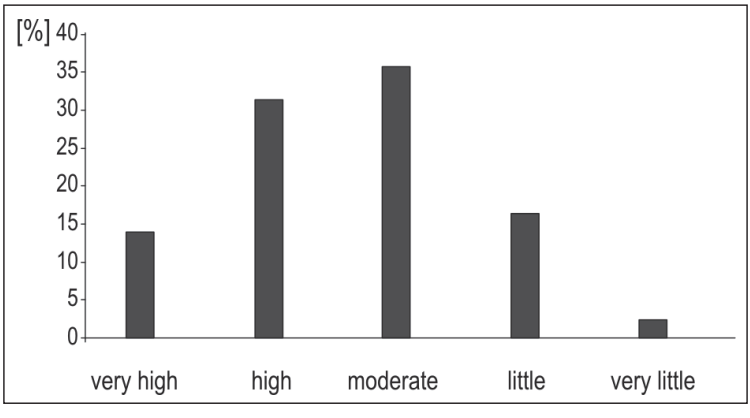


Fig. 2: *Importance of the cooperation with Babia Góra National Park for the business managers participating in the study*
Source: own work.

Factors and barriers of business cooperation

An aggregate list of factors which had led market operators participating in the study to engage in, or maintain, business cooperation with BGNP is presented in Table 1. By analysing the factors quoted by the respondents, they may be grouped into three groups:

– factors independent of the partners, resulting from the objective endogenous and exogenous cooperation conditions;
– factors inherent to the National Park's operation;
– factors relating to the operators' operation and range of goods or services offered.

Further, in the analysis of the replies, a group of factors were identified which reflected the specificity of the Park's cooperation with wood processing operators. These factors are presented separately in the second column of Table 1.

The independent factors resulting from the objective conditions include:

– the operator's location near the Park,
– the possibility of purchasing wood from the Park as a raw material for further processing and resale, and
– the quality of wood as a raw material.

The location of an operator near the BGNP was assessed as an important factor by most of the respondents (mean score: 4.08). It is important both for the Park's customers (wood processors) and for its service providers. Statistically however, the assessment values of this factor given by the Park's customers (wood processors) were significantly higher (Mann-Whitney's U test: $Z = 2.17$; $p = 0.029$) than those given by the other respondents. Those operators' location near BGNP was important in this respect mostly regarding the proximity of the raw material, its availability for purchase, and low transport cost. However, wood can only be purchased from the Park for further processing if it meets the purchasers' price, type and grade (quality and usability) requirements. In the context of the local wood processing industry, there are further independent factors of cooperation with BGNP: the local market (demand) and price for wood (Tab. 1).

From the perspective of the Park's suppliers of goods and services, the location factor is related to their ability of adjusting their service range (or at least a selected part thereof) to the Park's specific needs and profile. The listed factors of cooperation with BGNP which are related to the nature of its operation and organisation include – besides elements relating to purely commercial relations, determined by the demand for specific goods and services as a result of the Park's investment projects or ongoing activities – also other human and organisational issues.

Tab. 1: *Factors of business cooperation with Babia Góra National Park (BGNP) as perceived by the respondents*

BGNP's service providers	BGNP's customers (wood processors)
- BGNP's location near the operator's seat - Type and scope of projects undertaken by BGNP - BGNP's financial situation (ability to raise external funding for investment projects) - Financial terms of contracts awarded by BGNP - Clear contractual terms - Reasonable contract execution deadlines - Support (information) offered by BGNP - BGNP's image as a reliable partner - BGNP's financial stability - Financial security of the project execution - BGNP's support and expertise during project execution - Timely payments by BGNP - BGNP's willingness to cooperate - Having won a call for tenders announced by BGNP - BGNP's demand for the type of services offered by the business in question - BGNP's demand for the type of goods offered by the business in question - Common activities (goals and interests) with BGNP - Having obtained a direct contract from BGNP - Experience of previous cooperation with BGNP - Awareness of BGNP's needs - Individual approach to BGNP's expectations	- BGNP's location near the operator's seat - Possibility of buying wood from BGNP - Low transport costs - Wood quality (grade) - Appropriate wood type (spruce) - Local market for sale of wood - Market price for wood - Wood price quoted by BGNP - Problem-free transactions - Timely payments by BGNP - BGNP's image as a reliable partner - Having won a call for tenders announced by BGNP - Experience of previous cooperation with BGNP

Source: own work.

The human and organisational cooperation factors include:

– BGNP's image as a reliable partner, resulting from its financial stability, the financial terms of contracts it awards, timely payments, clear contractual terms and reasonable execution deadlines. These factors seem crucial for the low financial risk of cooperation with BGNP, as assessed by the respondents (mean score: 1.62).

– The Park's ability to raise external funding for its projects, which is also linked with its ability to ensure financial security of the projects.
– Possibility of obtaining selected contracts from the Park without the tendering procedure.
– Common interests and goals in the area of information, promotion, education etc., which is important for "soft" partnership project.
– Positive experience from past cooperation, as evidenced by favourable assessments by most respondents (mean score: 4.08). This included the elements mentioned above as well as the support and information provided by the Park during the execution of projects. The respondents emphasised the Park staff's expertise and commitment in relations with partners and described the Park staff's approach as competent (45%) and/or respectful (46%).

These human factors created an atmosphere of trust which was found to be very important in cooperation with the Park and was highly assessed by the respondents (mean score: 4.24; Fig. 3). The operators participating in the survey usually described their business contacts with the Park as friendly (56%) and/or purely business-focused (39%). Also the openness of BGNP's management for cooperation with local operators was assessed above average (mean score: 3.78).

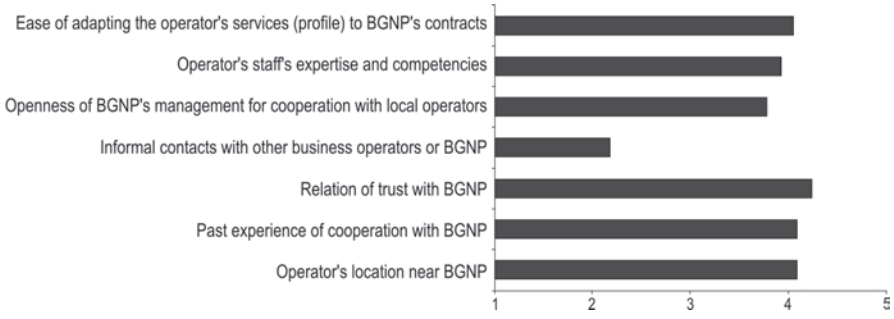


Fig. 3: *Importance of selected factors of business cooperation with Babia Góra National Park as perceived by the respondents*
Source: own work.

The group of cooperation factors attributable to BGNP's business partners include, most importantly, their ability to meet the criteria and terms of contracts awarded by the Park through public calls for tenders, which is decisive for engaging in cooperation and signing a contract. The respondents also emphasised the importance of their awareness of the Park's needs and their individual approach to the Park's expectations. These factors were particularly relevant for companies which offered their own services to the Park and which set great store by their staff's expertise and competencies (mean score: 3.93) and their own ability (or "ease") of adapting their services to the Park's needs and contract terms (4.05) (Fig. 3).

The respondents, in general, assessed highly their own staff's qualifications (the "lack of own qualified staff", as a barrier, had a mean score of 1.52), which allowed them to overcome the challenges posed by a relatively high complexity of the cooperation (1.87) and complexity of legal regulations (2.13) as potential obstacles in business relations with BGNP. The operators participating in the survey did not encounter problems with accessing information on investment projects or purchases planned by the Park (1.79). The risk of competition from other operators, either from the local market or from beyond, as a potential threat to their cooperation with BGNP, was perceived as moderate (mean scores: 2.98 and 2.86) (Fig. 4).

Tendering procedures, while being judged as of relatively little importance as a barrier for cooperation (mean score: 2.02), is a more serious obstacle for BGNP service providers than for its customers (wood processors) (Fig. 4).

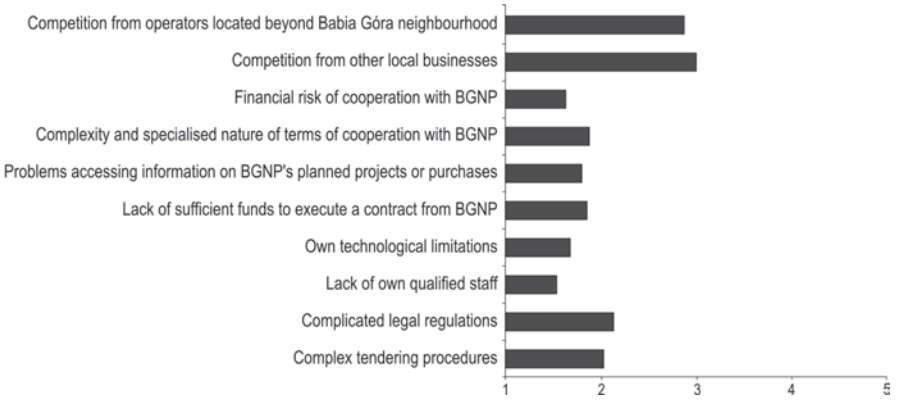


Fig. 4: *Barriers and restrictions of business cooperation with Babia Góra National Park as judged by the respondents*
Source: own work.

Conditions required for improved cooperation

As many as 80% of the respondents, when asked to assess the prospects of their future business cooperation with BGNP, expressed positive assessments (mean score: 4.06, standard deviation $\sigma = 0.74$), with 18% of average or moderate assessments (Fig. 5). Within these assessments there were no statistically significant differences between assessments by BGNP service providers and those by BGNP customers (wood purchasers). Importantly though, most of the operators participating in the survey had been cooperating with BGNP for years and were well prepared for that cooperation.

Despite the generally favourable assessment of the business cooperation between Babia Góra National Park and business operators there is room for improvement of at least some aspects of their commercial relations. Other than proposed legal changes, some business managers thought that, in order to improve their cooperation with BGNP, additional external financial support should be provided for businesses engaged in maintenance of roads and tracks, especially forest tracks.

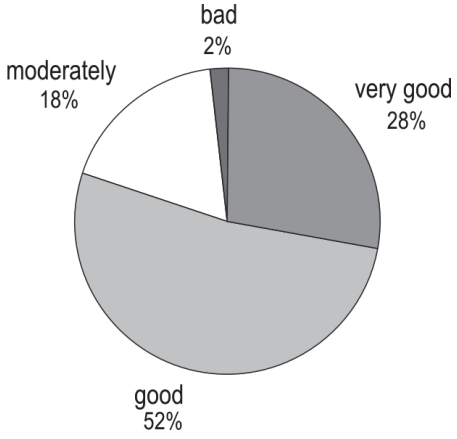


Fig. 5: *Answers to the question How do you assess the prospects for your future cooperation with Babia Góra National Park?*
Source: own work.

Businesses executing investment projects in the Park emphasised problems resulting from the legally prescribed duration of contracts awarded through calls for tenders. In their view, their duration was too short (a maximum of 6 months), which made any cooperation seasonal and required businesses to mobilise financial and human resources in a short time. In comparison, similar contracts for investment projects (such as maintenance and upgrade of forest tracks) awarded by the State Forests could be carried out in longer periods (3 years) and were consequently perceived as more attractive. Accordingly, the need to adapt legal regulations to the economic environment was quoted as one condition for improvement of businesses' cooperation with national parks. The demand for legal changes did not only relate to tendering and contracting procedures and eliminating seasonality. The business managers expressed their opinion that the National Park, as a business partner, should have more freedom in using its resources and entering into long-term contracts, including in order to ensure permanent supply of wood for processing in the local (or regional) industry, consisting mostly of family-run businesses.

The possibility of concluding long-term contracts (for one or more years) with the Park for supplies of wood as a raw material would be particularly important for wood processors. This group of operators also pointed out to other important issues, such as fixing or decreasing wood prices quoted by the Park or the availability for purchase in the Park of large-sized wood for sawmill processing.

BGNP service providers believed that, in order to adapt to the Park's activities, they would have to engage in different types of cooperation between them, especially for executing projects managed by the Park but financed from external sources through competitive grant projects. They also believed it necessary to improve the clarity of contracts concluded other than through calls for tenders and expected even more support (information and guidance) from the Park's staff.

CONCLUSIONS

There are numerous spatial, legal, economic and human factors affecting business cooperation of the Babia Góra National Park. These factors are rooted both in the specificity of the National Park's functioning as an institution and in the operation of the Park's business partners. Although the factors and barriers described here relate to a specific national park, many of them apply universally to all national parks in Poland. This is especially true for legal and organisational issues. The results discussed above lead to the following conclusions.

1. The cooperation of local businesses with BGNP has been affected mostly by legal regulations on public procurement (tendering procedures), requiring them to meet the requirements specified in calls for tenders. However, despite the formal and administrative constraints as well as relatively short duration of cooperation contracts with the Park, the tendering procedures have not been a significant barrier for the local businesses.
2. For businesses purchasing wood, the proximity of the Park is the key advantage. The problem is that the amount of wood offered by BGNP is not constant over the year and depends on numerous natural factors, such as the weather (e.g. strong winds causing windthrows), the quality and type of the wood material, or the spread of pests destroying tree stands, which then require felling.
3. BGNP has usually been described by its counterparties as a reliable, and therefore attractive, business partner mainly thanks to its financial stability and low financial risk entailed by the cooperation. An important factor in this respect has been the Park's active attitude in raising funds for investment projects from sources other than the State budget.
4. Another crucial factor in the business cooperation has been the trust between the partners, i.e. BGNP staff and the business managers, and the social capital which the BGNP management has earned itself in the local business community.
5. When we compare the current situation with the one prior to the introduction of the new legal and organisational arrangements in 2012, it is difficult to decide whether or not those changes have had a positive effect on BGNP's economic function in the local economy. BGNP's links with the local businesses have been well established for many years. Also, the cooperation is still, to a large extent, subject to requirements and constraints resulting from the tendering regulations. The legal and organisational changes introduced in 2012 may prove important for the Park's business activities once the amount ceilings for transactions which do not require a call for tenders are shifted upwards. In such a case, more potential suppliers of goods and services for the Park, capable of competing with the external suppliers, might appear on the local market. The cooperation with all national parks could also be stabilised if the time periods for execution of contracts by their service providers selected through calls for tenders were extended.

Acknowledgement

Article prepared as part of a project financed by the National Science Centre (Poland): funds granted by decision no. DEC-2011/01/D/HS4/05993.

REFERENCES

ATHANAS A., VORHIES F., GHERSI F., SHADIE P., SHULTIS J. (2001). *Guidelines for Financing Protected Areas in East Asia*, IUCN, Gland and Cambridge.

BELTRÁN J. (ed.). (2000). *Indigenous and traditional peoples and protected areas: principles, guidelines and case studies,* Best Practice Protected Area Guidelines Series No. 4, IUCN, WWF International, Gland and Cambridge.

BORRINI-FEYERABEND G., DUDLEY N., JAEGER T., LASSEN B., PATHAK BROOME N., PHILLIPS A., SANDWITH T. (2013). *Governance of protected areas: from understanding to action,* Best Practice Protected Area Guidelines Series, No. 20, IUCN, Gland.

BORRINI-FEYERABEND G., KOTHARI A., OVIEDO G. (2004). *Indigenous and local communities and protected areas: towards equity and enhanced conservation. Guidance on policy and practice for co-managed protected areas and community conserved areas,* Best Practice Protected Area Guidelines Series, No. 11, IUCN, Gland and Cambridge.

COSTANZA R., D'ARGE R., DE GROOT R., FARBER S., GRASSO M., HANNON B., LIMBURG K, NAEEM S., O'NEILL R.V., PARUELO J., RASKIN R.G., SUTTON P., VAN DEN BELT M. (1997). *The value of the world's ecosystem services and natural capital,* Nature, Vol. 387, pp. 253–260.

CULLINANE THOMAS C., HUBER CH., KOONTZ L. (2015). *2014 National park visitor spending effects, economic contributions to local communities, states and the nation*, Natural Resource Report NPS/NRSS/EQD/NRR—2015/947, Fort Collins.

DRIML S. (2010), *The economic value of tourism to national parks and protected areas in Australia*, CRC for Sustainable Tourism, Gold Coast.

EMERTON L., BISHOP J., THOMAS L. (2006). *Sustainable financing of protected areas: a global review of challenges and options*, Best Practice Protected Area Guidelines Series, No. 13, IUCN, Gland and Cambridge.

HUHTALA M., KAJALA L., VATANEN E. (2010). *Local economic impacts of national park visitors' spending: The development process of an estimation method*, Working Papers of the Finnish Forest Research Institute, No. 149.

JOB H., WOLTERING M., HARRER B. (2009). *Regionalökonomische Effekte des Tourismus in deutschen Nationalparken,* Naturschutz und Biologische Vielfalt, No. 76, Bonn.

LÓPEZ-ORNAT A., JIMÉNEZ-CABALLERO S. (2006). *Sustainable Financing Sources for Protected Areas in the Mediterranean*, IUCN, Centre for Mediterranean Cooperation, Gland and Cambridge.

MIKA M., ZAWILIŃSKA B. (2015). *National parks' impact on the local development according to the new paradigm of protected areas' operation. Experien-*

ce from Polish economy, Proceedings of the Third International Conference on Emerging Research Paradigms in Business and Social Science, Middlesex University Dubai, Dubai, United Arab Emirates.

MIKA M., ZAWILIŃSKA B., PAWLUSIŃSKI R. (2016). *Exploring the economic impact of national parks on the local economy. Functional approach in the context of Poland's transition economy,* Human Geographies – Journal of Studies and Research in Human Geography, Vol. 10, No. 1, pp. 5−21.

MIZGAJSKI A., BERNACIAK A., KRONENBERG J., ROO-ZIELIŃSKA E., SOLON J, ŚLESZYŃSKI J. (2014). *Development of the ecosystem services approach in Poland*, Ekonomia i Środowisko, Vol. 4, No. 51, pp. 10–19.

PHILLIPS A. (2002). *Management Guidelines for IUCN Category V Protected Areas – Protected Landscapes/Seascapes,* Best Practice Protected Area Guidelines Series, No. 9, IUCN, Cambridge and Gland.

PHILLIPS A. (2003). *Turning ideas on their heads: a new paradigm for protected areas,* George Wright Forum, Vol. 20, No. 2, pp. 8−32.

PHILLIPS A. (ed.) (1998). *Economic Values of Protected Areas: Guidelines for Protected Area Managers*, IUCN, Gland, Switzerland and Cambridge, UK 1998.

SAAYMAN M., SAAYMAN A. (2006), *Estimating the economic contribution of visitor spending in the Kruger National Park to the regional economy*, Journal of Sustainable Tourism, Vol. 14, No. 1, pp. 67–81.

STOLTON S., DUDLEY N. (eds.). (1999). *Partnerships form Protection. New Strategies for Planning and Management for Protected Areas*, WWF and IUCN, London: Earthscan.

THOMAS L., MIDDLETON J. (2003). *Guidelines for Management Planning of Protected Areas*, IUCN Gland and Cambridge.

Ustawa z dnia 16 kwietnia 2004 r. o ochronie przyrody (Act of 16 April 2004 on Nature Conservation), Dziennik Ustaw (Journal of Laws) No. 92 of 2004, Item 880.

ZAWILIŃSKA B. (2015). *National Parks in the New Legal and Economic Environment*, Biblioteka Regionalisty, Vol. 15, pp. 113−122.

ŻYLICZ T. (2012). *Valuating ecosystem services,* Ekonomia i Środowisko, Vol. 2, No. 42, pp. 18–38.

Folia geographica, Acta facultatis studiorum humanitatis et naturae Universitatis Prešoviensis,
Prírodné vedy Volume 58, 2016, No. 2, FHPV PU Prešov. ISSN 1336-6157

SOCIO-ECONOMIC ASPECTS OF THE URBANISATION IN NORTHERN HUNGARY IN THE 21ST CENTURY

Zoltán BUJDOSÓ [1] **–** ***Ádám GYURKO*** [2] **–** ***István HÁGEN*** [3]

Abstract: *Urbanization and its consequences became a new research direction in Central-Europe. There were 40 towns in 2016 in Northern Hungary, which means that this is the second most urbanised region in Hungary. The region has 12% of all the towns of Hungary, nevertheless it must be emphasized that urbanisation in the region cannot be considered homogeneous either from a regional or from a functional point of view. Considering the regional distribution of new towns by counties it can be said that urbanisation in North Hungary has been significant in the last decade at the national level but a large number of settlements has been ranked as towns in the eastern and north-eastern parts of Hungary. Looking at North Hungary from a regional point of view we can state that some regions are strongly urbanised while there are large rural areas especially along the borders. Especially in the rural areas of the regions significant urbanisation can be observed in the 21st century. The aims of the research were to analyze the changing of the legal aspects of the declaration of towns in Hungary; to reveal the speciality of the process in North Hungary and to analyze the socio-economic aspects of the urbanization in the research area through the analysis of the actor's point of view. This study reveals the characteristics of this process with using the methodology of comparative data analysis, questionnaire survey and conducting of deep interviews.*

Key words: *reclassification, urban function, Northern Hungary, socio-economic aspects*

INTRODUCTION

The declaration of a town is a reappearing topic of settlement geography in the literature. Obtaining the rights and privileges of a town status is different in each country and the conditions both in Hungary and Central Europe are continuously changing (Kopczyński- Sobechowicz, 2017; Šimon, 2014; Matlovic, 2014; Matlovicova, 2014; Ursic – Matjaz, 2012; Bagat et al.,2008; Szymanska-Matczak, 2002, Basovsky- Divinsky, 1991). Factors could be measurable, like number of inhabitants or percent of sewage system, etc. However some subjective factors also could be take

1 ***Dr. habil Zoltán Bujdosó,*** *Eszterházy Károly University Károly Róbert Campus, 3200 Gyöngyös, Mátrai út 36, 3200, e-mail:bujdoso.zoltan@uni-eszterhazy.hu*

2 ***Ádám Gyurkó,*** *University of Debrecen, 4010 Debrecen, Egyetem tér 1., e-mail:gyurkoadam122191@gmail.com*

3 ***Dr. István Hágen,*** *Eszterházy Károly University Károly Róbert Campus, 3200 Gyöngyös, Mátrai út 36, 3200, e-mail:hagen.istvan @uni-eszterhazy.hu*

into consideration, like the identity, traditions, etc. The processes of classification of towns in Europe are different (Table 1.)

Tab. 1: *The processes of classification of towns in some European countries*

Level of classification	Central: Czech Republic, Slovakia, Denmark, France, Ireland, Poland, Great Britain, Italy, Portugal, Switzerland, Sweden, Hungary	Local, regional: Austria, Great-Britain, Germany, Norway
Method of classification	according to law: Austria, Denmark, France, Norway, Ireland, Portugal, Switzerland, Sweden	according to a decision: Czech Republic, Slovakia, Poland, Great Britain, Italy, Hungary

Source: Kocsis, 2008, p. 722

However, the perception on the town status and the role of cities is not uniform in the domestic academic life. Of the disciplines relevant from the point of view of this paper the settlement geographers emphasize the functions of municipalities and the role of intermediate institutions which enable settlements to rise into town status. The experts of "space sciences" believe that a town is the product of the division of labour that developed among the surrounding settlements, and also that a town is a settlement with central roles in which the appropriate quantity and diversity of the urban core functions are concentrated.

To analyze the urbanization and its consequences is a complex task, as not only the necessary factors are various but the awarding of city status and its connection with city functions changed several times throughout history.

Thanks to its complexity, firstly we targeted to analyze the changing of the legal aspects of the declaration of towns in Hungary in order to clarify the background of the urbanization in the research area.

As North Hungary is one of the most urbanized part of Hungary, following the general analysis we aimed to reveal the speciality of the urbanization process in the region.

During our data analysis and field research we experiences that local government, local entrepreneurs and inhabitants have different opinion about the effects of upgrading into a town. Starting from this observation we also analyzed the socio-economic aspects of the urbanization in the research area through the analysis of the actor's point of view.

Legal aspects of urbanisation in Hungary

The awarding of city status and its connection with city functions changed several times throughout history. The first important law in the post-transition period, the Local Government Act 1990 repealed the earlier regulation, and regulated the process during the next nine years (Szabó 1994; Balázs 1994).

§59 of the Act on Local Government states: "A large village/incorporated municipality may suggest that it be declared a town, if the use of that title is justified by its advanced state, and its role played in the region." However, the system does not contain any mandatory elements; there were only suggested guidelines for the assessors (Tóth 2000, 2000b). There is no reference to any population limit or infrastructure indicators that a city should definitely fulfil. The only rigorous limit is that only a large village/incorporated municipality may become a town and §108 makes it obvious that it may be more difficult to become a large village/incorporated municipality than to proceed to a town status from that position (Pirisi-Trócsányi 2007).

The next milestone of the regulation process is represented by the Act XLI of 1999 on procedures on regional organisation, which provide more detailed guidelines. §15 (1) of the Act states that the members of the local government present the current state of development as well as the regional functions and roles of the large village in a detailed assessment at the beginning of the procedure, then section (2) provides details for this. The appendixes of the application includes a table with all the compulsory data that must be provided by the Hungarian Central Statistical Office (HCSO) and the local government albeit no target numbers are included thus the procedure relies on case law, influenced by common practice (Pirisi -Trócsányi 2007, László 2007). Act CLXXXIX of 2011 on the Local governments of Hungary. §104 states that (1) a large village can be given a town status which has regional roles and fulfils average development that can be expected of a town. (2) Should the minister decline support for the application of a town status, the local government of will receive a notice with the development requirements. If the local government maintains its proposal, it can submit the application again by 31 January following the year when the indicated de-

Fig. 1: *Towns in Hungary in 2016*

velopment suggestions have been completed. On this basis 18 settlements were given town status by Head of State in 2013.

The above mentioned facts demonstrate that the regulation is still not rigorous enough. Despite the decreasing or even terminated economic activity the number of towns has increased and is still increasing intensely. Consequently, the vast majority of the towns in Hungary lack functionality and are scarcely populated (every eights town has a population under 5000, a number of towns have no town-function whatsoever) but there are no regions severely lacking of towns[4] (Figure 1, Faragó 2006, 2009).

As a result of the above mentioned facts the number of towns has risen (Table 1).

Towns in North Hungary

There were 46 towns in North Hungary in 2016, which makes it the second most urbanised region in Hungary. 12% of the towns of Hungary can be found in this region but it must be emphasized that the urbanisation of the area cannot be considered homogeneous either form a regional or from a functional point of view. (Bujdosó -Szűcs 2008).

In the examined area the case of Nógrád County has to be highlighted because no settlement has been given a town rank since 1989 and owing to the current regulations it is highly unlikely that there will be for a long while since there are no villages in the county. Because of this Nógrád is the least urbanised county in Hungary but Heves County in North Hungary belongs to the less urbanised counties with its 11 towns and low level of urbanised population (Table 2).

Fig. 2: *Towns in North Hungary with the date of declaration*
Source: own edition

4 Scarcely-urbanised zones: area where the distance between towns exceed 25 kilometres (Szabó G., 1997)

Tab. 2: *The development of the number of towns in Hungary between 1945 and 2016*

Year	Number of towns (db)	Rate of urban population (%)
1945	52	35
1960	63	40
1970	76	45
1982	96	53
1984	109	55
1989	164	58
1990	177	62
1993	184	63
1995	194	63
1996	206	64
1997	218	64
2000	237	65
2004	274	66
2006	289	67
2007	298	67
2008	306	68
2010	328	68
2013	346	69
2014	346	69
2015	346	69
2016	346	69

Source: Magyarország közigazgatási helynévkönyve, 2015., on the website of the Hungarian Central Statistical Office, The President's 325/2013. (VII. 10.) KE decree on the declaration of towns (Magyar Közlöny, 2013. évi 118. szám, 64033. oldal)

Examining the North Hungary from a regional point of view we can state that some areas (Sajó-valley, the Miskolc area, Borsodi-Mezőség) are heavily urbanised while other places mainly along the national border lack urbanised zones (Hajdú 1977). The Cserhát and the Cserehát regions are characterised by this fact (Figure 2).

The growing number of towns indicates that there were great potentials in the settlements at the time of the regime change and the turn of the century. This is supported by the fact that during the past two decades the number of towns grew by more than 40%.

We can state with certainty that settlements were given town rank each year other than election years and 2001, 2004 as well as 2013 were exceptionally "fruitful" years as 3 large villages became towns each year (two large villages became towns in 2005 and 2009 while only one in 2003, 2007, and 2008) (Figure 3).

Tab. 3: *Urbanisation of Hungarian counties*

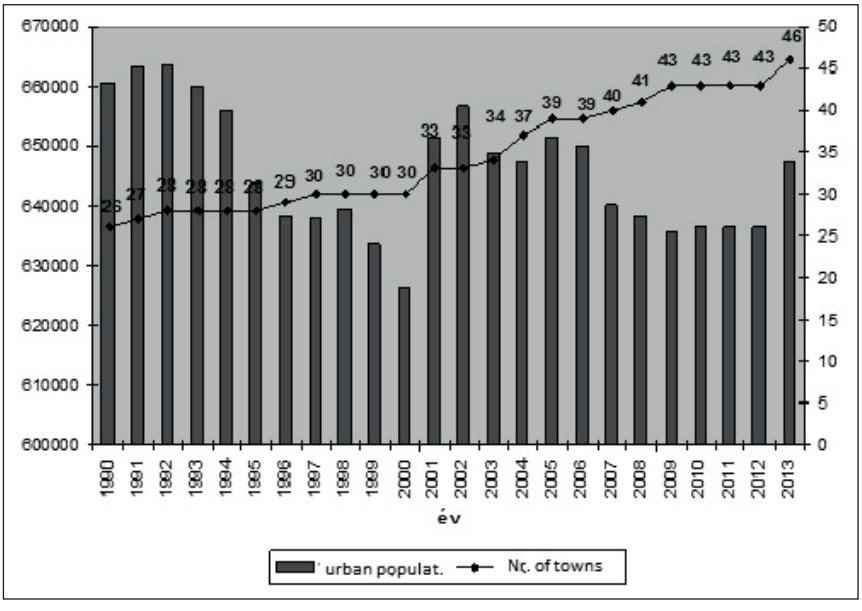
County	**Number of towns**	**∑ settlements**	**Ratio of settlements with town status (%)**	**Ratio of urban population (%)**
Budapest	1	1	100	100
Pest County	54	187	28,8	66,21
Central Hungary	**55**	**188**	**29,2**	**88,1**
Fejér County	17	108	15,7	44,12
Komárom-Esztergom County	12	76	15,8	64,73
Veszprém County	15	217	6,9	32,23
Central Transdanubia	**44**	**401**	**10,9**	**54,47**
Győr-Moson-Sopron County	12	183	6,5	59,77
Vas County	13	216	6,0	60,48
Zala County	10	258	3,9	56,61
West-Transdanubia	**35**	**657**	**5,3**	**59,24**
Baranya County	14	301	4,6	66,04
Somogy County	16	245	6,5	52,34
Tolna County	11	109	10,1	56,39
South-Transdanubia	**41**	**655**	**6,2**	**59,02**
Borsod-Abauj Zemplén County	29	358	8,1	58,63
Heves County	11	121	9,1	46,93
Nógrád County	6	131	4,6	41,96
North Hungary	**46**	**610**	**7,5**	**52,85**
Hajdú-Bihar County	21	82	25,6	80,43
Jász-Nagykun-Szolnok County	22	78	28,2	72,81
Szabolcs-Szatmár-Bereg County	28	229	12,2	54,31
Northern Great Plain	**71**	**389**	**18,2**	**68,56**
Bács-Kiskun County	22	119	18,5	68,17
Békés County	22	75	29,3	75,85
Csongrád County	10	60	16,6	75,35
South Great Plain	**54**	**254**	**21,2**	**72,61**
Country total	**346**	**3154**	**11,03**	**68,6**

Source: Hungarian Central Statistical Office, 2015

Naturally there are certain aspects of this process of urbanisation in the region (Lukács - Perger 1975). It can be declared that most of the settlements with a central function had become towns by the time of the regime change. The historic centres and sub-centres with real and full urban roles were towns at the time of the World Wars while after 1945 during the first phase of urbanisation – in harmony with the national processes – it meant the creation of the industrial towns (Hatvan, Ózd, Kazincbarcika, Tiszaújváros – earlier Leninváros).

The second phase of urbanisation included the natural centres of former micro regions/small areas. Mezőkövesd, Encs, Heves, Pásztó, Edelény, Szécsény, Tokaj, Bátonyterenye, Füzesabony, Pétervására, Putnok, Rétság, Sajószentpéter, Szikszó became towns owing to their institutions and intermediary functions (Molnár-Pénzes 2005, Bujdosó Et Al., 2007, Bujdosó 2007, Bujdosó 2010, Bujdosó 2012).

After the regime change the process of the declaration of towns became more polarised. The new types include settlements in the near vicinity of large cities (Alsózsolca, Felsőzsolca, Nyékládháza, Emőd), smaller industrial towns or former industrial towns (Lőrinci, Borsodnádasd, Bélapátfalva, Rudabánya, Sajóbábony), natural centres of micro regions (Mezőcsát, Szendrő, Pálháza, Abaújszántó, Gönc, Cigánd, Verpelét) or settlements with other functions (or no functions) (Kisköre, Onga, Gyöngyöspata vagy Mezőkeresztes) (Bujdosó 2013).



Obr. 3: *The development of the number of towns and the urban population between 1990 and 2013*

METHODS

The complexity of the topic as well as its spatial and temporal dimensions required a wide range of methodologies to be applied in my work, which are the following:

– literature review: due to the specific nature of the topic primarily the *literature published* in Hungary was processed with a short international overview;
– the project applications of towns to be declared, *development documents and strategies* lying on scientific bases;
– regulations of town declarations as well as national, regional and settlement *normative regulations* of Hungary's regional and settlement development;
– the scientific articles of (conference) publications;

In addition, further empiric and secondary research were carried out:

- *processing* national and settlement *statistical data*: during the research the *statistical databases* available for the examined towns, TSTAR, Statistical Yearbooks were used. In addition, *data about project applications* were gained from EMIR, MÁK (Hungarian State Chamber) and OTMR (Hungarian Territorial Monitoring System) databases. In order to present the status change and the actual public administration status the Settlement Collection of the Hungarian Republic was used. To find out about the most recent information about the settlements their *websites* were used together with www.valasztas.hu;
– *SWOT-analysis of the examined settlement:* primarily analyses taken over from documents of town declarations;
– *questionnaires*: as we only had partial data available for the research, primary research had to be carried out. I chose to use questionnaires directed at three target groups (different questionnaires were applied with both open and close questions). When surveying local governments, I was primarily interested in the factors and motivations of their request for declaration of a town and also the results since the declaration (sources, institutions, gains). The examination covered all the local governments of the settlements included in the analysis. Another target group of the primary research were local enterprises and companies, altogether 50 representative enterprises per settlement (representing the economic profile of the settlement). The questions were about the economic activities, project possibilities and the results after the declaration of a town. The third target group of my questionnaire was the locals: 500 people were interviewed, which was not a representative sample. The objective of the questions decisively about the general assessment of the settlement, the changes in services and standard of living was to have a subjective picture about the 'soft' factors that do not suggest statistical data;
– *in-depth interviews*: interviewing mayors and entrepreneurs, the inhabitants primarily to explore the special local features.

RESEARCH RESULTS AND DISCUSSION

Based on the literature review, the primary and secondary data collection and analysis the following scientific results can be stated:

1. The title of a town has a strong prestige in our country. They live it as a rank, and cooperation between the inhabitants results in a higher prestige.

The specialist literature on the topic concludes that the previous economic benefits of becoming a town (in the case of villages with a lot of inhabitants the ratio of the VAT remaining on the spot can be higher if the settlement is a town, it is easier to win national and EU projects for towns due to the higher level of institutions, enterprises also prefer towns) cease to exist, so expressed revenue increase does not come with the title. This hypothesis was proved by my examination.

At the same time, becoming a town was a question of prestige for the settlements examined, all the target groups highlighted it. It is also important to note that the prestige of not all the settlements increased after they were declared towns (Mezőkeresztes, Kisköre). Furthermore, success is not lived in the same way by all the target groups. While the leaders of the settlement take it as a success (as they initiated it) and note a prestige growth, the local enterprises do not feel in the same way (Figure 4).

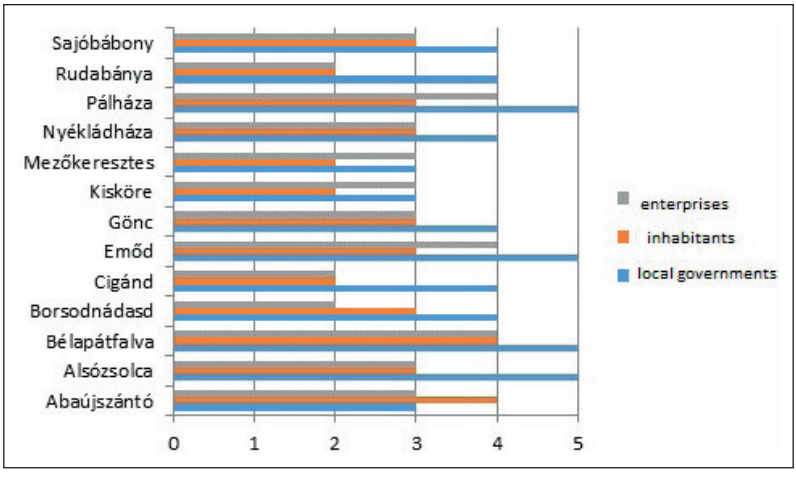


Fig. 4: *The assessment of greater prestige in the examined towns after declaration by target groups*
Source: own compilation based on the questionnaire

2. Developing infrastructure is essential in the life of all settlements regardless of their rank, so in many cases developed infrastructure was a prerequisite of declaration.

The infrastructure of a settlement generally reflects development. As developing infrastructure plays a significant part in the lives of all settlements, the question is whether developed infrastructure was the prerequisite of declaration or it changed

afterwards? During the examination seven indicators were assessed that mostly represent the present state of infrastructure.

In many settlements indicators formed a growing smooth curve as network development is continuous and growing. Maybe it is worth noting that positive infrastructure development preceded the declaration of a town and it is not the consequence. Of course, some „towns" may differ from the average, but on the whole the increase of the indicators is obvious.

To sum up, we can state that there was no significant relationship detected if the declaration of a town has any role in increasing infrastructure indicators. The development of the infrastructure is essential for all settlements regardless of their rank. What is more, developed infrastructure was a prerequisite of declaration.

3. The title „town" means emotionally more for the locals. The declaration of a town is a significant social, psychological factor that strengthens identification and encourages cooperation.

According to many researchers it is important for the inhabitants to live in towns, which enhances local patriotism and identification with the place (Süli-Zakat Et Al. 2002, Patkós 2002). Sometimes a settlement wants to become a town to free extra energies from the locals and they are willing to contribute more to a would-be town than a village (Kiss 1997). In certain cases after declaration the settlement starts to develop and the inhabitants become active to prove they deserve to be a town (Szigeti 1997, Huszti 2008).

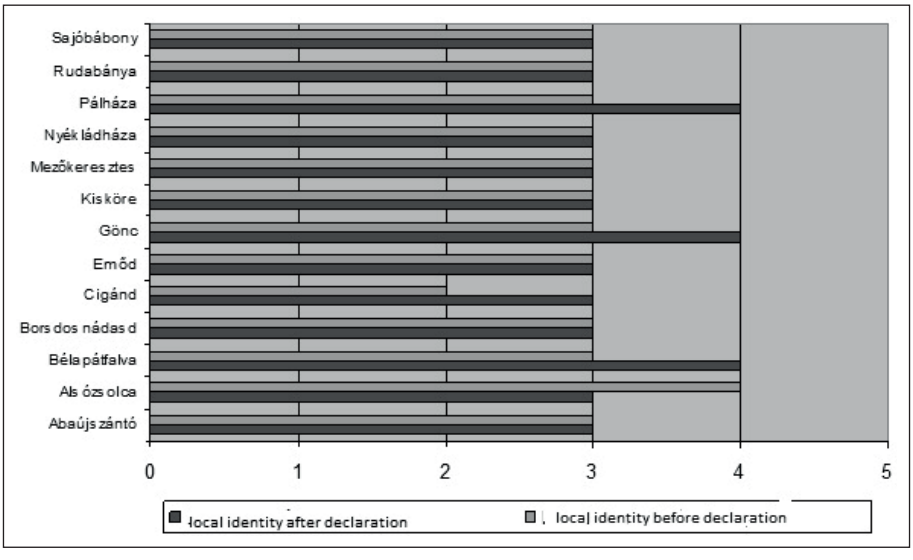


Fig. 5: *The assessment of local identity in the examined towns*
Source: own compilation based on the questionnaire

The settlements that have already earned that title during the course of history but lost their rank the declaration is a decisive sociological-psychological factor that strengthens identification and encourages cooperation (Csapó 1994, Csapó -Kocsis 1997, Zsótér 2008).

The locals' sense of identity is also changeable at the examined settlements. First, it is interesting that in the case of Alsózsolca the sense of identity decreased. In my opinion this can be due to the loose relations of the people moving out of Miskolc. It is also important to note that in smaller and primarily hillside towns (Bélapátfalva, Pálháza, Gönc) the locals have stronger ties to the settlement, so we can say that the title of a „town" has an emotional charge for the inhabitants (Figure 5).

4. Declaration of a town has positive impacts on the project applications, activity, success and source adsorption capacity of the settlement.

The examination proved that becoming a town has a positive impact on the success of the projects and the amount of funds according to the management. At the same time, however, it is also important to note that in a way the respondents also evaluate their own work, project activity and success so this subjectivity can result in a more positive picture than real (Figure 6). In addition, the opinions of the target groups differed significantly. While town management unanimously declared that the declaration opened up project opportunities and more funds, local inhabitants and enterprises shared this view only in some settlements. It is also supported by the analysis of the amount of funds.

Project applications brought along positive changes in nearly half of the declared towns although most settlements assessed the available project opportunities satisfactory. Almost without any exceptions local enterprises thought their project prospects had improved.

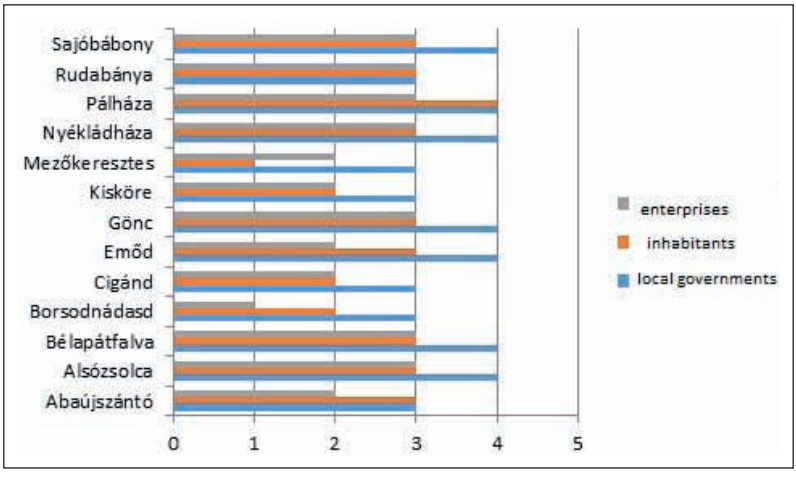


Fig. 6: *The assessment of project opportunities in the examined towns after declaration by target groups*
Source: own compilation based on the questionnaire

However, we have to see that people sometimes have the misbelief that towns can apply for more projects than villages and they are more successful. The results of the examination did not prove the opposite. It is also obvious that it can be influenced by several external impacts that were outlined previously.

5. The declaration does not automatically mean institutional network extension, more jobs or improved services.

One of the objectives of the examination was to find out whether the declaration of a town can induce improving employment and better chances of getting a job. According to the locals as one of the target groups nearly half of the examined settlements have has better employment prospective since the declaration. Mezőkeresztes and Abaújszántó can be the exceptions where the locals are and were pessimistic. It is not surprising, too, that the most favourable indicators are presented by two towns near Miskolc (Alsózsolca, Nyékládháza), However, it must be considered that opportunities may not be improved in the settlement concerned as the inhabitants can find a job easier in the nearby town so we cannot state with certainty that employment opportunities have been improved due to the declaration.

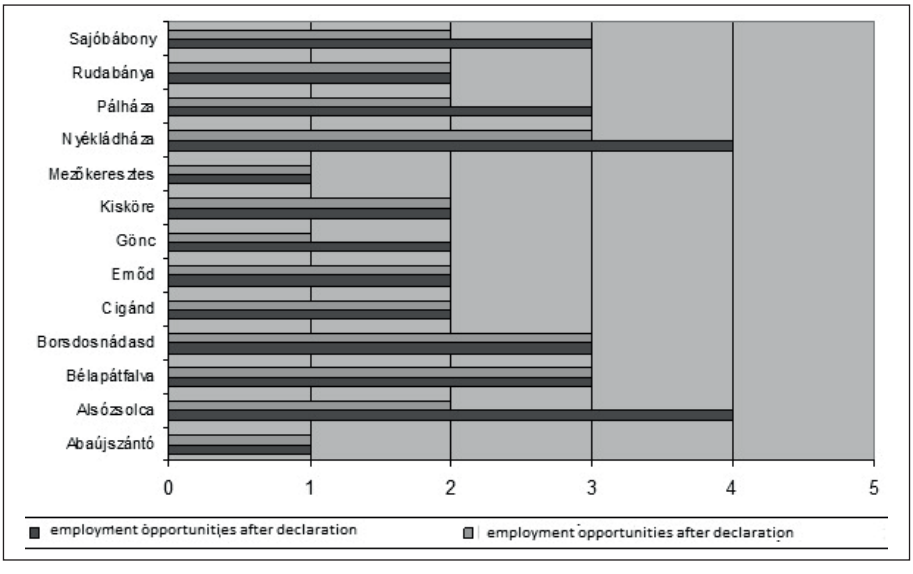


Fig. 7: *The assessment of changes in employment opportunities in the examined towns*

Source: own compilation based on the questionnaire

Of the secondary examination when analysing the documents of application for the town status it was pointed out several times that in case of declaration, or as its impact, new institutions may arise and the ones playing a central function can be extended. This expectation, or desire, was not proved unequivocally as the regional

institutions had been set up even before the declaration of a town (they were the prerequisites of the declaration).

The institutionalisation level of the examined towns is very varied although it can be stated that most of them lack some functions or their function is weak. Regarding administration only Cigánd and Gönc have district offices and apart from them Bélapátfalva, Borsodnádasd and Emőd has the office of government issuing documents.

The basic services are available in all the towns but apart from them only an institution (usually a secondary school or the fire brigade) plays the central function for the towns.

Kisköre and Mezőkeresztes does not have any of the functions mentioned before as almost all the services must be required in the nearby towns (Füzesabony, Heves, Mezőcsát, and Mezőkövesd).

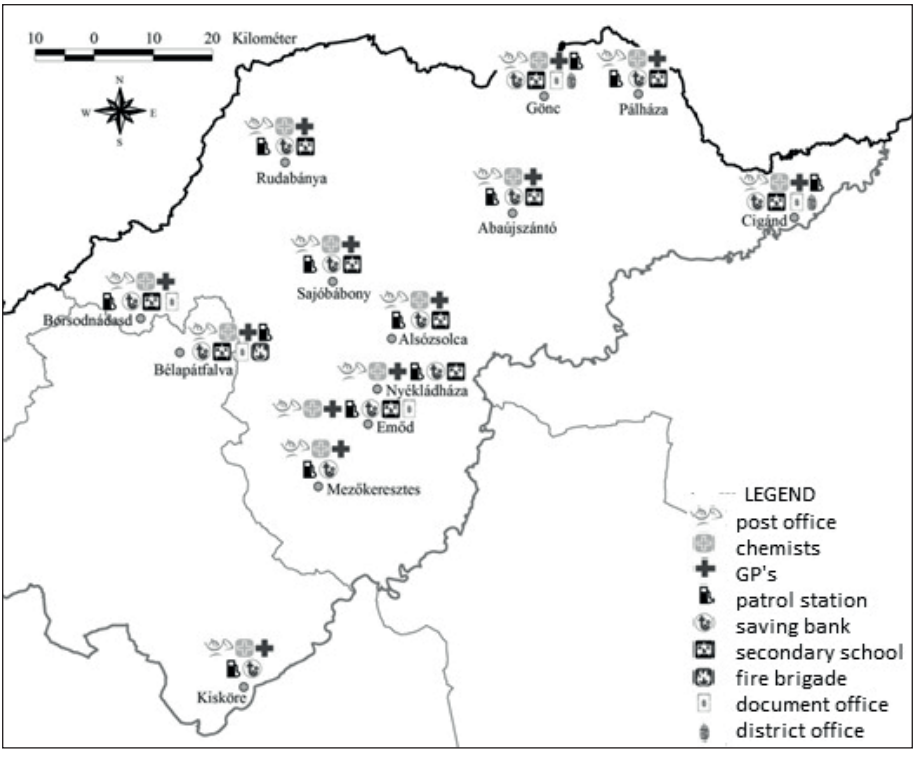


Fig. 8: *The institutionalisation level of the examined towns*
Source: own compilation based on TEIR data and the local websites

The situation is similar in assessing the correlation between town declaration and the change in the number of services. Although the town management sees the increase of services as an obviously positive fact, according to the local people the

number of services only increased after the declaration in the case of half of the towns, and there was no change in the case of most towns. However, it must be noted that the positive trend is useless if the population assesses the number and the standard of the services available as maximum average.

6. Town declaration is not by all means a conscious instrument for town development and development policy, rather it is the self-assessment of the town management so the opinion of the leaders is significantly more positive than the real picture.

Due to the liberalisation of settlement development and settlement organisation policy during the years after the change of the regime more than 80 settlements became towns in Hungary and some of them lack functions. The devaluation of the town rank resulted in the symbolic meaning of town inauguration. According to Csapó and Kocsis (2008) the main function of acknowledging a settlement was self-reward (Csapó-Kocsis 2008). The issue of whether town declaration is an instrument for town development and development policy or just self-reward mentioned by Csapó-Kocsis requires further examinations.

Knowing the results of the primary research it is worth noting that town management is mostly overrepresented so it obviously means the evaluation of their own success and giving higher subjective values to the criteria applicable to the settlement (Figure 9).

It became obvious from the local inhabitants' answers that their opinion is nearly one unit lower than the town management's so we proved that the subjective opinion of the leaders is not necessarily real and their opinion is rather a self-justification.

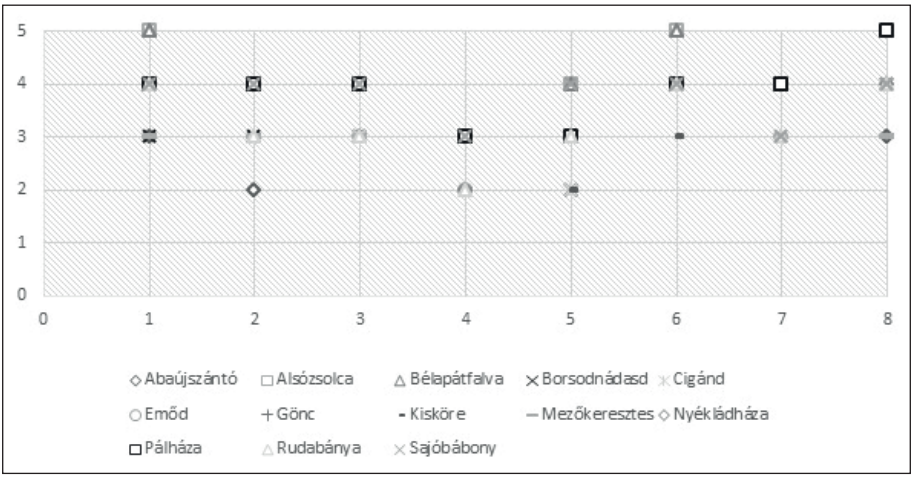


Fig. 9: *The correlations of town leaders' opinion in the examined settlement*
Legend: 1. improved standards of living; 2. stronger enterprises; 3. new sources of funding for local governments; 4. new institutions and services; 5. economically measurable changes; 6. improved image of the town; 7. the population has stronger ties; 8. greater prestige.

7. During the process of town declaration political influence in decision making was relevant in some cases, there is no significant correlation between the settlements and the political parties declaring them towns.

In the process an advantage is that the settlement as a town is more apparent both on the real and mental map but there are some cases when mayors regard their personal and primarily political objective to gain the title so motivation for the declaration is often political (Trócsányi – Pirisi – Malatyinszki 2007, Kiss -Michalkó- Tiner 2012).

The issue of how local and national politics influence town declaration was also examined. According to Gábor Szepesi a correlation between settlements and the political status of parties declaring them towns can sometimes be detected (Szepesi 2008b). It is supported by the example of the North Hungarian Region where in only three cases had the settlements a mayor from the governing (ruling) political party at the time of the declaration (Nyékládháza, Sajóbábony, Verpelét) (Table 3).

Tab. 4: *Political affiliation of mayors in the year of declaration of the town*

	Ruling party	**Mayor**
1998-2002		
Borsodnádasd	FIDESZ	MSZP-VSZSZ-SZDSZ
Emőd	FIDESZ	MDF
Gönc	FIDESZ	Independent
2002-2006		
Nyékládháza	MSZP-SZDSZ	MSZP
Abaújszántó	MSZP-SZDSZ	Independent
Bélapátfalva	MSZP-SZDSZ	Independent
Cigánd	MSZP-SZDSZ	Centrum
Kisköre	MSZP-SZDSZ	Independent
Pálháza	MSZP-SZDSZ	Zemplén Settlement Association
2006-2010		
Alsózsolca	MSZP-SZDSZ	Independent
Rudabánya	MSZP-SZDSZ	Independent
Mezőkeresztes	MSZP-SZDSZ	Independent
Sajóbábony	MSZP-SZDSZ	MSZP
2010-2014		
Gyöngyöspata	FIDESZ-KDNP	Jobbik
Onga	FIDESZ-KDNP	Independent
Verpelét	FIDESZ-KDNP	FIDESZ-KDNP

Source: own compilation based on www.valasztas.hu

CONCLUSIONS

At the end, it is worth to make conclusions about the benefits of the research. In concordance with our research aim the paper presented and proved that the current legal regulation of town declaration and its practice has anomalies and causes disharmony in the system of settlement-rank-function.

We have proved that gaining the rank of a town is rather a question of prestige than an economic-social-development political question. However, it stretches beyond the everyday political issue, it is in a more complex system of relationships that has a significant spatial effect on micro level. Declaration of a town is a significant social, psychological factor that strengthens identification and encourages cooperation.

We also righted that developing infrastructure is essential in the operation of urban functions, so high level infrastructure is a prerequisite of declaration.

We attested, as well, that declaration of a town has positive impacts on the project applications, activity, success and source adsorption capacity of the settlement, however town declaration is not by all means a conscious instrument for town development and development policy, rather it is the self-assessment of the town management so the opinion of the leaders is significantly more positive than the real picture.

We think, a further added value of our paper, that we proved, the methodology of traditional geographical researches was applied in the research so one of the important objectives in addition to enriching theory was to serve the social-economic practice directly.

Additionaly, the collected research material and the scientific results can serve as the basis for related sciences (historical geography, law and public administration, socio-geography, development policy, public administration and statistics).

Finally, in our opinion the statements of the research can serve as the scientific basis for the partial theoretical reassessment of the Hungarian town declaration and settlement development policy and the empirical analyses can be a good starting point to evaluate the town declaration process and its impacts.

LITERATURE

BAGAT M.- DRAKULIC V. - KAUZLARIĆ K. – VLAHUŠIC A.- BILIĆ I.- MATANIĆ D. (2008). Influence of Urbanization Level and Gross Domestic Product of Counties in Croatia on Access to Health Care Croat Med J. Vol. 49 Issue 3. pp.384–391.

BALÁZS I. (1994). A települési önkormányzatok nagysága és az általuk betöltött funkciók Comitatus Vol.5 Nr.2. pp.22-35-.

BASOVSKY O.- DIVINSKY B. (1991). The Development of Modern Urbanisation in Slovakia and Its Present Problems Rev Belge Geogr Vol. 115 Issue (1-3), pp.265-277.

BELUSZKY P. (1983). A várossá nyilvánítás szerepe a területfejlesztésben. – Állam és Igazgatás, pp. 912-924.

BUJDOSÓ Z. (2013). Az Észak-magyarországi Régió városodása a XXI. században – A In: Kozma G (ed.): Emberközpontú Társadalomföldrajz, Debrecen, 6-16pp.

BUJDOSÓ Z. (2004). The urbanisation in Hungary during the last decade – is it an economic interest or a question of prestige to be graded a town in our country nowadays? In: Cross-Border Co-operations – Schengen Challanges, Debrecen, 2004. pp.232-237.

BUJDOSÓ Z. (2005). Adalékok a hazai városállomány gyarapodásához In (Ed.: Süli-Zakar I.): Tájak-Régiók-Települések, Debrecen, Didakt kiadó, 2005. pp.185.-190.

BUJDOSÓ Z. (2007). Területfejlesztési célú támogatások megoszlása 2004-2006 között az Észak-magyarországi Régióban In. (Ed.:) Süli-Zakar: Határok és határon átnyúló kapcsolatok szerepe a kibővült Európai Unió perifériáján, Debrecen, pp. 255-261

BUJDOSÓ Z. (2010). Városok igazgatási szerepköre az észak-magyarországi régióban In (Ed. Magda S.-Dinya L.): XI. Nemzetközi Tudományos Napok pp. 615-620.

BUJDOSÓ Z. (2012). Észak-Magyarország 2000 utáni városodásának néhány aspektusa In (Ed.: Magda S.-Dinya L.): XII. Nemzetközi Tudományos Napok pp. 452-459

BUJDOSÓ Z.;SZŰCS CS.; MUCSICS L. (2007). The distribution of funds for regional development between 2004-2006 in Northern Hungary In Ed. Fritz, B.-Planer, D): Tagungsband Thüringische-Ungarisches Symposium, Jena 2007 pp.16-21.

BUJDOSÓ Z.; SZŰCS CS. (2008). The utilization of regional development funds int he small towns of Northern Hungary In. (Ed: Csapó T.-Kocsis Zs., 2008): Nagyközségek *és* kisvárosok a térben, Savarai University Press, Szombathely, pp.172-181.

CSAPÓ T.; KOCSIS ZS. (2008).A várossá válás reformja. Területi Statisztika Vol. 6. Nr. 2 pp.640-650

CSAPÓ T. (1994). Kistérségi központi funkciók ellátását végző és arra alkalmas települések, potenciális városok Vas megyében. Térségi folyamatok a Nyugat-Dunántúlon 1. MTA RKK Szombathely, 57p.

FARAGÓ L. (2006).A városokra alapozott területpolitika koncepcionális megalapozása Tér és Társadalom, Vol. 20 Nr. 4 pp.12-25

FARAGÓ L. (2009). A településhálózat és annak alakítása Területi Statisztika Vol 12. Nr. 2 pp.257-262.

HAJDÚ Z. (1977). A hegyaljai városi jellegű települések funkcióinak és hierarchikus rendjének vizsgálata, vonzáskörzeteinek elhatárolása Studia Geographica 1. KLTE Földrajzi Intézet, Debrecen. 107p.

HUSZTI ZS. (2008). Települések sikerességének vizsgálata Dunaújvárosi Főiskola Közleményei XXX, Dunaújváros 56p.

KISS É. (1997). A várossá nyilvánítás problematikája és a várossá válás jelentősége az önkormányzatok szemszögéből. — Földrajzi *Értesítő*. Vol 21. Nr. 3. pp. 456-481.

KISS É.; TINER T.; MICHALKÓ G. (2012). Szob a várossá válás útján- az első évtized tapasztalatai Földrajzi Közleményej Vol 24. Nr.2 pp. 182-198.

KOPCZYŃSKI M.- SOBECHOWICZ L. (2017). The Impact of Urbanization on Stature and BMI in Poland Journal of Interdisciplinary History Volume 47, Number 3, pp. 359-379

LÁSZLÓ J. (2007). A „városgyár" és ami mögötte van. Előadás, Szeged, 2007.okt 25.

MATLOVIC R. (2014). Adaptative transformation of the intra-urban structures in postsocialist period: ontological and epistemological considerations Folia Geographica, Vol. 56, 2014, No.2, pp. 5-13

MATLOVICOVA K. (2014). Theoretical framework of the intraurban Criminality research: main Approaches in the criminological thought Folia Geographica, Vol. 56, 2014, No.2, pp. 29-40

LUKÁCS J.-NÉ; PERGER F.-NÉ (1975) Egy változat az agglomeráció jelenlétének és körének kimutatására Miskolc és környékének adatai alapján Területi Statisztika Vol 3. Nr. 1. pp. 24-31

MOLNÁR E.-PÉNZES J. (2005). Kis –és középvárosi foglalkoztatási centrumok az Észak-alföldi Régióban. In: Czimre K. (Ed): Kisközségtől az eurorégióig. Didakt Kft, Debrecen pp. 159-175.

PATKÓS CS. (2002). Regionális identitás vizsgálata Szolnok városában. – Északkelet-Magyarország. Gazdaság-Kultúra-Tudomány Társadalompolitikai Folyóirat Vol 7.Nr. 3-4. pp. 50-55

PIRISI G.; TRÓCSÁNYI A. (2007)A várossá nyilvánítás, mint a területfejlesztés eszköze? A városi cím elnyerésének területpolitikai vonatkozásai Terüeltfejlesztés és innováció Vol. 1. Nr.2. pp.2-8.

SÜLI-ZAKAR I.; TEPERICS K.; CZIMRE K. (2002). A nemzeti identitás hatása az eurorégiós törekvésekre – Esettanulmány: Kárpátok Eurorégió. – In: Acta Geographica Debrecina Tomus XXXV. Debrecen, pp. 275-286.

SZABÓ GY. (1994). A várossá válás útján – Komádi Falu, város, régió Vol.94. Nr. 8. pp. 52-23.

SZEPESI G. (2008). A rendszerváltozás utáni várossá avatások Magyarországon Kézirat (PhD study) SZTE Földtudományok Doktori Iskola 134p.

SZIGETI E. (1997) Urbanizáció, városhálózat, várossá-nyilvánítás. – Területi Statisztika. Vol 12. Nr 1. pp. 66–82.

ŠIMON M. (2014). Exploring Counterurbanisation in a Post-Socialist Context: Case of the Czech Republic Sociologia Ruralis Volume 54, Issue 2 pp. 117–142

SZYMANSKA D.-MATCZAK A. (2002). Urbanization in poland:tendencies and transformation European Urban and Regional Studies Vol 9, Issue 1, pp.22-40

TÓTH K. (2000a) Városias falvak-falusias városok. Az 1990 óta várossá nyilvánított települések helye a városhálózatban. In: Kovács T. (Ed): Integrált vidékfejlesztés. V. falukonferencia, MTA RKK, Pécs. Pp.463-469.

TÓTH K. (2000b). Városok a városi lét szélén, az 1990 óta várossá nyilvánított települések vizsgálata. In (Ed..):Molnár J.: Földrajz az egész világ, Miskolc pp.219-223

TRÓCSÁNYI A. ; PIRISI G.; MALATYINSZKI SZ. (2007). A célnál fontosabb a bejárt út. A várossá nyilvánítás gyakorlata Magyarországon. Falu Város Régió, vol 12. Nr 3. pp. 18-27.

URSIC K.- MATJAZ V. (2012).Urbanisation History of Slovenia in the Context of Eastern and South-Eastern European Countries *European Quarterly of Political Attitudes and Mentalities* Volume: 1. Issue: 1 pp.15-32

ZSÓTÉR B. (2008). Változások a délkelet-alföldi Mezőhegyes életében várossá nyilvánítását követően. Területi Statisztika Vol 22. Nr. 6. pp. 8-18

Folia geographica, Acta facultatis studiorum humanitatis et naturae Universitatis Prešoviensis,
Prírodné vedy Volume 58, 2016, No. 2, FHPV PU Prešov. ISSN 1336-6157

MERANIE SUBJEKTÍVNEJ A OBJEKTÍVNEJ DIMENZIE KVALITY ŽIVOTA Z GEOGRAFICKÉHO HĽADISKA – PREHĽAD PRÍSTUPOV

MEASUREMENT OF SUBJECTIVE AND OBJECTIVE DIMENSION OF QUALITY OF LIFE IN GEOGRAPHY – OVERVIEW OF APPROACHES

Katarína RIŠOVÁ [1]

Abstract: *The quality of life (Qol) research is characterized for its methodological diversity. The primary aim of this paper is to highlight the differences between the significant approaches on the measure and evaluation of Qol in a geographical setting. The works of Slovak, as well as foreign authors were analysed and compared to demonstrate the advantages, the disadvantages and possibilities of the subjective and the objective Qol. The article also maintains a partial and a holistic approach for assessing Qol, on the different views selected through relevant domains and Qol indicators. In conclusion, two types of indicators are detected and the future possibilities for Qol research are proposed.*

Key words: *quality of life indicators, satisfaction of citizens, image of the city, subjective approach, objective approach*

ÚVOD

Problematika kvality života (ďalej len Qol, z anglického „quality of life“) sa čoraz častejšie objavuje v prácach slovenských, ale aj zahraničných autorov. Téma sa stáva neustále aktuálnejšou aj z dôvodu vzrastajúcej svetovej miery urbanizácie, ktorá podľa World Cities Report (UN-Habitat, 2016) v roku 2015 predstavovala 54 %. Práve rýchly a živelný rast miest spôsobuje pokles kvality mestského prostredia (Pasaogulari, Doratli, 2004; Rogerson, 1999). Ira a Andráško navyše upozorňujú, že nielen žiť lepšie, ale aj žiť inak by malo byť otázkou Qol.

Massam (2002) zdôraznil, že nie všetci máme rovnaký prístup k verejným službám, alebo rovnaké príležitosti ovplyvniť verejné služby a prostredie mesta aktívnou participáciou. Qol pritom priamo ovplyvňuje konkurencieschopnosť miest, ako aj konkurencieschopnosť celého regiónu (Andráško 2008 a.) prostredníctvom migrač-

1 ***Bc. KatarínaRišová.,*** *Katedra geografie a geológie, Fakulta prírodných vied, Univerzita Mateja Bela v Banskej Bystrici, Tajovského 40, 97401 Banská Bystrica, e-mail: katarina.risova@studenti.umb.sk*

ných rozhodnutí, cien nehnuteľností (Ballas, 2013; Faggian, Royuela, 2010), imidžu mesta a city marketingu (Rogerson, 1999) a v neposlednom rade aj prostredníctvom komfortu obyvateľov.

Qol predstavuje komplexný multidisciplinárny problém, čo je dôvodom absencie jeho všeobecne platnej definície (Ira, Andráško, 2007). Bacsó (2007) oboznámil čitateľa s pôvodom pojmu Qol. Popísal chápanie pojmu Qol z hľadiska viacerých vedných disciplín. V medicíne sa Qol spája so zdravím, v sociológii so životným štýlom, v psychológii so subjektívnou pohodou, v ekonómii so životnou úrovňou a životným štandardom, v ekológii a environmentalistike s trvalo udržateľným rozvojom, v geografii predstavuje vzťah medzi človekom a prostredím.

Práve geografia dodáva výskumu Qol priestorový aspekt, pričom nehľadí len na ekonomické činitele. Ira a Murgaš (2008) Qol definovali ako sumu kvalít života obyvateľov daného priestoru. Autorka článku sa prikláňa k myšlienke, že Qol z geografického hľadiska treba chápať z hľadiska kvality miesta (Andrews, 2001), kvality prostredia, kvality životných podmienok a obývateľnosti (Andráško, 2008 c.).

Cieľom predkladanej práce je upriamiť pozornosť na rozdiely medzi subjektívnym a objektívnym prístupom k výskumu Qol, ako aj medzi prístupom parciálnym a holistickým. Ďalej uviesť výhody a nevýhody využitia subjektívnych a objektívnych indikátorov a poskytnúť čitateľovi reprezentatívnu vzorku domácich a zahraničných prác, ako príkladov aplikácie jednotlivých čiastkových prístupov. V závere autorka na základe analýzy doterajších výskumov a prístupov k problematike vyjadrí názor, akým smerom by sa výskum Qol v budúcnosti mal uberať.

VÝSKUM QOL V GEOGRAFII

Vývoj spoločenských pomerov, ktorý smeroval k narastajúcim disparitám, presunul pozornosť vedcov od materiálneho zabezpečenia ku komplexnej Qol obyvateľov a ich spokojnosti s prostredím, v ktorom žijú. Heřmanová (2012) považuje za kľúčový podnet pre výskum Qol v 70. rokoch 20. storočia práve rozšírenie konzumného života v ekonomicky vyspelom „západnom svete“.

Za prvú rozsiahlu prácu v danej oblasti je najčastejšie považovaná práca Smitha (1973), v ktorej autor skúmal geografiu Qol v USA. Na ňu neskôr nadväzovali ďalšie štúdie, zaoberajúce sa percepciou Qol (Campbell et. al, 1976), indikátormi Qol (Liu, 1976), atraktivitami (Roback, 1980) či konštrukciou indexu Qol (Rosen, 1979). Zo zahraničných teoretických prác možno spomenúť Massama (2002), ktorý publikoval rozsiahlu teoreticko-metodologickú príručku týkajúcu sa merania Qol. Spomedzi novších teoretických prác možno spomenúť rozsiahly článok Ballasa (2013), ktorý ponúkol obsažný prehľad prístupov a aktuálnych trendov v oblasti Qol, ako aj súhrn kľúčových svetových diel v tejto oblasti. Prehľad štúdií rôznych autorov poskytol aj Marans (2012), pričom pridal vlastné modely týkajúce sa vzťahu medzi objektívnymi podmienkami a subjektívnou odozvou. V publikácii Maransa a Stimsona (2011) sú uverejnené nielen práce a prípadové štúdie týkajúce sa Qol v rôznych častiach sveta, ale aj teoretické pohľady na Qol, vrátane prístupov k štúdiu Qol a výziev pre budúci výskum.

V prostredí Slovenska sa prvé práce zaoberali problémom Qol v suburbánnom priestore Bratislavy (Spišiak, Danihelová, 1998) či v regiónoch Dolného Pomoravia,

Tatier a Východných Karpát (Ira, 1999). Jednou zo základných slovenských teoretických prác v oblasti Qol je práca Iru a Andráška (2007), ktorí sa venovali najmä metodologickým východiskám výskumu Qol. Prehľad prác slovenských autorov v danej oblasti poskytli Ira et al. (2009). Aktuálne teoretické postrehy poskytuje Andráško (2016) aj vo svojej rozsiahlej monografii.

Vo výskume Qol existuje dualita, ktorá sa prejavuje v prístupe subjektívnom a objektívnom, pozitívnom a negatívnom, parciálnom a celostnom (Ira, Murgaš, 2008). Pozitívny prístup predpokladá voľbu indikátorov, ktoré ovplyvňujú Qol pozitívne (napr. detské ihriská, možnosti kultúrneho vyžitia a pod.), zatiaľ čo negatívny prístup využíva negatívne indikátory (kriminalita, znečistenie ovzdušia a pod.). V praxi sa často uplatňuje kombinácia pozitívneho a negatívneho prístupu.

Parciálny prístup spočíva v hodnotení Qol na základe jedného, alebo len malého počtu indikátorov s cieľom autora poukázať na parciálny problém mestského prostredia. Pri parciálnom prístupe zvolený problém vynikne a nezanikne v množstve ďalších indikátorov, ako by tomu bolo pri komplexnom prístupe. Celostný prístup zohľadňuje väčšie množstvo indikátorov z viacerých oblastí života, s cieľom čo najkomplexnejšie zhodnotiť daný stav.

Objektívny prístup je založený na kvantifikovaní prírodných (klíma, znečistenie ovzdušia, vzdialenosť od pobrežia a pod.) a socio-ekonomických (príjmy, náklady na bývanie, kultúrna tolerancia, občianska vybavenosť a pod.) indikátorov Qol. Subjektívny prístup sleduje priestorové preferencie obyvateľov a ich spokojnosť s prostredím, v ktorom žijú.

Qol v geografii možno skúmať na interurbánnej, ako aj na intraurbánnej úrovni (Andráško, 2008 b.). Pri interurbánnom prístupe sa medzi sebou porovnávajú viaceré mestá. Na intraurbánnej úrovni sú medzi sebou porovnávané mestské časti, základné sídelné jednotky, alebo inak definované celky v rámci jedného mesta. Na úrovni rôznych mierok je vhodné využívať odlišné indikátory. Jedným dôvodom je odlišná dostupnosť údajov na rôznych úrovniach priestorových jednotiek. Druhým dôvodom je časová náročnosť terénneho výskumu na veľkej ploche, ktorý je často časovo, či z hľadiska ľudských kapacít nereálny.

Ira a Andráško (2007), identifikovali na základe prehľadu prác tieto časté témy, týkajúce sa výskumu Qol: migrácia, lokalizácia firiem, regionálny rozvoj, vierovyznanie, pracovné prostredie, bývanie. Ďalšou častou témou spájanou s problematikou Qol sú aj postsocialistické transformačné procesy (Ira et al., 2009).

OBJEKTÍVNY PRÍSTUP K MERANIU QOL

Pri objektívnom skúmaní Qol sa stretávame s problémom voľby indikátorov, ako aj s voľbou parciálneho či holistického prístupu. Pri holistickom prístupe je žiaduce zvoliť čo najvhodnejšiu kombináciu indikátorov pre dané skúmané územie, prostredníctvom ktorých je Qol skúmaná ako komplexný problém.

Výber objektívnych indikátorov – výhody objektívnych indikátorov Qol sú ľahká definovateľnosť, kvantifikovateľnosť, porovnávateľnosť. Ich slabé stránky súvisia s meraním údajov a v prípade slabej znalosti skúmaného územia aj s interpre-

táciou výsledkov. Objektívne indikátory taktiež nereflektujú vnímanie obyvateľov (Diener, Suh, 1997).

Ira a Murgaš (2008) zdôrazňujú, že oblasti (domény), ktorých sa týka výskum kvality života, by mali byť také, aby sa týkali každodenného života a mali významný vplyv na Qol. V týchto oblastiach sú začlenené indikátory Qol.

Geografický výskum Qol vychádza z predpokladu, že faktory ovplyvňujúce Qol sú kvantifikovateľné. Výber indikátorov je však subjektívny, čo prispieva k značnej nejednotnosti v prístupoch autorov. Andráško (2005) uvádza tieto spôsoby výberu vhodných indikátorov Qol: posúdením výskumníka samotného, prehľadom a zhodnotením relevantnej literatúry a na základe širšieho prieskumu (názory obyvateľov, expertné posudky).

Godor a Horňák (2010) sa zaoberali problematikou indikátorov Qol. Uviedli 108 indikátorov používaných v prácach slovenských autorov. Každý z týchto indikátorov zaradili do jednej zo siedmich oblastí (domén) života: ekonomickej, bytového fondu, komfortu a vybavenosti bytov, environmentálnej, dostupnosti a vybavenosti územia službami a tovarmi, demografickej a domény bezpečnosti. Ku každému indikátoru poskytli jeho definíciu a merné hodnoty. Zoznam často používaných indikátorov Qol v meste podľa vybraných autorov uviedli vo svojich prácach aj Rogerson (1999) a Massam (2002). Všetky tri spomínané práce predstavujú vítanú pomôcku pri výbere indikátorov Qol. Pomôcť môžu nielen geografom, ktorí sa podobným výskumom zaoberajú po prvý raz.

Ako príklady výberu domén v zahraničnej literatúre možno uviesť práce Cliftona et. al (2008) a Andrewsa (2001). Zatiaľ čo Andrews (2001) dbal pri výskume Qol na domény ľudského zdravia, rekreačných atraktivít a estetiky prostredia, Clifton et. al (2008) sledovali v rámci mesta najmä kvantifikovateľné ukazovatele v oblastiach krajinnej ekológie (ochrana krajiny), ekonomickej štruktúry (výkonnosť ekonomiky), transportu (prístupnosť), spoločnosti (sociálna starostlivosť) a urbánneho dizajnu (estetika a schodnosť). Na tomto príklade je viditeľné, že niektorí autori zapájajú do výskumu Qol aj ukazovatele životnej úrovne, kým iní sa im zámerne vyhýbajú.

Zapojenie obyvateľov do výberu indikátorov posúva výskum Qol bližšie k praxi. Riešené domény sú v takomto prípade bližšie k respondentom a možno očakávať, že odzrkadľujú najdôležitejšie aspekty ich každodenného života. Andráško et al. (2005) identifikoval základné ukazovatele Qol na základe dotazníkového prieskumu, ktorý sa uskutočnil v 38 obciach Slovenska. Respondenti uviedli, že osobnú Qol najviac ovplyvňujú medziľudské vzťahy, rodina, financie, zamestnanie, životné prostredie a zdravie. Sídelnú Qol podľa nich v najväčšej miere ovplyvňujú životné prostredie, medziľudské vzťahy, doprava, vybavenosť a financie. Výsledky takéhoto prieskumu sú využiteľné pre ďalší výskum Qol.

Celostný prístup k hodnoteniu Qol – holistický prístup merania a hodnotenia Qol vyžaduje väčší počet ukazovateľov, pričom o jeho kvalite rozhoduje najmä vyvážený výber indikátorov. Pri porovnávaní viacerých miest alebo území vznikne viacrozmerný štatistický súbor. Na jeho analýzu sa často používa napríklad faktorová analýza, analýza hlavných komponentov, zhluková analýza a iné viacrozmerné štatistické metódy.

Andráško (2008 b.) zdôraznil, že multivariačné metódy vyžadujú poznanie skúmaného územia. Kvalita interpretácie výsledkov totiž nezávisí len na správnom kvantifikovaní javov, ale aj na kontextuálnom pozadí.

Li a Weng (2007) sa venovali kvalite života v meste Indianapolis. V rámci objektívneho prístupu zadelili indikátory Qol do dvoch dimenzií: environmentálnej (zeleň, teplota vzduchu) a socio-ekonomickej (hustota zaľudnenia, príjmy, chudoba, zamestnanosť, vzdelanie a bývanie). Využili metódy korelačnej analýzy, faktorovej analýzy a regresnej analýzy. Autori zistili, že vegetácia pozitívne korelovala s príjmami, cenou bývania a stupňom vzdelania. Negatívne korelovala s teplotou vzduchu a hustotou zaľudnenia. Práca poskytuje návod na pritiahnutie ekonomicky silnejších a vzdelanejších sociálnych skupín do mesta – tým návodom je zeleň. Článok je preto jedným z príkladov prieniku výskumu Qol s možnou praxou.

Mendes a Matuzuki (2001) skúmali kvalitu života v meste São Carlos s využitím multikriteriálneho objektívneho prístupu merania. Indikátory, ktoré sledovali, zaradili do dimenzií: komercia a služby, kriminalita, environmentálna dimenzia, bývanie a doprava. Článok ničím výrazne nevybočuje od klasických viackriteriálnych objektívnych meraní Qol v meste – naopak, je jedným z typických príkladov takéhoto prístupu.

Faggian a Royuela (2010) skúmali vplyv Qol na migračné toky v rámci metropolitnej oblasti Barcelony. Výskum sa uskutočnil na úrovni 314 samospráv. Okrem indikátorov Qol autori sledovali aj počet migračných pohybov medzi samosprávami, kedy vznikla matica rozmerov 314 x 314. Práca je charakteristická najmä vysokým počtom indikátorov (57), ktoré autori zaradili až do 17 dimenzií. Ide o mimoriadne obsažný a komplexný výskum, ktorý môže slúžiť ako inšpirácia pre ostatných geografov.

Marlet a Woerkens (2005) ponúkli vo svojej práci síce jednoduchý, avšak veľmi originálny pohľad na Qol v meste. Autori sledovali na území holandských miest prípadnú súvislosť medzi výskytom tzv. kreatívnej sociálnej triedy (obyvateľstvo zamestnané v oblastiach umenia, vedy, manažmentu, informatiky, zdravotníctva, práva a financií) a vybranými faktormi (atraktivity, kultúrna tolerancia, otváracie hodiny pubov, estetika, pracovné príležitosti a i.). V práci boli použité metódy korelačnej analýzy. Podobne ako práca autorov Li a Weng (2007), aj táto ponúka návod na pritiahnutie určitej želanej skupiny do mesta. Znovu ide o inšpiratívnu metodiku.

Paul (2012) skúmal Qol v meste z hľadiska vybavenosti. Autor určil stupne rozvoja na úrovni volebných obvodov v indickom meste Barasat. Na disparity medzi obvodmi poukázal prostredníctvom koeficientu variácie, vypočítaného z počtu prvkov vybavenosti na 1000 obyvateľov. Výsledky mapovania ďalej analyzoval pomocou výpočtu teoretickej vzdialenosti medzi prvkami vybavenosti. V závere aplikoval faktorovú analýzu. Sledovanie vybavenosti je jednou z najexaktnejších metód výskumu Qol v meste. Problém nastáva pri výbere reprezentatívnych prvkov vybavenosti, ktorý môže ovplyvniť napríklad aj odlišná kultúra. V spomínanej práci autor mapoval napríklad aj hranice na spaľovanie mŕtvol.

Spomedzi slovenských a českých autorov možno spomenúť Jindrovú (2015), ktorá využila výskum kvality života na odhalenie regionálnych disparít v Českej republike na úrovni NUTS 4 (s vylúčením Prahy). Sledovala ekonomickú doménu (hustota železničnej siete, nezamestnanosť žien a iné), sociálnu doménu (index starnutia, počet dentistov, hustota zaľudnenia a iné) a environmentálnu doménu (koefi-

cient ekologickej stability, množstvo ornej pôdy na jedného obyvateľa a iné). Analýzu údajov vykonala pomocou metódy hlavných komponentov, korelačnej analýzy, zhlukovej analýzy a výpočtu euklidovskej vzdialenosti. Článok sa vyznačuje pestrou vzorkou indikátorov, stručnosťou a zrozumiteľnosťou, čím môže byť prínosný nielen pre začínajúcich vedcov v oblasti Qol.

Murgaš (2009) sa zaoberal priestorovou diferenciáciou Qol v okresoch Slovenska. Vypočítal index Qol na základe indikátorov patriacich do domén prosperity, deprivácie a humánneho kapitálu. Vzhľadom na zvolené domény, výsledný agregovaný index Qol odráža skôr životnú úroveň, než Qol, čo je viditeľné aj na mapách, ktoré autor prikladá.

V inej práci Murgaš a Klobučník (2014) hodnotili kvalitu života v Českej republike na úrovni samospráv, okresov a krajov. Využili pri tom tzv. zlatý štandard Qol, v rámci ktorého aplikovali indikátory: úmrtnosť na samovraždy, úmrtnosť, predpokladanú dĺžka života pri narodení, pôrodnosť, znečistenie životného prostredia, podiel vysokoškolsky vzdelaných obyvateľov, nezamestnanosť a generativitu, vyjadrenú darcovstvom krvi. Indikátory vyjadrujú akési extrémne hodnoty daného javu (napr. samovražda ako extrémna hodnota absencie chuti do života, či úmrtie ako extrémna hodnota absencie zdravia). Predmetná práca predložila pozoruhodný prístup k výberu indikátorov, čím môže značne prispieť k skvalitneniu výskumu Qol.

Tej, Sirková a AliTaha (2012) vo svojej práci porovnávali kvalitu života v krajských mestách Slovenska na základe týchto ôsmich indikátorov: predpokladaná dĺžka života pri narodení, nezamestnanosť, podiel dlhodobo nezamestnaných z počtu uchádzačov o zamestnanie, počet podnikov na 1000 obyvateľov, priemerný nájom za 3-izbový byt, počet vlakových spojení, počet trestných činov na 10 000 obyvateľov a znečistenie ovzdušia. Na základe týchto kritérií vzniklo toto poradie úspešnosti krajských miest: Bratislava (najúspešnejšie), Trenčín a Trnava, Nitra, Žilina, Prešov, Banská Bystrica, Košice (najmenej úspešné). Poradie odzrkadľuje skôr životnú úroveň než Qol, čo je spôsobené výberom indikátorov. Vzhľadom na počet skúmaných miest je pochopiteľné, že absentuje terénny výskum. Práca sa nedá chápať ako výskum mestskej Qol, len ako výskum životnej úrovne regionálnych centier.

Stručný náhľad do problematiky kvality života poskytol Székely (2006). Na príklade samosprávnych krajov Slovenska porovnal kvalitu života v rurálnom a urbánnom prostredí. Zdôraznil, že kvalita života vytvára regionálne rozdiely. Vo svojej práci sledoval podiel domácností s napojením na internet, podiel dochádzajúcich do práce a index starnutia. Vo všetkých prípadoch zohľadnil osobitne výsledky pre rurálne a osobitne pre urbánne prostredie. Pri obmedzenom množstve zvolených indikátorov je otázne, či ide o celostný alebo parciálny prístup. Na tomto príklade možno vidieť, ako sa mení relevancia indikátorov v čase. Dnes by už bola vhodnosť použitia indikátora pripojenia na internet pravdepodobne diskutabilná.

Andráško (2008 c.) sa vo svojej práci venoval výskumu Qol v Bratislave. Využil indikátory, patriace do dimenzií: bývanie, vzdelávanie, životné prostredie, kriminalita, doprava, vybavenosť vybranými službami a zdravotná starostlivosť. Analyzoval dáta formou viacrozmerných štatistických metód. V závere vznikla typológia mestských štvrtí Bratislavy, autor každý typ opísal. Práca je zaujímavá napríklad z hľadiska vymedzenia vlastných skúmaných územných jednotiek (mestské štvrte),

pri zohľadnení genézy a štruktúry mesta. Takýto postup je pre výskum prínosom, keďže urbanistické obvody, prípadne základné sídelné jednotky často neodzrkadľujú skutočné priestorové vzťahy v rámci mesta.

Parciálny prístup k hodnoteniu Qol – na príklade troch prác domácich autorov je viditeľný rozdielny pohľad na parciálny prístup k výskumu Qol. Michálek (2008) a Székely (2008) sa dotkli problému Qol len čiastočne, ich práce odzrkadľujú skôr stav životnej úrovne.

Michálek (2008) zvolil ako indikátor Qol regionálne nerovnomernosti, vyjadrené relatívnou mierou nerovnomernosti (podiel počtu zamestnancov s najvyššou mzdou a počtu zamestnancov s najnižšou mzdou v regióne). Údaje autor čerpal z dokumentu Regionálna štatistika o cene práce, vydanom MPSVaR. Výskum prebehol na úrovni samosprávnych krajov Slovenska.

Székely (2008) považoval za významný indikátor kvality života dopravnú dostupnosť. Ide o parciálny prístup k výskumu kvality života. Autor identifikoval reálne priame autobusové a vlakové spojenia a stanovil priamu dopravnú dostupnosť uzlov – okresných miest Slovenska.

Oproti predchádzajúcim dvom autorom Michniak (2008) prostredníctvom zaujímavého výberu indikátora (možnosť pracovať v okrese bydliska, vyjadrená podielom počtu pracovných miest a počtu bytov v okrese.), riešil sekundárne celý komplex problémov (zlepšenie prístupu k práci, vzdelávaniu, službám, riešenie dopravných problémov, ochrana životného prostredia, efektívne využitie pôdneho fondu, viac času na relax a pod.).Výber indikátora argumentoval tým, že prípadné nerovnomernosti vedú k dochádzke do zamestnania z veľkej vzdialenosti, čo znižuje Qol. Výskum sa uskutočnil na úrovni okresov Slovenska. Práca má nesporný prínos do výskumu Qol. Demonštruje fakt, že aj prostredníctvom parciálneho prístupu možno skúmať dôležité aspekty Qol.

SUBJEKTÍVNY PRÍSTUP K MERANIU QOL

Subjektívny prístup merania Qol je bližší obyvateľom daného územia. Vyhodnocovanie výsledkov je menej náročné, nakoľko je možné uplatniť jednu veličinu pri všetkých meraniach, tou je spokojnosť. V súčasnej spoločnosti je nie je žiaduce vynechať občana z rozhodovacieho či hodnotiaceho procesu. Hodnotenie priestoru obyvateľmi je jedným z nástrojov zavádzania participačných metód do komunitného života. Aj Cilliers et al. (2015) vyjadrili presvedčenie, že ľudia využívajúci miesto v meste by ho mali mať možnosť oceniť. Decentralizáciu rozhodovania a participatívne plánovanie považuje Andráško (2016) za jedny z nástrojov riadenia mesta v súlade so zabezpečovaním Qol. Pacione (2003) dokonca tvrdí, že percepcia obyvateľov ako kľúčový faktor vnímania Qol môže byť považovaná za nadradenú objektívnej dimenzii. Považuje preto za prínosné využiť participáciu verejnosti v procese rozhodovania.

Subjektívne indikátory sa vyznačujú určitými nevýhodami. Tie sú spôsobené najmä odlišnou povahou dotazovaných ľudí (Diener, Suh, 1997). Obyvatelia sú taktiež často zvyknutí na podmienky, v ktorých žijú (Andrews, 2001; Diener, Suh, 1997).

Ako ďalší nedostatok subjektívneho prístupu Andrews (2001) upozorňuje aj na rozličné nároky jednotlivcov na kvalitu prostredia.

Európska únia už niekoľko rokov iniciuje prieskum verejnej mienky Eurobarometer, pričom jednou z oblastí je aj spokojnosť obyvateľov Európskej únie s mestom, v ktorom žijú. Výsledky Eurobarometra z roku 2015 boli publikované v dokumente Kvalita života v európskych mestách 2015, Flash Eurobarometer 419 (2016).V prvom kroku sa jednotlivci vyjadrovali, či súhlasia s výrokom: „Som spokojný, že bývam vo svojom meste." Obyvatelia ďalej hodnotili spokojnosť v oblastiach infraštruktúry a vybavenosti, integrácie cudzincov, pracovného trhu, bývania, bezpečnosti, administratívnych služieb mesta, životného prostredia a svojej osobnej situácie.

Jedným z faktorov, významne ovplyvňujúcich Qol v meste, je kvalita a dostupnosť verejných priestranstiev. Percepciu týchto priestranstiev skúmali napríklad Pasaogullari a Doratli (2004) alebo Curl et al. (2015). Kým Pasaogullari a Doratli (2004) sa v meste Famagusta zamerali na kvalitu chodníkov a ciest vedúcich k verejným priestranstvám, efektívnosť verejnej dopravy, vlastníctvo automobilu, estetiku, komfort, čistotu a rozmanitosť verejných priestranstiev a aktivít, Curl et al. (2015) sledovali vo vybraných mestách Veľkej Británie otvorené priestory, ulice, prostredie pre chodcov a dizajn ulíc. Využitie takýchto prieskumov v samospráve môže značne prispieť ku kvalite sídelného prostredia.

Bialowolska (2016) sa vo svojej práci zamerala na aspekty kvality života v európskych mestách. Ako kritériá hodnotenia využila: hmotné prvky (parky, športoviská a iné), sociálne prvky (tolerancia, bezpečnosť, susedské interakcie a iné), atribúty životného prostredia (znečistenie, hluk a iné), ekonomické prvky (trh s nehnuteľnosťami, pracovný trh a iné). Autorka použila dáta z európskeho projektu Eurobarometer, kde obyvatelia vybraných európskych miest hodnotili kvalitu mesta, v ktorom žijú. Bialowolska (2016) pristúpila k syntéze vybraných kritérií a dospela tak ku komplexnejšej výpovedi o spokojnosti obyvateľov. Možno pozorovať slabú stránku článku, a to fakt, že neprináša vlastný výskum, využíva len prevzaté údaje.

Lin (2016) našla silnú koreláciu medzi kvalitou spoločenského prostredia a ľudským šťastím. Závislosť skúmala v čínskych mestách Hangzhou, Xiamen a Shenzhen.

Kapuria (2016) skúmala percepciu obyvateľov v piatich dimenziách: psychologická nepohoda, sociálne interakcie a voľnočasové aktivity, kvalita bývania, zdravotná starostlivosť, ekonomická situácia a pracovné podmienky.

Z domácich autorov možno spomenúť Andráška et al. (2013), ktorý hodnotil na základe subjektívneho dotazníkového výskumu kvalitu bývania na vybraných sídliskách Brna (Lesná, Bohunice a Bystrc). Výskum bol realizovaný v dvoch krokoch. V prvom kroku vybraní obyvatelia celého mesta vyberali spomedzi štvrtí tie, ktoré považujú za najlepšie a najhoršie. V druhom kroku sa autori pýtali na názor len obyvateľov troch vybraných sídlisk. Porovnali tak vonkajší a vnútorný imidž vybraných sídlisk. Práca pomáha lepšie pochopiť vzťah medzi skutočnou kvalitou sídliska a jeho imidžom, ako aj myslenie obyvateľov.

Podobný postup využil Andráško (2006) aj v prípade výskumu percepcie Bratislavy. Porovnával výsledky preferencií externého pohľadu (hodnotenie obyvateľmi z celého mesta) a interného pohľadu (hodnotenie obyvateľmi danej štvrte) obyvateľov. Respondenti uviedli maximálne piatich najhorších a najlepších lokalít v Brati-

slave, následne ohodnotili len okolie svojho bydliska. Autor týmto chcel zistiť, či je hodnotenie prejavom imidžu štvrte, alebo aj odrazom reálnych podmienok.

Ako podnetná pre využitie v praxi sa javí práca Mandysa et al. (2013). Autori uviedli teoretický model pre potreby testovania Qol samosprávami. V budúcnosti predpokladajú zapojenie verejnosti do hodnotenia Qol pre potreby komunitného plánovania. Okrem niekoľkých vopred stanovených domén môžu respondenti navrhnúť a hodnotiť domény podľa vlastného výberu.

Frantál a Vaishar (2008) sa vo svojej práci zaujímali o kvalitu života v malých mestách Českej republiky: Dubňany, Holešov, Luhačovice, Moravský Krumlov, Nové Město na Moravě, Telč, Tišnov a Žamberk. Výskum bol realizovaný formou dotazníkov. Obyvatelia miest hodnotili 13 oblastí života: príroda v okolí mesta, sociálne kontakty, architektúra a historická hodnota stavieb, stav životného prostredia, osobná bezpečnosť, možnosti športového vyžitia, prítomnosť návštevníkov a turistov, množstvo a spektrum vzdelávacích zariadení, množstvo a spektrum obchodov a služieb, možnosti kultúrneho vyžitia, dopravné riešenie, možnosť získania vlastného bývania, množstvo a spektrum pracovných príležitostí. Počet vyplnených dotazníkov (2580) dodal hodnotu tomuto príspevku napriek tomu, že sami autori označili vzorku respondentov za nereprezentatívnu. Práca je prínosná aj z hľadiska zovšeobecňujúcich záverov, týkajúcich sa malých miest v prostredí Českej republiky.

Klusáček a Vaishar (2008) sledovali vo svojej práci kvalitu života v mestách Bologna, Brno, Lipsko, Ljubljana a León. Využili existujúce údaje z projektu *Mobilizing re-urbanization on condition of demographic change.* Zamerali sa na Qol z hľadiska úrovne bývania, funkčných konfliktov (znečistenie, problémy s dopravou a pod.), sociálneho prostredia, úrovne zelene a iných verejných priestorov. Autori v práci zdôraznili vplyv suburbanizácie, gentrifikácie a reurbanizácie na kvalitu života. Článok možno vidieť ako nástroj použiteľný v praxi, keďže sa zameriava na tie aspekty Qol, ktoré môžu potenciálne naštartovať reurbanizáciu.

Fertaľová a Madziková (2008) zvolili vo svojej práci subjektívny prístup hodnotenia kvality života v meste Bardejov. Obyvatelia v dotazníkoch s 20 otázkami hodnotili kvalitu bývania, pracovné príležitosti v meste, zdravotné a sociálne služby, kvalitu životného prostredia, zeleň v meste, celkový vzhľad a čistotu mesta, kultúrne a rekreačné služby, školy, mestskú hromadnú dopravu a osobnú bezpečnosť. Ide o mimoriadne stručný príspevok, avšak výstižný, poskytujúci základný náčrt v oblasti subjektívneho výskumu Qol.

Kladivo (2011 b.) vysvetlil rozdiely rôznych demografických skupín obyvateľov v percepcii mesta Olomouc. Vychádzal z predpokladu, že každá skupina obyvateľov vníma kvalitu života v meste iným spôsobom. Respondentov výskumu autor charakterizoval podľa veku, rodinného stavu, zamestnania, vlastníctva majetku a pod. (dokopy 24 charakteristík). Zistil, že mladší obyvatelia vnímajú kvalitu života vo svojom meste pozitívnejšie ako starší. Pozitívny prístup sa preukázal aj medzi vysokoškolsky vzdelanými ľuďmi a obyvateľmi suburbií. Prínos práce spočíva v uvedení rozdielov v percepciách rôznych demografických skupín obyvateľov.

SPOJENIE OBJEKTÍVNEHO A SUBJEKTÍVNEHO PRÍSTUPU K MERANIU QOL

Z dôvodu komplexnosti problému odporúčajú viacerí autori kombinovať v geografickom výskume Qol objektívny aj subjektívny prístup (Diener, Suh, 1997; Ira, Murgaš, 2008). Takto získané výsledky možno navzájom porovnávať a zistiť, nakoľko percepcia obyvateľov odzrkadľuje realitu. Andráško (2016) však upozorňuje na nedostatok prác syntetizujúcich objektívny a subjektívny prístup merania Qol. Odôvodňuje to tým, že vedcom stále nie je jasné, ako presne by podobná syntéza mala vyzerať.

Das (2008) skúmal kvalitu života v indickom meste Guwahati, s cieľom odhaliť prípadnú koreláciu medzi výsledkami získanými subjektívnym a objektívnym prístupom. Práca skúmala Qol na úrovni volebných obvodov. Zistil, že medzi výsledkami získanými subjektívnym a objektívnym prístupom existuje slabá korelácia (Pearsonov korelačný koeficient 0,36). Pre značné regionálne disparity je výskum Qol v Indii veľmi rozšírený. V porovnaní s väčšinou európskych a severoamerických štúdií Qol možno sledovať výrazné odlišnosti vo voľbe indikátorov. Autor totiž využíval aj indikátory, ako sú čistota vody, zdroje vody či prítomnosť kanalizácie.

Subjektívny aj objektívny prístup využili vo svojej práci Brereton et al. (2008). Autori v Írsku merali Qol na základe objektívnych ukazovateľov, akými sú vzdialenosť od pobrežia, pláže, vlakovej stanice, letiska, hlavnej cesty, prístavu, skládky, skládky nebezpečného odpadu. Ďalej sledovali indikátory týkajúce sa volebnej účasti, hustoty zaľudnenia či kriminality. Taktiež využili subjektívnu dotazníkovú metódu, kde sa obyvateľov pýtali na spokojnosť s ich životom. Autori využili vysoké množstvo premenných, čím prispeli ku komplexnosti výsledkov a ponúkajú tak zaujímavý pohľad na štúdium Qol.

Gyenizse et al. (2016) publikovali prácu, ktorá sa sústredila na územie maďarského mesta Szeged. Kolektív autorov tu využil preferencie obyvateľstva, ako aj expertné posudky. Ako hodnotiace kritériá bolo zvolených 25 faktorov v rámci týchto tematických skupín: vlastnosti nehnuteľností, doprava, vzdelávanie a kultúra, komerčná vybavenosť, rekreácia, šport a zdravotná starostlivosť iné vlastnosti prostredia (napr. prítomnosť priemyselných parkov). Po uskutočnení kvantitatívnej analýzy dát boli identifikované objekty s najnižším hodnotením. Za silnú stránku práce možno považovať vzájomné porovnanie máp percepcie obyvateľstva, expertných posudkov a cien nehnuteľností.

Andráško (2008 b.) spojil pri skúmaní Qol v Bratislave objektívny a subjektívny prístup. Na spracovanie údajov využil multivariačné metódy: faktorovú analýzu (na výskum sociálno-demografickej štruktúry), metódu hlavných komponentov (na výskum kvality životných podmienok) a regresnú analýzu (na vyhodnotenie percepcie obyvateľov). Článok je len akýmsi náčrtom, s hlavným ťažiskom vo zvolených metódach.

Kladivo (2011 a.) a Kladivo a Halás (2012) skúmali Qol mesta Olomouc. Objektívny prístup sa vzťahoval na 82 základných sídelných jednotiek mesta. Prvým krokom bolo kvantifikovanie 30 indikátorov, patriacich do tematických skupín: kvalita bývania, kvalita ovzdušia, kvalita a dostupnosť zelene, dopravná situácia, bezpečnosť, školstvo, zdravotná starostlivosť a komerčná vybavenosť. Následné dáta autori podrobili

PCA analýze, faktorovej analýze a zhlukovej analýze. Vo výsledku vznikla typológia základných sídelných jednotiek podľa kvality životných podmienok na ich území (spolu šesť základných typov). Subjektívny prístup bol realizovaný na úrovni mestských častí. V závere subjektívneho prístupu opäť vznikla typológia mestských častí. Medzi subjektívne a objektívne získanými výsledkami vo väčšine prípadov panovala zhoda. Obidve práce sú na vysokej kvalitatívnej úrovni, čím sa stávajú jednými z najreprezentatívnejších prác výskumu Qol na území Českej republiky a Slovenska. Najmä Kladivo (2011 a.) ponúkol obsažnú a komplexnú analýzu Qol vo svojej dizertačnej práci.

ZÁVER

Ako bolo spomenuté, výskum Qol umožňuje aplikáciu širokého spektra prístupov merania Qol, hodnotenia a interpretácie výsledkov. Či už objektívnym alebo subjektívnym spôsobom možno poukázať ako na čiastkové problémy územia, tak aj hodnotiť územie komplexne, prostredníctvom širšieho výberu vhodných indikátorov.

Autorka predkladaného príspevku si nemyslí, že existujú všeobecne platné indikátory využiteľné pre každý región. Je potrebné zohľadniť kultúru a miestne špecifiká sledovanej oblasti. Napríklad kostoly ako prvok vybavenosti možno sledovať len v oblastiach s vyššou religiozitou. Zároveň je toho názoru, že zapojením obyvateľov dotknutého územia do voľby indikátorov v maximálnej možnej miere by sa vyriešil problém vhodného výberu indikátorov. Obyvatelia by mali mať možnosť sami navrhovať indikátory Qol a následne za ne hlasovať. Takáto participácia občanov na hodnotení Qol má však aj svoje nevýhody. Ide najmä o nemožnosť porovnania prác, v ktorých sa vyskytujú odlišné indikátory, otáznu dostupnosť údajov, ako aj diskutabilné určenie ideálnej hodnoty takto zvolených indikátorov.

Pri štúdiu prístupov autorka odhalila dva typy voľby indikátorov. Možno ich nazvať indikátory príčin Qol a indikátory prejavov Qol. Indikátory prejavov, ako sú úmrtnosť, rozvodovosť či predpokladaná dĺžka života pri narodení majú výhodu jednoduchej dostupnosti údajov. Sú však len akýmisi výsledkami bližšie nešpecifikovaných príčin. Poukázanie na príčiny týchto javov môže slúžiť ako podklad pre konštruktívne riešenie Qol. Indikátory príčiny Qol zahŕňajú charakteristiky prostredia pre život, ako sú vybavenosť, podiel zelene, podiel peších zón, vizuálna atraktivita prostredia, množstvo pracovných miest a pod. V prácach zaoberajúcich sa Qol na úrovni väčších celkov (napríklad kraje, okresy, departementy a pod.) možno vidieť najmä aplikáciu indikátorov prejavov, najmä pre nereálnosť terénneho výskumu na veľkej ploche. Preto sú tu uplatňované štatistické údaje. Indikátory príčin sa aplikujú najmä na úrovne sídiel a ich častí. Tu sú zas štatistické údaje často nedostupné a terénny prieskum je reálnou alternatívou.

V slovenskej aj zahraničnej literatúre sú početne zastúpené prístupy objektívne, subjektívne, ako aj ich kombinácia. Za najfrekventovanejšie využívané metódy hodnotenia Qol možno považovať skúmanie percepcie obyvateľov prostredníctvom dotazníkového prieskumu, čerpanie informácií zo štatistických úradov či mapovanie vybavenosti miest. Najčastejšie sú získané údaje spracované formou viacrozmernej štatistickej analýzy (napr. faktorová analýza a PCA) či výpočtom indexu Qol. Budúcnosť výskumu Qol vidí autorka nasledovne:

– Pre potreby praxe bude v budúcnosti nutné hľadať prvotný pôvod prejavu Qol.
– Výskum Qol sa uplatní v participácii občanov na verejnom živote, ktorá bude zahŕňať aj proces hodnotenia Qol obyvateľmi dotknutého územia.
– Obyvatelia budú sami navrhovať domény a indikátory Qol, s možnou s následnou korekciou autora štúdie.

Prostredníctvom hodnotenia Qol je možné naštartovať pozitívne zmeny v meste či inom skúmanom území prostredníctvom analýzy prioritných problémov a návrhov ich riešenia. Potenciál možno vidieť v uplatňovaní kombinovaného objektívno-subjektívneho prístupu, ako aj v prípadných interdisciplinárnych štúdiách Qol.

LITERATÚRA

ANDRÁŠKO, I. Quality of life: an introduction to the concept. Masarykova univerzita, Brno, 2013.
ANDRÁŠKO, I., et al. Kvalita života v mestách: východiská, prístupy, poznatky. Masarykova univerzita, Brno, 2016.
ANDRÁŠKO, Ivan, et al. Perception of quality of life in Brno housing estates. Hungarian Geographical Bulletin, 2013, 62.1: 90-101.
ANDRÁŠKO, Ivan, et al. The role and status of geography in thequality of life research. Liberec: Technická univerzita, 2009, 21: 0-215.
ANDRÁŠKO, Ivan. Dve dimenzie kvality života v kontexte percepcií obyvateľov miest a vidieckych obcí. 2005.Geografická organizace Česka a Slovenska v současném období. 6-13
ANDRÁŠKO, Ivan. Kvalita života jako účast konkurenceschopného regiónu?. XI. mezinárodní kolokvium o regionálních vědách, 2008 a., 39.
ANDRÁŠKO, Ivan. Niektoré možnosti využitia multivariačných metód pri štúdiu urbánnej kvality života. Miscellanea geographica 2008 b. 14: 15-19.
ANDRÁŠKO, Ivan. Percepcia kvality života v mestských štvrtiach Bratislavy. 2006. Geografická revue. 2. 2: 227-240.
ANDRÁŠKO, Ivan. Regionálne typy vnútornej štruktúry Bratislavy z hľadiska kvality životných podmienok. Geographia Slovaca, 2008 c, 25: 159-173.
ANDREWS, Clinton J. Analyzing quality-of-place. Environment and Planning B: Planning and Design, 2001, 28.2: 201-217.
BACSÓ, Peter. K teoreticko-metodologickým aspektom kvality života. Geografické informácie, 2007, 11: 20-27.
BALLAS, Dimitris. What makes a 'happy city'?. Cities, 2013, 32: S39-S50.
BRERETON, Finbarr; CLINCH, J. Peter; FERREIRA, Susana. Happiness, geography and the environment. Ecological Economics, 2008, 65.2: 386-396.
CAMPBELL, Angus; CONVERSE, Philip E.; RODGERS, Willard L. The quality of American life: Perceptions, evaluations, and satisfactions. Russell Sage Foundation, 1976.
CILLIERS, E. J., et al. The Story Behind the Place: Creating Urban Spaces That Enhance Quality of Life. Applied Research in Quality of Life, 2015, 4.10: 589-598.
CLIFTON, Kelly, et al. Quantitative analysis of urban form: a multidisciplinary review. Journal of Urbanism, 2008, 1.1: 17-45.

CURL, Angela; THOMPSON, Catharine Ward; ASPINALL, Peter. The effectiveness of 'shared space' residential street interventions on self-reported activity levels and quality of life for older people. Landscape and Urban Planning, 2015, 139: 117-125.

DAS, Daisy. Urban quality of life: A case study of Guwahati. Social Indicators Research, 2008, 88.2: 297-310.

DIENER, Ed; SUH, Eunkook. Measuring quality of life: Economic, social, and subjective indicators. Social indicators research, 1997, 40.1-2: 189-216.

EUROPEAN UNION. Quality of life in European cities 2015. Flash Eurobarometer 419, Luxembourg: Publications Office of the European Union, 2016

FAGGIAN, Alessandra; ROYUELA, Vicente. Migration flows and quality of life in a metropolitan area: thecase of Barcelona-Spain. Applied Research in Quality of Life, 2010, 5.3: 241-259.

FERTAĽOVÁ, J.; MADZIKOVÁ, A. Percepcia kvality života na príklade mesta Bardejov. Misceillanea Geographica 14: sborník Katedry geografie Fakulty pedagogické Západočeské univerzity v Plzni, 2008, 105-109.FRANTÁL, Bohumil; VAISHAR, Antonín. Zvláštnosti kvality života v malých městech. Geografia Slovaca, 2008, 25: 175-188

GODOR, Mário; HORŇÁK, Marcel. Možnosti využitia indikátorov vo výskume kvality života na Slovensku. Geografické informácie, 2010, 14: 42-54.

GYENIZSE, Peter, et al. A multi-factor model developed on residents' opinions for the classification of urban residential areas. GEOGRAFIE, 2016, 121.1: 1-31.

HEŘMANOVÁ, Eva. Kvalita života a její modely v současném sociálním výzkumu. Sociologia-Slovak Sociological Review, 2012, 4: 478-496.

IRA, V. Životné prostredie, kvalita života a trvalo udržateľný rozvoj vo vnímaní a predstavách obyvateľov (v regiónoch Dolné Pomoravie, Tatry a Východné Karpaty). Folia Geographica, 1999, 3: 338-339.

IRA, V., ANDRÁŠKO, I. Kvalita života z pohľadu humánnej geografie. Geografický časopis, 2007. 59, 159–179.

IRA, V., ANDRÁŠKO, I., MICHÁLEK, A., PODOLÁK, P. Quality of life: geographical research in Slovakia. Geographia Slovaca, 2009 26, 101-119.

IRA, Vladimír, et al. Kvalita života z pohľadu humánnej geografie. Geografický časopis, 2007, 59.2: 159-179.

IRA, Vladimír; MURGAŠ, František. Geografický pohľad na kvalitu života a zmeny v spoločnosti na Slovensku. Geographia Slovaca, 2008, 25: 7-24.

JINDROVÁ, Andrea, et al. Application of Multivariate Statistical Methods in the Analysis of Czech Population Life Quality with Attention to Regional Differentiation. Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, 2015, 63.5: 1671-1678.

KAPURIA, Preeti. A Human Well-Being Perspective to the Measurement of Quality of Life: Findings From the City of Delhi. Applied Research in Quality of Life, 2016, 11.1: 125-145.

KLADIVO, Petr. Prostorová diferenciace kvality života obyvatel města Olomouce. 2011 a.). PhD Thesis. PhD. thesis. Brno, Masarykova univerzita.

KLADIVO, Petr. Socio-demographic structure of Olomouc from the point of view of the quality of life. Acta Universitatis Palackianae Olomucensis–Geographica, 2011 b.), 42.2: 79-90.

KLADIVO, Petr; HALÁS, Marián. Quality of life in an urban environment: A typology of urban units of Olomouc. Quaestiones Geographicae, 2012, 31.2: 49-60.

KLUSÁČEK, P; VAISHAR A. Současné urbanizační pochody a obytné prostředí jako součást kvality života ve vnitřních částech evropských velkoměst. Geographia Slovaca, 2008, 25: 145-157.

LI, G.; WENG, Q. Measuring the quality of life in city of Indianapolis by integration of remote sensing and census data. International Journal of Remote Sensing, 2007, 28.2: 249-267.

LIN, Ka. Social quality and happiness — analysis of the survey data from three Chinese Cities. Applied Research in Quality of Life, 2016, 11.1: 23-40.

LIU, Ben-Chieh. Quality of life indicators in US metropolitan areas. Praeger, 1976.

MANDYS, Jan, et al. Kvalita života jako využitelný indikátor pro potřeby regionální sociální politiky. In: Murgaš, F.. (ed.) Kvalita života2013, 2013, 86.

MARANS, R. W. Quality of urban life studies: An overview and implications for environment-behaviour research. Procedia-Social and Behavioral Sciences, 2012, 35: 9-22.

MARANS, R. W., STIMSON, R. J. eds. Investigating Quality of urban life: Theory, method, and empirical research. Dordrecht, Springer Publishing, 2011.

MARLET, G. A., et al. Tolerance, aesthetics, amenities or jobs? Dutch city attraction to the creative class. Discussion Paper Series/Tjalling C. Koopmans Research Institute, 2005, 5.33.

MASSAM, Bryan H. Quality of life: public planning and private living. Progress in Planning, 2002, 58.3: 141-227.

MENDES, José FG; MOTIZUKI, Wilson Satoro. Urban quality of life evaluation scenarios: the case of São Carlos in Brazil. CTBUH review, 2001, 1.2: 13-23.

MICHÁLEK, A. Regionálne mzdové nerovnosti v kontexte kvality života na Slovensku. Geographia Slovaca, 2008, 25: 25-45.

MICHNIAK, D. Rovnováha práce a bývania v jednotlivých okresoch na Slovensku v kontexte kvality života. Geographia Slovaca, 2008, 25: 47-61.

MURGAŠ, František. Kvalita života a jej priestorová diferenciácia v okresoch Slovenska. Geografický časopis, 2009, 61.2: 121-138.

MURGAŠ, František; KLOBUČNÍK, Michal. Municipalities and regions as good places to live: Index of quality of life in the Czech Republic. Applied Research in Quality of Life, 2014, 1-18.

PACIONE, M. Urban environmental quality and human wellbeing — a social geographical perspective. Landscape and urban planning, 2003, 65.1: 19-30.

PASAOGULLARI, Nil; DORATLI, Naciye. Measuring accessibility and utilization of public spaces in Famagusta. Cities, 2004, 21.3: 225-232.

PAUL, Suman. Analysis of Micro Level Disparities in Urban Facility-Utility Services: A Study on Barasat City, West Bengal, India. Journal of Urban and Regional Analysis, 2012,4 (2), S173-188

ROBACK, Jennifer Anne. The value of local urban amenities: theory and measurement. University Microfilms, 1982.
ROGERSON, Robert J. Quality of life and city competitiveness. Urban studies, 1999, 36.5/6: 969.
ROSEN, Sherwin. Wage-based indexes of urban quality of life. Current issues in urban economics, 1979, 3.
SMITH, David Marshall. The geography of social well-being in the United States: An introduction to territorial social indicators. McGraw-Hill, 1973.
SPIŠIAK, P.; DANIHELOVÁ, D. Niektoré otázky kvality života v suburbánnom priestore Bratislavy. Acta Facultatis Rerum Naturalium Universitatis Comenianae, Geographica, 1998, 41: 155-163.
SZÉKELY, V. Priame dopravné prepojenia ako indikátor kvality života: príklad bývalých okresných miest Slovenska. Geographia Slovaca, 2008, 25: 63-83.
SZÉKELY, VLADIMÍR. Urban municipalities versus rural municipalities–selected aspects of quality of life in Slovakia. EUROPA XXI, 2006, 87.
TEJ, J.; SIRKOVÁ, M.; ALI TAHA, V. Model and results of the quality of life evaluation in regional cities in Slovakia. Journal of management and business: research and practice, 2012, 4.2: 31-34.
UN-Habitat. Urbanisation and development: Emerging futures, World cities report *2016*. United Nations Human Settlements Programme, 2016.
UNITED NATIONS. World Urbanization Prospects 2014: Highlights. United Nations Publications, 2014.
WĘZIAK-BIAŁOWOLSKA, Dorota. Quality of life in cities–Empirical evidence in comparative European perspective. Cities, 2016, 58: 87-96.

SUMMARY

MEASUREMENT OF SUBJECTIVE AND OBJECTIVE DIMENSION OF QUALITY OF LIFE IN GEOGRAPHY – OVERVIEW OF APPROACHES

Increasing inequality between cities and regions over the past decades have led to rapidly growing number of works pertaining to quality of life (Qol). From the point of view of geography, spatial dimension to the Qol research is implemented.

The aim of this paper is to maintain the key ways measuring Qol by comparing studies pertaining to Qol. The article also provides an overview of key approaches, including: subjective and objective approaches, partial and holistic approaches.

Objective approach uses objective natural and human-created Qol indicators, such as: air pollution, wages, amenities, etc. which are quantified. Subjective approach uses mainly questionnaires that are based on citizen´s opinions. It has often been suggested, that combination of subjective and objective measures is needed. Holistic approach measures wide data sets and it builds bases for comprehensive works. For such studies, multi-criteria statistical analysis is needed. Partial approach examine

Qol from the point of view of one or a small set of indicators, dealing with one partial problem. In the future following trends in Qol research can be expected:

– *Efforts to identify origin of Qol status*
– *Qol research will be implied in citizen´s community life participation*
– *Residents will design their own Qol domains and Qol indicators*

Folia geographica, Acta facultatis studiorum humanitatis et naturae Universitatis Prešoviensis,
Prírodné vedy Volume 58, 2016, No. 2, FHPV PU Prešov. ISSN 1336-6157

AKVATICKÉ KRAJINNÉ PRVKY MEDZIBODROŽIA NA SLOVENSKU

THE AQUATIC LANDSCAPE ELEMENTS OF GEOMORPHOLOGICAL UNIT OF MEDZIBODROZIE IN SLOVAK REPUBLIC

Lucia KUNAKOVÁ [1] **–** ***Jozef TEREK*** [2]

Abstract: *Medzibodrozie is a territorial unit in the southern part of the Vychodoslovenska nizina (lowland). Ameliorative treatment significantly altered hydrological conditions of almost the whole territory. We can recognize natural (rivers, waterlogged periodically - flooded area, wetlands, river mounds, oxbow lakes, lake) and anthropogenic (material pit, dyke, irrigation and drainage canals, pumping stations, polders) aquatic elements in this territory. The aim of the present paper is to provide comprehensive analysis the aquatic elements in territory of Medzibodrozie. On the base of the field research, focusing on the analysis of spatial distribution of individual aquatic elements and analysis of satellite imagery, we characterize natural and anthropogenic created aquatic elements of the region in a comprehensive study.*

Key words: *Medzibodrozie region, aquatic elements, river, lake, polder*

ÚVOD

Územie Medzibodrožia je príkladom cezhraničného regiónu, ktorého väčšia časť sa rozkladá na území Maďarskej republiky (v Slovenskej republike sa časť ktorá k tejto jednotke patrí sa nazýva Medzibodrocké pláňavy). Je zhruba ohraničené riekami Bodrog, Tisa a Latorica. Medzibodrocké pláňavy sú súčasťou geomorfologického celku Východoslovenská rovina, ktoré má hladko modelovaný plochý povrch s denivelizáciou do 30 m. Rovinatý reliéf tu spestrujú sopečné štruktúry Chlmeckých pahorkov a Tarbucky.

Výraznými prírodnými krajinnými prvkami v regióne Medzibodrožia sú akvatické prvky ako sú močiare, mokrade, slatiniská, riečne jazerá. Po vodohospodárskych úpravách pribudli tu antropogénne akvatické krajinné prvky.

1 ***RNDr. Lucia Kunáková, PhD.****, Štátna ochrana prírody, Správa slovenských jaskýň, Liptovský Mikuláš, M. M. Hodžu č. 11, e-mail: lkunakova@gmail.com*

2 ***prof. RNDr. Jozef Terek, PhD.,*** *Katedra environmentálneho manažmentu, Fakulta manažmentu, Prešovskej univerzity v Prešove, 080 01 Prešov, Konštantínová 16, e-mail: jozef.terek@unipo.sk*

Hlavným cieľom príspevku je analýzu akvatických prvkov slovenskej časti Medzibodrožia, teda na Medzibodrockých pláňavach na základe terénneho výskumu a analýzy satelitných snímok zameraných na priestorové rozmiestnenie a charakter jednotlivých krajinných akvatických prvkov.

GEOGRAFICKÁ POLOHA A CHARAKTER ÚZEMIA

Podľa geomorfologického členenia územia Slovenskej republiky (Mazúr, Lukniš 1980) sú Medzibodrocké pláňavy podcelkom geomorfologického celku Východoslovenská rovina. Zo základných typov reliéfu prevládajú akumulačné roviny. Nadmorská výška Medzibodrockých pláňav sa pohybuje od 94 m n. m. do 101 - 102 m n. m.

Medzibodrocké pláňavy sú z aspektu tektoniky súčasťou strážniansko - trakanskej depresie, rozdelenej výraznou chlmeckou hrasťou na čiastkovú strážniansku depresiu a čiastkovú trakanskú depresiu, ktoré sa na povrchu výrazne neprejavujú, pretože sú pokryté mladšími fluviálnymi a eolickými sedimentmi. Obidve čiastkové štruktúry majú spoločný vývoj a sú vyplnené ilovitými a piesčitými sedimentmi. Ich subsidenčný charakter sa prejavil už v starom pleistocéne, kedy doznievali tektonické prejavy podložných štruktúr. Poklesy v tomto období dosiahli 5 – 15 m. V mindelskom glaciáli 10 m, v rise 10 – 20 m. V mladom pliestocéne až starom würme okolo 20 m, v strednom a mladom würme 18 – 22 m. Celková subsidencia počas kvartérneho vývoja depresie dosiahla hodnotu okolo 70 m (Baňacký et al., 1989a,b). Pri formovaní súčasného reliéfu územia sa výrazne uplatnili neotektonické pohyby t.j. všeobecné poklesávanie pozdĺž zlomov SV - JZ, SZ- JV a S-J. Neotektonické poklesové tendencie ovplyvnili aj vývoj riečnej siete (Kvitkovič, 1955, 1964). Dochádza k zmene smerov korýt vodných tokov (prekladanie korýt vodných tokov na agradačných valoch), zaškrtením riečnych meandrov vznikajú riečne jazerá ap.

Z hľadiska klimatických pomerov je územie súčasťou teplej klimatickej oblasti a okrsku T3 - teplý, suchý, s chladnou zimou (Lapin et al. 2002). Oblasť Slovenského Nového Mesta a Medzibodrocké pláňavy majú priemernú ročnú teplotou 9,6 °C, a ročný úhrn zrážok je 622 mm.

Územie je súčasťou hydrogeologického regiónu QN 104 - kvartér juhovýchodnej časti Východoslovenskej nížiny. Región je vymedzený na severe ľavým brehom Latorice, na západe riekou Bodrog. Južnú hranicu tvorí štátna hranica s Maďarskom a východnú štátna hranica s Ukrajinou. Budovaný je litologicky homogénnymi kvartérnymi sedimentmi, ktoré podmienili vznik pomerne jednotných hydrogeologických pomerov. Sú to predovšetkým akumulácie pieskov, ktoré majú v západnej časti Medzibodrockých pláňav mocnosť až 30 - 40 m a vo východnej nad 60 m. Využiteľné množstvo podzemných vôd bolo určené na 780 $l \cdot s^{-1}$ (Némethyová, Šebesta 2005; Némethyová et al. 2006).

Celkový režim podzemnej vody je v prevažnej miere ovplyvňovaný riekou Latorica, menší podiel majú atmosférické zrážky. Bodrog a Latorica zo svojimi prítokmi je zaradená do oblasti vrchovinno-nížinnej, s typom režimu odtoku dažďovo-snehovým. Kvalitu podzemnej vody v regióne ovplyvňuje kvalita povrchových vôd v Latorici a Bodrogu V jednotlivých sondách boli zistené rozdielne vlastnosti vôd, ktoré sú podmienené geologickou a tektonickou stavbou územia, klimatickými a geomor-

fologickými podmienkami (Némethyová, Šebesta, 2005; Némethyová et al. 2006). Pre región sú typické zaškrtené ramená riečnych meandrov, močiare, a mokrade. Podmáčané – periodicky zaplavované územia sa vyskytujú prevažne v depresiách s kolísavou vodnou hladinou a sú charakterizované vytvorenými zónami s deficitom až absenciou kyslíka pri dne. Ukazovatele základného chemického zloženia neprevyšujú III. klasifikačný stupeň kvality vody (Tab. 1). Zo zvláštnych ukazovateľov je charakteristický zvýšený obsah amoniaku a síranov. Hodnoty jednotlivých meraní závisia od izolovanosti lokalít od vonkajšieho prostredia, t.j. od okolitých intenzívne využívaných pozemkov.

Na zaplavovaných alebo podmáčaných stanovištiach sa nachádzajú najmä lúky a pasienky. Plocha lúk a pasienkov v tomto území aj po veľkých melioračných a regulačných úpravách je dosť veľká. Pretože v uvedených prácach sa na nížine pokračuje, dochádza k postupnému ubúdaniu prirodzených trávnych porastov, alebo sa podstatne mení ich floristické zloženie najmä tých, ktorých existencia závisí od záplav a vysokej hladiny podzemnej vody. Zároveň sa rozšírila plocha kultúrnych siatych lúk, prevažne na antropogénnych stanovištiach ako sú protipovodňové hrádze, brehy odvodňovacích kanálov a regulovaných riek (Terek, 2009).

Vodné pomery záujmového územia boli vždy výrazne ovplyvňované vodnými tokmi. Kvôli častým záplavám, spôsobujúcim veľké škody, sa oneskorovali poľnohospodárske práce, znehodnocovala sa úroda, znečisťovali sa domové studne (Šútor et al., 1995). Tisa mala v minulosti značný vplyv na formovanie študovaného územia. Pôvodný tok smeroval od Čopu na západ a pri Zemplíne sa vlieval do Bodrogu (Kvitkovič 1955 in: Hilbert et al. 2009). Po preložení toku sa zachoval systém mŕtvych ramien. Povodie rieky Bodrog predstavuje zložitý riečny systém skladajúci sa zo štyroch hlavných riek (Latorica, Laborec, Uh, Ondava) vzájomne sa stretávajúcich na malom priestore. Tento fakt spolu s nedostatočnými spádovými pomermi boli príčinou častých záplav. Každým rokom bolo zaplavených takmer 45 tis. ha pôdy. Tieto problémy viedli k vodohospodárskym úpravám v 50. a 60. rokoch 20. storočia, kedy bolo zregulovaných a upravených 316 km vodných tokov a vybudovaných 453 km ochranných hrádzí a ďalšie vodohospodárske stavby.

Nepriaznivé hydrologické podmienky viedli v rokoch 1946 až 1964 k výstavbe hrádzí a hydromelioračných kanálov (spomedzi najvýznamnejších je Somotorský kanál, ale aj ďalšie menšie napr. Chlmecký, Vojčianský, Svinický, Leleský, Radský (Terek, 2009) a poldrov. Veľká regulácia vodného toku Latorica na území Slovenska bola v rokoch 1958-1965, keď sa vybudoval priamy kanál pretínajúci meandre pôvodného toku. Staré koryto je prietočné po týchto zásahoch len v čase záplav (Hilbert et al., 2009).

Podľa zákona 543/2002 Z. z. o ochrane prírody a krajiny bola na území Medzibodrožia vyhlásená Chránená krajinná oblasť Latorica s celkovou rozlohou územia 23 198,5 ha. Na jej území sa nachádzajú 3 národné prírodne rezervácie (Botianský luh – Latorický luh I.; Latorickú luh – Latorický luh II.; Tajba – ide o mŕtve rameno s výskytom vzácnej korytnačky močiarnej) a 9 prírodných rezervácií (Dlhé Tice, Krátke Tice, Biele jazero, Boľské rašelinisko, Veľké jazero, Horešské lúky, Zatinský luh, Tarbucka, Poniklecová lúčka). Spomínané rezervácie boli vyhlásené na ochranu močarísk, rašelinísk a mŕtvych ramien s typickou vegetáciu.

AKVATICKÉ KRAJINNÉ PRVKY MEDZIBODROŽIA

Akvatické prvky skúmaného územia môžeme rozdeliť do dvoch veľkých skupín:

1. prírodné akvatické prvky
2. antropogénne akvatické prvky

1. Prírodné akvatické prvky

Najvýraznejšími takýmito prvkami v krajine Medzibodrožia sú vodné toky. V závislosti od množstva vody, formy koryta, dĺžky rieky a iných ukazovateľov sa rozlišujú: bystriny, horské potoky, potoky, riečky, rieky a veľtoky (Dzurovčin 2000). V rámci sledovaného územia Medzibodrožia sa vyskytujú iba rieky a veľtok, ktoré si bližšie charakterizujeme.

Rieky sú nížinné vodné toky, s väčšími až veľkými povodiami (150 až 2000 km^2). Riečne koryto má vyvinutý pozdĺžny profil, s malým a pomerne vyrovnaným sklonom (0,1-2 promile). Údolia riek bývajú široké, a počas veľkých vôd zaplavované. Splaveniny sú jemnejšie – kal, piesok, drobný štrk. Veľké vody spôsobujú rozsiahle povodne, v našich podmienkach podmienené dlhotrvajúcimi dažďami a topením snehu (Dzurovčin 2000). V Medzibodroží ide o rieku Bodrog, ktorá vzniká sútokom riek Latorice a Ondavy a Latorica s prameňom vo Východných Karpatoch. Celková dĺžka toku až po ústie do Tisy je 65 km, z toho na území Slovenska len 15 km. Dlhodobý priemerný ročný prietok nameraný v Strede nad Bodrogom je113,38 m^3/s. Druhou významnou riekou záujmového územia je Latorica. Pramení na Ukrajine vo Východných Karpatoch v nadmorskej výške 850 m n.m. Celková dĺžka rieky je 188 km. Na naše územie vstupuje na rozhraní k.ú. Ptrukša a Boťany (cca v nadmorskej výške 100 m). Preteká Medzibodrožím v dĺžke 31,4 km až po sútok s Ondavou, kde vytvára Bodrog. Pri prechode cez naše územie má typický nížinný ráz, kde vytvára množstvo meandrov a slepých ramien. Dlhodobý ročný priemerný prietok nameraný pri Veľkých Kapušanoch je33,68 m^3/s.

Veľtoky sú mohutné, dlhé rieky, ktoré ústia priamo do mora, alebo do veľkých jazier. Sú zásobované vodou z veľkých povodí, takže majú mimoriadne veľké prietoky (Dzurovčin 2000). Medzi veľtoky Medzibodrožia možno zaradiť Tisu. Pramení na Ukrajine vo Východných Karpatoch spojením Čiernej a Bielej Tisy. Dĺžka toku je 966 km. Tvorí prirodzenú časť hranice medzi Maďarskom a Slovenskom v celkovej dĺžke 5,6 km s prietokom 370 m^3/s avšak s veľkou rozkolísanosťou.

Mokrade sú zamokrené územia s kolísavou vodnou hladinou. Mokrade sú veľmi zraniteľné, patria celosvetovo medzi najohrozenejšie biotopy a aj na juhu východného Slovenska sú pod neustálym tlakom. Najväčšiu ranu mokradiam zasadili rozsiahle melioračné úpravy Východoslovenskej nížiny, ktoré znamenali zánik pravidelných záplav, v dôsledku čoho sa pôvodné mokrade zazemňujú, dochádzalo a dochádza k zaberaniu plôch pre poľnohospodárstvo, nelegálnym výrubom a podobne. Najviac mokradí sa nachádza v trojuholníku k.ú. medzi Malý Horešom, Veľkým Kamencom a Svätou Máriou. Tieto územia boli v minulosti oddelené od korýt riek a sú tvorené

Tab. 1: *Prehľad klasifikácie kvality vody v hodnotených miestach sledovania v povodí Hornád a Tisa r. 2003 – 2004 (Terek 2009)*

Trieda kvality vody v skupine ukazovateľov						
Miesto sledovania	**Riečny km**	**A**	**B**	**C**	**E**	**H**
Ondava – Brehov	**4,2**	V	IV	III	IV	
Somotorský kanál - Malý Horeš (Onča)	15,2	V	V	**V**	**V**	II
Somotorský kanál - Malý Horeš	14,8	V	V	V	V	
Pavlovský kanál - Stavidlo Hrušov	4,8	V	V	III	IV	I
Somotorský kanál – Somotor	**3,6**	V	IV	IV	IV	I
Bodrog - Streda nad Bodrogom	6,0	III	III	III	IV	I
Bodrog – Klin nad Bodrogom	3,5	III	IV	III	IV	I
Roňava-	2,2	IV	III	IV	IV	I
Veľká Krčava – Tarcaly			I	I		
Tisa - Malé Trakany	3,0	IV	V	III	IV	I
Latorica - Pavlovo, Rad	0,1	IV	**V**	III	IV	I

1 – Skupiny ukazovateľov:
*A - kyslíkový režim (rozpustený kyslík, kyslíka - $ChSK_{Mn}$, $ChSK_{Cr}$), B - základné fyz.-chemické ukazovatele (pH, lezpustené látky, merná vodivosť, celkové železo, celkový mangán, horčík. chloridy, sírany), C - nutrienty (amoniakálny dusík, dusičnanový fosforečnanový fosfor) E - mikrobiologické ukazovatele (koliformné baktérie, iennotolerantné koliformné baktérie) *2 s, H - rádioaktivita (celková objemová aktivita beta)*
2 – Triedy kvality povrchových vôd:
I. Trieda – veľmi čistá, II. Trieda – čistá, III. Trieda – znečistená voda, IV. Trieda – silne znečistená voda, V. Trieda – veľmi znečistená voda

nízko položenými územiami, kde voda zotrvala dlhú dobu a nebola schopná dostať sa späť do koryta riek. Je veľa periodických korýt, ktoré pri vysokej hladine podzemnej vody sa aj dnes napĺňajú vodou a počas suchého leta úplne vyschnú. Preto je ich triedenie ťažké. Počas dlhších suchých období môžu úplne stratiť svoj mokraďovy ráz a premeniť sa na svieže pasienky (Dobos, Novak 2008).

Mŕtve ramená: mŕtvym resp. starým ramenom sa označuje časť toku, ktorý bol v minulosti riečnym korytom, ale postupne sa od riečneho koryta úplne oddelil. Koryto mŕtveho ramena je z obidvoch strán uzavreté a voda v ňom stagnuje. Takéto ramená môžu byť napájané spodnou vodou a preto výška hladiny niekedy kolíše. Vznikajú v dôsledku spájania meandrov, zmeny koryta toku a pod. Príkladom v rámci Medzibodrožia je Stará Tisa, Starý Bodrog, Tajba, Mŕtvy Bodrog a pod.

Z ukazovateľov je charakteristický zvýšený obsah dusičnanov, ktorý má silný vplyv na rozvoj makrovegetácie. Hodnoty jednotlivých meraní závisia od izolovanosti lokalít od vonkajšieho prostredia, t.j. riek ako aj okolitých intenzívne využívaných pozemkov.

Tab. 2: *Vybrané charakteristiky vo vzorkách povrchových vôd v rokoch 1981 a 2007 (Terek 2009)*

Vlastnosti	Tvrdosť v °N	Dusičnany ($N0_3$) [mgJ^1]	Fosforečnany ($P0_4$) ImgJ'l	Chloridy (Cl') (Blgl'l
Lokalita, rok	1981 2007	1981 2007	1981 2007	1981 2007
Latorica, MR	6,5 6,4	9,8 7.8	0.03 0,06	14,5 10,6
Latorica, TJ	ON 8 ON	8,1 6.0	0,05 0,07	13,2 11,0
Leles, MR	10,2 -	0,1 -	0,1 -	30,1 -

MR – mŕtve rameno, TJ – ťažobná jama

Jazerá sú prírodné prehĺbeniny na zemskom povrchu vyplnené vodou. Priaznivo ovplyvňujú klimatické pomery svojho okolia, pretože zmierňujú teplotné výkyvy a zvyšujú vlhkosť vzduchu. V rámci regiónu sa vyskytuje jediný typ jazier a to riečne jazerá – vznikajú riečnou eróziou v aluviálnych oblastiach dolných tokov väčších riek častým prekladaním riečneho koryta alebo oddeľovaním meandrov. Zo západu na východ sa v regióne nachádzajú tieto jazerá: Jazero **Veľká Krčava, Volské** jazero pri obci Somotor, **Čertovo** jazero pri obci Sv. Mária, , **Krivé** jazero pri obci Rad, **Biele** jazero pri obci Sv. Mária, **Rákosové** jazero pri Vojke, **Veľké jazero** pri Vojke**, Krivé jazero** pri Vojke**, Okrúhle** jazero pri Boťanoch, **Blatné** jazero pri Čiernej nad Tisou.

2. Antropogénne vytvorené akvatické prvky

Človek svojou činnosťou vytvára nielen rôzne formy, ale významne ovplyvňuje aj morfogenetické procesy. Antropogénne tvary závisia od druhu aktivity a od charakteru pôvodného reliéfu, na ktorom sa realizujú. Človek upravuje reliéf podľa svojich potrieb. Pôsobenie človeka na prírodné morfogenetické procesy je stále výraznejšie. Prejavuje sa pri ich usmerňovaní, zmene ich intenzity, i v ich opätovnej aktivizácií. Človek na formovanie reliéfu pôsobí aj úpravou riečnych korýt, pri ktorých sa zaškrtia riečne meandre. Zväčšuje sa tým kinetická energia vodných tokov (Dzurovčin 2000). Medzi antropogénne akvatické prvky patria v skúmanom území tieto formy:

Materiálové jamy (ťažobná jama, tzv. kubík) sú vybagrované jamy pri stavbe hrádzí z vnútornej strany medzihrádzového priestoru Latorice. Je to plytká jama so strmými brehmi. V čase záplav sú dotované rybami a vzhľadom na dobré podmienky poskytujú dobru potravinovú základňu, čo sa prejavuje na druhovej bohatosti a prírastkoch.

Poldre.

Polder je zníženina, ktorá sa nachádza pod úrovňou mora alebo rieky, preto je nevyhnutná kontrola vodnej hladiny. Neexistujú tu priame spojenia medzi vodstvom vo vnútri územia a mimo, okrem umelo vybudovaných zariadení, ako sú vzdúvadla a pumpy. U väčšiny poldrov nie je hladina vody vnútri nižšie ako hladina mimo, ale nie je to podmienkou. Pokiaľ je vnútorná hladina nižšie ako hladina vody mimo poldra je potrebné pomocou púmp udržovať polder suchý. U týchto poldrov je rovnako

nutná výstavba hrádzí, ktoré vydržia nápor vyššej hladiny vody momo poldra. U väčšiny poldrov je trvalo stanovená úroveň vnútornej hladiny (Čech, Krokusová 2013).

Rozoznávame pobrežné alebo riečne poldre. Na Východoslovenskej rovine sa nachádzajú tzv. suché alebo protipovodňové poldre (polder Beša a Kucanský polder). Je to suchá nádrž, ktorá zadržuje povodňovú vlnu, ktorá potom spôsobí menšie či dokonca žiadne škody. V poldri tiež sedimentujú erodované častice a vodná nádrž nižšie na toku sa tak chráni pred zanášaním. Plocha poldra je poľnohospodársky obrábaná, spravidla ako trvalý trávnatý porast. Pri veľkých povodňových prietokoch sa voda, ktorú nemožno korytom toku bezpečne previesť, zadrží v nádrži a následne, po opadnutí povodňových prietokov, sa takto zadržaná voda pozvoľna vypúšťa do koryta pod priehradou, aby sa ochranný priestor vyprázdnil a mohol zachytávať ďalšie povodňové vlny (Čech, Krokusová 2013).

Polder Beša – pre zachytávanie veľkých vôd bola vybudovaná suchá retenčná nádrž pod obcou Beša s objemom 53 mil.m3 na ploche 1 568 ha. K vyprázdňovaniu poldra dochádza vtedy, keď hladina vody v Laborci začne klesať. Po vyprázdnení a vysušení poldra sa môžu pôvodne zaplavené pozemky obrábať. Vybudovaný polder môže znižovať povodňovú vlnu Laborca a Latorice až o 600 m3.s-1. Napúšťa sa výlučne len pri mimoriadnych povodňových situáciách (Šútor et al. 1995). Nádrž patrí medi najväčšie rezervoáre a vodohospodári ho využívajú len v krajnom prípade, keď hladina v koryte Bodrogu stúpne na 936 centimetrov.

K uvedenému systému bol ešte priradený tzv. **Kucanský polder**, ohraničený pravou hrádzou Latorice, Laborca a pôvodnou tzv. záverečnou hrádzou Latorice v oblasti čerpacej stanice Kamenná Moľva a Kucany, uvažovaný ako núdzový, do ktorého by bola voda napustená v prípade potreby prerušením pravej hrádze Latorice alebo Laborca (Šútor et al. 1995, s. 136).

Kanály.

Po druhej svetovej vojne došlo pri realizácii vodohospodárskych úprav k oddeleniu slovenského a maďarského odvodňovacieho systému vybudovaním najväčšieho odvodňovacieho kanála v smere západ - východ. Hlavným odvodňovacím kanálom na Medzibodroží sa stal **Somotorský kanál**, ktorého začiatok je pri Malých Trakanoch a ústie pri Strede nad Bodrogom, kde je vybudovaná čerpacia stanica. Jeho celková dĺžka je 26 km. Na odvodnenie severnej časti územia medzi Ticou a Latoricou slúži Leleský kanál, ktorý je pri Rade napojený na Ticu. Tica bola pri Hrušove prehradená a odtok z nej bol presmerovaný cez severnú vetvu Radského kanála do Somotorského kanála. Somotorský kanál preťal dovtedy vybudovanú odvodňovaciu sieť. Zo severnej strany je do neho zaústený Severný Radský kanál s bočným kanálom Svätá Mária-Kamenec, Severný Svätušský kanál (v minulosti nazývaný Plešianský) s bočnými kanálmi Svinickým a Vojčianským**,** Severný Horešský kanál**,** ďalej Chlmecký kanál s bočným kanálom Krčava. Napokon sú to kanály Pribenický, Dobrianský a Bielsky. Prakticky všetky vody odvodnenej plochy Medzibodrožia idú cez Somotorský kanál k čerpacej stanici v Strede nad Bodrogom s kapacitou 20 m3.s-1 a potom do Bodrogu (Šútor et al., 1995, s. 137). **Leleský kanál** (delený na Východný a Západný) má niekoľko bočných vetiev medzi ktoré patrí napr. Predný kanál, Lesný kanál, či Soľ-

ničianský kanál. Do jazera Veľká Krčava ústia tieto kanály: Južný Horešský kanál, Južný Svätušský kanál a južný Radský kanál. Veľká Krčava je potom odvodňovaná Hornobereckým kanálom až do Maďarska. Hornoberecký kanál priberá vody z kanálov: Svätá Mária-Kamenec (južná časť), Veľký kanál, Stredský kanál a Katronský kanál. Severne od hrádze Latorice sa nachádzajú ďalšie kanály ako Bešianský kanál, Maťovský, Ruský, či Ptrukšianský.

Čerpacie hydrologické stanice.

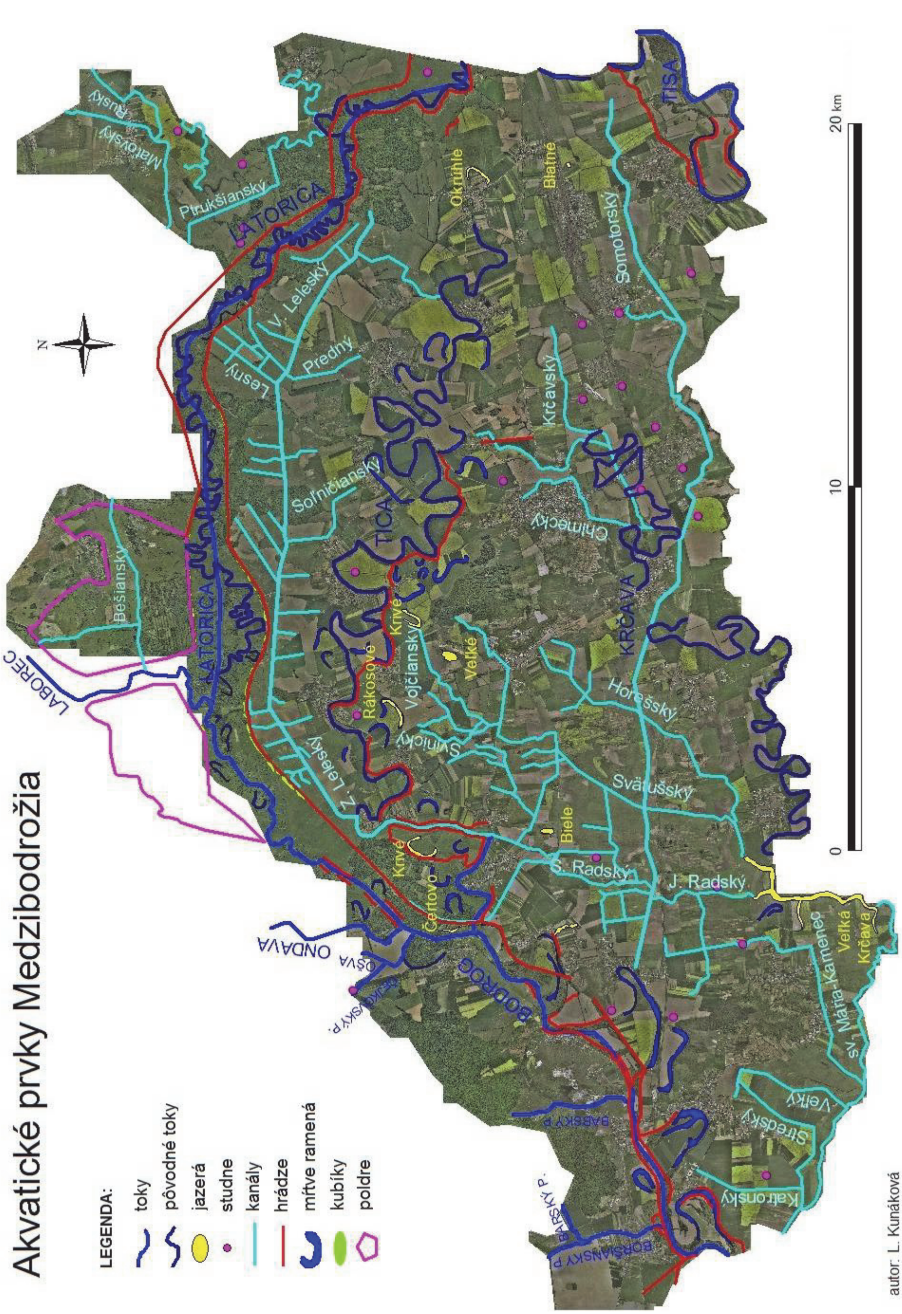
Súbežne s výstavbou hydromelioračných kanálov boli vybudované čerpacie stanice pri Strede nad Bodrogom (20 m^3/s) - prečerpáva vody z územia Medzibodrožia do rieky Bodrog; v Čičarovciach (10 m^3/s) – prečerpáva vnútorné vody z územia medzi ľavobrežnou hrádzou Uhu a pravobrežnou hrádzou Latorice do rieky Laborca; Bôľ – do Latorice; Veľkých Raškovciach (10 m^3/s) a v Jenkovciach (1,5 m^3/s). Ďalšie významné čerpacie stanice boli vybudované v Hrani (10 m^3/s) a Kamennej Moľve (10 m^3/s). Čerpacia stanica Kamenná Moľva prečerpáva vnutorné vody z ľavobrežného inundačného územia Ondavy do Latorice.

Hrádze.

Ochranné hrádze sú objektmi, ktoré vymedzujú priestor určený na prevádzanie povodňových prietokov na tokoch a súčasne plnia funkciu protipovodňového líniového prvku v systéme protipovodňovej ochrany. Ide o umelo vybudované steny, násypy alebo valy, zvyčajne vyplnené zeminou alebo kameňmi, vybudované okolo relatívne rovného, nízko ležiaceho územia na ochranu pred povodňami. Spevnené komunikácie na korune ochranných hrádzí sú vybudované za účelom zlepšenia prístupu na hrádze pre ťažké mechanizmy pri vykonávaní povodňových zabezpečovacích prác, údržbe, opravách a kontrole hrádzí. Koruna hrádza býva často využívaná na rôzne účely, ako je cyklistika, korčuľovanie na kolieskových korčuliach či pešia turistika. Hrádze sú vybudované po oboch stranách rieky Latorice, Bodrogu, Tisy a na ľavej strane starej Tice.

Studne.

Tradičným spôsobom zásobovania obyvateľstva vodou pred vybudovaním vodovodu bolo čerpanie vody zo studní, ktoré sa nachádzali pri každej usadlosti.. Voda sa z nich čerpala ručne pomocou vedra a reťazí alebo háku. Uvedené studne postupne na zásobovanie obyvateľstva nestačili (Čech, Krokusová 2013). Hladina vôd v studniach poklesla z pôvodných 3,6 m od povrchu (r. 1982) do hĺbky 5-7 m (r. 2007). Špecifickým druhom boli poľné studne, ktorých bolo v r.1998 registrovaných 22. V súčasnosti je zaznamenaných iba 12, nakoľko došlo k ich zničeniu v dôsledku veľkoplošného poľnohospodárskeho využívania. Po stránke hydrobiologickej majú vlastnosti povrchových vôd (Terek, Brázda 1986). Poľné studne prezentujú pôvodný spôsob obhospodarovania t.j. ako pasienky pre chov hovädzieho dobytka. Veľkokapacitné studne sa nachádzajú v Boťanoch, ktoré patria **Východoslovenskej vodárenskej** spoločnosti, OZ Trebišov. Chemické vlastnosti sa vyznačujú vysokými hodnotami NH^4 (1,1-1,7 $mg \cdot l^{-1}$, norma, n 0,5), Fe^2 (8,4-15,1 $mg \cdot l^{-1}$ norma, n -3), Mn^2 (0,7-1,2 $mg \cdot l^{-1}$, n-0,05) s relatívne nízkymi hodnotami NO^3 (0,11-0,21 $mg \cdot l^{-1}$,n-50).


Akvatické prvky Medzibodrožia
LEGENDA:
toky
pôvodné toky
jazerá
studne
kanály
hrádze
mŕtve ramená
kubíky
poldre
LATORICA
LABOREC
ONDAVA
BODROG
TISA
TICA
KRČAVA
Ptrukšiansky
Matovský
Ruský
V. Leleský
Predný
Lesný
Soľničiansky
Bešiansky
Z. Leleský
Rákosové
Krivé
Vojčiansky
Veľké
Svinický
Okrúhle
Blatné
Somotorský
Krčavský
Chlmecký
Horešský
Svätušský
Biele
S. Radský
J. Radský
Čertovo
Veľká Krčava
sv. Mária-Kamenec
Veľký
Stredský
Kaľonský
BARSKÝ P.
BORŠIANSKY P.
0
10
20 km
autor: L. Kunáková

Tab. 3: *Priemerné hodnoty chemizmu vody v studniach a sondách Medzibodrožia (Terek 2009)*

Typ zdroja	Studne v extrav.		Studne v intrav.		HMU		Vod. a kanal.	
Chemizmus, rok	1988	2007	1988	2007	1988	2007	1988	2007
Tvrdosť v °N	29,1	20,1	11,7	16,2	1,9	5,0	6,8	-
Chloridy (mg.l^{-1})	42,8	10,0	91,3	28,3	50,1	20,1	26,9	18,2
Dusičnany (mg.l^{-1})	32,8	18,2	80,7	22,4	8,8	5,1	4,3	2,0

V príspevku je podaná charakteristika akvatických prvkov krajiny skúmaného územia. Pôvodný ráz krajiny, pre ktorý boli charakteristické časté záplavy, bol v nedávnej minulosti výrazne antropogénne ovplyvnený. Pri vodohospodárskych úpravách boli výrazne zmenené hydrologické pomery takmer celého územia. Počet prírodných akvatických prvkov bol rozšírený o nové antropogénne akvatické prvky, napr. materiálové jamy, protipovodňové hrádze, hydromelioračné kanály, prečerpávacie stanice, poldre. Z prírodných akvatických prvkov dominujú vodné toky a početné sú aj jazerá. Z ochranárskeho hľadiska sú vzácnymi prírodnými prvkami mokrade a mŕtve riečne ramená. Z antropogénnych akvatických krajinných prvkov za najvýraznejšie hydromelioračné kanály, hrádze a poldre.

LITERATÚRA

BAŇACKÝ, V., ELEČKO, M., KALIČIAK, M., LEXA, J., STRAKA, P., VASS, D., VOZÁR, J., VOZÁROVÁ, A. 1988a. Geologická mapa južnej časti Východoslovenskej nížiny a Zemplínskych vrchov. GÚDŠ Bratislava.

BAŇACKÝ, V., ELEČKO, M., KALIČIAK, M., STRAKA, P., ŠKVARKA, L., ŠUCHA, P., VASS, D., VOZÁROVÁ, A., VOZÁR, J., 1989b. Vysvetlivky ku geologickej mape južnej časti Východoslovenskej nížiny a Zemplínskych vrchov. GÚDŠ Bratislava, 143 s.

ČECH, V., KROKUSOVÁ, J. 2013. *Antropogénna geomorfológia (antropogénne formy reliéfu).* Prešov: PU, FHPV. ISBN 978-80-555-1037-8.

DOBOS, E., NOVÁK, P. 2008. Súčasné využitie krajiny: In: Terek, J. Dobos, E. (eds.): Život medzi riekami – Monografia krajinného manažmentu Medzibodrožia. Univerzita Miskols, s.181-186.

DZUROVČIN, L. 2000. *Geomorfológia.* PU FHPV, Katedra geografie a geoekológie. ISBN
80-88885-79-5.

HILBERT, H., HILBERT, H.H., HILBERT, R. 2009. V. Analýza a čiastková syntéza biotopov Medzibodrožia. In: *Folia Oecologica 2: Čiastkové analýzy a vybrané propozície Slovenskej časti krajiny Medzibodrožia*. Roč. L., s. 32-43. ISSN 1338-080X.

KVITKOVIČ, J. 1955. Geomorfologické pomery juhovýchodnej časti Potiskej nížiny. Geografický časopis, 7, 1–2, SAV Bratislava, 72–84.

KVITKOVIČ, J. 1964. Concerning the Basic Geomorphological Problems of the East-Slovakian Lowland. Geografický časopis, 20, 2, SAV Bratislava, 143 – 159.

LAPIN, M., FAŠKO, P., MELO, M., ŠŤASTNÝ, P., TOMLAIN, J. 2002. Klimatické oblasti. In: Atlas krajiny Slovensko. Ministerstvo životného prostredia SR a Slovenská agentúra životného prostredia Banská Bystrica, ISBN 80-88833-27-2, číslo mapy 27, s. 95.

MAZÚR, E., LUKNIŠ, M. 1980.Regionálne geomorfologické členenie SSR.Geografický ústav SAV, Bratislava 1980.

NÉMETHYOVÁ, M., ŠEBESTA, I. 2005. Boťany - zabezpečenie nového zdroja podzemnej vody pre Boťanský skupinový vodovod, podrobný HGP Bernolákovo: Hydrovrt, Bratislava: Vodné zdroje Slovakia, Spišská Nová Ves: URANPRES, 2005. 36 s., 1 príl., 1 d. Mapový list: M-34-129-Ca

NÉMETHYOVÁ, M., ŠEBESTA, I., HODÁK, Ľ. 2006. Boťany - zabezpečenie nového zdroja podzemnej vody pre Boťanský skupinový vodovod /vrt SH-7/2/, podrobný HGP Bernolákovo: Hydrovrt, Bratislava: Vodné zdroje Slovakia, Spišská Nová Ves: URANPRES, 2006. 28 s., 1 príl., 1 d. Mapový list: M-34-129-Ca

REPEL, M. 2013. Ochrana mokradí východného Slovenska, In: *Enviromagazín 1*, roč. 18/2013, s. 12 [cit. 30. júla 2015] Dostupné z: http://www.enviromagazin.sk/enviro2013/enviro1/07_ochrana.pdf

ŠÚTOR, J., MATI, R., IVANČO, J., GOMBOŠ, I., KUPČO, M, ŠŤASTNÝ, P. 1995. *Hydrológia Východoslovenskej nížiny.* Michalovce: Media Group. ISBN 80-88835-00-3.

TEREK, J. 2009. Kvalita povrchových a podzemných vôd Medzibodrožia. In: *Folia Oecologica 2: Čiastkové analýzy a vybrané propozície Slovenskej časti krajiny Medzibodrožia*. Roč. L., s. 32-43. ISSN 1338-080X.

TEREK, J., BRÁZDA J. 1986. Fauna studni extravilánu Východoslovenskej nížiny. Biológia (Bratislava),41,10,971-979.

SUMMARY

THE AQUATIC LANDSCAPE ELEMENTS OF GEOMORPHOLOGICAL UNIT OF MEDZIBODROZIE IN SLOVAK REPUBLIC

The paper is focused on the characteristics of the aquatic landscape elements of the Medzibodrožie region. Natural landscape with frequent floods past has been significantly influenced by human activities. Water management measures significantly changed hydrological conditions of almost the whole territory. Range of aquatic natural elements (rivers, wetlands, lakes etc.) has been supplemented anthropogenic aquatic elements (material pit, dyke, irrigation and drainage canals, pumping stations, polders). Rivers and lakes are dominant natural aquatic elements. From the aspect of nature conservation the wetlands and river lakes are the most unique natural elements. From anthropogenic aquatic landscape elements are the most prominent elements irrigation canals and drainage canals, dikes and polders in the Medzibodrožie region.

Folia geographica, Acta facultatis studiorum humanitatis et naturae Universitatis Prešoviensis,
Prírodné vedy Volume 58, 2016, No. 2, FHPV PU Prešov. ISSN 1336-6157

CHANGES IN THE STRUCTURE OF THE LANDSCAPE AFTER 1948 IN POPRAD BASIN

Vladimír SOLÁR [1] *- Eva MICHAELI* [2] *- Monika IVANOVÁ* [3]

Abstract: *The method of land use and changes that are going on, are the combination of different factors and conditions. The main aim of the article is to analyse the landscape structure of the Poprad Basin from the spatial-temporal aspect in the context of political changes. The Poprad Basin has held a very significant position in Slovak conditions. The article deals with landscape structure change at detailed scale in the Poprad Basin after the end of World War II. in the context of important changes in political situation (formation Communist regime and then its demise in 1989). By using orthophotomaps and older topographic maps, we are able to monitor the shifts from one class to another. Using a comparative method of the maps, we are able to analyse the differentiation within landscape structures during different political regimes 1956–2010. The article focuses on the consequences of political and economic processes as well as the determining influence of natural conditions on agriculture.*

Key words: *Land cover, Landscape structure, Poprad Basin, Slovakia*

INTRODUCTION

The current landscape and its structure is the result of gradual changes in the original natural landscape under the influence of a man (Feranec, Oťaheľ 2001). Landscape structure has an important status in a geosystem - it is its visible surface portion, comprising the physical elements of the human environment. It is a sphere, of which one has an interest and examining it from multiple perspectives and variety of factors and conditions are involved to its development. The aim of the article is to analyse the landscape structure of the Poprad Basin in the context of political and economic processes as well as the determining influence of natural conditions on agriculture. With examination of landscape structure on the territory of the Slovak Republic in their works deal Boltižiar, Olah (2013), Fazekašová et al. (2013), Petrovič (2005),

1 ***RNDr. VladimírSolár, PhD.,*** *Department of Geography and Applied Geoinformatics, University of Prešov, Ul. 17. novembra 1, 081 16 Prešov, Slovakia, e-mail: vladimir.solar@unipo.sk*

2 ***Prof. RNDr. Eva Michaeli, PhD.,*** *Department of Geography and Applied Geoinformatics,University of Prešov, Ul. 17. novembra 1, 081 16 Prešov, Slovakia, e-mail: eva.michaeli@unipo.sk*

3 ***RNDr. Monika Ivanová, PhD.,*** *Department of Geography and Applied Geoinformatics, University of Prešov, Ul. 17. novembra 1, 081 16 Prešov, Slovakia, e-mail: monika.ivanova@unipo.sk*

Pucherová et al. (2007), Šolcová (2012), Vojteková (2013), Olah, Boltižiar, Petrovič (2006) and many others. Changes in land use are spatially differentiated in depending on physical-geographical and human-geographical conditions as well. In this context Simpson et al. (1994) presented that socioeconomic factors must be combined with the physical setting to fully understand patterns of change in human-dominated landscapes.

There are significant differences between regions, especially in the nature of the changes of land use, respectively land management (Michaeli 2005). One of the factors is political power aspects and their implications for the nature and evolution of landscape structure. On the landscape structure area, which was the subject of our research the following political changes has had the impact in observed period. After the end of the Second World War the German population left territory of Czechoslovakia, and it had a substantial impact on the population structure and changes in the country in Poprad Basin. There has been a weakening of the bond between the local landscape and its new inhabitants. Czechoslovakia in this period came under the influence of Soviet sphere. As Kováč (2000) states the victory of Communist and completed a coup d'état did not only led to establishing of communist totalitarianism, but the final submission of Czechoslovakia under power interests of Soviet Union. The political regime soon destroyed all the seeds of civil society. Under the planned economy enterprises and agriculture were nationalized. Development in the former Czechoslovakia entered a completely new direction after 1989, when the so-called "Velvet Revolution" changed almost all areas of human activity. The Revolution in 1989 represents the final stage of industrial society and the beginning of the transformation processes due to the emergence of two independent states – Czech and Slovak Republic. According to Ištok (2006) the processes of political integration after 1989 were – as throughout the 20th century – only exceptional phenomenon in the development of space-political structure of the world. The particular importance in the transformation process has a way of using the country where the private ownership of land gets to the forefront. Another important milestone in the political development of Slovakia was its entry into the European Union, which brought and still brings a number of advantages as well as disadvantages. The accession process to the European Union in terms of the preliminary conclusion of the pre-accession chapters Slovakia catch up states of the first wave of candidate countries and after fulfilling all the conditions on May 1, 2004 became along with the Czech Republic, Hungary, Poland, Slovenia, Malta, Cyprus, Estonia, Lithuania and Latvia full member of the European Union. Through the European regional policy (cohesion policy) instruments, based on financial solidarity between regions, opportunities to raise living standards, modernization of economy and creation more stable institutions have been opened to new Member States. Social development in the observed period significantly accelerated and the changes are best seen in the country. From the aspect of the landscape structure´s development is important to know not only the natural conditions which create it directly, but also indirect effects of human activity. That is why we have a wide range of conditions and factors chosen by policy changes.

DATA AND METHODS

Examined area is bounded by a geomorphologic line of the Poprad Basin, which is defined on the basis of geomorphologic division of the Slovak Republic. We selected the complex of the Poprad Basin with an area of 519,16 km^2 which is located in the north-western area of eastern Slovakia, southwards of the High Tatras (Fig. 1). The area has an elongated shape in the direction northeast - southwest with a total length of 45.082 km. In 2010 (31.12.2010), in the area of the Poprad Basin lived 151,033 inhabitants and with a density of 291 inhabitants per 1 km^2 is one of the most densely populated basin in the Slovak Republic.

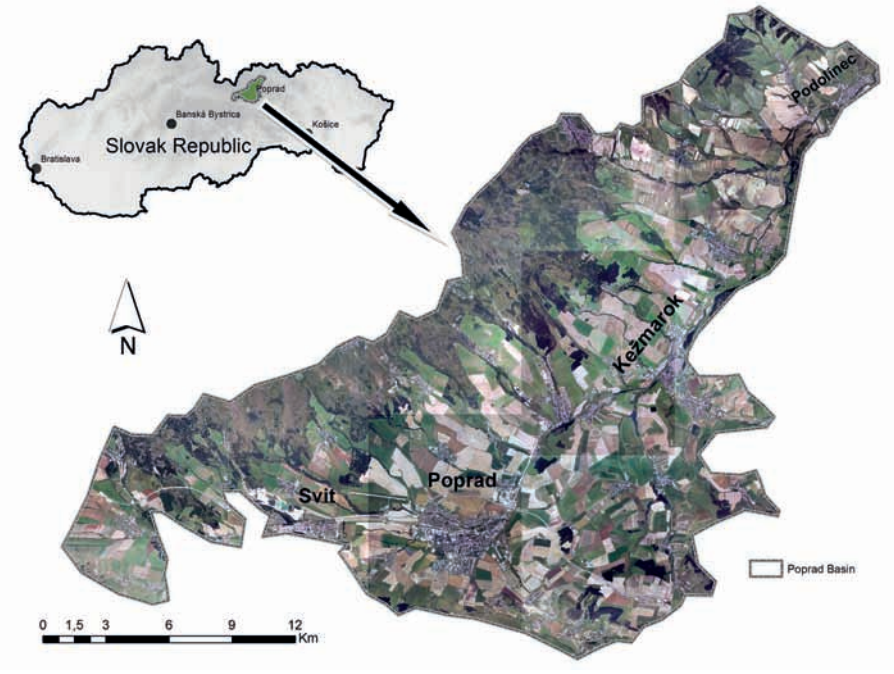


Fig.1 *Localization of Poprad Basin in Slovak Republic*

By identifying and digitalization of landscape structure has been used the map data 1953-1957 military topographic mapping, topographic mapping of Czechoslovakia of the 80´s and orthophotomap from 2002-2003 and 2008-2010. Digital vector processing of the maps was performed using the Arc View 10 software base, where each polygon was assigned a numeric and verbal attribute. The analysis of the area of Poprad Basin makes use of the analysis of elements of secondary landscape structure in terms of the LANDEP methodology (Ružička 2000). Each complex was identified at landscape features detailed scale of 1: 1,000, according to legend of landscape structure from Petrovič (2005). Were identified polygons with a minimum width of 1 m and the meaning of legends landscape features have been grouped into 8 groups of landscape elements:

1 Forest and non-forest vegetation, 2 Permanent grassland, 3 Agricultural crops, 4 Subsoil and substrate, 5 Rivers and water areas, 6 Settlements and recreation areas, 7 Technical elements, 8 Transportation elements. The research results are presented to the rank of four horizons (1956, 1986, 2003 and 2010) with regard to policy changes and their consequences.

RESULTS AND DISCUSSION

In connection with the changes in the landscape structure and their political implications it is important to take into account the population living in the territory. In this context, the population is the most significant factor that influences the development of the country. Despite the transfer of the German minority there in the post-war years to the overall population increase. Main characteristics of the population Poprad Basin and the rate of urbanization are presented in the Tab. 1.

Tab. 1 *Population of the Poprad Basin 1956-2010*

Poprad Basin	**1950**	**1980**	**2003**	**2010**
Population	63 446	116 849	147 278	151 033
Rate of urbanization	42%	63%	64%	61%

Source: Kropilák et al.1977a,b, 1978; ŠÚSR

When evaluating the population distribution it is most commonly used indicator of the general population density, wherein the density of each important structural characteristic of the inhabited space (Mládek et al., 1993). The general population density Poprad Basin in the period under review increased from 128 inhab./km² to 291 inhab./km². Distribution of population in Poprad Basin in 1956 was evenly, but in 2010 there were already two significant concentration of the population around the towns of Poprad and Kežmarok (Fig. 2).

The concentration of population is closely linked with the process of urbanization. Poprad administrative earmarked in 1946 creates a continuous built-up area of land between the smaller neighbouring settlements Poprad, Veľká, Spišská Sobota, Matejovce, Stráže and Kvetnica. Other municipalities are Kežmarok Poprad Basin, Svit, Spišská Bela and High Tatras. Due to time horizons examined, the highest 64% urbanization rate in 2003 and thereafter are reflected suburbanisation processes around these cities. The term in 1956, we have identified within the landscape structure 8 groups, 33 subgroups landscape elements and 65 elements. The largest part was the Agricultural crops with 23 977.88 ha. The communist government in 1948 has left the consequences onto structure of the country, where directed a short period of democracy in 1945 it has been replaced by mandatory mode of governance and management. The most significant change occurred in the Agricultural crops where the fields become due the forced agricultural collectivisation one of the dominant element of the group. They are mainly located outside local cadastral areas of the central area of the Poprad Basin (Fig.3).

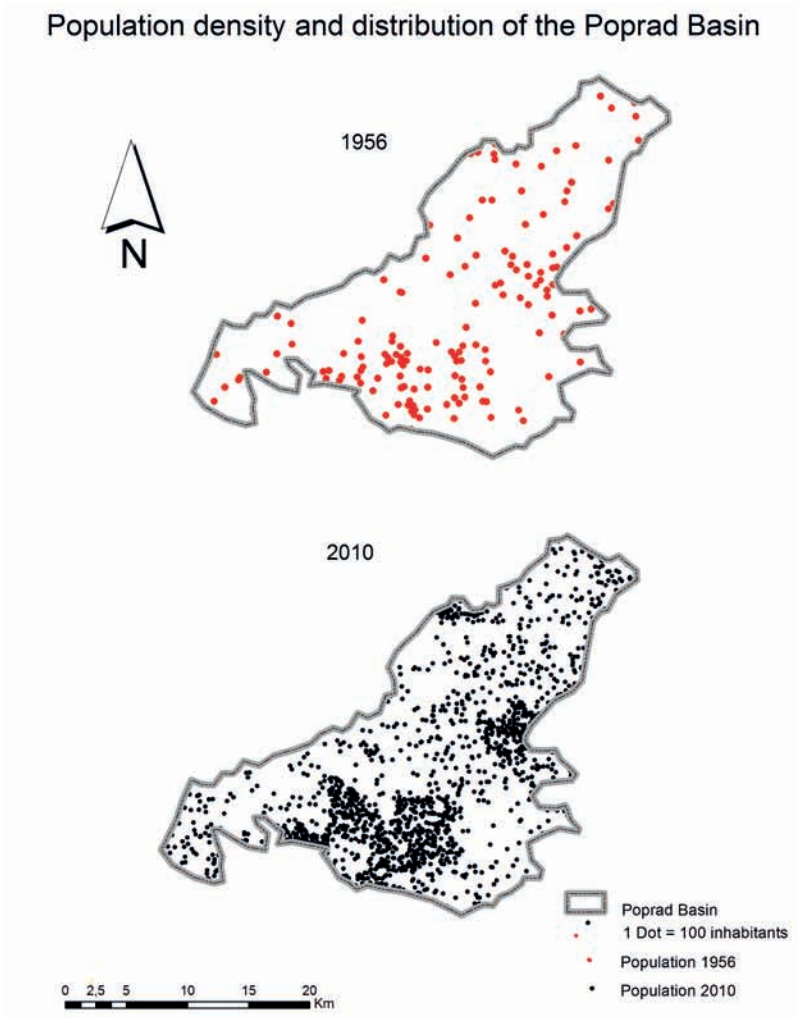


Fig.2 *Distribution of population 1956-2010*

Collectivization brought new forms of land management called Collective farming that formed the basis for agricultural production and their functionality was reflected across the Poprad Basin (Solar 2011). In this period in the southeast of Poprad the first orchards has incurred. As a result of mining there have incurred bedrock outcrops in the west of the Spišská Teplica at Gerlachov, hot and Kvetnica. With the development of water management arise regulated rivers, lakes and other bodies of water. In Settlements and recreation areas, we recorded a brand new place in Poprad Basin and the Mlynčeky, Svit, Starý Smokovec and Tatranská Lomnica. The sprawling industrial complex is going to be built within the boundaries of the city Svit, other smaller in Poprad and Kežmarok. New elements were farms and farmyards,

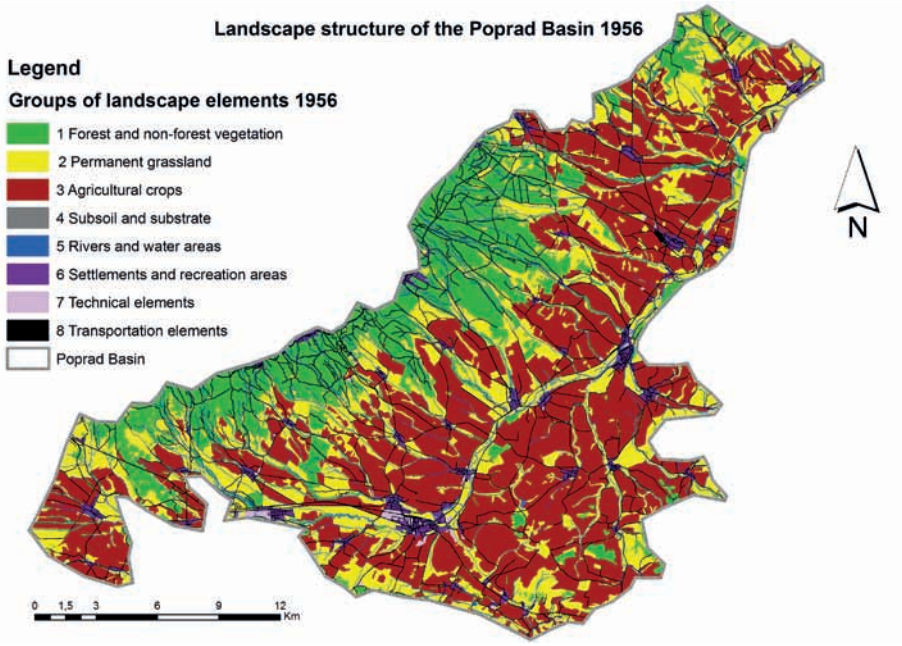


Fig. 3 *Landscape of structure of the Poprad Basin 1956*

which were created for almost every municipality mainly due to the collectivisation of agriculture. From the point of development of transport infrastructure, we recorded new elements: car parks, bus and gas stations and airport west of Poprad. Changes in the landscape structure with respect to the previous period are not very significant changed in particular land uses and their ownership, enshrined in the newly adopted regulations and laws. Nearly 40-year period marked by violations of human and civil rights as well as inefficient management is reflected in the landscape structure. Supporting processes such as industrialization and collectivization of agriculture in line with population growth caused most notable changes in the landscape structure within that period. The result is a landscape structure in the timeframe 1986 comprised 8 groups, 33 subgroups landscape elements and 72 landscape elements. Area was the largest Agricultural crops with 23 137.63 ha. Coniferous forests form the largest part of Forest and non-forest vegetation. In this period incurred the orchards in the south of Gerlachov. Creation of 7 water reservoirs and ponds with a total area of 64 ha. As a result of the development of the tertiary sector created new landscape elements: sports halls and gyms, ski slopes, ski lifts and allotment. Growing populations have also noted an increase in built-up area and a surface area of nearly 3,800 ha. Within the Transportation elements occupy the largest area of tertiary roads (353.37 hectares).

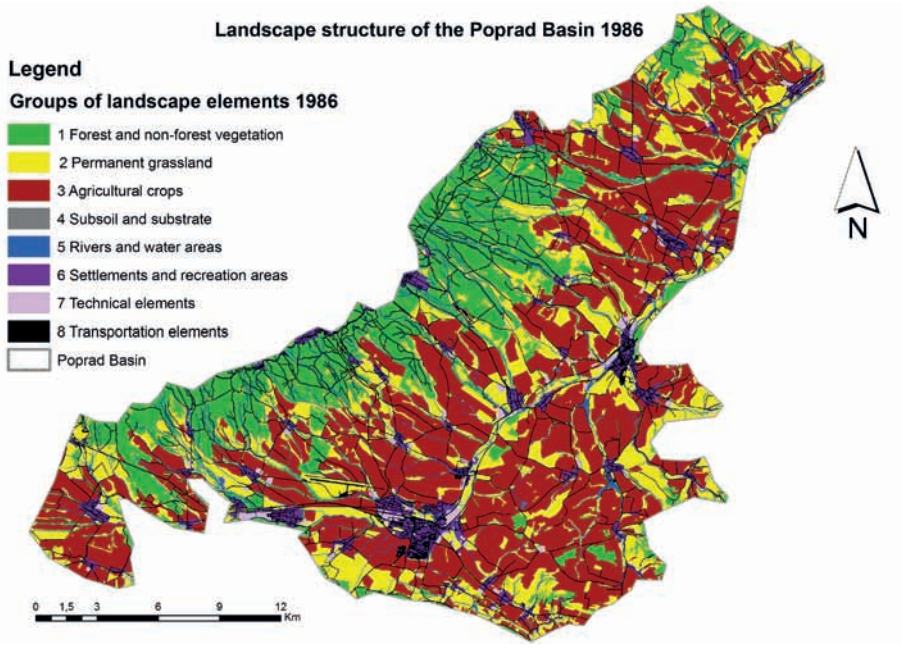


Fig. 4 *Landscape of structure of the Poprad Basin 1986*

The period of transformation marks a major shift from a society dominated by the communist ideology to a civil society and market economy based on trade and price liberalization, the extensive land and privatization property, and the shaping and defining of a new legislative and institutional paradigm. This transformation involved major social consequences and translates into the area of agriculture as well (Balej, Anděl 2010). This desintegration of Czechoslovakia, the onset of democracy, and especially changes in land ownership are the most important agents of change in landscape structure. The term in 2003, we have identified 8 groups, 33 subgroups landscape elements and 75 landscape elements. The most extensive was again Agricultural crops with area of 24 441.22 hectares and 47.08% share in the areas of the territory. As a result of the return of land to private ownership has expanded surface mosaic structure with the used and unused agricultural parcels. In Settlements and recreation areas, there has been only 1.61% increase in the proportion of the total area. Industry transformation after 1989 and the arrival of foreign investors created new businesses such as Whirlpool, Scametatra, Polyform etc.

The post-industrial period and post-industrial society is characterized by the rapid development of communication and information contacts (which results in pressure on the transport and communication infrastructure) and a growing tertiary sector (services and travel industry). Within the settlement structure, there is an integration of the system and arrival of new trends as suburbanization and satellite communities (Balej, Anděl 2010).

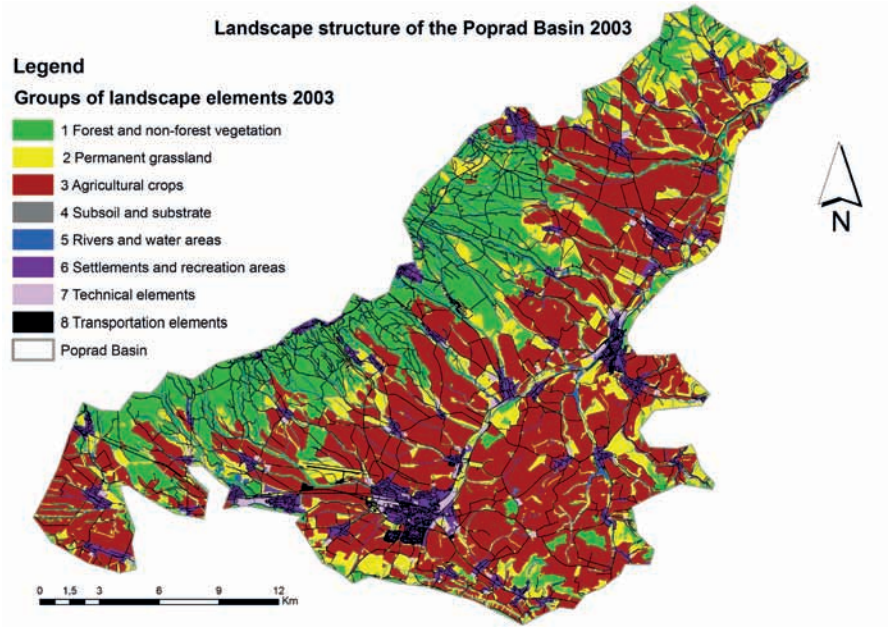


Fig. 5 *Landscape of structure of the Poprad Basin 2003*

Within the time horizon of 2010, we have identified 8 groups, 34 subgroups landscape elements and 78 elements. The largest group of elements was Agricultural crops with 24 026,64 ha and a total share of 46.28%. In Forest and non-forest vegetation we saw a significant change as a result of the disaster in the High Tatras in 2004. Broken forests accounted for only 48% of the total area of the group of landscape elements. In relation to gravel extraction in rural village Batizovce was created Batizovská water reservoir with an area of 8 hectares. Suburbanization process stimulated the development of construction in the village around Poprad and Kežmarok. The new elements became golf courses situated north of the Veľká Lomnica with an area of 107.01 hectares. By accession to the European Union and the possibility of using structural funds in 2009 were built motorway sections Važec-and Mengusovce, Mengusovce-Jánovce that gave the Poprad Basin across significant anthropogenic barrier. There has been established the industrial park Poprad-Matejovce with an area of 10 ha. Trade in the context of transport development in the last decennia more pronounced landscape structure was affected mainly the construction of large commercial and entertainment and business centres at strategic trunk routes and hubs. The largest concentration of these centres is recorded in the urban centres of the city of Poprad and the Poprad and Svit.

Proportion of different groups of landscape elements in the overall structure of the country Poprad basin presents Table 2. During the period 1956-2010 we register a total loss only in Permanent grassland and the largest increase was in the area Settlements and recreation areas. For spatial reflect of the changes in landscape structure, we have created the following Figure 7, where some stable surface features of

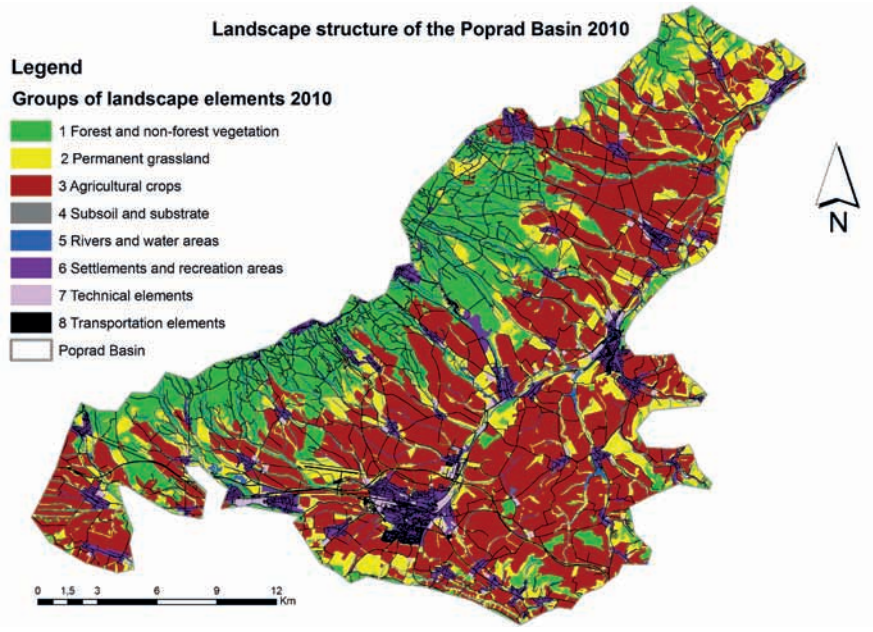


Fig. 6 *Landscape of structure of the Poprad Basin 2010*

Tab. 2 *Area groups of landscape elements (in ha)*

Poprad Basin	1956	1986	2003	2010
1 Forest and non-forest vegetation	10681	11342,35	12647,01	12428,58
2 Permanent grassland	14295,07	12648,07	9027,11	9330,28
3 Agricultural crops	23977,88	23137,63	24441,22	24026,64
4 Subsoil and substrate	4,44	6,58	7,85	7,73
5 Rivers and water areas	320,99	366,42	366,29	373,4
6 Settlements and recreation areas	1552,37	2708,85	3470,46	3665,12
7 Technical elements	294,31	759,83	843,46	848,11
8 Transportation elements	790,22	946,73	1113,1	1237,54
∑	51916	51916	51916	51916

the landscape throughout the period under review, mainly located in the central part (green color) and the areas where there is a change in at least one of the examined time horizon (red color).

The largest identity within each landscape element was the time horizon of 2003. The most significant changes were the maximum in Permanent grassland. The box highlighted identical within each area of landscape features during the 1956-2010 (Table 3).

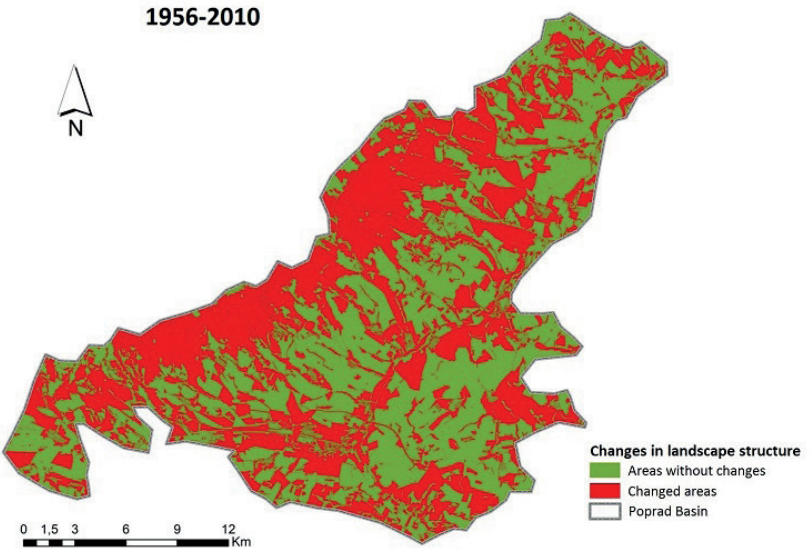


Fig. 7 *Changes in landscape structure of the Poprad Basin 1956-2010*

Tab. 3 *Transformation matrix changes in landscape structure 1956-2010 (in ha)*

in ha		Group of landscape elements 2010								
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Spolu**
Group of landscape elements 1956	**1**	9 840,76	588,81	73,59	2,05	12,95	110,13	7,03	45,71	10 681,03
	2	2 355,56	6 345	3 854,67	2,12	110,07	1 120,43	325,02	182,65	14 295,53
	3	179,23	2 333,02	20 037,49	2,37	7,35	854,26	302,57	240,77	23 957,05
	4	1,39	1,82	0,03	1,16	0	0	0,05	0	4,44
	5	36,5	20,86	10,33	0	238,48	9,66	2,6	4,42	322,84
	6	2,65	11,92	24,75	0	1,19	1 478,4	10,71	43,86	1 573,48
	7	3,55	12,5	2,75	0	2,92	65,83	190,02	16,73	294,31
	8	8,94	16,53	22,95	0,02	1,85	26,43	10,16	705,17	792,04
	∑	12 428,59	9 330,46	24 026,56	7,73	374,82	3 665,13	848,15	1 239,31	51 920,74

Notes: 1 Forest and non-forest vegetation, 2 Permanent grassland, 3 Agricultural crops, 4 Subsoil and substrate, 5 Rivers and water areas, 6 Settlements and recreation areas, 7 Technical elements, 8 Transportation elements

CONCLUSION

In this article we focused on in-depth analysis of the landscape structure in the post-war period from the aspect of political changes and their consequences. The obtained amount of information depends on the implementation of the evaluation scale landscape structure. Therefore, we have applied our research in assessment of land-

scape structure on the most detailed level possible, but the results given the relatively large database data are presented at the level of groups of landscape elements. Examination after the Second World War, due to the maps presented in four time horizons (1956, 1986, 2003, 2010) is characterized by dynamic development company with concomitant changes in the country. The period to 1956 is characterized by reconstruction of the country after World War II and the communist takeover of the aspect of political development. Period in 1986 reflects industrialization and collectivization of agriculture in the context of population growth Poprad Basin. A further period until 2003 provides information on the transformation of the country from the aspect of the landscape structure with respect to the independence of the Slovak Republic and the advent of democracy. The nature of land ownership and in particular the development of the tertiary sector necessitated amendments by landscape elements, especially in the area of settlement building. The last year (2010) represents the current landscape structure changing as a result of the Slovak Republic to the European Union. Although the most significant change in its appearance caused a windstorm in 2004. The political changes are in line with the natural conditions and human actions that are the decisive factor in changes in the country. As well as stated Vaclavik and Rogan (2009) also our results suggest that the scale and intensity of land changes do not entirely follow the patterns of land transformation identified in other Central and Eastern European countries. This means that privatization of state property and transformation of agricultural collectives in the Poprad Basin resulted in marginalization of farmland but at a smaller scale than in Poland or Ukraine (Sabates-Wheeler, 2002; Angelstam et al., 2003)

Acknowledgement

This contribution was originated from the financial support of the "VEGA" Grant agency of the Ministry of Education, Science, Research and Sports of Slovak Republic from the project VEGA No. 1/0159/15, VEGA No. 1/0116/16 and project APVV-15-0406 Agency to support research and development.

REFERENCES

ANGELSTAM, P., BORESJO-BRONGE, L., MIKUSINSKI, G., SPORRONG, U., and A. WASTFELT, A. Assessing Village Authenticity with Satellite Images: A Method to Identify Intact Cultural Landscapes in Europe. Ambio: A Journal of the Human Environment 32 (8), 2003, pp. 594-604

BALEJ, M., ANDĚL, J. Political changes and consequences of their actions for land cover in the Czech Republic after 1989. Geographical Journal. Vol.62, No. 3, 2010, p. 201-220

BOLTIŽIAR, M., OLAH, B. Land use changes of UNESCO Biosphere reserves in the Slovak Carpathians since the late eighteenth century. In The Carpathians: Integrating nature and society towards sustainability. - Berlin: Springer, 2013, p. 377-391. ISBN 978-3-642-12724-3.

FAZEKAŠOVÁ, D., BOLTIŽIAR, M., BOBUĽSKÁ, L., KOTOROVÁ, D., HECL, J., KRNÁČOVÁ, Z. Development of soil parameters and changing landscape

structure in conditions of cold mountain climate (case study Liptovská Teplička). In Ekológia (Bratislava): international journal for ecological problems of the biosphere [seriál], 2013, vol. 32, no. 2, p. 197-210 ISSN 1335-342X.

FERANEC, J., OŤAHEĽ, J. Krajinná pokrývka Slovenska (Land cover of Slovakia). Bratislava: Veda, 2001. 124 p.

IŠTOK, R. Priestorovo-politická štruktúra sveta a jej vývojové tendencie v období globalizácie. In: Transformácia politicko-priestorových systémov a systémov demokracie. Prešov: Prešovská univerzita v Prešove, Fakulta humanitných a prírodných vied, 2006, p. 62-107. ISBN 80-8068-500-2

KOVÁČ, D.: Dejiny Slovenska, Nakladatelství Lidové noviny, Praha 2000, 259p.

MICHAELI, E. Transformácia využívania kultúrnej krajiny na príklade katastrálneho územia Jakuban za ostatných 50 rokov. Acta Facultatis Studiorum Humanitatis et Naturae Universitatis Prešoviensis, Prírodné vedy, XLIII., Folia Geographica 8, PU Prešov 2005, p.108-115

MLÁDEK, J., et al. Región Poprad, geografické štruktúry socioekonomických aktivít, UK Bratislava, 1993, 207 p.

OLAH, B., BOLTIŽIAR, M., PETROVIČ, F. Land use changes' relation to georelief and distance in the East Carpathians Biosphere Reserve. In: Ekológia (Bratislava) Vol. 25, No. 1, 2006. p. 68-81.

PETROVIČ, F. Vývoj krajiny v oblasti štálového osídlenia Pohronského Inovca a Tribeča. Nitra : Ústav krajinnej ekológie SAV Bratislava, pobočka Nitra, 2005. 209 p. ISBN 80-969272--3-X.

PUCHEROVÁ, Z. et al. Druhotná krajinná štruktúra (Metodická príručka k mapovaniu). UKF Nitra, 2007, 124 p.

RUŽIČKA, M. Krajinnoekologické plánovanie – LANDEP I. Vydavateľstvo Biosféra, 2000, Bratislava, 120 p.

SABATES-WHEELER, R. Consolidation Initiatives after Land Reform: Responses to Multiple Dimensions of Land Fragmentation in Eastern European Agriculture," Journal of International Development, Vol. 14, Issue 7 (2002) pp. 1005–1018

SIMPSON, J. W., et al. Forty-eight years of landscape change on two contiguous Ohio landscapes. In: Landscape Ecology, Vol. 9, No. 4 (1994), pp. 261-270.

SOLÁR, V. *Socioekonomické faktory a podmienky ovplyvňujúce zmeny krajinnej štruktúry Popradskej kotliny. Folia Geographica 17, PU Prešov, roč. LII., p.352-362, 2011, ISSN 1336-6149, ISSN 1336-6157*

ŠOLCOVÁ, L. Vývoj krajiny s disperzným typom osídlenia v Novobanskej štálovej oblasti. Prírodovedec č.531 UKF Nitra, 208 p., 2012, ISBN 978-80-558-0208-4

VACLAVIK, T., ROGAN, J. Identifying trends in land use/land cover changes in the context of post-socialist transformation in Central Europe: A case study of the greater Olomouc region, Czech Republic. GIScience & Remote Sensing 46 (1), pp. 54-76, 2009

VOJTEKOVÁ, J. 2013. Trendy vývoja banskej krajiny na hornom Ponitrí. Prírodovedec č.543 UKF Nitra, 152 p. ISBN 978-80-558-0426-2

FOLIA GEOGRAPHICA,
ACTA FACULTATIS STUDIORUM HUMANITATIS
ET NATURAE UNIVERSITATIS PREŠOVIENSIS, PRÍRODNÉ VEDY,
VOLUME 58, 2016, NO. 2

Hlavný redaktor / *Editor-in Chief:*	prof. RNDr. René Matlovič, PhD.
Výkonný redaktor / *Executive editor:*	doc. RNDr. Kvetoslava Matlovičová, PhD.
Autori / *Authors:*	kolektív / *team*
Náklad / *Edition:*	300 výtlačkov / *prints*
Rozsah diela / *Scope of work:*	92 strán / *pages*
AH / *AS:*	6,17
Vydanie / *Edition:*	prvé / *first*
Formát / *Format:*	B5
Sadzba / *Composition:*	Ing. Stanislav Kurimai
Vydavateľ / *Publisher:*	Vydavateľstvo Prešovskej univerzity v Prešove
Adresa / *Adress*	Ulica 17. novembra 15, 080 01 Prešov IČO 17 070 775
Periodicita / *Periodicity:*	2x ročne / *twice a year*
Dátum vydania / *Date of release:*	december 2016 / *December 2016*

Jednotlivé príspevky podliehajú anonymnému recenznému konaniu minimálne dvoch recenzentov / *Individual contributions are subject to anonymous peer-review procedure at least two reviewers*

Časopis dodržiava štandardy týkajúce sa publikačnej etiky počas celého procesu publikovania / *The journal keeps standards related to a publication ethics during the publishing process*

http://www.unipo.sk/fakulta-humanitnych-prirodnych-vied/geografia/folia

ISSN 1336-6157 (Folia Geographica)

ISSN 1336-6149 (Acta Facultatis Studiorum Humanitatis et Naturae Universitatis Prešoviensis, Prírodné vedy)

EV 4949/14