

## PARTICIPATORY GOVERNANCE MODEL IN THE POĽANA BIOSPHERE RESERVE

Katarína Vitálišová<sup>1</sup> and Mária Vavrušová<sup>2</sup>

### Abstract

*The systematic development of civic engagement and partnership with stakeholders within the biosphere reserve is a key to support the sustainability and resilience of the territory and development of its potential. The aim of the paper is to identify the authorities of the Poľana Biosphere Reserve and its relations with stakeholders, developed based on the concept of participatory governance and results of empirical research. The theoretical part of the paper explains the concepts of biosphere reserve and participatory governance. The practical part is focused on the analysis of the current state of the governance of the Poľana Biosphere Reserve and their legislative anchoring and functioning. The paper presents the results of surveys conducted with residents and selected stakeholders in the territory. The conclusion identifies opportunities to develop and strengthen community and stakeholder engagement within the Poľana Biosphere Reserve and propose a model of its governance.*

**Keywords:** Participatory governance, Engagement, Poľana Biosphere Reserve

## INTRODUCTION

A biosphere reserve is an area linking social and ecological systems, and its existence creates a space for understanding, managing change and interactions between these systems, which we should mutually reinforce (UNESCO, 2022; Lepeška, 2012). A biosphere reserve is also an internationally recognized site that is nominated by a national government but designated under the Man and Biosphere (MAB) intergovernmental programme by the Director-General of UNESCO, based on a decision of the MAB International Coordinating Council. Each biosphere reserve belongs to the World Network of Biosphere Reserves of the MAB Programme, which is a unique international tool for cooperation and exchange or sharing of good practices, knowledge, expertise, experience or effective promotion of

<sup>1</sup> Faculty of Economics, Matej Bel University in Banská Bystrica, Tajovského 10, 974 01, Slovakia, katarina.vitalisova@umb.sk, ORCID-ID: <https://orcid.org/0000-0002-5830-4862>.

<sup>2</sup> Faculty of Economics, Matej Bel University in Banská Bystrica, Tajovského 10, 974 01, Slovakia, maria.vavrusova@umb.sk. ORCID-ID: <https://orcid.org/0009-0006-3169-254X>.

biosphere reserves worldwide. In the context of the policy given by UNESCO, the biosphere reserve is a unique unit of cultural and natural landscape, in which man and his activities play an important role. The task is not only to preserve the natural heritage of the territory, but also cultural components in the form of traditions and a lifestyle of the people in the given territory, or their behaviour and socialization within the society belonging to this territory (UNESCO, 2023).

Biosphere reserves are known as a model territories or best practices examples where the coexistence of man and nature is developed with implementation of sustainability principles as well as reflecting the goals of Agenda 2030 (UNESCO, 2022; Bridgewater, 2002; Van Cuong, Dart, Hockings, 2017; Lepeška, 2012).

The value of a territory is created by its potential. In relation to economic theory, we can say that the definition and potential of biosphere reserves are based on the economic value theory of Randall and Stoll (1983) as a comprehensive analytical framework for the economic valuation of nature and landscapes (Mayer, Job, 2014). Biosphere reserves are goods with exceptional potential and positive externalities such as promoting sustainable development of the territory, strengthening the resilience, empowerment, and connectivity of the local community to the territory, strengthening biodiversity conservation and ecological and climate resilience, strengthening the resilience of the economy and others (Kettunen, ten Brink, 2013). If these goods, which are sensitive regarding the environment and the phenomenon of overcrowding, are to be wisely used, consumed and not devalued, it is necessary to strategically manage and plan wisely for the development of their potential. Development of biosphere reserve potential is important not only in preservation of its biodiversity. This development is also important for supporting the government, involvement of stakeholders and local community. The added value is also the appreciation of the importance of natural and cultural heritage for the development of the state, its policies, and its conservation, which contributes to ecological sustainability. Bridgewater (2002) states that ultimately, information gained from scientific research must be incorporated into meaningful management practices, and management must have a greater influence on research priorities. Both research and management need to be people-centred and directly linked to policy formulation. Ecological sustainability is a human-created ideal and will only be achieved through appropriate human behaviour. Biosphere reserves, as special places for people and nature, are a key tool for developing a truly sustainable system.

Examples from around the world show that biosphere reserves have real potential for social, economic, and environmental development, but that this potential is not being sufficiently exploited (Makenzi, 2013; Nautiyal, et al., 2001; Carius, 2016). Grossmann (2006) also explains that biosphere reserves indicate positive outcomes for quality of life, economic development and environmental status and generally depend on a combination of economic, social and political requirements. It is associated with their development that should be achieved with requirements and emphasis on all areas - economic, social and environmental (Wheeler, 2009; Brandon, et al., 2005; Kearney, et al., 2007; Eizenberg, Jabareen, 2017; Schädler, et al., 2011; Lyon, Hunter-Jones, Warnaby, 2017; Hák, Janoušková, Moldan, 2016; Wager, 1995; Weaver, 2005; Riensche, et al., 2015; Deveci, et al., 2022; Donald, 2008; Reyer, et al., 2012; Wiber, et al., 2004; Orenstein, Shach-Pinsley, 2017). Their development is influenced precisely by the potential of biosphere reserves.

Essential for development of biosphere reserve's potential is a support of the government and the engagement of stakeholders falling directly within or outside the territory, or by other words participative governance of the territory. Stoll Kleemann, et al. (2010, in Walk, Luthardt, Nölting, 2019) state that, in biosphere reserves, participatory governance and shared decision-making are very important because local communities and producers are key actors in biosphere reserve management. By promoting the collection and integration of knowledge, expertise and experience from different stakeholders, the issues in the biosphere reserve community can be addressed and contribute to its solution based on the principles of participative governance and collaboration. Belcher et al. (2016, in Walk, Luthardt, Nölting, 2019) add that, biosphere reserves need to understand how these participatory processes can include collaboration between communities, partners, and universities. Universities can, due to their scientific credibility, play a catalytic role by initiating and reflecting on the processes. With such an approach, universities would offer a space for research, participation but also a place for sustainability learning (Walk, Luthardt, Nölting, 2019).

Currently, to the issue of participative governance in biosphere reserves is not paid adequate attention. That is why the aim of the paper is to identify the authorities of the Poľana Biosphere Reserve and its relations with stakeholders, developed based on the concept of participatory governance and results of empirical research. The paper contributes covering the identified gap and explores the participative governance approach on the example of Biosphere Reserve Poľana as an example of good practice that can be a source of inspiration for other Slovak or foreign biosphere reserves.

## **1 STAKEHOLDERS AND PARTICIPATORY GOVERNANCE FOR DEVELOPING BIOSPHERE RESERVES**

Active engagement of stakeholders is an important driver of biosphere reserve potential development.

Stakeholder is any group or individual who can influence or is affected by the achievement of the organization's objectives and are influenced by them. Stakeholder is also a participant in the human process of joint value creation that may influence or be affected by policy decisions or place a claim on an organizations or other entity's attention, resources, or outputs. Through public participation, which Quick and Bryson (2016) explain as participation in governance which involves the direct or indirect involvement of stakeholders in decision-making about policies, plans or programs in which they have an interest, stakeholders may interact with government agencies, political leaders, nonprofit organizations and business organizations that create or implement public policies and programs. While participation may be limited to discrete acts (e.g., a town hall meeting or citizen survey) or described by a set of practices (e.g., convening public hearings or other types of consultation processes), participation more generally is the process of engagement in governance (Pirozzi, 2019; Quick, Bryson, 2016; Freeman, 2010; Bryson, 2004).

In order to develop the potential of biosphere reserves, it is necessary to manage these territories through an inclusive and participatory approach and bring attention to the importance of involving local communities, stakeholders and civil society in the management. Stakeholder participation and involvement in the management of biosphere reserves has many positive effects on sustainable development, particularly in terms of strengthening and developing social capital, increasing efficiency in the promotion and implementation of decisions in which stakeholders have participated, increasing accuracy in the use of a diversified knowledge base, strengthening co-management, or strengthening stakeholder accountability to the territory in the process of its management and conservation (Mugisha, Jacobson, 2004; Berkes, 2009; Bouamrane, et al., 2016; Sandersen, Koester, 2000; Guillaume, Charrouf, 2016; Dressler, et al., 2010; Stringer, et al., 2006; Sudtongkong, Webb, 2008; Yaffee, et al., 1996; Ruiz-Mallén, et al., 2015; Lebel, et al., 2006; Hahn, et al., 2006; Ansell, Gash, 2008; Pretty, Ward, 2001; Beierle, Konisky, 2001; Berghöfer, Berghöfer, 2006; Colfer, 2010; McCool, Guthrie, 2001; Stoll-Kleemann, O'Riordan, 2002). Wali, et al. (2017) claim that the global environmental conservation community recognizes

that the participation of local communities is essential for the success of conservation initiatives. Berkes (2004) also focuses on the importance of local communities and civil society in conservation efforts and advocates for collaborative and community-based approaches and claims that community-based conservation is based on the idea that if conservation and development could be simultaneously achieved, then the interests of both could be served. Fritz-Vietta, Röttger and Stoll-Kleemann (2009) highlight the need to leverage local knowledge and to reconcile the different formal and informal rules for active and responsible involvement of concerned community members. The authors Sisto, et al. (2022) explain that the main strength of this approach lies in its intersectionality and its applicability to solve complex problems whenever different actors with different interests come into play. UNESCO in the Man and the Biosphere Programme also emphasizes the importance of involving local communities, indigenous peoples, civil society and stakeholders in the design and management of biosphere reserves. UNESCO's publications and guidelines often highlight the role of civil society in achieving the objectives of biosphere reserves (UNESCO, 2022). Van Cuong, Dart and Hockings (2017) claims that the stakeholder participation and collaboration, governance, management, and awareness and communication are one of the most influential factors in the success or failure of the biosphere reserves. It is necessary to build a stable and responsible management system with inclusive governance, strong participation and collaboration and human resource allocation. They also add that it is all rather obvious, but it is difficult to achieve without commitment to the biosphere reserve concept by the governance authorities.

Stakeholder participation and collaboration is also crucial for good governance, whether in formal or informal structures. This ensures coordination that facilitates dialogue, participation and collaboration in the planning and management of biosphere reserves. However, the establishment of informal governance by local communities or NGOs could be undermined in their functioning because they lack authority (Brunckhorst, 2001; Van Cuong, Dart, Hockings, 2017). Belcher et al. (2016, in Walk, Luthardt, Nölting, 2019) add that biosphere reserves need to understand how these participatory processes can include collaboration between communities, partners, and also universities which can, due to their scientific credibility, play a catalytic role by initiating and reflecting on the processes. With such an approach, universities would offer a space for research, participation but also a place for sustainability learning (Walk, Luthardt, Nölting, 2019). Studies also point to the importance of involvement of scientists and volunteers in

the development, management and planning of biosphere reserves because it also contributes to the success of biosphere reserves by providing new information and evidence for planning, decision-making and policy-making (Sabatier, Jenkins-Smith, 1993; Van Cuong, Dart, Hockings, 2017; Schultz, Duit, Folke, 2011; Schultz, Folke, Olsson, 2007). Other studies indicate that participation overall increases social acceptance and support, leading to improved management of biosphere reserves (Stoll-Kleemann, Welp, 2008; Stoll-Kleemann, De la Vega-Leinert, Schultz, 2010; Albert, et al., 2012), but government commitment, involvement, and understanding of the role of participation at the local level is also critical to the success of biosphere reserves (Van Cuong, Dart, Hockings, 2017). In practice, intended outcomes are only achieved as a result of participation and negotiation between stakeholders and institutions (Bouamrane, 2007). Many studies point to the need for government involvement in biosphere reserve planning, and highlight the positive impacts, particularly in the context of co-management, which requires the involvement of both communities and governments (Carlsson, Berkes, 2005; Cash, Moser, 2000; Berkes, 2007). The negative impact of government involvement in biosphere reserve planning has implications for the quality of the plan in terms of the ability of management to protect ecosystems (Brody, 2003). A top-down approach to biodiversity conservation makes the process of biosphere reserve management more difficult, as people-centred management and conservation is more likely to succeed than strict protection by an authoritarian government (Stoll-Kleemann, Welp, 2008; Schultz, Lundholm, 2013; Schultz, Duit, Folke, 2011; Wilshusen, et al., 2002). Despite the positive or negative impacts of government involvement, the need for government support for sustainable development of biosphere reserves is inevitable (Van Cuong, et al., 2018; Engelbauer, 2023; Wager, 1995).

Several articles and studies point to the need for participatory and adaptive governance of biosphere reserves to guide the conservation and sustainable use of ecosystems with stakeholder participation. The exchange of information should lead to an understanding or agreement expressed by a shared vision. Shared management should be learning-oriented, using multiple sources of knowledge to solve problems. It should also include monitoring, interpreting and responding to feedbacks and take into account scientific knowledge (Plummer, Armitage, 2007; Folke, Colding, Berkes, 2003; Reid, et al., 2006; Plummer, Fitzgibbon, 2007; Olsson, 2007). Studies have shown that lack of participation can lead to conflicts between local residents and governing bodies, but this can be mitigated by involving local residents (Rao, et al., 2003; Wissen, et al., 2008; Speelman, et al., 2014).

## 2 MATERIAL AND METHODS

To the main sources of the secondary data used in literature review and mapping the situation in Slovak biosphere reserves belong monographs, studies, programmes, regulations, statutes, plans, strategies, projects, UNESCO methodological materials, or relevant laws on the issue of biosphere reserves processed by method of abstraction.

The primary research was realised from November 2022 till the end of 2023. The source of primary data were personal interviews with representatives of the Poľana Biosphere Reserve (manager and coordinator of biosphere reserve) and local stakeholders (3 local entrepreneurs, 1 representant of local action group, 5 members of civil association Coordination Council of the Biosphere Reserve Poľana). The collected data differentiated by the type of stakeholders. The semi-structured interviews with representatives of the Poľana Biosphere Reserve were oriented on the identification of the structure of stakeholders, the challenges and problems in cooperation with stakeholders, special attention was oriented on the work with local citizens. The semi-structured interviews with the local stakeholders evaluated the forms of cooperation with the representatives of biosphere reserves, the fields of cooperation, as wells as the challenges in the next development of cooperation.

The second part of primary data were collected by questionnaire survey among citizens of Poľana Biosphere Reserve, because they are the key stakeholders of biosphere reserve (Alford, 2002; Pestoff, 2009, Popoola, 2016). We aimed at researching citizen level of awareness about the biosphere reserves, which benefits or barriers it brings and how they perceive the cooperation with the representatives of biosphere reserves. Respondents were asked the following closed questions with yes or no options:

- Do you know that you live in the Poľana Biosphere Reserve?
- Do you know that the Poľana Biosphere Reserve is a UNESCO site?
- Have you heard about the UNESCO Man and the Biosphere Programme?
- Do you know that the Poľana Biosphere Reserve is managed by the Poľana Biosphere Reserve Coordination Council, which is made up of important stakeholders from the region?
- Do you know the statutes and objectives of the Coordination Council of the BR Poľana?
- Would you like to become a member of the BR Poľana Coordination

Council? (If yes, they could write the e-mail address to be invited for the meeting of the coordination council).

Respondents were also asked the closed or semi-closed question with multiple choice:

- How do you perceive the fact that you live in a Poľana Biosphere Reserve? (benefit x obstacle x no attitude).
- How do you perceive the existence of the Poľana Protected Landscape Area? (barrier for development of the territory x opportunity for development x no attitude). The respondent could also explain his/her answer.
- What do you perceive as priorities for development in the area of the Poľana Biosphere Reserve? (indicate the three most important from the list of 13 development areas identified by on the research of territorial potential)
- How do you assess 38 different areas of life in the area of the Poľana Biosphere Reserve on the 5-point scale from satisfied to unsatisfied? Respondent could also explain his/her evaluation. For the paper we selected just answers about the participation and governance of biosphere reserve.

Our research sample, which was deliberately selected, consisted of 101 respondents. The research sample was tested by Chi-square test as representative ones by gender (Chi-square test - Asymp. Sig. = 0,136) and age (Chi-square test - Asymp. Sig. = 0,051). The survey was conducted electronically via Qualtrics Survey, shared via email, social media and other channels. To process the collected data, we used basic mathematical and statistical methods. For testing and data analysis we used the SPSS program and MS Excel application.

The third part of the primary data were the information from the mayors of municipalities within the Poľana Biosphere Reserve collected by electronic survey. By quantitative questionnaire survey aimed at collecting direct data from mayors of municipalities within the territory of the Poľana Biosphere Reserve and its surroundings, we analysed the evaluation of the quality of functioning and cooperation in this area. Our research sample consisted of 17 respondents. The questionnaire consisted of 16 questions and was conducted electronically, shared mainly via e-mail. Respondents were asked the following closed questions with yes or no options:



- Is the municipality you represent a member of the BR Poľana Coordination Council?
- Are you familiar with the statutes of the BR Poľana Coordination Council?
- and semi-closed questions with yes or no options:
- Do you cooperate on projects aimed at the development of the area with the Poľana Biosphere Reserve?
- Do you perceive this cooperation as working and beneficial?
- Do you have areas of cooperation with the Poľana Biosphere Reserve included in your strategic documents or projects?
- Are you interested in cooperating in the future on projects aimed at the development of the Poľana Biosphere Reserve?
- Do you perceive this cooperation as workable and beneficial?
- Has being a member of the Coordination Council of the Poľana BR helped you in your community?

Respondents were also asked the semi-closed questions with multiple choice:

- How do you consider the fact that your village/town is in the area of the Poľana Biosphere Reserve? (positive x negative x no attitude).
- How do you perceive the interest in the participation of local citizens? (positive x negative x no attitude).
- What forms of participation of local citizens in the development of the area have you used so far? (questionnaire, poll, public meetings and discussions, individual interviews with citizens, electronic voting or other).
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Respondents were also asked the open questions:

- Do you perceive any specific problems that undermine this cooperation?
- Do you perceive any specific problems that hinder the development of the biosphere reserve area?
- With which entities do you cooperate the most that are part of the Poľana Biosphere Reserve (various entrepreneurs and non-profit organizations in the area, other mayors and mayors of municipalities falling within the area, etc.)?
- How do you see the functioning of the Poľana Biosphere Reserve in the future?
- What could be improved in the functioning of the Poľana Biosphere Reserve from your point of view?

We analysed the data based on the methods of analysis, abstraction, comparison, and basic mathematical-statistical methods. We used MS Excel to test and analyse the data. These data were supplemented with data from the Statistical Office of the Slovak Republic, official information published on the website of the Poľana Biosphere Reserve, municipalities belonging to the Poľana Biosphere Reserve.

### **3 POLANA BIOSPHERE RESERVE AS A GOOD PRACTICE IN PARTICIPATIVE GOVERNANCE**

The next part of the paper is focused on the analysis of the current state of the bodies of the Poľana Biosphere Reserve and their legislative anchoring and functioning and the current state of community and stakeholders' engagement in Poľana Biosphere Reserve. We present the results of surveys conducted with local residents and selected stakeholders in the territory.

#### **3.1 Legislative anchoring and functioning of bodies in Poľana Biosphere Reserve**

In Slovakia, there are 4 biosphere reserves, three of them are overlapped with the national parks and one is a Protected Landscape Area Poľana, an object of our research, so also their bodies correspond to these legal forms. Currently, there absents a legislative definition of biosphere reserves and its management bodies in the Slovak Republic.

The legislation of the Slovak Republic mentions the biosphere reserve only in one sentence within Act No. 543/2002 Coll. on Nature and Landscape Protection where is stated that „biosphere reserve is classified as an area of international importance.“

Only the term National Park is defined in terms of Article 19 (1) and (2) of the same Act, as: “a larger area, generally with an area of over 10,000 ha, predominantly with ecosystems substantially unchanged by human activity or in a unique and natural landscape structure, constituting the most significant natural heritage, in which nature conservation is superior to other activities.” At the same time, in the case of the National Park, “the aim of its protection is the preservation or gradual restoration of natural ecosystems, including ensuring the undisturbed course of natural processes in at least three-quarters of the National Park area, and this aim is ensured by the zonation of the National Park.” However, a national park is not identical

to a biosphere reserve or a protected area, the difference being primarily in the objectives of these recognised areas.

The same situation is with the definition of a protected landscape area. The same act, in article (18) defines it as a larger area, usually with an area of more than 1,000 ha, with scattered ecosystems, important for the preservation of biological diversity and ecological stability, with a characteristic appearance of the landscape or with specific forms of historical settlement.

Biosphere reserves have their objectives defined in a broader context than those of national parks or protected landscape area, which are bound directly by law to preserve or gradually restore natural ecosystems, including ensuring the undisturbed flow of natural processes (Act No. 543/2002 Coll. on Nature and Landscape Protection).

Except problems with missing legislative in conditions of the Slovak Republic there is also problematic issue an institutional system of biosphere reserves. The management of biosphere reserves reflects the recommendations of the UNESCO guidelines (2021). By them, the management staff of biosphere reserve structure should consist of a biosphere reserve manager/director and at least five executives in the context of the biosphere reserve functions managed by a supervisor within each biosphere reserve. This staff should balance all three functions of the biosphere reserve, i.e. logistics, conservation and development. A functional coordinating council consisting of key stakeholders from the private, non-profit and public sectors should be actively involved in decision-making and public policy formulation. There should be a coordinator above the level of biosphere reserves who will directly communicate with the responsible Ministry(ies).

In Slovakia, the role of coordinators to the tasks of biosphere reserves of the Slovak Republic are Ministry of Environment and the Ministry of Foreign and European Affairs of the Slovak Republic. However, their tasks to biosphere reserves are not clearly defined. In the next text, we focus on the analysis of the management bodies in Poľana Biosphere Reserve, which is illustrated in Figure 1.

**Figure 1:** Model of Poľana Biosphere Reserve bodies



*Source: own elaboration*

As it was mentioned, the Poľana Biosphere Reserve is a protected landscape area. It has no legislative form and is under the umbrella of the State Nature Conservancy of the Slovak Republic. The biosphere reserve is headed by a manager/director who is responsible for the implementation of the strategic development documents and the fulfilment of the functions of the biosphere reserve. In case of the Poľana Biosphere Reserve, the manager is the same person as a direct of a Protected Landscape Area Poľana. General manager of the Poľana Biosphere Reserve, Vladimíra Fabriciusová, was awarded the Michel Batisse Award for the best management of the biosphere reserve in 2017 for her management and work based on an inclusive approach and cooperation with stakeholders. This prize represents an award of global significance.

The representatives and employees of the Protected Landscape Area Poľana are also very important drivers of development of biosphere reserve. The implementation of the agenda in the form of specific tasks is entrusted to them according to their professional orientation. At the same time, they are also coordinators of cooperation between local stakeholders in the biosphere reserve. They bring together experts, partners, but also elected representatives of the municipalities falling within the area through the Coordination Council of the Poľana Biosphere Reserve.

The Coordination Council is a basic prerequisite for a participatory approach to the management of the development of the area. The Coordination Council ensures the development and implementation of the management plan, business plan, marketing and communication strategy of the biosphere reserve. It discusses jointly solutions to the problem areas of the territory's development and actively involves the relevant stakeholders of the territory in the decision-making processes. To strength its position and to get the legal power, the Coordination Council of Poľana Biosphere Reserve fulfilled the requirements for the establishment of a civil association registered by the Ministry of the Interior. All members of coordination council became the members of civil association and can influence equally the activities of association. Members of coordination councils take part also in the advisory committees for selected areas of the development in the biosphere reserves (e.g. social services, education, etc.). They are advisory bodies for decision-making.

Currently, the Coordination Council of the Poľana Biosphere Reserve through regular meetings and projects associate 43 representatives of local governments, entrepreneurs, NGOs and citizens (ŠOPSR, 2022; Vitálišová, Vavrúšová, Piscová, 2023; Okániková, eds., 2014).

The created management structure of Poľana Biosphere Reserve covers the legislative gap of biosphere reserve definition and its management (Vitálišová, Miňová, Vaňová, 2021). The civil association „coordination council“ can enter into the legal relationships, be a recipient of funds or donations, can be an active partner in development activities or comment the development intents within the territory and thus to influence the economic, social and environmental development of the biosphere reserve.

The good practice from Poľana Biosphere Reserve presents also one of the possible solutions for absence of a long-term strategic approach to biosphere reserve economic and social development. The reason for this problem is the lack of knowledge of the governing bodies and their insufficient capacity, but also the desire to care for, plan and develop these areas. Biosphere reserves lack important strategic documents for development, management, marketing communication and methodological procedures, as well as procedures for assessing the quality of management and functioning of the biosphere reserve, which is carried out through a periodic evaluation every ten years. Another problem is the lack of understanding of biosphere reserve areas in relation to the socio-economic aspects of development, with an emphasis on biodiversity conservation in synergy with civil society and stakeholders (Vitálišová, Miňová, Vaňová, 2021).

### **3.2 Analysis of current state of stakeholders' and community engagement in Poľana Biosphere Reserve**

Currently, the area of the Poľana Biosphere Reserve is characterized by a relatively low population density and is one of the least urbanized areas in Slovakia (1,96 inhabitants/km<sup>2</sup>) (Fabriciusová, Slamová, Jančura, 2015). Most of the 400 permanent inhabitants are pensioners, the employed commute to industrial enterprises in larger cities (e.g. Hriňová, Detva, Zvolen, Banská Bystrica, Brezno), only a few inhabitants work in forestry or agriculture. Currently, 3 900 inhabitants live permanently in the transition zone. According to data from the Statistical Office of the Slovak Republic, the population of the Poľana Biosphere Reserve is ageing, which may be a consequence of the departure of inhabitants and potential parents from the area. The reason for the phenomenon of recent years, which is the departure of young inhabitants from this area, is mainly due to the low number of job opportunities in this area and the supply, especially in the western part of Slovakia. Recently, we have also seen an increase in interest in the development of tourism, which could have an impact on the weak and unattractive supply of jobs, or on increasing the level of skills of local residents in the services offered and thus raising their overall level.

From the social and cultural point of view, the community of the Poľana Biosphere Reserve can be characterised by own production methods of tradition products, traditional crafts, the manually skilled people, traditional way of life in scattered settlement and specific cultural habits (costumes, songs, ceremonies, etc.). However, the ability to preserve and develop these potential fights with the challenges as the outflow of young people, the predominance of the older population, the growing proportion of the silver population, the loss of interest in traditional crafts and the lack of generational change (Vitálišová, Vavrúšová, 2023; Vitálišová, Vavrúšová, Píscová, 2023).

As a part of the analysis, we focused on exploring the awareness of the Poľana Biosphere Reserve and its existence by local people. We asked on it through 5 questions, whether the inhabitants know that they live in the Poľana Biosphere Reserve, whether they know that it is a UNESCO site, whether they have heard about the UNESCO Man and the Biosphere Programme, whether they know that the Poľana Biosphere Reserve is managed by the Coordination Council of Poľana Biosphere Reserve and whether they know its statutes.

Through the answers of 101 respondents of the questionnaire we came to the findings that 94,9% of the respondents know that they live in the Poľana Biosphere Reserve. 78,2% of respondents know that the Poľana Biosphere Reserve is a UNESCO site, but only 47,5% of respondents have heard of the UNESCO Man and the Biosphere Programme. 61,4% of respondents do not know that it is managed by the Coordination Council of Poľana and 79,2% of respondents do not know its statutes. The last finding, we report in this area is that 13,9% out of 101 respondents would like to become a member of the Coordination Council of the Poľana Biosphere Reserve.

The issue of awareness of the Poľana Biosphere Reserve was explored also through questions how local people perceive the fact that they live in this reserve and how they perceive the existence of the Protected Landscape Area Poľana and their priorities for development in this area. The first question how local residents perceive the fact that they live in the biosphere reserve was responded as follow. 77,2% of respondents perceive this fact as a benefit or positive thing. Within this area, we also asked about the perception of the existence of the Protected Landscape Area Poľana by our respondents. 7% of respondents perceived its existence as a barrier to the development of the area and 77% as an opportunity for the development of the area.

Respondents perceive the existence of the Protected Landscape Area Poľana as an opportunity for development, mainly because of the development of tourism in a friendly way with an emphasis on traditional uses and ways of living in the territory, because without the preservation of natural and cultural values, they perceive the territory as uninteresting for tourism and housing. Furthermore, the respondents gave reasons such as the development of agro-tourism with nature trails, the possibility of sports activities, the development of the overall territory and its infrastructure, the creation of job opportunities, the increase of interest in an attractive territory which has a "quality mark" by its existence. Respondents perceive the opportunity in the existence of the Protected Landscape Area Poľana also in the increased emphasis on the care and protection of the unique territory, or in the way of education and the link between education and nature. We also asked about priorities for development in the biosphere reserve area, with 15% of respondents perceiving the biggest priority to be supporting employment in agriculture, 11% of respondents seeing the reconstruction of water and sewage systems as the biggest priority, and 10% of respondents perceiving environmental protection and reconstruction of roads and trails as the biggest priority.

Within this analysis, we came to findings that directly affect the behaviour of community in the territory. Based on the assessment of the different areas of quality of life by local citizens, we found that respondents consider the quality of involvement of residents in public life in Poľana Biosphere Reserve with a value of 26,8% out of 100%<sup>3</sup>, the quality of cooperation of actors in the territory with a value of 57,5% out of 100% and the quality of work of elected representatives of cities and municipalities with a value of 57,8% out of 100%.

The second part of the analysis is focused on the stakeholders' engagement in the Poľana Biosphere Reserve represented by the mayors of the villages and cities within Poľana Biosphere Reserve.

Stakeholders of the biosphere reserve that fall within its territory can be understood as various educational institutions, farmers, foresters, municipalities, representatives of civil society, or business entities. In the Poľana Biosphere Reserve there are various educational and cultural institutions covering different levels of education or cultural and social activities. These institutions are located in the villages where they offer their services to the local population. Within the territory of the Poľana Biosphere Reserve there are 9 kindergartens, 15 primary schools, 4 art schools and 3 secondary schools. In the vicinity of the area there are various universities and research and scientific workplaces, such as the Matej Bel University in Banská Bystrica, the Technical University in Zvolen, the Academy of Arts in Banská Bystrica, the Faculty of Health Care, the Slovak Medical University, or the branch of the Slovak Academy of Sciences - Institute of Earth Sciences in Banská Bystrica (ŠOPSR, 2022).

Stakeholders of the biosphere reserve area represent the state administration, local action group or higher territorial unit. The state administration influences mainly the decision-making process of local policy. Local Action Group Podpoľanie is an important partner in financing of the regional activities. The important stakeholder is the higher territorial unit Banská Bystrica Region, which prepares various strategic documents of the region, but also decides about the financing of the key regional investments. In the context of stakeholder analysis, we focused on the analysis of the evaluation of the quality of functioning and cooperation in the area of the Poľana Biosphere Reserve by the mayors of the municipalities falling within its territory and its surroundings.

Within the first area, we investigated the functioning of the Poľana Biosphere Reserve on the basis of four questions. The first question asked

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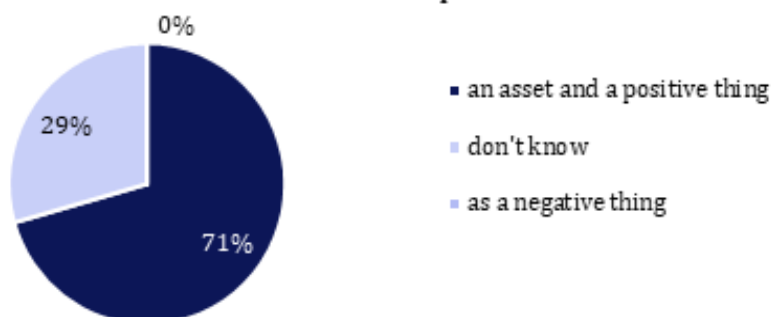
<sup>3</sup> 100 % is the highest rate of involvement



how mayors perceive the fact that their municipality falls within the area of the Poľana Biosphere Reserve. As you can see in graph 1, 29% of the respondents considered this fact as an asset and a positive thing, none of the respondents considered this fact as a negative thing and 71% chose the option don't know, of which 33% justified their answer by saying that they do not fall under the area.

**Graph 1:** Perceiving of the fact that municipality belong to the area of the Poľana Biosphere Reserve by the mayors

**How do you perceive the fact that your municipality belong to the area of the Poľana Biosphere Reserve?**



*Source: own elaboration*

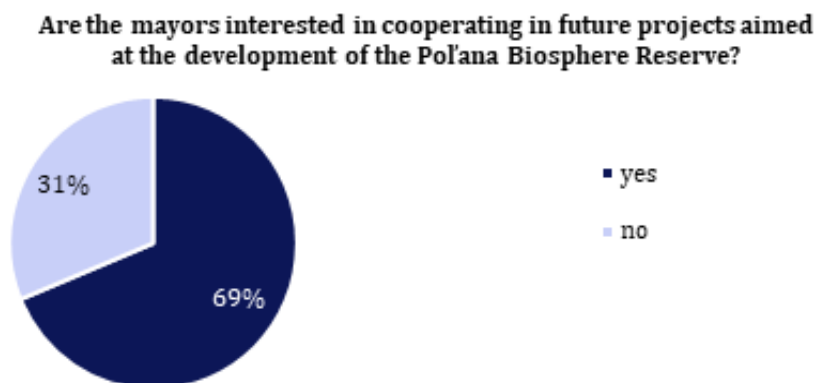
The second question asked whether mayors perceived any specific problems that hinder the development of the Poľana Biosphere Reserve area, where mayors mentioned the low support of local farmers and artisans by the state, or the use of examples of good practice from abroad. The penultimate question within this area was how mayors see functioning of Poľana Biosphere Reserve in the future. Among the answers we noted that they consider its functioning as a positive, benefit or a good thing that should work in the future, e.g. also in the field of tourism (difficult access for tourists to the area due to the presence of brown bears). The last question in this area was what could be improved in the functioning of the Poľana Biosphere Reserve from the point of view of the mayors. Among the answers to this question, we noted an increase in promotion, cooperation with citizens, information or involvement of state authorities.

In the second area we were interested in cooperation with the Poľana Biosphere Reserve. The first question in this area was whether the mayors cooperate with the Poľana Biosphere Reserve on projects aimed at the development of the area. 18% of respondents answered this question

positively and 82% negatively. Examples of areas or projects aimed at the development of the territory in which they cooperate with the Poľana Biosphere Reserve were given as: awareness raising, education, or work with youth. 40% of the respondents perceive this cooperation as working and beneficial thanks to the participatory management model and good communication, 60% of the respondents do not perceive this cooperation as working and beneficial, but they did not justify their answers. However, respondents gave reasons such as: lack of understanding on the part of the Ministry of the Environment of the Slovak Republic or pointing to good examples from abroad as specific problems that undermine this cooperation. Another question in this area asked whether the municipalities have included in their strategic documents or projects areas related to cooperation with the Poľana Biosphere Reserve. Exactly half of the respondents answered positively, citing documents such as the Economic and Social Development Programme and the Spatial Plan for the town and municipality. The next question explored whether the mayors are interested in cooperating in future projects aimed at the development of the Poľana Biosphere Reserve.

By the graph 2, 69% of the respondents answered positively, and in their opinions, these would be in areas such as support for traditional farming, tourism development, hiking, cycling and cycle paths, education and awareness, or again, dealing with the brown bear overpopulation situation. Within this area, we also asked questions of interest to the Coordination Council of the Poľana Biosphere Reserve.

**Graph 2:** Mayors' interest in cooperating in future projects aimed at the development of the Poľana Biosphere Reserve

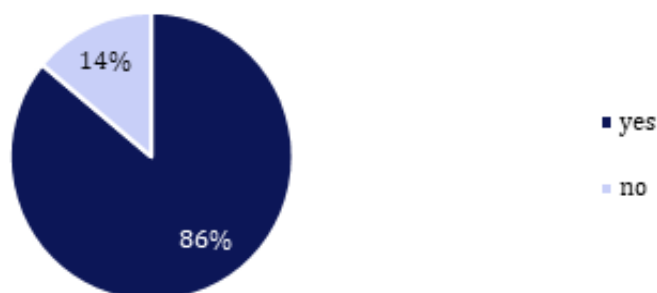


*Source: own elaboration*

Through the questions, we found that 41% of the respondents we surveyed are members of this council, as well as 41% of respondents are familiar with its statutes, and as you can see in graph 3, 86% of those who indicated that they are members of the council said that their community and municipality has been helped by being a member of the council. Reasons given were coordination procedures, finding common solutions and problems, and working together to regulate development.

**Graph 3:** Opinion of mayors' on being a member of the Coordination Council of the Poľana Biosphere Reserve

**Has it helped you and the municipality to be a member of the Coordination Council of the Poľana Biosphere Reserve?**



*Source: own elaboration*

The third area of research was exploring collaboration with other entities within the Poľana Biosphere Reserve. Within this area, we asked which entities the mayors cooperate with the most that are part of the Poľana Biosphere Reserve. The answers to this question were mainly: other mayors, other municipalities, or the civil association at Poľana Biosphere Reserve. 71% of respondents perceived this cooperation as working and beneficial. The fourth and final area was civic engagement in the community. In this area, we asked how mayors perceived the interest in local citizen participation. 56% of respondents perceived this interest as an asset and a positive thing, none of the respondents perceived this interest as a negative thing, and for 44% of the respondents we recorded the answer don't know. Within this area, we also asked about the forms of local citizen participation in the development of the area that respondents have used so far. Respondents mainly use public meetings and discussions, individual interviews with citizens, but also questionnaires. More detailed results you can see in table 3.

**Table 3:** The forms of local citizen participation, which mayors in the development of the area use

<b>Forms of local citizen participation</b>	<b>Once a year</b>	<b>Two to three times a year</b>	<b>More than three times a year</b>
<b>Questionnaire</b>	35%	-	23%
<b>Poll</b>	12%	-	23%
<b>Public meetings and discussions</b>	35%	67%	8%
<b>Individual interviews with citizens</b>	12%	33%	23%
<b>Electronic voting</b>	6%	-	23%

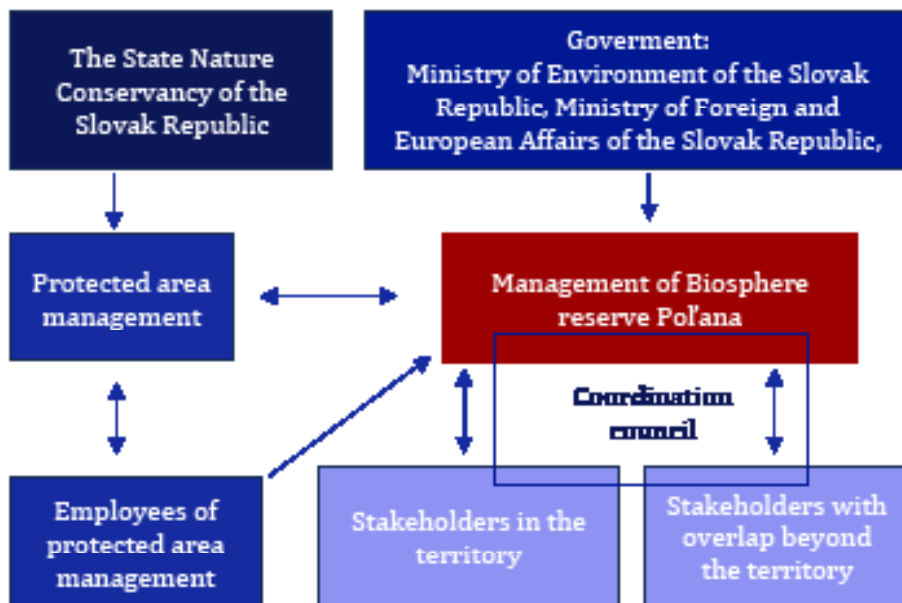
*Source: own elaboration*

## **CONCLUSIONS**

The Poľana Biosphere Reserve faces several significant challenges, primarily related to inadequate legislation, weak institutional frameworks, lack of long-term strategic development. There is insufficient recognition of the reserve's importance, both locally and nationally and low local awareness which hinders biodiversity conservation efforts and community engagement. In the context of the analysis of the current state of local community and stakeholders in the territory and in terms of the position of the Poľana Biosphere Reserve as an actor in the development of the potential, we can confirm that it is inevitable for the biosphere reserve to be in direct interaction with actors and stakeholders from different levels.

Key recommendations include empowering local communities to acknowledge their heritage and responsibilities, enhancing education and awareness about the reserve, and improving communication strategies. Additionally, fostering partnerships among local stakeholders and developing an ecotourism concept could generate economic benefits and improve local conditions. Effective management and participatory approaches are essential to ensure the sustainability of the reserve while preserving its natural-geographic, socio-economic, socio-demographic and innovation potential.

**Figure 2:** Model of Poľana Biosphere Reserve stakeholders



*Source: own elaboration*

The important actors of biosphere reserves and thus also of the Poľana Biosphere Reserve are mainly the Ministry of the Environment of the Slovak Republic, the Ministry of Foreign and European Affairs of the Slovak Republic. In the Slovak Republic, the first working model of the governance, on the examples of Poľana Biosphere Reserve present figure 2. It covers the managerial relationships as well as the relationships with the local stakeholders.

In the biosphere reserves, it is important to build a territory where people are aware of it and their value defined by their cultural and historical uniqueness, but also the common future and their interactions with this territory and act collectively and responsibly to form a prosperous community in harmony within the biosphere through participatory governance. In the paper, based on the analysis of the research results, we propose a set of recommendation how to foster the engagement of the stakeholders and thus to contribute to the potential development and raising awareness about the importance of biosphere reserves. Because the civil society is a bridge between different stakeholders, including local communities, businesses or researchers.

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