

# PARTICIPATION OF LOCAL PEOPLE ON IDENTIFYING THE LANDSCAPE VALUES AND FUTURE DEVELOPMENT IN HISTORICAL AGRICULTURAL LANDSCAPES

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## Abstract

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The participation of local people is becoming a fundamental step in research of landscape, especially in areas with valuable historical structures of agricultural landscape. In the paper the focus was put to present results from 3 meetings with local people in three types of historical agricultural landscape in Slovakia including vinicultural, arable-grassland farming landscape and landscape with dispersed settlement. The meetings were aimed at evaluating the landscape values and scenarios of the most suitable landscape development for local people. The results show, that different perceiving of agricultural landscape values and desired future development varies according to the different types of pressures in studied types of agricultural landscape.

*Key words:* historical structures of agricultural landscape, meeting, landscape values, scenarios, local people

## Introduction

Present-day character of the agricultural landscape in Slovakia has been significantly influenced by 3 main processes. Intensification of agriculture occurred mainly during socialism period, while land abandonment and increased urban and tourism pressure followed political changes in 1989. Mainly intensification and collectivization of agriculture had a big impact

on the landscape and inhabitants. Huge reclamations led to significant lost of landscape diversity and biodiversity, and the relationships between farmers and agricultural landscape developed during several centuries were interrupted by elimination of land ownership. All of these resulted in negative attitudes of present generation to farming and landscape.

Within the agricultural landscape in Slovakia, the unique islands of species-rich plant and animal communities still can be found. These biotopes representing mosaics of small-scale arable fields and permanent agricultural cultivations resulted from the long-term, mutual relationship between man and the landscape. Generally we can define them as historical structures of agricultural landscape (HSAL). Due to dynamic political changes and development trends in society during the past decades, they have been marginalized and fragmented. Only few of them are utilized up to now by traditional techniques. Their maintenance depends on continuous extensive agricultural management. These areas are now becoming rare and thus highly valuable in Europe with irreplaceable ecological, cultural and historical values. Besides the traditional agricultural management skills the ecological and cultural-historical awareness of local inhabitants is one of the main requirements for maintaining HSAL.

The socio-economic changes can be considered as driving forces of most types of processes leading to changes in utilization of agricultural landscape by local people. Fernández Muñoz, Mata Olmo (2008) perceive involvement of local people as a primary step in studying future transformations in rural landscape. One way of visualizing the future development of particular landscape is through the scenarios. According to Larcher et al. (2009), the focus groups allow to test the scenarios in terms of visual landscape changes and impacts according to different policies, planning strategies, but also to preferences of local inhabitants. The precious historical landscapes are abandoned or they are under construction threats, because the society has different goals and models. Therefore it is important to recover past social relationship among communities and with the landscape, based on the discovering of local values and landscape heritage (Gherzi, Villa, 2009). In HSAL territories some inhabitants still possess ecological awareness and agricultural skills for the maintenance of these unique parts of agricultural landscape.

In the frame of the research project „Research and maintaining of biodiversity in historical structures of agricultural landscape of Slovakia“ (Dobrovodská et al., 2010) one of the objectives is the interdisciplinary research of HSAL at the local level in 3 model areas that represented three basic the best preserved types of historical agricultural landscape in Slovakia – the viticultural landscape (Svätý Jur), arable-grassland farming landscape (Liptovská Teplička) and landscape with dispersed settlement (Hriňová). The big attention was also put to the sociological research in the model areas. Besides the personal interviews there have been realized meetings with local inhabitants of different age, education and profession. For this purpose it was proposed the methodology that combined the method to find out the attitudes of local people towards the landscape values, and the methodology of scenarios to find out the preferences of inhabitants towards the future landscape development at the local level in form of meetings with local inhabitants. The indirect aim of the meetings was to increase the ecological and cultural awareness of inhabitants.

## Study areas

The model areas represent three different types of landscape with preserved historical structures of agricultural landscape. These areas are also spread in different regions in Slovakia (Fig. 1). They are as follows:

1. Traditional viticulture landscape is represented by town of Svätý Jur with an average altitude 180 m and cadastral area 3 986 ha. The agricultural collectivization was carried-out in the mid of the last century. The town is situated in the vineyard region on the foothills of the Malé Karpaty Mts, and about 14 km north from the capital of Slovakia – Bratislava. Mainly due to vicinity of Bratislava the number of inhabitants is continuously increasing (e. g. in 1999 there were 4 420 inhabitants compared to 5 167 inhabitants in 2009) (Statistical office SR, 2009). During the several centuries there were created mosaics of vineyards, orchards and terraces on steep slopes and huge stone mounds. Some of them remained till now and represent an illustration of traditional wine growth. They are mainly endangered by urban pressure and land abandonment, both closely linked with unfavourable market conditions for wine production.
2. The landscape with dispersed settlements represents the town of Hriňová in the central part of Slovakia with average altitude 669 m. The size of its cadastral area is 12 649 ha. There have never been collectivization and reclamations of agricultural land. Besides the forest complexes the landscape is created by mosaics of small-block strip meadows, pastures, arable lands, orchards, terraces, stone mounds and heaps and several dispersed settlements of Hriňová municipality. The main threat for the landscape is abandonment because of lack of job opportunities in the region resulting in migration of people from dispersed settlements to towns. Number of inhabitants has during the last 10 years decreased from 8 392 inhabitants in 1999 to 7 821 inhabitants in 2009 (Statistical office SR, 2009).
3. The mountain landscape with traditional agriculture is well represented by the village of Liptovská Teplička located in the northern part of Slovakia within the Nízke Tatry Mts



Fig. 1. Localisation of the model areas.

with average altitude 920 m, the cadastral area 9 870 ha and number of inhabitants 2 359 (Statistical office SR, 2009). Despite of agricultural collectivization in the 70s of the last century, there are still preserved terraced fields of arable land and grasslands, the terraces and stone mounds of high biodiversity (Ružičková, Dobrovodská, 2006). The historical landscape is threatened mainly by construction of ski facilities resulting from increased winter recreation and by agricultural land abandonment resulting from life style changes of local people.

## Methodology

In each of the model areas (Svätý Jur, Hriňová and Liptovská Teplička) was realized a workshop with local inhabitants during the February and March 2009. The number of participants in each study area was as follows:

- in the town of Svätý Jur – 26 participants,
- in the town of Hriňová – 13 participants,
- in the village of Liptovská Teplička – 18 participants.

The composition of meeting participants was variable – there were involved farmers, representatives of local self-governance in individual municipalities, and representatives of state nature protection, the university students, teachers, representatives of cooperative farms, young, middle age and also retired people. The workshops were aimed at introducing the research project and through the participation of local people to gain the input information about their perception of landscape values and desired future landscape development. This was done through two steps.

In the first step the attitudes of stakeholders towards the landscape values at the local level were examined through the group work (in each group were 4–7 people) that was aimed to answer following questions:

- What part of landscape in your cadastral area is according to you valuable/non valuable?
- Which place in your cadastral area is important for you (from the personal, tourist, cultural etc. point of view)?

Participants had to their disposal aerial photograph of the study area in format A0 with marked landmarks such as hills, churches, boundaries of the cadastral areas, etc. for their better orientation. After the discussion each group put the green post-it notes with explanations to the places on the map where they thought the landscape is valuable in terms of scenery, natural, cultural or personal values. On the other hand the pink post-it notes were put to the places on the map, which participants considered as non-valuable (Fig. 2). Participants were asked to consider all particular cadastral area, as one of the objectives of this research was also to find out, if local people are along the values of other types of landscape such as forest or urban landscape also conscious about the values of traditional agricultural landscape. In later evaluation only responses regarding the agricultural landscape were considered (Tables 1, 2). In each group was one facilitator to enhance and to guide the discussion.

The second step was aimed at scenarios evaluation. For each of the study area was elaborated three visual scenarios (Figs 3, 4, 5) using photo montages (software Adobe Photoshop 7.0):

- The first scenario focused on the process of increased intensity of land utilization. In the model areas the threats resulting from increased intensification differ, thus the scenarios were derived on the base of the highest current pressure to agricultural land separately for each model area with the assumption of threats continuation. In the town of Svätý Jur the scenario was adjusted to the threat coming from the housing sprawl resulting in build up area. In the village of Liptovská Teplička the scenario of tourism with built up area was presented and the scenario of agricultural intensification was presented to stakeholders in Hriňová resulting in monotonous agricultural landscape.
- The second scenario was aimed at extensification leading to abandonment of agricultural land and subsequent overgrowing. This scenario is likely to be happened in all three study areas, while among the most threatened belong mainly the most valuable historical structures of agricultural land such as terraces, mosaics of small

fields of arable land and pastures, old orchards and vineyards, etc., that are of great importance from biodiversity, landscape diversity, or cultural values point of view.

- The third scenario was adjusted to support sustainable agricultural use with preservation of most valuable biotopes in rural landscape, which are still alive, but are rapidly disappearing.

Actual state (Fig. 6) and three scenarios were shown to participants of the meetings and were asked to evaluate them individually according to the question: “Does this scenario respond to your expectations to the future development of the landscape?” The participants chose among four options:

- the scenario respond to my expectations entirely,
- the scenario respond to my expectations partially,
- the scenario does not respond to my expectations,
- the scenario partially does not respond to my expectations.

the stakeholders also had the opportunity to explain, why the particular scenario is most suitable for them.

Although the method of scenarios is widely used among the researches e.g. in Poloniny area by Bezák, Petrovič (2006) and Soliva et al. (2008), it must be taken into account, that the choice of scenarios can be partially influenced also by graphical processing of photographs.

## Results and discussion

The responses from participants about the values of agricultural landscape were sorted according to categories expressing cultural-historical, aesthetic, natural, social or economic values. Some of the stakeholders expressed their opinion also about the values of urban or forest landscape. These responses were not included in the evaluation (Tables 1, 2).

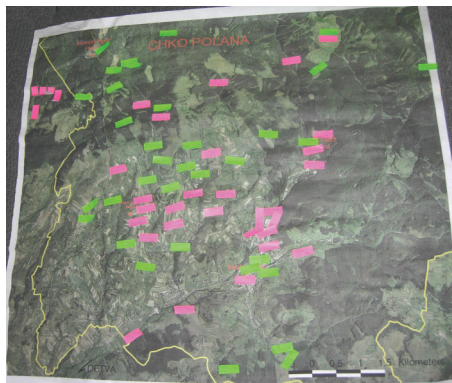


Fig. 2. Example of the group work in the meeting with local inhabitants in Hriňová representing dispersed settlement. Areas with positive landscape values are on the aerial photograph marked with green postit notes, and areas with negative landscape values are marked by pink postit notes.

Table 1 documents the values of agricultural landscape in three model areas. The landscape values that were identified by participants in all model areas are natural values

Table 1. Values of agricultural landscape in the model areas.

Agricultural landscape values	Model area		
	Svätý Jur	Hriňová	Liptovská Teplička
<b>Aesthetic</b>	Panoramic views		Panoramic views Aesthetic value of landscape
<b>Natural</b>	Old species of fruits trees	High biodiversity	Clean natural sources (air, water) A lot of medical herbs in nature
<b>Cultural-historical</b>	Preserved old wells Preserved old orchards Preserved viticulture landscape with old wood pole vineyards Preserved remnants of terraces	Preserved traditional architecture in disperse settlements Preserved folk traditions and folk art (basketry, sculpture, make off Slovak shepherds' long pipes and wooden painted crosses) Preserved traditional agriculture with sheep and cows breeding and cheese and milk production Preserved hand mowing and bounds	Preserved traditional architecture (wooden houses, potatoes cellars, hay lofts) Preserved folk traditions and particular dialect Preserved bounds that are significant from biodiversity and landscape stability point of view Mowed meadows in autumn to clean the bounds by cooperative farm
<b>Economic</b>	Production of local wine sort	Occurrence of ski resort important for tourism development Starting agri-tourism development Establishment of self-help farm (306 people)	Tourism still not disturbing the life in the village (ski resort) The owners did not sell the land under the ski lift, but gave it to the rent to Tatry cableways, thus the requests of owners must be respected The planned yard sell e.g. slaughter meet Ecological agriculture with establishment of cooperative farm (agri-environmental support)
<b>Social</b>	Emotional attitude to the traditional agricultural landscape	Emotional attitude to the traditional agricultural landscape	Good interpersonal relationships Young people stay in the village, they want to preserve traditions Emotional attitude to the traditional agricultural landscape

mainly connected with biodiversity or clean air or water sources, and cultural-historical values that are related to preserved traditions, architecture and folk art, but also to agricultural landscape with extensive management, which helps to preserve traditional

Table 2. Conditions negatively influencing the agricultural landscape values in the model areas.

Conditions negatively influencing landscape values	Model area		
	Svätý Jur	Hriňová	Liptovská Teplička
<b>Natural</b>	Erosion from motorcycling	Excessive water erosion Air pollution from plant and housing heating and water pollution from wastes Grass burning every year Spreading of invasive species	
<b>Cultural-historical</b>	Neglected and by meliorations destroyed wells in vineyards	Dried up wells in sparse settlements	Not possible to preserve old hay lofts and shepherd's huts Low utilisation of local wells Decline of bounds mowing, that is expensive and impossible to keep without subsidies, thus the landscape loses its character
<b>Economic (including tourism, sport, transport, industry and house building)</b>	Driving the motorbikes destroys vineyards Unsuitable transport corridors results in landscape fragmentation. Non-coordinated individual house construction in former vineyards Some „investors“ buy in the agricultural land to sell it prospectively Waste dump contaminates soils and waters Low prices of grapes on the market	Bad economic situation Many overnight opportunities in sparse settlements, but they are without sewage Cottagers built fences which hinder passage of people and cattle	Driving the motorbikes destroys fields and grasslands Waste dump contaminates waters
<b>Agricultural</b>	Neglected vineyards in the property of the Slovak Land Fond perceived as an intention for potential concern of developers Many neglected vineyards are result of the vicinity of Svätý Jur to Bratislava with attractive employment opportunities Non-functional drying canals with result of rushes growth	Water ditches are not restored Abandonment of agricultural land Strict protection in the protected area of water reservoir results in restrictions for agricultural use	Strict protection in the protected area of water reservoir results in restrictions for agricultural use Abandonment of agricultural land High decline of sheep breeding in private

Table 2. (Continued)

Conditions negatively influencing landscape values	Model area		
	Svätý Jur	Hriňová	Liptovská Teplička
<b>Social</b>	Stirring approach of local inhabitants is missing Newcomers do not have relation to vineyards Unknown land owners	Not settled up owner's relationship. High migration from dispersed settlements to towns, young people are not interested in farming High level of unemployment (26%), low work opportunities	High population of Romas, that are low educated and unqualified for most positions Young people want to stay, but the problem is with building plots, that are not settled among families, and are not possible to sell.
<b>Political</b>	Bad agri-environmental policy EU policy supporting vineyards liquidation	Bad agri-environmental policy	Bad agri-environmental policy Ecological restrictions

viticulture landscape with old wood pole vineyards or bounds that are significant from biodiversity and landscape stability point of view. Among economic values were mainly identified possibilities for tourism development and production of local agricultural crops. Social values were related to good interpersonal relationship and the willingness of young people to preserve traditions.

In all model areas among the conditions negatively influencing agricultural landscape (Table 2) were perceived economic, social, agricultural and cultural-historical conditions. Landscape values negatively influenced by agriculture were perceived mainly in the area of abandonment of agricultural land. In all three areas the abandoned are mainly the most valuable elements of agricultural landscape such as terraces, small fields, vineyards or mosaics of grasslands and non-forest woody vegetation that are rapidly disappearing. Another problem is connected with nature protection resulting in strict restrictions for agricultural management. Negatively were perceived also elements of infrastructure. Among the conditions influencing the landscape values the social situation differ the most among the model areas. In the town of Svätý Jur the participants have missed stirring approach of local people to preserve the vinicultural landscape, which is much threatened by the vicinity of the Bratislava. Hriňová have faced mainly the high migration from dispersed settlements to towns and unconcern of young people to farming. Finally in Liptovská Teplička the problem with staying of young people is mainly due to unsettled building plots among families and high migration of Romas to the village representing a low educated and mostly unqualified work-force even for agricultural positions. From the economic condition point of view the most expressive is perceiving of Svätý Jur inhabitants. It is mainly unsuitable transport, no-coordinated individual houses construction and problems of EU financial support of liquidation of vineyards with regard to the common market mechanism.





Fig. 3. Sustainable viticulture will be supported.



Fig. 4. Abandonment of agricultural land.



Fig. 5. Housing sprawl.



Fig. 6. Current state.

The objective of using the method of scenarios was to finding out the preferences of local people about the future agricultural landscape development. All model areas are threaten by several factors, from which the most distinct are the extinction of traditional management and farmland abandonment on one hand and urbanisation, or intensive agricultural management or tourism on the other. Below are given examples of scenarios that were used during the workshop in Svätý Jur.

Scenario „support of housing sprawl/intensive agriculture/increased tourism development“ represents the biggest threat to the traditional agricultural landscape. Non-regulated urbanisation is the most likely scenario in Svätý Jur, which is under pressure of Bratislava fast development. It would result in irreversible loss of biodiversity and extinction of historical anthropogenic forms of relief such us terraces, walls and also wells in vineyards. In Hriňová and Liptovská Teplička the housing sprawl is less probable, however the agricultural landscape particularly in Hriňová could be potentially endangered by intensive agriculture resulting in large scale management, water erosion, and pollution of waters and soils by pesticides and fertilisers. The most likely scenario for Liptovská Teplička is winter tourism development and the destroying of most valuable terraced fields around the village by construction of ski facilities. According to this scenario the landscape will loose its diverse character and its natural and cultural-historical values.

Scenario „abandonment of agricultural land“ reflects the abandonment of vineyards and permanent grasslands. Many of them are nowadays in different stage of succession. Mainly in Svätý Jur the abandoned vineyards are perceived as potential building plots with high economic value for potential developers.

Scenario „support of sustainable agricultural use“ supposes to recover the sustainable agricultural management in the model areas that is currently retreated. In Svätý Jur the optimal combination should be the use of small scale viticultures for ecological production of local high quality sorts of grapes and large scale production of common types of wine. In Hriňová and Liptovská Teplička the scenario assumes mainly the maintenance of extensive

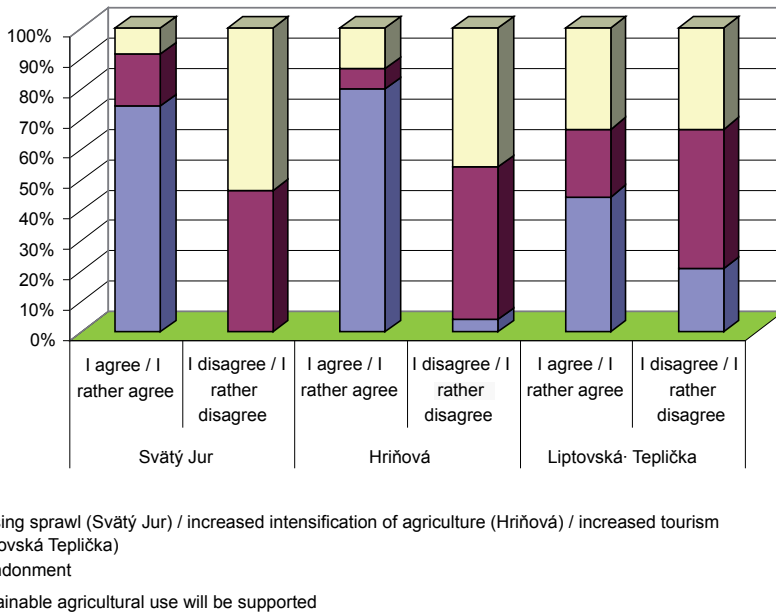


Fig. 7. Scenarios of desired future development as perceived by local people.

agriculture and ship breeding. This should be done through optimal utilisation of agri-environmental schemes that support sustainable use of agricultural landscape. Necessary is also to promote regulations of the occupancy of agricultural land by urban development, that is problematic mainly in Svätý Jur.

Scenarios of desired future development as perceived by local people are expressed in Fig. 7.

## Conclusion

Local people are an important source of knowledge for future generations about the utilization of the landscape by optimal way, especially in the areas with valuable HSAL, which represent witnesses of traditional land utilization and life style of former generations. Therefore the landscape can not be properly evaluated without the participation of local inhabitants. They were involved in the research on landscape values and desirable future development in three model areas that represented vinicultural, arable-grassland farming landscape and landscape with dispersed settlement. The results showed that participants perceived both main threats of extinction of traditional agricultural landscape – the intensive use of agricultural land and the abandonment, however with different level of concern.

From both used methods resulted, that in the viticultural landscape represented by Svätý Jur local people prefer the agricultural utilisation of vineyards, but they also admit the possibility of abandonment of vineyards. They consider the abandonment as better solution compared to construction and housing sprawl. According to participants the abandoned vineyards are possible to restore, but the build up area can not be turn back to vineyards. The concerns of local inhabitants from high construction activities are well-founded, as the town of Svätý Jur is already under high pressure of developers.

In Hriňová that represents the landscape with dispersed settlement the inhabitants were in most favour to maintain the traditional agricultural management. On the other hand as highest threat they considered the abandonment of agricultural land, that is mainly brought about the high migration of young people from disperse settlements into towns and their unconcern about farming.

Liptovská Teplička represents the grassland farming landscape with one of the best preserved terraces and bounds of high biodiversity. Similarly as in Hriňová the concerns of local people are focused to the leaving of young people, which is among the other reasons caused also by disintegrated parcels that are not settled among families so it is difficult to buy the building plots in the village. On the contrary to previous model areas the inhabitants perceived the continuing enlargement of the village and touristic centres more positively, however with the limits that would not disturb the life in the village itself.

In all model areas the abandonment of agricultural land was considered as a big threat to the agricultural landscape development. According to Agger et al. (1988) the abandonment will result in biodiversity and landscape diversity decrease and disappearing of small biotopes and particular structures of traditional agricultural landscape. In Liptovská Teplička particularly characteristic bounds are the most threatened by abandonment, as according to stakeholders their mowing is 5–6 times more expansive that mowing of meadows and not possible to maintain without the subsidies.

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