DOI: 10.15201/hungeobull.73.2.3 Hungarian Geographical Bulletin **73** 2024 (2) 147–163.

Assessment of the landscape identity through participation in the framework of a landscape character research

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Abstract

The physical and emotional character of the landscape is an increasingly important ecosystem service factor in Hungary, too, and the strong identity of residents with the landscape is part of their well-being. Between 2016 and 2022, we prepared the landscape character map of the entire country. One of the essential elements of the project was that in four study areas – Sopron–Lake Fertő region (containing Sopron Mountains and Basin together with Lake Fertő), Gerecse Mountains, Tápió-vidék region and Tiszazug region – as landscape units, we tried to reveal the feelings of the residents related to the landscape using different methods. One of the most effective tools was surveys organised in workshops (personal or online) when we inquired about how the residents see landscape patterns, land use, and the changes in the surroundings of their settlements. One of the most important lessons learned from the study areas was that the local citizens usually have an indisposition for large-scale alterations of the accustomed environment, which leads to less familiar feelings and weakens the near natural character of the landscape. The results were compared with international experience.

Keywords: landscape identity, landscape character, community research, participatory planning, European Landscape Convention

Received January 2024, accepted April 2024.

Introduction

The unique particularity of the landscapes, as perceived by people, contributes to the attachment of man to the place or the area they live in and correlates with the given man-nature relationship. What we perceive is not just an independent spot-like feature but the entire area with its multiple natural and cultural elements and characteristics. People are bound to their landscape through perception. The cultural and human geographical land-

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scape approach, emphasising the aesthetical, perceptual qualities, has been strengthening since the turn of the millennium (Cosgrove, D.E. 1984, 2003; Wylie, J.W. 2007). The landscape is full of meaningful symbolic content, which has been crucial since the early history of humans (Schama, S. 1995; Ingold, T. 2002). Perception of the landscape is, therefore, a widespread and valued research topic (Kim, J. and Kaplan, R. 2004; Antrop, M. 2005; Olwig, K.R. 2006; Gobster, P.H. *et al.* 2019; Opdam, P. 2020; De Vries, S. *et al.* 2021).

Landscape character is defined as a "distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another" and "it is what makes each part of the landscape distinct and gives each its particular sense of place" (Swanwick, C. 2002; Wascher, D.M. 2005). Beyond the term landscape character, landscape identity also became a commonly used expression. The two concepts are relatively close. However, they are not synonyms. "Landscape identity is the unique psycho-social perception of a place defined in a spatial, cultural space" (Stobbelaar, D.J. and Pedroli, B. 2011; Minca, C. 2013; Konkoly-Gyuró, É. 2018). The word "identity" is derived from the Latin *identitas*, meaning "sameness". In other words, the landscape identity is "the perceived uniqueness of the place" (Ramos, I.L. *et al.* 2016).

Both character and identity can be captured at several scales and an individual/personal or collective perception (Lowenthal, D. 2007; Lewicka, M. 2008; Knez, I. and Eliasson, I. 2017; Belanche, D. *et al.* 2021). Scales extend from local to national, or we might speak of continental identity or character (Dixon, J. and Durrheim, K. 2000; Dossche, R. *et al.* 2016; Butler, A. *et al.* 2017; Jankó, F. *et al.* 2018; Butler, A. and Sarlöv-Herlin, I. 2019). According to the most accepted environmental psychology ideas, the human perception of the landscape is largely influenced by evolutionary heritage (Lowenthal, D. 2007), which can be traced back to the satisfaction of basic physical needs and a sense of security (Maslow, A.H. 1943; Kaplan, S. and Kaplan, R. 1982; De la Fuente de Val, G. *et al.* 2006). Due to the former component, people are attracted to landscapes that are fertile and easy to control in terms of topography and plant coverage, as well as clear and legible. The security for *Homo sapiens* was originally provided by the landscape structure of the wooded savannah, where there is a sufficient view of the area, but there is also the possibility of hiding in the patches of trees and bushes (Appleton, J. 1975; Hunziker, M. *et al.* 2007). This so-called prospect and refuge theory also explains why the open, semi-open or closed appearance of the field of view has a particular weight in the assessment of landscape or as a waterfront, water surface that expands the spatial experience (Coeterier, J.F. 1996; Butler, A. *et al.* 2017; Häfner, K. *et al.* 2018).

Several researchers are convinced that for humans, environments with an intermediate level of complexity should be preferred, which would have provided survival benefits to our "ancestors" (Orians, G.H. 1986; De la Fuente de Val, G. *et al.* 2006). In comparison, an overly homogeneous or an extremely mosaic-like landscape both offered worse chances of survival. Some believe that even in the background of the attractiveness and popularity of the landscape, an attitude seeking safety can be discovered, but according to others, it is much more strongly shaped by learned behaviour and cultural background than aesthetic judgment (Tveit, M. *et al.* 2006; Häfner, K. *et al.* 2018).

According to the European Landscape Convention 2000 (ELC 2000) (Council of Europe, 2000), the identification and valuation of the landscapes requires the participation of the local stakeholders and inhabitants. The future strategies concerning the human environment and landscapes have to be based on collective decision and participation. Consequently, the research of landscape character and identity with participatory methods contributes to landscape management, protection and planning, as well as to several sectoral strategies, e.g., tourism, agriculture, and urbanism (Konkoly-Gyuró, É. 2013; Csorba,

P. and Csatári, B. 2017). Moreover, participation in landscape identification and valuation can strengthen the reliability and acceptance of local initiatives and interventions (Imecs, Z. *et al.* 2022; Lengerer, F. *et al.* 2022).

The focus on public participation in the ELC is in line with the general principles of democracy, as the transparency of the decision-making is a prior requirement. (Jones, M. 2007; Bándi, Gy. 2011; Semian, M. and Nováček, A. 2017; Kahila-Tani, M. *et al.* 2019; Santé, I. *et al.* 2020; Zachrisson, A. *et al.* 2021). Genuine cooperation with the stakeholders is needed in regional development, environmental conservation and landscape planning (Konkoly-Gyuró, É. 2013; Fodor, L. and Pump, J. 2016; Berki, Zs. 2018). The legal framework of participation in Hungary was constructed right after the political changes in 1989–1990 concerning environmental impact assessments, as well as local and regional development strategies and planning (Hungary's Government Decree No. 86/1993, 20/2001, 314/2005 and 314/2012.). The practice of actual participation in decision-making, however, often remains at a basic level, or the bottom-up initiatives still need to be improved. According to the National Landscape Strategy (NLS) of Hungary (2017–2026), "Only a quarter of the NGO members are active members, that is one of the lowest proportion in the EU."

The higher the level of participation stands, the stronger the landscape identity is. As the NLS states, a survey concerning the inhabitants' relationship towards their landscape needs to be included in Hungary. Our study is an attempt – at least partly – to respond to this need in the case studies of a nationwide landscape character assessment. The five-year Hungarian research project was launched in 2016 by the Ministry of Agriculture (KEHOP-4.3.0-VEKOP-15-2016-00001), and aimed at a national characterisation along with case studies at the micro-regional and local level. Online questionnaires and a series of workshops served the inclusion of local perceptions (Konkoly-Gyuró, É. and Csőszi, M. 2021). In the case studies, we used similar methods (Sain, M. and Rab, J. 2018), however, unique, innovative approaches have also been tried (Boromisza, Zs. *et al.* 2022).

The aim of the scientific project was to prepare Hungary's first landscape character map and its explanation, with the help of which even non-professional decision-makers can determine the landscape character of a given planning area. The scientific goal, therefore, served a practical purpose at the same time in the form of useful information for the landscape planning process.

Materials and methods

The classification of landscape character depends more on the subjective perception of the person than, for example, the classification of landscape types. It is difficult to reconcile scientific research with the emotional aspect, with the fact that the "acceptance" of the landscape depends on the emotional state and personality of the observer and the grade of the emotional and identity relationship of the observer with the given landscape. This can only be enhanced if a sufficiently large number of subjective opinions are considered, i.e., subjective opinions are statistically balanced.

The four micro-regional and local case studies represent the landscape diversity of Hungary and cover the majority of landscape types identified in the previous countrywide GIS assessment (Konkoly-Gyuró, É. *et al.* 2021) *(Figure 1)*. The study area designation did not follow the physical geographical landscapes (Csorba, P. *et al.* 2018). During the research, our goal was to create a perceptual landscape character map interpreted more broadly than the physical geographical landscapes, in which the attitude and sense of identity of the local people also appear. In addition, land use, nature protection, demographics, and infrastructure data used for the survey are available from the municipality.

The Tiszazug region is situated between the rivers Tisza and Körös in the central part of the Great Hungarian Plain. The Tiszazug well represents the different landscape types of the

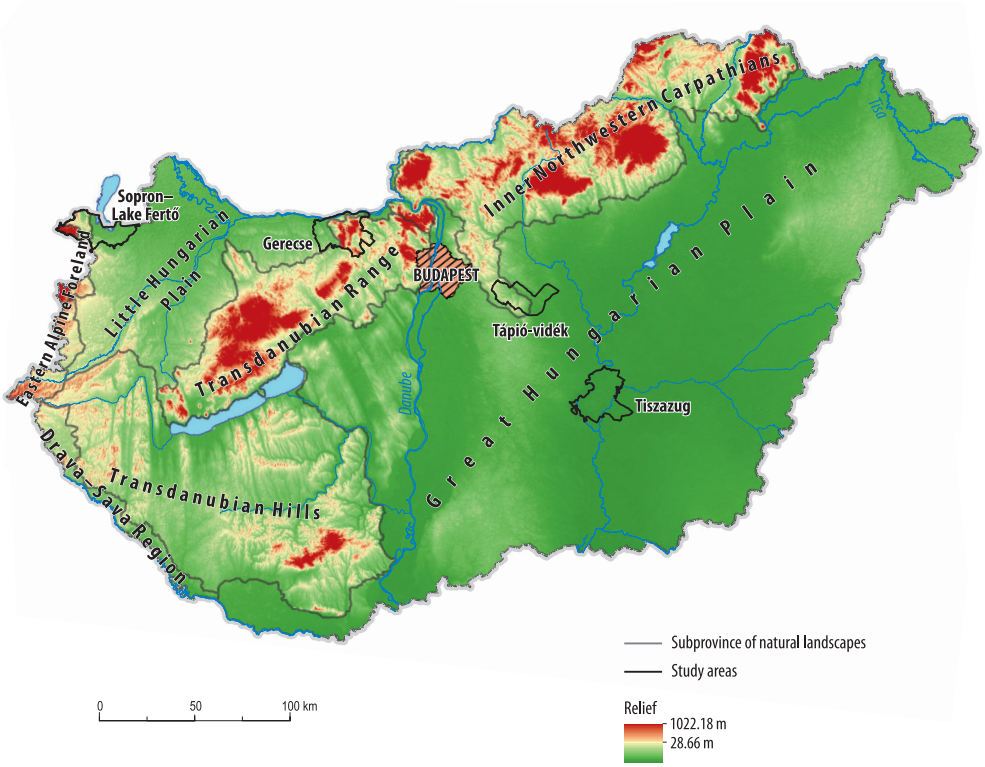

Fig. 1. Location of the four study areas in Hungary. *Source:* Authors' own elaboration based on European Digital Elevation Model (EU-DEM), version 1.1 from EEA, 2016.

Great Hungarian Plain: low alluvial plains, higher loess plateaus, and sandy hills. There are arable lands on the plateaus with chernozem soils, orchards and vineyards on the sandy soils, and minor meadows and arable lands on the low alluvial plains *(Figure 2)*. The society of the study area is in a severe demographic crisis: the population of the region decreased by 25 percent since the 1970s. Due to the decreasing and ageing population, economic activity is also declining in the region. Most industrial facilities are abandoned.

The area of Sopron–Lake Fertő region at the north-western border of Hungary consists of various landscape types between 150–650 m a.s.l. (see *Figure 2*). On the foothills of the Alps, we find forested low mountains and hills covered by vineyards and recreational areas. Between them lies an urbanised basin with the town of Sopron. The higher and lower lowlands, wetlands and shallow alkaline lake extend toward the Little Hungarian Plain. There are densely populated urban and intensively used, rural, agricultural areas with growing populations and natural and semi-natural national park (NP) zones, partly overlapping with cultural landscapes inscribed on the world heritage (WH) list. Both NP and WH areas are transboundary, extending toward Austria and more and more demand for touristic and recreational use can be detected.

The Gerecse Mountains study area has forested hills ranging between 300–600 m a.s.l. on the east, but plains with significant wetlands and arable lands also occur in the west-

ern part (see *Figure 2*). Culturally important small town, Tata and villages are located in the south-central part, while the northern edge of the study area along the Danube river and the Slovakian border is represented by mining and industrial use and partly by wine production and recreation functions. This study area involves several different landscape character types and can be subdivided into many sections. The most authentic parts are the enclosed basins of the Gerecse Mountains containing small villages of rural land use mixture with forested and steep hills and ridges.

The Tápió-vidék region study area in the Central Hungary region, in Pest county, covers nine settlements. According to the CORINE Land Cover (2018) database, arable land covers more than half (57%) of the study area. Deciduous forests and transitional forest-shrub areas account for almost 20 percent. The western part represents a hilly landscape with higher forest coverage, whereas in the eastern part, lowland landscapes are dominant, with planted woodlets, spacious agricultural lands and wetlands (see *Figure 2*). There are few nature reserves, mainly wetlands along little brooks. The settlement density is significantly higher than the national average.

Data expressing landscape mosaics, land use diversity, and ecological fragmentation

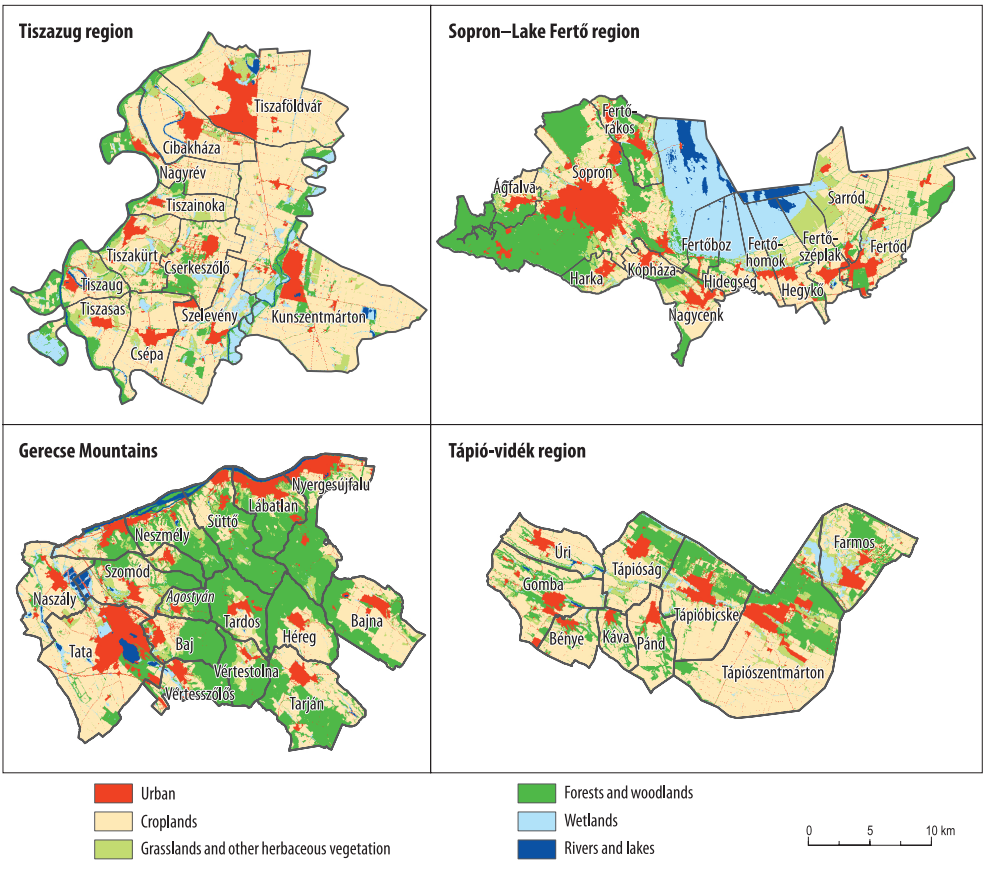

Fig. 2. Main ecosystems of the four study areas. *Source:* Authors' own elaboration based on Ecosystem Map of Hungary (project KEHOP-430-VEKOP-15-2016-00001, Ministry of Agriculture, 2019).

of the study areas (mean patch size, Shannon diversity, fragmentation) play a significant role in the character of the landscape and point out the significant differences between the individual plots *(Table 1)*. In the case of the Tiszazug, landscape mosaics are in strong correlation with large arable plots and protected grasslands around Lake Fertő. Land use diversity is highest in the Tápió-vidék region, while in the case of Gerecse Mountains the landscape is the most uniform due to extensive forests (61%). The hemeroby level shows the strongest anthropogenic influence (α – euhemerobic) in the Tápió region and the Tiszazug, where the proportion of protected areas is negligible.

The methods used, with the help of which we got to know the opinions of local residents, the methods used were significantly influenced by social and demographic conditions in the study area. For example, there are very active NGOs in Sopron (Sopron–Lake Fertő region), and there was no problem organising the discussions. However, the majority of non-governmental organisations employ intellectual workers. The character of the landscape is significantly influenced by vine production, but grape growers are hardly represented in civic forums. In contrast, the Tiszazug study area is a traditional agricultural region, but with a very passive, ageing society. It was possible mainly to reach pensioners there. All study areas have nature conservation areas, but professionals were not always active partners in the research.

During the preparative phase, we identified the local stakeholders from the different organisations and social groups. Invitees arrived from diverse branches, e.g., nature conservation, cultural heritage protection, water management, architecture, research and higher education, and various social groups. Beyond governmental and management organisations, NGOs and non-official inhabitants participated in the workshops.

The first introductory workshop gave an overview of the purpose of the entire landscape character project and the actual workshop. In the first meeting, the researcher aimed to collect basic information on the personal landscape perception of the attendees. It included the mental maps of the landscape, main characteristics, unique places, values and conflicts. The second workshop confronted the experts' views and the locals' perceptions after fulfilling the expert field surveys and the precision of the landscape character types and areas in the study areas. The third workshop focused on the landscape changes and their evaluation, as well as formulating the quality objectives for the future. The last workshop presented the results and asked for feedback from the locals about the conclusions drawn by the experts. It also had the purpose of defining the future tasks.

Various tools have been applied during the workshops:
– mental maps and short questionnaires;
– small-group round table discussions and consultations;

Table 1. Characteristics of the study areas influencing landscape character

Indicators	Tiszazug region	Sopron Mountains and Basin	Lake Fertő	Gerecse Mountains	Tápió-vidék region
Proportion of arable land, %	60.00	15.00	32.00	10.00	57.00
Proportion of forest, %	6.00	46.00	20.00	61.00	16.00
Proportion of built-up area, %	4.00	10.00	2.00	2.00	11.00
Mean patch size, km^2	2.10	1.00	2.60	1.20	1.40
Shannon diversity	1.50	1.48	1.44	1.35	1.81
Landscape ecological fragmentation	2.40	4.00	1.05	1.60	4.00
Proportion of protected area, %	5.00	42.00	35.00	41.00	5.00
Intensity of human intervention (hemeroby level)	α – euheme-robic	Mesoheme-robic	Oligoheme-robic	Mesoheme-robic	α – euheme-robic

– photo series facilitating the expression of opinion, e.g., written voting on the characteristics and preferences of photo series;
– open questions and answers: voting, e.g., about main conflicts based on a predefined list of problems;
– interactive landscaping board game;
– free association drawing;
– public participatory GIS (ppGIS) mapping of distinct characteristic elements of the landscape.

Results and discussion

Willingness of participation

Significant differences were shown in the number of workshop participants and their activity in the study areas *(Table 2)*. The low willingness and general pessimism of the Tiszazug area (5–10 participants) is an extremity. However, the number of online respondents was far higher here: 70 people filled in the online questionnaire. Another problem was that usually different people participated in the four workshops, i.e., those who joined later needed to be more familiar with what was discussed earlier.

In the Sopron–Lake Fertő region (in addition to online respondents), we had 89 participants at the workshops, 46 on-site and 43 online attendees. The majority of them arrived mainly from the town of Sopron. Only a few participants from the villages took part. For the profession, we had a more balanced picture. Representatives of nature conservation, forestry, water management, architecture, heritage protection, and interested citizens were present, but no official decision-maker attended the workshops.

In the Gerecse study area, workshops and interactive events were visited by 64 people. The most popular event was outdoors at the start point of a memorial hiking trip of locals in Pusztamarót (part of Nyergesújfalu town). The participants focused on landscapes and could easily express their impressions as part of their hiking schedule with an attitude open to landscape-related questions. The events organised indoors had only 8–10 participants on average, reaching only the most active members of landscape management. These active persons usually came from the fields of nature conservation, wildlife management, decision-making, forestry, tourism, monument protection, architecture and landscape architecture.

In the Tápió-vidék area, the personal workshops were visited by 161 people altogether. The first workshop was organised in 4 local primary schools, with the participation of 102 pupils. Organising a workshop as a school lesson means a higher attendance evidently, whereas those workshops proved attractive to local people, where they were already in their comfort zone (e.g., the workshop took place at an outdoor public swimming pool).

It must be noted that most of the workshop organisation phase coincided with the Covid-19 pandemic, partly during lockdown periods. Therefore, many events have been held in a hybrid form (on-site and online) or only online. However, due to the manifold online activities, participation was undoubtedly lower than usual.

Perception of the landscape character in the study areas

The most beautiful landscape segment for the inhabitants of the Tiszazug is the scenery with the water body in the frame of floodplain forests visible at the ferry on the Tisza river *(Photo 1)*.

In their view, the most characteristic landscape of the Tiszazug shows up from the top of the flood control dams with the mosaic-like land use structure of the protected floodplain, the dark line of the floodplain forests along the river and the steeples of the tiny villages built on the islands exempt from inundations *(Table 3)*. However, most have mentioned an oxbow lake belted with trees and reeds as a "favourite place". They consider tranquility, the nearness of nature and the tiny villages that fit into the landscape as

Table 2. Locations, dates and participants of the workshops

Location and time of the workshops, month/year	Method of data collection	Number of participants	Age of participants, years	Typical occupation of participants
Tiszazug region				
Tiszaföldvár town, Geographical Museum, 02/2020	Opening meeting personal attendance	18	16–50	Municipal employees, nature conservation specialists, students
Tiszakürt village, Arboretum, 07/2020	Personal attendance	12	30–60	Scientific experts, nature conservationists
Tiszaföldvár–Debrecen, 10/2020	Online	14	40–60	Agricultural workers
Tiszaföldvár–Debrecen, 10/2020	Online	10	30–50	Teachers, municipal employees
Tiszaföldvár–Debrecen, 04/2021	Closing meeting online	15	30–50	Employees in museums, libraries, nature conservation specialists
Tiszaföldvár–Debrecen, 06/2021	Online questionnaire	70	16–35	Students, intellectuals
Tiszaföldvár town and Cserkeszőlő village, 09/2021	Personal questionnaire	18	50–70	Pensioners
Sopron–Lake Fertő region				
Fertőd town, 05/2019	Preparative meeting personal attendance	22	30–60	Experts, landscape planners, decision makers
Fertőd town, 10/2019	Online questionnaire	70	20–70	Civil activists, experts
Fertőd town, 10/2020	Online questionnaire	68	14–18	Students specialising in tourism
Sopron town, 09/2020	Personal attendance and online	14	20–60	Civil experts
Sopron town, 10/2020	Personal attendance and online	22	40–70	Civil experts
Sopron town, 11/2020	Closing discussion online	31	30–60	Experts, planners, decision makers
Gerecse Mountains				
Nyergesújfalu town, 06/2019	Opening discussion, personal attendance	26	35–70	Experts, planners, teachers

Table 2. Continued

Location and time of the workshops, month/year	Method of data collection	Number of participants	Age of participants, years	Typical occupation of participants
Pusztamarót, memorial place, 09/2019	Personal attendance	41	15–75	Hiking tourists
Gerecse various villages, 05 and 06/2020	Online questionnaire	171	15–80	Decision makers, teachers, students, local people
Tata town, 09/2020	Personal attendance	18	35–70	Agricultural workers, engineers, landscape planner
Nyergesújfalu town, House of Culture, 09/2020	Closing discussion personal attendance and online	10	30–45	Landscape planners, nature conservation specialists, students
Bajna village, Community House, 09/2020	Personal attendance and online	13	30–65	Landscape planner, hunter, employees in museums, libraries
Tarján village, restaurant, 09/2020	Personal attendance and online	16	35–65	Decision makers, landscape planner, forester
Tápió-vidék region				
Tápióság village, 09/2019	Opening meeting personal attendance	25	6–14	Students, civil experts, specialists
Tápiószentmárton village, 09/2019	Personal attendance	27	6–14	Students
Gomba village, 09/2019	Personal attendance	24	6–14	Students
Farmos village, 09/2019	Personal attendance	26	6–14	Students
Tápióbicske village, 09/2019	Personal attendance	18	40–70	Civil
Farmos village, 07/2020	Personal attendance	10	14–40	Planners, civil experts of NGOs
Tápiószentmárton village, 04/2021	Closing meeting personal attendance	20	20–50	Civil experts, tourists
Budapest–Tápiószentmárton, 03/2021	Closing discussion online	6	30–50	Planners, specialists

Photo 1. Ferry boat on the Tisza river (upper left); Varied hilly landscape along Lake Fertő (upper right); Wetland in Farmos village (bottom left); Local tourist groups expressing their opinion about landscape elements with public participatory GIS (bottom right). *Source:* Photos taken by the authors.

particular values of the Tiszazug. They deem the abandonment of the former floodplain and sandy orchards, along with the raunchiness of the emptying villages, unfavourable tendencies. They do not consider the extensive planted poplar forests and arable lands attractive landscape elements. They judge the decreasing landscape diversity as an adverse land use change caused mainly by the abandonment of grazing and small-scale farming in the floodplains.

*Table 3. Elements and factors determining the character of the Tiszazug region landscape based on answers to the questionnaires**

Elements and factors	Very important, %	Important, %	Less important, %
Tisza river	92	5	3
Silence	80	15	5
Oxbow lakes	71	19	10
Traditional buildings	60	30	10
Vineyards, orchards	55	40	5
Great arable parcels	50	42	8
Dam	50	35	15
Thermal water and spa	50	35	15
Floodplain vegetation	45	40	15
Forest	40	45	15
Tiny villages	40	50	10
Great pastures	35	50	15
Livestock farm	15	40	45
Highway	5	15	80

*N = 88.

Citizens of the Tiszazug have appreciated floodplain meadows and wet hollows in former river beds as prominent landscape aesthetic values. They emphasised that tree plantations and close-to-natural forests with high species diversity belong to different types from the aspect of landscape character. The first one has been clearly judged destructive to the landscape. From artificial plantations, tree rows (typically Lombardy poplar and

Pseudoacacia) planted along dirt roads, vineyards and orchards have been considered beneficial landscape elements. Citizens were disappointed that plum, apple, and sour cherry orchards had almost completely disappeared from the region that had been famous for its orchards. They have acknowledged that the environment of the untended building groups with a recreation (mainly angling) function built on water banks during the 1980s has an individual character.

The most significant development perspective for the Tiszazug might be the rural water bank tourism. However, citizens can see the threats of mass tourism. They have stated that the substantial values of the Tiszazug water banks are tranquillity and nearness to nature. Therefore, the loss of these values would have a strong negative effect on their emotional association with the landscape. An excellent example of this is the local centre of thermal tourism, Cserkeszőlő, which has become an "extraneous patch" in the region and is not an actual Tiszazug location anymore, according to them.

Our interviewees are not responsible for the emptying, ageing, spoiling of infrastructure and alarming public safety in some places in the Tiszazug. However, local entrepreneurs feel that there is a minimal willingness to cooperate and to think innovatively in Tiszaföldvár and its vicinity. According to the workshop participants, there have not been – or at least not known – any coherent regional and settlement development concepts. Local governments make a bid for any financial support available without any concept. Specifically, young people have missed online content on spatial and settlement development on the homepages of settlements in Tiszazug. There is a relatively weak NGO activity in the region, which is also reflected in the fact that most of the interviewed persons could not mention any NGOs in the nature conservation or environmental protection field.

The most preferred sceneries of the Lake Fertő landscape are those which open from a high point, e.g., from a well-known lookout tower toward the lake basin or the hill range encircling the basin. This opinion highlights the significance of the extensive overview and the readability of the landscape. The most characteristic land cover types have been the grasslands and wetlands, giving the unique habitat structure of the Fertő-Hanság National Park. Built elements like streets and settlement views, showing traditional buildings, were mainly preferred. Nature, along with the traces of human hands and the baroque garden of the famous Esterházy castle, was frequently mentioned, signalling the complex approach considering humans and cultural objects as integral parts of the landscape. This view underlines the validity of the world heritage cultural landscape. The round table discussion and the online questionnaire brought the concerns of the citizens, e.g., the functional and management questions and the threats toward the traditional character.

Workshops organised in the town of Sopron highlighted the diversity of the landscapes within this small area (a fertile basin with a historic town between the forested mountains and the gentle hills with various land cover and the proximity of the lake basin and the Alps). They expressed their preference for the forested mountains, which are considered particularly valuable for the town from an ecological/climatic and recreational point of view. Vineyards, gardens and orchards (see *Photo 1*) of the surrounding hills have also been appreciated. The expanding modern residential areas, the new motorway construction, and the agglomeration of neighbouring villages endanger the latter. Respondents were proud of the history of their city and the tangible and intangible cultural heritage. They criticised the rapid expansion of the city, the change of the formerly quiet settlement due to the growing number of incomers and the new constructions without sufficient participation of the local citizens.

In the Tápió-vidék region, information was gained on favourite and characteristic sites. The buildings that currently dominate them, such as their home and school, have appeared

in large numbers on their drawings, but the natural values of the given settlement have generally been illustrated more often. This suggests that outdoor green spaces play an essential role in the lives of young people in the Tápió-vidék region. The second workshop was organised for the representatives of local NGOs (10 participants). Information was collected on the values, problems, landscape changes and locations, primarily using the community mapping method. The third workshop took place in a bird-ringing nature conservation camp with 20 local participants. The focal topics were landscape values, problems, changes and visions/expectations for the future. The results showed that the delimitation of landscape units, their interpretation, and the formulation of territorial differences appear in the minds of the population from a completely different perspective, thus, providing less input during the creation of study area/local types from national landscape character types. Locals also perceive the difference between the previously identified landscape character units, but the differences are primarily seen in the services and technical infrastructure of some settlements (built-up areas), changes in natural features along landscape boundaries, and landscape contrasts are less recognised based on the results of the present research. The popularity and awareness of natural values are very positive results and differ significantly from the findings of previous research in other study area, partly with a similar age group. The involvement of locals is beneficial in formulating the objectives of future visions for the landscape.

During the workshops, the locals highlighted some built landscape elements (e.g., castles, mansions, wine cellars), in addition to fishing lakes, wetlands (see *Photo 1*) and nature trails as characteristic features of most settlements in the Tápió-vidék region. The results of the expert studies support these observations, lakes also appear as a landscape character-defining element in many cases. However, some built features, although they may locally define the landscape and townscape, do not fundamentally influence landscape character.

In the Gerecse study area, the most characteristic landscape sceneries with marked identity for the locals are related to the Gerecse Mountains. Still, the historical town centre of Tata, with the lake and castle and the forested Danube riverbank, are sites that also create identity. Many consider them as their favourite place. Most of them recognised and considered as a problem the change of local climate, the disappearing tree alleys along the roads. Abandonment of land, demolishment of old buildings and increase in new built-up areas were mentioned among the changes and problems as well. The positive changes were the construction of bicycle paths, picnic and rest areas along the rivers, creeks and hiking routes.

Most participants liked to express their opinions about the landscape in front of an extensive analogue (not digital) map of the study area. Still, only professionals and local experts felt comfortable to localise their preferences on the map. The average locals and laypeople usually need a bit of orientation and guidance to geo-locate the changes in landscape characteristics, problems, favourite places, etc., on a map (see *Photo 1*).

Perception of the landscape character in the study areas

During the final workshop, we informed the citizens of the Tiszazug study area that the project's recommendations – according to our expectations – would be part of the new EU agricultural subvention system. It would be one of the main results of the project, carried out in the research area and the realisation of co-creation in practice. It means the support of the traditional combined land use practice of planting fruit trees between the vine rows, the maintenance and re-establishment of floodplain orchards, and an accentuated support for floodplain grazing in particular.

The fourth, closing online workshop in the Sopron–Lake Fertő region summarised the result of the previous communications

and had the purpose of discussing the co-operation and the co-dependence of the two main landscape character areas from three points of view: ecological, functional and visual. The answers reflect again predominantly an activity-related, functional, operational approach, highlighting the vineyards, the road network, transport facilities and the exchange of products. Ecologically, the connecting role of the waters, the possibly far-reaching transport of pollution, and the previously mentioned difference in the subalpine and continental areas arose. The visual aspects had a minor part to play.

The closing workshop at the Tápió-vidék study area was organised at a public swimming pool, with the participation of 20 visitors, primarily applying an interactive board game. The main goal was to involve the previously underrepresented middle-aged locals, focusing on the visions/expectations of the region's future and on the identification of the landscape units with similar characteristics.

The last workshop of Gerecse Mountains study site was organized in a restaurant with a spectacular view of the hilly landscape. The scenery contributed to the success of the discussion. Still, it could have been more motivating for the participants than an event organized on an active hiking day in nice weather outside the landscape.

Evaluating the opinions of the local inhabitants, we can confirm some conclusions from the international literature concerned with our topic:

- The opinions of the respondents about the landscape differ significantly according to their age and profession (Howley, P. 2011; López-Martínez, F. 2017; Šerý, M. and Daňková, M. 2021);
- The favourite places of the local environment are typically near-natural, refuge-like, hidden segments of the landscape (Lowenthal, D. 2007; Hedblom, M. *et al.* 2020; Belanche, D. *et al.* 2021);
- The attitude of the public toward the landscape character prefers the traditionally cultivated, mosaic-like pattern, the open scenery, often with long tree rows (De la Fuente de Val, G. *et al.* 2006; Junge, X. *et al.* 2015; Häfner, K. *et al.* 2018);
- The land use of outdoor recreation modifies the landscape structure increasingly (Butler, A. and Berglund, U. 2012; Silva, L. and Leal, J. 2015);
- The aesthetic value and the quietness of the rural landscape are more and more critical components of an ecosystem service (Angelstam, P. *et al.* 2019; Kaltenborn, B.P. *et al.* 2019).

Conclusions

In addition to the conclusions mentioned above from the Hungarian survey, we have some general remarks. Clichés – though characteristic – originating from the touristic advertisements and national park brochures – water, reed, birds, gentle hills – often appear among the preferences. Local citizens usually have an indisposition for large-scale alterations of the accustomed environment, which leads to less familiar feelings.

The various methods used (e.g., free association drawing, small group guided conversation, community mapping, interactive board game, grouping of study area photographs, ppGIS) are not only suitable for assessing people's thoughts, knowledge and emotions about the landscape but also for providing an experiential, interactive, perceptual program, can also be seen as an educational program. The reverse is also true: in addition to scientific communication, interactive games, playful tasks, and programs can also be suitable for portraying the landscape image of society/local communities. Demographic, economic and social conditions in a given study area significantly influence the selection of possible methods. For this reason, the results obtained in different study areas cannot be perfectly compared.

It should be emphasized that landscape researchers and local residents, as well as local experts, represent three different points of view. Landscape researchers strive for a ho-

listic vision, i.e., they combine measurable and mapable data with information that can be detected based on field visits and experience and use this knowledge to guide the exploration of local people's opinions. Unlike this, the local, layman's view is not spatial, they mostly think in terms of functions and activities: where, what is produced, how does transportation, commuting, trade, and tourism work. They try to link these activities to the spaces. At the same time, in the case of the landscape, vantage points are often mentioned, which means the importance of the view. In addition, point-like objects and values are emphasized. Finally, the experts have a strong sectoral approach and remain within the boundaries of their own field of expertise. They can also 'fit into the landscape' of their own subject area through functional interactions and the landscape.

The most important lesson learned from the study areas was that the workshop "has to be" an event where the locals are actively present. In this case, they behave comfortably, are open for discussion, can form individual or group opinions, and feel more free to speak up from the heart. The organizer should observe the event calendar of the region and join regular ongoing events where people are a priori present and active. An outdoor event is even better since the participants can feel the "landscape perspective" (in a picnic area, near a lookout point, or a rest area of a popular hiking route, etc.). It is not easy to invite laypeople to the office and make them speak than to go to their "desk" and discuss with them. This "desk" may be found at the market, at a fair, at a competition, at a concert, during a community day, at a campsite, in a forest school, on a picnic or any gastronomic event or during a guided landscape tour.

Landscape protection, which means conservation, reshaping or rehabilitation of the visual approach of the landscape, has seen increasing social support recently

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