VYSOKE MYTO MICROREGION LANDSCAPE VALUES

STODOLOVA VERONIKA, STASTNA MILADA, VAVROUCHOVA HANA, MASICEK TOMAS
Department of Applied and Landscape Ecology
Mendel University in Brno
Zemedelska 1, 613 00 Brno
CZECH REPUBLIC

veronika.stodolova@mendelu.cz

Abstract: The aim of the article was to describe transformation of the perception of the cultural landscape value over the time in Vysoke Myto microregion. It was necessary to identify, analyse and permanently document disappearing testimony in the memories of older generations. This testimony was made as a part of the cultural heritage of the village, in the form of so called "Modern chronicle of the village" using map outputs, field research, photographs and audio recordings of interviews with natives. Modern chronicle of the village was made as interactive media; containing recordings of interviews with eyewitnesses, accompanied with visual material (photos and video) locally associated with the described verbally locations or events. The results showed that mental ties to the land are often decisive for the formation of local identity and stabilize the rural population.

Key Words: modern chronicle of the village, mental map of landscape, natives, microregion, local identity

INTRODUCTION

The value of the landscape is an often used term, but its essence is not clearly defined in the literature. European Landscape Convention uses it in the legislation, but it does not specify it any further. In a metaphorical sense, this term can also be found in the Act no. 183/2006 related to territorial planning and building regulations. For example, Kupka (2010) is engaged in categorization landscape values on the theoretical and methodological basis. His text serves as a suitable material to specify a detailed survey of the municipality with a focus on the historical and spiritual values of the country. Brown and Brabyn (2012) or Brown et al. (2014) comment on the typology of landscape values in the international context.

The aim of the article consists in a description the transformation of the perception of the cultural landscape value over time in Vysoke Myto microregion. The primary aim is focused on an identification, analysis and permanent documentation of the disappearing testimony concerning cultural landscape in the first half of the last century. This testimony is captured in the memories of older generations and forms a part of the cultural heritage, which is applied in so called "Modern chronicle of the village".

MATERIAL AND METHODS

Analysis of the territory in the context of broader regional relations

Landscape structure of the Voluntary Association of Vysokomytsko was analysed. The analysis was based on the concept of primary, secondary and tertiary structure of the landscape. The primary structure of the landscape is made up of mainly physical-geographic features. Such structure is formed mainly by abiotic elements (geological substrate, soil, topography, climate, waters) and potential natural vegetation. Secondary landscape structure is based on the primary structure of the landscape and there is possible to identify the current land use (land use). Secondary structure includes a diverse set of tangible elements of the landscape, which currently fill the earth's surface. The tertiary structure of the landscape is made of elements related to the socio-economic sphere. It is a set of intangible elements and phenomena related interests, manifestations and consequences of the human society activities and individual sectors in the country which bind to the material elements of the primary

and secondary structure of the landscape (Miklos, Izakovicova 1997). The result contains a detailed analysis of the landscape structure of the administrative area confronted with an analysis of the landscape structure on the higher unit.

Analysis of the landscape

Analysis of the territory was carried out on two levels – macrostructure and microstructure – for the selected area of the village, and for the purpose of determination of broader territorial relations. It is quantitative expression of spatial aggregation of different types of land use for macrostructures. Description is made on the basis of commonly available data of the Czech Statistical Office. Statistical data was found for individual cadastral areas and for the microregion. Actual data are confronted with the database LUCC Czechia (lucc.ic.cz), created by the Faculty of Science at Charles University, adjusted to current administrative arrangements and with respect to the years 1948 and 1990.

The first step of assessing the landscape microstructure is called determination of horizontal landscape structure. Horizontal landscape structure is composed of three basic compositional parts – matrix, enclaves and corridors, which can be found in the landscape. Analysis of the microstructure was done at the level of the municipal area. On the regional one it is simple interpretation of the latest orthophoto update accompanied with a field survey.

Zonneveld (1995) classifies the microstructure in terms of quantity, size, shape, type and overall arrangement of compositional parts. The terrain survey with records into the map is basic partial method of exploring. The first phase is to determine and correct the boundaries of individual types of land use and individual refine of investigated units (e.g. elaboration item water areas for further subcategories - wetlands, streams, specifications of other areas - active heaps, cemeteries, etc.). The second step is the aggregation of individual elements into maps of horizontal landscape structure formed by three components (matrix, corridors and enclaves). The type of landscape microstructure is determined by comparison of the resulting graphics with Zonnenveld's classification.

Map processing

Map outputs were processed in ArcGIS Desktop 10 software which is product of ArcInfo using a set of integrated software applications ArcMap, ArcCatalog and ArcToolbox user interface. The description of the map outputs created in ArcGIS was based on principles and procedures referred in publications Booth and Mitchell (2001), Dumbrovský (2009), Geletic et al. (2013), Masicek and Zdimal (2014) and the Schmidts (2013). Cartographic presentation includes maps plotting the microregion of interest (Vysokomytsko), including selected cadastral areas (Bucina and Pustina), GIS visualization of the current structure of the cadastral areas landscape, historical structure of the cadastral areas landscape of the mid-20th century and historical landscape structure of the cadastral territory in the first half of the 19th century. The cadastral area are also directly presented on the basis of orthophoto maps, aerial photographs (LMS) and Imperial fingerprint of stable cadastre of Bohemia and imperial fingerprint of stable cadastre of Moravia and Silesia.

Identification of landscape values

The value of the landscape is determined by a set of characteristics that express their use (see Table 1). It can be categorized into subjective values (according to the evaluator and value judgments) and objective value (professionally objectified, based on legal norms in society). The research was focused on both types of values. Information on the perception of the environmental quality of residents is obtained by confrontations from non - expert view. In the first phase, the values of the landscape are identified according to objectified templates from the studies and analysis (objectives value of the landscape). Subsequently, the values of the landscape are determined through semi-structured interviews with local residents (subjective values of the landscape). The conclusion points on the comparison of the subjective and objective landscape values and intrusions (mixed values of the landscape) are detected

Management of semi-structured interviews with natives

Target group was formed by natives or old settlers (living in the village since the age of five) in the age of 65 and over. There were performed 10 interviews to obtain more objective view at the landscape structure. However, the number can be adapted to the conditions of each territory; at least 5 interviews should be done. Interviews were performed directly in the field or in a public

place with the current map, knowing a background of study area and syllabus issues of semi-standardized interview. Questions were directed to three basic time levels: past – present – future. The audio, photographs or video were recorded during the interview. It is necessary to obtain the written consent of the narrator before the interview.

Table 1 The land value at the local level

Land value	
Cultural-historic value	
Spiritual and religious values	religious buildings, pilgrimage places, symbols in the landscape, genius loci etc.
Intangible cultural values	areas associated with important personalities, events, tales and legends, filming, etc.
Cultural values accepted	under the protection of the Act 20/1987 Coll., on State Historical Preservation (cultural heritage / national cultural monument, a monument reservation, a monument zone); UNESCO
Cultural informal values	other values associated with the culture of human specific landscape structure, composed landscape, permeability of landscapes, etc.
Architectural and urban values	valuable buildings, groups of buildings, major construction landmark preserved urban structure seat
Social values	
Values for the development of human relationships	squares, meeting places, cultural center, parks...
Values for the development of local communities	school, training center, information center, ecology center
Recreational values	
Spa value	mineral springs, other medical sources
The value of the recreational potential	territory compliance with health standards, a recreation area, geopark
The value presenting functional nature	
Landscape ameliorative measures	erosion control, selected flood control (dikes, retention basins, etc.), slope stabilization, landscaping, made landscaping, etc.
Natural value	
Natural values accepted	particularly protected area, Significant landscape features, natural monument, Territorial system of ecological stability, Landscape monument zone, system Natura 2000, protected area of natural accumulation of water
Natural values informal	valuable ecosystems without protective mode

RESULTS AND DISCUSSION

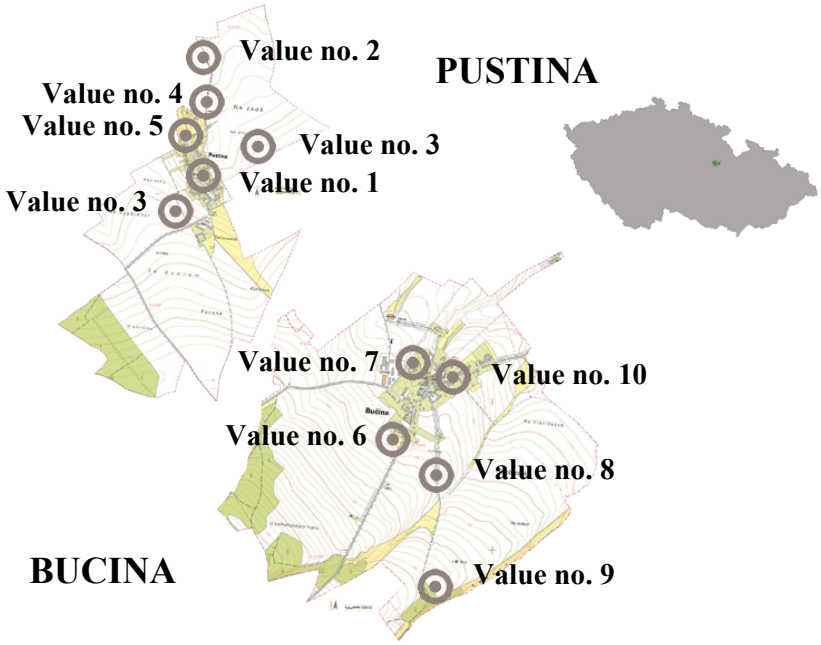
Modern chronicle of the municipality (Šťastná et al. 2015) was made in the form of multimedia interactive media (audio and video recording, photo and map documentation, including an evaluation of the historical development of landscape structure on the basis on visualization of mental image of the landscape in the middle of the last century). Part of the modern chronicle is represented also by audio recording interviews with witnesses supplemented with visual material (photos and video) locally associated with the verbally described locations or events.

Vysoke Myto microregion – intermediate countryside

Intermediate countryside represents average developed municipalities that are placed farther away from the large urban centers. The municipalities have good transport links. Vysokomytsko microregion is in the foothills of the Eagle Mountains. Microregion's surface is rugged, with

an average altitude of about 350 meters above sea level. Microregion is situated in climate area of slightly warm and slightly damp with intensive use of agricultural land. Vysokomytsko is the warmest and the driest area in the Pardubice region. The microregion can be considered as comparative area where the landscape has changed only minimally. Two municipalities were studied in the Vysokomytsko microregion (Doskocilova et al. 2014): Pustina and Bucina (see Figure 1).

Figure 1 Modern chronicle of the municipality



PUSTINA

Value no. 1 – The Pond

The pond was located on the square in the center of the village. The original stucco pond is currently being replaced by fire protection reservoir, which is also used for bathing. The surroundings of the pond is now complemented by ornamental foliage.

Value no. 2 – Forest Haj

Forest Haj is located along the northeast border of present-day village Pustina (formerly belonged to the Cadastre of Pustina), which is today in the territory of neighbouring municipality Repniky. Forest owners are mostly inhabitants of Pustina. Currently, there are planted young spruce trees in the forest, because the original trees were destroyed during the recent storm.

Value no. 3 – Streams

Once there were streams in the nearby village, which prevented the village from flooding due to the consolidation of arable land.

Value no. 4 – Alley

The Pustina village had a fruit alley in the past. The original cherries alley is preserved until today. Cherry tree avenue along the road to Vysoke Myto was replaced by birch trees.

Value no. 5 – Stream

Children played near by a small stream flowed from the pond in the past. Today the stream is fed from the overflow tank fire.

BUCINA

Value no. 6 – Course

The course is situated on the southern edge of the village buildings. Original football field was re-seeded and expanded to include tennis courts. Part of the course is also used as a fire training ground.

Value no. 7 – Fire tank

Fire tank is located near the campus of the former collective farm. The tank is used for bathing, but its reconstruction is necessary.

Value no. 8 – Dirty road Polsko – Smeklo

Dirt road in the south-eastern part of the Bucina village is widely used for walking. It was fixed as part of landscaping in 2009.

Value no. 9 – Mosnovy

Continuation of dirt road goes from the village to the woods of Mosnovy. There is a wooden bench in the forest from which the good weather allows to see the surrounding area.

Value no. 10 – The Louze Pond

There was a pond or puddle on the square next to the inn in the past.

CONCLUSION

Structural changes in the landscape can be fairly well analysed, both quantitatively and qualitatively, then evaluated and results can be transfered into decision-making processes and planning tools (e.g. Skalos, Kašparová 2012, Skalos et al. 2011, Salasova et al. 2010, Brierley 2010, Lipsky 2001). However, the social and mental dimensions of these changes are applied very rarely in the context of research on the dynamics of the cultural landscape. Just these mental ties are often decisive for the formation of local identity and stabilizing the rural population. Local identity linked to the cultural landscape often plays a role in regional development. Zanon and Geneletti (2011) consider it as crucial in their research. The role of cultural heritage in shaping identity at the local level is confirmed by RoigéVentura and Arrieta Urtizberea (2010). According Corsale and Iorio (2010) the advantage of this relationship can be taken to develop (often marginal) rural areas mainly focusing on the development of the tourism, on build development strategy and on the unique regional ties. Antonioni et al. (2010) confirms this thesis in his research of identity in relation to the cultural landscape. Moore and Whelan (2007) are engaged by casuistry and the complex relationship between identity, memory, heritage and cultural landscape in their book. However, collective (whether historical or social) memory in the context of the cultural landscape, its dynamics and role in creating identity in research (both at national and international level) is relatively neglected. Complementing the comprehensive research of the cultural landscape as well as the dimension of knowledge is very necessary, innovative and applicable in practice.

ACKNOWLEDGEMENT

This article is based on the results from TD020211 research project funded by the Technological Agency of the Czech Republic.

REFERENCES

Booth B., Mitchell A. 2001. *Getting Started with ArcGIS. Redlands*, California: ESRI. ISBN 1-879102-93-5.

Brown G., Brabyn L. 2012. An analysis of the relationships between multiple values and physical landscape at a regional scale using public participation GIS and landscape character classification. *Landscape and Urban Planning*, 107: 317–331.

Brown G., Weber D., de Bie K. 2014. Assessing of public lands using public participation GIS (PPGIS) and social landscape metrics. *Applied Geography*, 53: 77–89.

Brierley J. G. 2010. Landscape memory: the imprint of the past on contemporary landscape forms and processes. *Area*, 42(1): 76–85.

Corsale M., Iorio M. 2010. *Revista de Turismo y Patrimonio Cultural*, 8(4): 555–568.

Doskocilova V. et al. 2014. The changes of Czech cultural landscape in the intermediate countryside. In *Proceedings of International PhD Students Conference MendelNet 2014* [online]. November 19, 2014, Mendel University in Brno, Faculty of Agronomy, Czech Republic, pp. 345–349. [2015-08-20]. Available from: https://mnet.mendelu.cz/mendelnet2014/articles/58_doskocilova_1059.pdf

Dumbrovský M. 2009. *Geographic information systems. Modul CS02.* Brno: BUT in Brno. (Czech language).

Antonioni S. et al. 2010. Gazes on Levanto: A case study on how local identity could become part of the touristic supply. In Tourism and visual culture. *Theories and concepts*, eds. Burns P. M., Palmer C., Lester J. A. Urbino, 1: 107–123.

Geletic J. et al. 2013. *Introduction into ArcGIS 10.* Olomouc: Palacky University in Olomouc, Faculty of Science. ISBN 978-80-244-3390-5 (Czech language).

Kupka J. 2010. *Cultural and historical landscape. The influence of the values of cultural and historical characteristics on the landscape of our country.* Praha: Printing office Czech Technical University publishers. ISBN 978-80-01-04653-1 (Czech language)

Lipsky Z. 2001. Present land use changes in the Czech cultural landscape: driving forces and environmental consequences. *Moravian Geographical Reports*, 9(2): 2–14.

Masicek T., Zdimal V. 2014. *Innovation course "Computer designing" – practical use of GIS in solving hydrological analyzes. Methodical worksheets. Another part of the institutional plan no. 13.9 for the year 2014.* Brno: Mendel University in Brno (Czech language).

Miklos L., Izakovicova Z. 1997. *Landscape as geosystem.* 1st ed. Bratislava: Veda. ISBN 80-224-0519-1 (Slovak language).

Moore N., Whelan Y. 2007. *Heritage, memory and the politics of identity: New perspectives on the cultural landscape.* Hampshire: Ashgate Publishing Limited.

RoigéVentura X., Arrieta Urtizberea I. 2010. Construction of identities in the museums of Catalonia and Basque country: local, national and global. *Revista de Turismo y Patrimonio Cultural*, 8(4): 539–553.

Salasova A. et al. 2010. Indicators of landscape environment quality. *Acta Horticulturae et Regiotecturae*, 13: 8–14. ISSN 1335-2563 (Czech language).

Schmidts M. 2013. *Esri ArcGIS Desktop Associate: Certification Study Guide.* California: Esri Press. ISBN 978-1-58948-351-4

Skalos J., Kašparová I. 2012. Landscape memory and landscape change in relation to mining. *Ecological Engineering*, 43: 60–69.

Skalos J. et al. 2011. Historical land use in territory Sokolovsko – year 1842. DO-Protection of landscape, Specialized map with expert content, 8.15, HLU - Functional change of scenery (Czech language).

Šťastná M. et al. 2015. Changes of a rural landscape in Czech areas of different type. *European Countryside*, 7(2): 111–133. ISSN 1803-8417.

Zanon B., Geneletti D. 2011. Integrating ecological, scenic and local identity values in the management plan of an Alpine Natural Park. *Journal of Environmental Planning and Management*, 54(6): 833–850. ISSN 0964-0568.

Zonneveld I. S. 1995. *Land Ecology: An Introduction to Landscape Ecology as a Base for Land Evaluation, Land Management and Conservation*. SPB Academic Publishing.