Slovenská ekologická spoločnosť pri SAV
v spolupráci
s Ústavom krajinnej ekológie SAV, v. v. i., Bratislava
a Katedrou ekológie a environmentalistiky FPVaI UKF v Nitre

EKOLOGICKÉ ŠTÚDIE

Ročník 16 **Číslo 1/2025**

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TATRANSKÁ BIOSFÉRICKÁ REZERVÁCIA AKO VZDELÁVACIE MIESTO PRE TRVALO UDRŽATEĽNÝ ROZVOJ (SLOVENSKO)

THE TATRA BIOAPHERE RESERVE AS AN EDUCATIONAL SITE FOR THE SUSTAINABLE DEVELOPMENT (SLOVAKIA)

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Abstract: Environmental education, its connection with practice and education for sustainable development have been frequently criticized in Slovakia in recent years. Since the main goal of biosphere reserves is to effectively use the territory of the reserve as a "living laboratory" for sustainable development and education, we decided to conduct research in one of them and find out how environmental education is carried out in educational settings and to what extent the biosphere reserve is used in the teaching process. The issue of the Tatra Biosphere Reserve (BR) involvement in environmental education is complex and faces several structural, institutional and perceptual challenges. In a questionnaire survey, we addressed 402 environmental institutions operating in the territory of the biosphere reserve. Of these, only 14.21% responded to the survey, mostly kindergartens and primary schools. The topic of biosphere reserves is absent in environmental education, cooperation between the TANAP Administration and educational institutions is weak, and there is no functional educational network in the territory whose members would cooperate with each other. Therefore, we recommend incorporating the topic of biosphere reserves into the formal teaching process.

Key words: environmental education, education for sustainable development, biosphere reserve MAB UNESCO, quality education, outdoor education.

Introduction

In recent decades, people have been trying to find a balance between human and economic well-being, cultural traditions and respect for the earth's resources. Biosphere reserves (BRs) are proving to be suitable sites for achieving such a balance. They are highly recognized as educational areas for sustainable development in various ecological, social and economic contexts (Habibah et al., 2013) and touch the lives of more than 250 million people worldwide (EdUBiOMeD, 2022). BRs form a global network, with individual BRs serving as local pilot sites for education, research and demonstration of approaches to

conservation and sustainable development (UNESCO, 2007). A particular responsibility given to BR is to function as a learning laboratory or learning site (UNESCO, 2014), where evidence-based knowledge, iterative and practical principles are used to ensure sustainable development (UNESCO, 2012).

In the 60s of the last century, environmental education (EE) was identified and three basic dimensions developed: (1) education about the environment; (2) education in the environment; and (3) education for the environment (Scoullos, 2013). Since the 80s of the last century, education for sustainable (ESD) development began to develop and the program UNEP also inspired the creation of many non-governmental organizations (NGOs) for the protection of the environment. UNESCO identifies education as a lifelong process for both young people and adults (EuroMAB, 2005), which seeks to balance human and economic well-being with cultural traditions and respect for natural resources.

Many foreign studies (UNESCO, 2015, 2022) recommend ESD directly in BRs. This type of education means that in each BR it is necessary to initiate a number of educational and training processes for the people who live and work there, as well as for visitors and tourists (German National Committee MAB (Ed.), 2005). However, there is no agreed and well-defined educational destination in the world that offers a holistic orientation and knowledge of a particular place. Generally, each BR should introduce social learning (McCarthy et al., 2006), ecosystem approach (Tippett et al., 2005) and systems thinking approach (Nguyen et al., 2009; Nguyen & Bosch, 2013), learning tourism destination or tourism learning area (Schianetz et al., 2009), care approach (complexity, aesthetic, responsibility and ethics), edutourism and experiential learning (Ministry of British Colombia, 2009) to foster the learning of sustainable development.

In some countries, EE continues to develop and remains popular because people can identify with it more than ESD (e.g. USA) (Zelenaj, 2013). In other countries where a government has joined an international group of nations committed to ESD, these groups adopt ESD strategically or pragmatically without necessarily changing their EE practices. UNESCO is the United Nations leading agency for ESD and is responsible for the implementation of ESD for 2030 (UNESCO, 2022). UNESCO supports countries to develop and expand educational activities that focus on sustainability issues such as climate change, biodiversity, disaster risk reduction, water, the oceans, sustainable urbanisation and sustainable lifestyles through ESD.

By joining the intergovernmental scientific project Man and the Biosphere UNESCO, the Slovak Republic undertook to support science, research and education with an emphasis on building partnerships at the local, regional and international level. However, building a system for the advancement of

sustainable development is very difficult, it is necessary to constantly develop ESD, which is based on healthy EE (UNESCO, 2015). In Slovakia, the EE cross-curricular topic is implemented as part of the learning content of teaching subjects, through separate projects, seminars, teaching blocks, courses, etc., and it can form a separate teaching subject from the framework of optional (available) lessons (State Educational Programs, n.d.). The variety of answers in the questionnaire survey confirmed, that teaching EE depends on the knowledge and enthusiasm of teachers. Although BR managers strive for the development of ESD, they are also directors of protected areas and prioritize the protection of the protected area over the BR.

Based on the questionnaire survey, we found that the educational network between the TANAP Administration and educational institutions is not created. Although the BR strives for ESD, this type of education needs to be strengthened by the state and non-state organizations. BRs would also need their own permanent staff.

Methodology

Study area

The bilateral Tatra BR, established in 1993, is covered by two national parks on both sides of the border between Poland and Slovakia. The core area represents the alpine character of the highest Carpathian mountain range. More than 40,000 inhabitants live in BR, the vast majority of whom live on the Slovak side (MAB, n.d.). The tourism sector provides the main form of employment, as well as forest management, which affects the buffer and transition zones. In the Slovak part, core territories occupy 49,663 ha, protection zones 23,744 ha, and transition zones 39,844 ha (Figure 1).

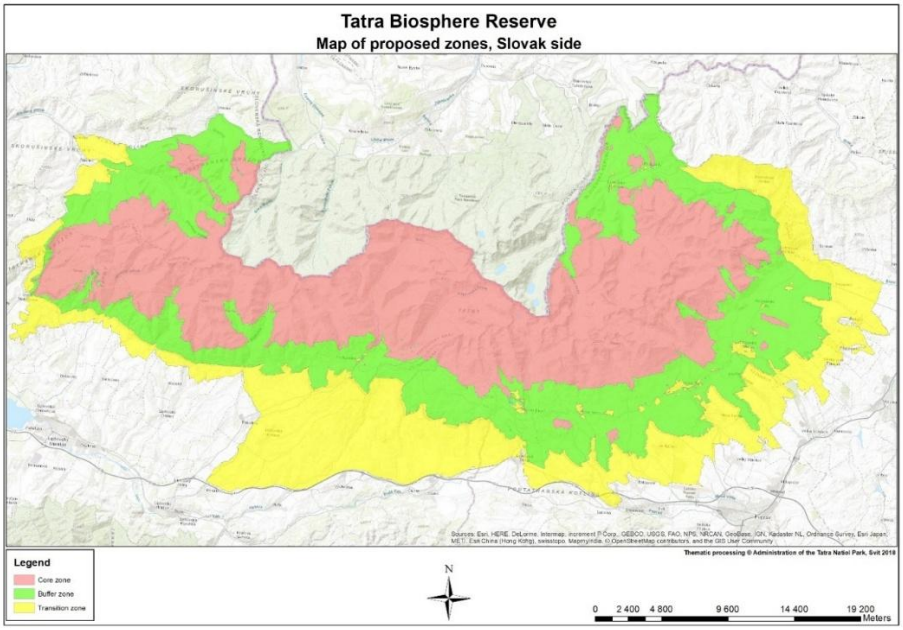

Figure 1. Proposed zones in the Tatra Biosphere Reserve, Slovak side (Source: TANAP Administration).

Educational institutions in the BR

According to the Register of Regional Education (Ministry of Education, Science, Research and Sport of the Slovak Republic, 2022), there are 402 educational institutions in the BR, including 168 kindergartens, 137 elementary schools, 31 special elementary schools, 34 elementary art schools, 37 high schools and 49 leisure centers.

Research methods

Sociological survey

The sociological survey was carried out in the form of Google electronic questionnaires, which were sent to the directors of the institutions in the period from 12th of December 2024 to 1st of April 2025. The questionnaire survey was carried out in all educational institutions located in the BR, which were searched according to the Register of Regional Education (Ministry of Education, Science, Research and Sport of the Slovak Republic, 2022). The questionnaire is attached as Supplemental online material (Supplement 1). The results of the questionnaire survey were processed using the Excel program.

The cooperation of universities, colleges and scientific institutions with the TANAP Administration is determined by agreements on partnership cooperation with the Slovak MAB UNESCO Committee. Due to GDPR (General Data Protection Regulation) implementation, the results of cooperation mentioned in the agreements are not processed in the contribution.

SWOT analysis

SWOT analysis is a starting point for formulating a strategy that will be created as a match between the internal capabilities of the evaluated entity and its external environment (Černaj, 2024). When processing the research objectives, we proceeded as follows:

1. Analysis of the internal environment – strengths and weaknesses, which are defined and written into the matrix;

2. Analysis of the external environment – opportunities and threats, which are defined and written into the matrix;

3. Evaluation (scoring) of individual parameters within the quadrants: a scale from +1 to +5 was used for strengths and opportunities, a scale from -1 to -5 for weaknesses and threats;

4. Supplementing the analysis with a weight coefficient - the sum of the weights in the individual quadrants must be equal to 1, the weights are in the range from 0.00 to 1.00 (the more important the parameter, the higher the coefficient);

5. Multiplying the weight value with a numerical rating

6. Summary of the internal part of the SWOT analysis (strengths and weaknesses);

7. Summary of the external part of the SWOT analysis (opportunities and threats);

8. Calculation of the final balance: opportunities are subtracted from threats – a positive number indicates that the given organization has the prerequisites to successfully implement the activity for which the analysis was performed;

9. Determination of the strategy based on the numerical values of the indicators (S, W, O, T).

Results

Participation in the questionnaire survey

Although we contacted all 402 educational institutions in the territory of the BR, we received a response from only 14.21% of them. We received answers to the questionnaire survey from 57.14% special elementary schools, 20.00% kindergartens, 13.14% elementary schools, 8.82% art elementary schools, 5.41% high schools, and 3.33% leisure centers. Approximately the same number of elementary schools (total 47%) as kindergartens (48%) participated in the questionnaire survey. High schools participated with a small number of responses (3% of schools). Only 2% of leisure centers also contributed to the survey.

Results of a questionnaire survey

Current benefits of locating of educational institutions in the BR

Only 28.43% of responded educational institutions feel benefits from their location in the BR. Also, only 21.27% of institutions participate in current dissemination activities aimed at BR (mostly elementary art schools, Figure 2).

Integration or inclusion in the education process

As an approach in the field of education, 36.71% of responded institutions prefer school integration (mainly leisure centers and kindergartens), and 57.04% prefer school inclusion (mainly high schools and elementary special schools). Some institutions, however, use both inclusion and integration (Figure 2), and it does not affect the feeling of benefits from the BR.

Educational activities in the BR as a school initiative

74.07% of institutions prepare an excursion in nature, 37.22% environmental events and 49.26% professional lectures and meetings with experts from practice. These forms are mainly preferred by kindergartens and elementary schools (Figure 3).

Educational activities in the BR offered by the TANAP Administration

52.04% of institutions use field trips, visits to the TANAP Museum or the TANAP Botanic Garden (mainly leisure centers and elementary schools, Figure 3), and 37.41% prefer professional meetings and lectures by experts (mainly elementary schools, Figure 3). Only 27.04% of institutions use environmental events, 16.83% communication or cooperation with the TANAP Administration, 1.00% educational courses for elementary school teachers, and 3.78% other forms of cooperation

with the TANAP Administration. Employee participation in EE courses offered by the TANAP Administration is only 6.67%, the most trained are employees of kindergartens and elementary schools (Figure 3).

Interest in strengthening EE and ESD in the BR

94.58% of educational institutions would be interested in outdoor place-based education at specific educational localities, 88.33% in participating in trainings or courses for teachers and 55.32% would work with a local environmental textbook. Participants showed a high interest in these services, with the exception of the use of local textbooks by kindergartens and leisure centers (Figure 4). The services and catalogs developed by the TANAP Administration also represent a strengthening in both EE and ESD education. 92.41% of educational institutions would use a catalogue of services offered by the Administration and a catalogue of local products, although only 25.60% of institutions would be able and willing to pay for these services, mainly high schools and leisure centers. 94.71% of institutions would be interested in participating in local excursions and 98.15% would be interested in various special programs prepared by the Administration. Subjects of excursions in the BR that the educational institute needs to focus on, are different (Figure 4). 50.23% of institutions prefer wildlife animal world and protected animal species, and 48.15% vegetation and protected plant species, mainly leisure centers and elementary schools. Landscape of the BR is preferred by 41.44% of institutions, mainly by leisure centers and elementary special schools. 20.30% of institutions prefer geological background, soils and geomorphological processes in the territory of the BR, 41.20% impact of climate change on the BR, 17.66% different other subjects, in all cases mainly by leisure centers. Kindergartens and elementary art schools did not respond to these questions. No institution prefers the possibility of excluding BR participation in EE process.

benefits from the location of educational institutions in the Tatra BR, as an educational site	kindergarten	primary schools	special primary schools	primary art schools	high schools	leisure centers
benefits from its location	40.00%	38.89%	25.00%	66.67%	0.00%	0.00%
participate on dissemination activities focused on a BR	20.69%	27.78%	12.50%	66.67%	0.00%	0.00%
system of education in educational institutions	kindergarten	primary schools	special primary schools	primary art schools	high schools	leisure centers
preferring the system of school integration	63.33%	44.44%	12.50%	–	0.00%	100.00%
preferring the system of school inclusion	86.67%	55.56%	100.00%	–	100.00%	0.00%

Legend: 0.00 – 25.00%, 25.01 – 50.00%, 50.01 – 75.00%, 75.01 – 100.00%

Figure 2. Current benefits from the location of educational institutions in the Tatra BR and systems of education used in educational institutions.

educational activities in the biosphere reserve as a school initiative	kindergarten	primary schools	special primary schools	primary art schools	high schools	leisure centers
excursions in nature	100.00%	94.44%	100.00%	–	50.00%	100.00%
environmental events	56.67%	66.67%	50.00%	–	50.00%	0.00%
participation of employees in EE courses	23.33%	16.67%	0.00%	–	0.00%	0.00%
professional lectures and meetings with experts from practice	73.33%	72.22%	50.00%	–	100.00%	0.00%
other	20.00%	16.67%	0.00%	–	0.00%	0.00%
educational activities prepared by the TANAP Administration	kindergarten	primary schools	special primary schools	primary art schools	high schools	leisure centers
field trips, visits to the TANAP Museum or the TANAP Botanic Garden	40.00%	72.22%	50.00%	–	50.00%	100.00%
environmental events	23.33%	38.89%	50.00%	–	50.00%	0.00%
professional meetings and lectures by experts	46.67%	77.78%	50.00%	–	50.00%	0.00%
communication or cooperation with the TANAP Administration	20.00%	6.00%	25.00%	–	50.00%	0.00%
educational courses for elementary school teachers	–	6.00%	0.00%	0.00%	–	–
other forms of cooperation with the TANAP Administration	16.67%	6.00%	12.5%	–	0.00%	0.00%

Legend: 0.00 – 25.00% | 25.01 – 50.00% | 50.01 – 75.00% | 75.01 – 100.00%

Figure 3. The role of activities prepared by employees of educational institutions and employees of the TANAP Administration.

interest in strengthening EE and ESD in the BR	kindergarten	primary schools	special primary schools	primary art schools	high schools	leisure centers
be interested in outdoor place-based education at specific educational localities	80.00%	100.00%	87.50%	100.00%	100.00%	100.00%
be interested in participating in trainings or courses for teachers	78.57%	88.89%	62.50%	100.00%	100.00%	100.00%
work with a local environmental textbook	–	94.44%	87.50%	100.00%	50.00%	0.00%
use the services and products of the catalogs	93.33%	94.44%	100.00%	66.67%	100.00%	100.00%
be willing to pay for the services and products listed in these catalogs	38.46%	38.89%	42.89%	33.33%	0.00%	0.00%
be interested in participating in excursions in the territory	93.33%	100.00%	75.55%	100.00%	100.00%	100.00%
be interested in various special programs prepared by the TANAP Administration	100.00%	88.89%	100.00%	100.00%	100.00%	100.00%
subjects of excursions in the BR that the educational institute needs to focus on	kindergarten	elementary schools	special elementary schools	elementary art schools	high schools	leisure centers
landscape of the BR	–	61.11%	87.50%	–	0.00%	100.00%
vegetation and protected plant species	–	88.89%	50.00%	–	50.00%	100.00%
wildlife animal world and protected animal species	–	88.89%	62.50%	–	50.00%	100.00%
impact of climate change on the BR	–	72.22%	25.00%	–	50.00%	100.00%
geological background, soils and geomorphological processes in the territory of the BR	–	27.78%	0.00%	–	0.00%	100.00%
other	–	6.00%	12.50%	–	0.00%	100.00%

Legend: 0.00 – 25.00% | 25.01 – 50.00% | 50.01 – 75.00% | 75.01 – 100.00%

Figure 4. Strengthening EE and ESD in the Tatra BR.

SWOT analysis

Since BRs are not legislated in Slovakia and EE is not provided in the Slovak school system by the school subjects themselves, this situation opens up many categories of strenghts (S1 – 7) and weaknesses (W1 – 7), opportunities (O1 – 7) and threats (T1 – 7) in the field of the coexistence of educational institutions and Tatra BR. Their weighting values are presented in Supplemental online material (Supplement 2, Table 1, 2).

Strenghts and weaknesses – categories "benefit for educational institutions from the implementation of various forms of teaching in the territory of the BR" and "natural conditions of the territory of the BR – direct confrontation of theoretical knowledge and practical skills on the territory of the BR, offer of imaginative experiences (e.g. pupils of elementary art schools) represent the strongest aspects of the coexistence of educational institutions and Tatra BR (Supplement 2, Graph 1). Category "insufficient promotion of activities, unused possibilities of current forms of promotion by the BR, insufficient updating of the BR website pages" represents the weakest side of the coexistence of educational institutions and BR Tatra (Supplement 2, Graph 2).

Opportunities versus Threats – Category "the possibility to focus on general information about the territory of the BR and its protection in the form of outdoor education at specific locations of the BR or in your own environmental classroom, the possibility of trips and excursions to the BR with a professional guide" represents the strongest opportunity of the coexistence of educational institutions and Tatra BR (Supplement 2, Graph 3). Categories "insufficient financial support for the activities of EE for the BR, insufficient support for the BR from the state" and "the outflow of highly qualified the BR workers for economic and other reasons" represent the strongest threats of the coexistence of educational institutions and the Tatra BR (Supplement 2, Graph 4).

Discussion

After many criticisms in the media, newspapers and social networks, as well as based on personal experiences with students coming to study at universities, we decided to evaluate the level of EE, its connection to practice and ESD in the Tatra BR. This BR is the oldest and at the same time the most visited national park in Slovakia, occupying the highest part of the entire Carpathians and offering a full-fledged laboratory in the field of EE and ESD. As part of the Slovak MAB

Committee, we know that the educational network for BR has not yet been created. BR is not yet a member of the World Network of Mountain BRs, where ESD education is also supported.

The research was carried out in the form of a questionnaire survey on 402 educational institutions in the territory of BR, selected according to the Register of Regional Education (Ministry of Education, Science, Research and Sport of the Slovak Republic, 2022). Only 14.21% of these institutions participated in the survey. The reluctance of educational institutions to respond to the questionnaire survey results from teachers' reluctance to do something extra for the current salary (oral sources).

The perception of benefits from the location of educational institutions in the BR is relatively weak (4.04% of all educational institutions). The variety of answers about the perception of benefits confirmed that EE depends mainly on the enthusiasm of teachers, while teachers, especially in lower grades, implement EE in the territory of BR most often in the form of excursions.

Similar to other countries (UNESCO 2010, 2012; Hein and Kruse-Graumann, 2005), teachers also need to be continuously educated in Slovakia. IEP SR (2021) points not only to the need to educate teachers, but also to the need to update the content and objectives of EV in the State Education Program, to more consistently incorporate the cross-sectional nature of environmental topics into the content of individual teaching subjects.

Also, the participation of institutions in the dissemination activities of the TANAP Administration is weak (3.04% of all educational institutions). These activities are mainly used within the EE of lower grades, while visits to the TANAP Museum or the TANAP Botanic Garden, or professional meetings and lectures by experts are preferred. Although the TANAP Administration has recently been trying to develop informal EE and ESD permanently, the Administration does not have permanent staff for the BR, and the work for the BR is performed by employees above their duties in the national park. If the permanent staff of TANAP Administartion were to offer services and products for educational institutions, although the institutions would be interested in them, most of them would need a financial subsidy to use them.

Protected areas today are expected to make a broad range of contributions to human society including maintaining critical ecosystem "goods and services" such as water, food, carbon storage; mitigating climate change; alleviating poverty; and even providing opportunities for economic development (Watson et al. 2014). Many protected areas are also established BRs of the MAB UNESCO Program. BRs are ideal to function as classrooms for education, proven in some countries years later (e. g. Gunatilleke & Gunatilleke, 2003; MRI, 2018; UNESCO, 2010,

2012, 2022). Acoording to more authors (e. g. Gower et al., 2022; Scoullos et al., 2013; Regato & Salmon, 2008), mountain BRs provide a diverse range of learning activities and that outdoor experiential learning with small audience groups is considered the most effective approach.

We recommend including this BR to the WNMBR (WNMBR, n.d.; MRI, 2024) and to create a local educational network for BR. However, we also recommend cooperation with other BRs, as is the case abroad (Gunjan, 2005; Kušová, 2008; Godmaire et al., 2013). SWOT analysis shows that the current state of EE and ESD in the BR is affected by insufficient promotion of activities, unused possibilities of current forms of promotion by BR, insufficient updating of BR websites. It is related to the insufficient support of BR from the state and the outflow of highly qualified BR workers for economic and other reasons are the strongest threats to the reservation. would also bring finances to BR. Educational institutions should be supported by the state. A change in the State Education System is necessary.

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Supplemental online material: Supplement 1 – Questionnaire; Supplement 2 – Table 1. Strengths and weaknesses of EE at school institutions in the Tatra BR; Graph 1. Strengths of the coexistence of educational institutions and the Tatra BR; Graph 2. Weaknesses of the coexistence of educational institutions and the

Tatra BR; Table 2. Oportunities and threats of EE at school institutions in the Tatra Biosphere Reserve; Graph 3. Opportunities of the coexistence of educational institutions and the Tatra BR; Graph 4. Threats of the coexistence of educational institutions and the Tatra BR.

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Supplements

Supplement 1

Questionnaire

Q1: „What are the forms of teaching used by your (environmental) institution during environmental education?“

A. excursions in nature
B. popularizing environmental events
C. professional lectures and meetings with experts from practice
D. possibility of excluding the participation of the biosphere reserve in the process of environmental education
E. participation of employees in environmental education courses
F. other

Q2: „Which environmental activities of the Tatra National Park/Tatra Biosphere Reserve does your (educational) institution deal with?“

A. field trips organized by the National Park/Biosphere Reserve Administration or visits to the Tatra National Park Museum
B. participation in popularizing environmental events organized by the National Park /Biosphere Reserve Administration
C. professional meetings and lectures by experts from the National Park/Biosphere Reserve Administration
D. no communication or cooperation with the National Park /Biosphere Reserve Administration
E. educational courses for elementary school teachers organized by the National Park /Biosphere Reserve Administration
F. other forms of cooperation with the National Park /Biosphere Reserve Administration

Q3: „Does your school experience any benefits from its location in this national park/biosphere reserve?“ (Yes/No)

Q4: „Does your (educational) institute participate on popularization activities (f. e. environmental competitions) focused on a national park/biosphere reserve?“ (Yes/No)

Q5: „If the National Park Administration prepared various special programs for individual educational institutions (form of various activities), focusing on nature conservation and sustainable use of the territory, would you be interested in them? (e.g. the Ridge of the Western Tatras Program for several schools, the whole school year, school subjects of Environmental studies, physical education, biology, geography – maybe with possibility to get attached school credits)“. (Yes/No)

Q6: „What specifically would you need to focus on in the national park/biosphere reserve during the excursion/outdoor activity service?“

A. general informations about the landscape of the biosphere reserve
B. vegetation and protected plant species
C. wildlife animal world and protected animal species
D. impact of climate change on the biosphere reserve
E. geological background, soils and geomorphological processes in the territory of the biosphere reserve
F. other

Q7: „Would you use the services and products of the catalogs Catalog of Services in Outdoor Environmental Education of the biosphere reserve and Environmental Education Products Catalog of the biosphere reserve, in the process of environmental education?“ (Yes/No)

Q8: „Would your (educational) institution be willing to pay for the services and products listed in these catalogs?“ (Yes/No)

Q9: „Would your (educational) institution be interested in participating in excursions in the territory of the national park/biosphere reserve with a professional guide?“ (Yes/No)

Q10: „Would your (educional) institute be interested in outdoor place-based education at specific educational localities of the biosphere reserve?“ (Yes/No)

Q11: „Would your (educational) institute be interested in participating in trainings or courses for teachers focused on environmental education in a national park/biosphere reserve?“ (Yes/No)

Q12: „Would your (educational) institute work with a local environmental textbook on the Tatra National Park/Tatra Biosphere Reserve?“ (Yes/No)

Q13: „Are you an (educational) institution that prefers school integration or school inclusion?“

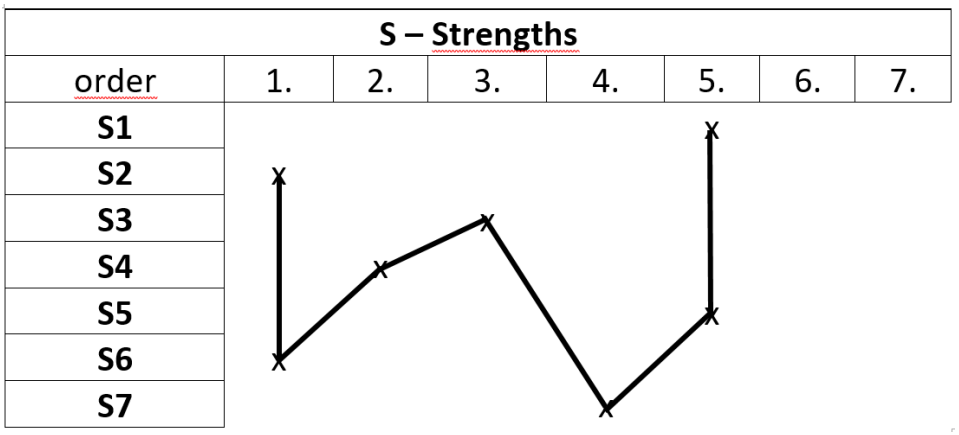
A. prefering school integration
B. prefering school inclusion

Supplement 2

Table 1. Strengths and weaknesses of EE at school institutions in the Tatra BR.

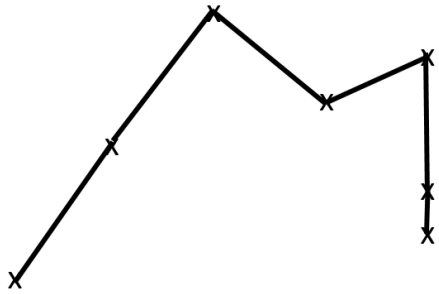
Factors	Internal factors		Normalized weight	Score of current status	Weighted score
Strengths Superiority	S1	Benefit for educational institutions from the implementation of various forms of teaching in the territory of the BR	0,05	4	0,2
	S2	Natural conditions of the BR - direct confrontation of theoretical knowledge and practical skills on the territory of the BR, offer of imaginative experiences (e.g. pupils of elementary art schools)	0,1	5	0,5
	S3	EE supported by people from practice, qualification of employees of the TANAP Administration, organization of activities aimed at educating different groups of pupils and teachers directly by the employees of the TANAP Administration	0,08	5	0,4
	S4	Current use of various organizational forms of teaching organized by the TANAP Administration (lesson outside the school premises, excursions in nature or in the Museum of the TANAP, walks in nature) – application of group and project teaching	0,09	5	0,45
	S5	Dissemination of environmental activities in various forms (lectures and meetings with practitioners), active participation of the BR employees in EE courses organized by various educational institutions	0,05	4	0,2
	S6	Own teaching premises – from 2015 environmental classroom, adequate and appropriate material and technical equipment	0,1	5	0,5
	S7	Cooperation with the city of Vysoké Tatry - memorandum of cooperation between the TANAP Administration and the Vysoké Tatry Municipal	0,06	5	0,3

		Office			
Weaknesses	W 1	Absence of direct legislation for a biosphere reserve	0,08	-3	-0,24
	W 2	Insufficiently developed network of cooperating (educational and scientific) institutions with the TANAP Administration	0,05	-3	-0,15
	W 3	Absence of outdoor education at specific educational locations of the BR, insufficiently used potential of the BR for various forms of teaching	0,07	-3	-0,21
	W 4	Absence of offered products and services aimed at EE in relation to different groups of the public	0,07	-5	-0,35
	W 5	Insufficiently developed cooperation between the TANAP Administration and interested parties on raising the level of environmental awareness of residents and visitors of the BR	0,05	-3	-0,15
	W 6	Lack of interest or ignorance of the benefits of implementing EE activities in the BR	0,05	-3	-0,15
	W 7	Insufficient promotion of activities, unused possibilities of current forms of promotion by NP/BR, insufficient updating of theBR website pages	0,1	-4	-0,4
TOTAL			**1**	**9**	**0,9**



Graph 1. Strengths of the coexistence of educational institutions and Tatra BR.

W – Weaknesses							
order	1.	2.	3.	4.	5.	6.	7.
W1							
W2							
W3							
W4							
W5							
W6							
W7							



Graph 2. Weaknesses of the coexistence of educational institutions and Tatra BR.

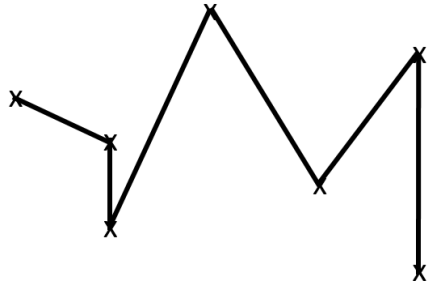
Table 2. Oportunities and threats of EE at school institutions in the Tatra Biosphere Reserve.

Factors	**External factors**		Normalized weight	Score of current status	Weighted score
Oportunities	O1	Participation in various special programs for individual educational institutions prepared by the TANAP Administration focused on nature protection and sustainable use of the territory, the possibility of implementing trainings or courses for teachers focused on EE in the BR	0,06	5	0,3
	O2	Possibility of involvement in projects, cooperation with experts, exchange of pedagogical experiences outside the TANAP Administration (e.g. seminars, conferences)	0,05	3	0,15
	O3	The possibility to focus on general information about the territory of the BR and its protection in the form of outdoor education at specific	0,1	5	0,5

		locations of the BR or in your own environmental classroom, the possibility of trips and excursions to the BR with a professional guide			
	O4	The possibility of using the Catalog of ecosystem services for the needs of EE in the BR	0,07	5	0,35
	O5	Creation of a Catalog of NP/BR services and products for various population groups (students, families with children, pensioners, etc.)	0,08	3	0,24
	O6	Absence of EE in school educational programs at the level of compulsory subjects	0,07	5	0,35
	O7	The issue of the protection of natural resources – part of social education and opportunities for exchange of ideas, dialogue and reflection, involvement in the care of natural resources as a result of positive thoughts, feelings and beliefs	0,05	3	0,15
Threats	T1	Fees for the BR services in total, including payments for various forms of env. of education and training – with incorrect settings and communication towards users	0,07	-5	-0,35
	T2	Educational institutions can apply different school systems (school integration or school inclusion)	0,05	-3	-0,15
	T3	Insufficient financial support for the activities of env. education for the BR, insufficient support for the BR from the state	0,1	-5	-0,5
	T4	The outflow of highly qualified BR's employees for economic and other reasons	0,1	-5	-0,5
	T5	Unfavorable changes in demographic development	0,04	-2	-0,08

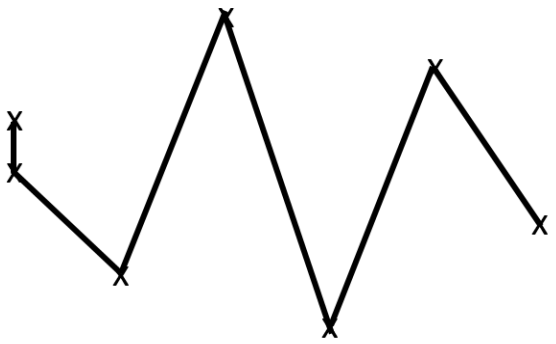
	T6	Frequently changing legislation in the field of nature protection and education	0,08	-5	-0,4
	T7	Volatility of natural conditions, restrictions resulting from the BR Visiting Regulations (e.g. seasonal closure)	0,08	-3	-0,24
TOTAL			**1**	**1**	**-0,18**

O – Opportunities							
order	1.	2.	3.	4.	5.	6.	7.
O1							
O2							
O3							
O4							
O5							
O6							
O7							



Graph 3. Opportunities of the coexistence of educational institutions and Tatra BR.

T – Threats							
order	1.	2.	3.	4.	5.	6.	7.
T1							
T2							
T3							
T4							
T5							
T6							
T7							



Graph 4. Threats of the coexistence of educational institutions and Tatra BR