

East Carpathians Biosphere Reserve, Slovakia

Iveta Buraňová & Zuzana Bartušová

Key Messages/Lessons learnt

- The Slovak part of East Carpathians Biosphere Reserve (hereafter BR) provides natural habitats for unique range of fauna and flora species and communities, many of which are endangered to some extent and this way contributes to halt global biodiversity loss. It represents one of the seldom refuges in urban expansion world and fragmented landscape. Primeval beech forests in core zone of BR is subscribed on the list of world nature heritage sites UNESCO as Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe. The role of Administration of BR is to protect biodiversity and natural treasures and pass it to next generation in untouched form. Leading role of environmental education is pass them also crucial message to care about this natural heritage.
- There are ten villages with 2248 inhabitants, who live inside of territory biosphere reserve in the east and south of the Slovak section of the BR. The biosphere reserve has long-term history of protection and research, but ideas of nature protection still need to be widely acknowledged and utilized by local community. It is important to understand ideas of nature protection and connect them with benefits and well-being of local community. Environmental education in BR is effective tool to learning local community how to use natural and cultural treasures of BR as products of tourism and thus substituting their incomes from timber industry and halt the negative demographic trend.
- Application of environmental education and raising environmental public awareness is actual all the time. Generally it is important influence on thinking and acting of individuals in each age category and social group to understand of natural and cultural value of the landscape. It is necessary to improve public consciousness in process of environmental education and point to importance of equilibrium between economy benefits and ecology that has key role for sustainable living and development of society.

Biosphere Reserve description

East Carpathian Biosphere Reserve is situated in easternmost Slovakia at the junction of the political boundaries of three European countries – Poland, Slovakia and Ukraine. Complex protection of the landscape dates from 1977, when the Východné Karpaty/Eastern Carpathians Protected Landscape area (hereafter PLA) was established covering 96 910 ha. In 1997 protected area of PLA was split into two parts. In the more valuable eastern part, the Poloniny National Park was established on the area of 29 805 hectares with buffer zone covers 10 973 hectares. The area of present PLA “Eastern Carpathians” covers additional territory outside the National Park

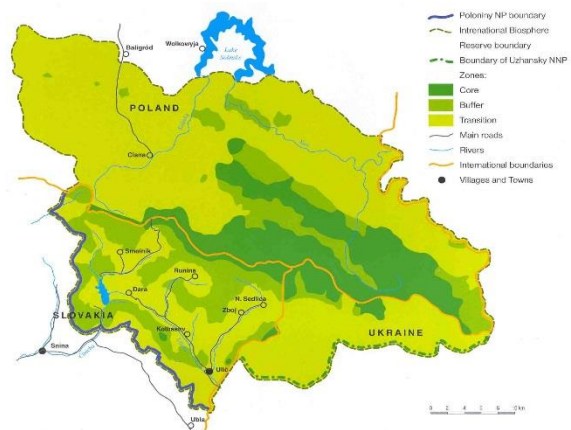


Figure 1: Map of the trilateral East Carpathian Biosphere Reserve

Poloniny further to the west. The site became part of the Network of Biosphere Reserve in

two stages, with the Slovak and Polish side being designated in 1993, joined by the Ukrainian in 1998. It has been the first trilateral biosphere reserve in the world. The area of the Slovak part of BR overlaps with territory of the National Park (hereafter NP) Poloniny. The Slovak and Polish national park that are part of the biosphere reserve both received a “European Diploma of protected areas” in 1998 from the Council of Europe which is designed to recognize “protected natural or seminatural areas of exceptional European interest from the point of view of conservation of biological, geological or landscape diversity by virtue of their scientific, cultural or aesthetic interest if they have an appropriate protection system, perhaps also in conjunction with programmes of action for sustainable



Figure 2 : View of Slovak – Polish – Ukrainian territory in the trilateral boundary area of East Carpathians Biosphere Reserve.

development”. On June 28, 2007, the Primeval Beech Forests of Carpathians, located in Slovak part of BR were inscribed, as transboundary serial nomination (Ukraine/Slovakia), on the UNESCO’s World Heritage List.

The location of the BR at the junction of the East and West Carpathians is mirrored by a unique range of fauna and flora species and communities. The well-preserved vegetation-beech forests, cut meadows, pastures, and special mountain meadows “poloninas” – predetermines the natural diversity of biocenoses. A detailed inventory of vascular plant has identified more than 1000 species in the Slovak section of the

East Carpathian BR. The floristic richness of the BR is underlined by the known occurrence of 1200 species of higher fungi (*Ascomycetes* and *Basidiomycetes*), more than 330 of mosses (*Bryophyta*) and close to 200 of lichens. So far, 6352 animal species have been found, including 6032 species of invertebrates and 320 species of vertebrates. Since 2004, the mammalian fauna in the Slovak part of BR has been enriched by human-induced introduction of European bison (*Bison bonasus*) due to dislocate from zoological gardens. The woods are inhabited by large carnivores as lynx (*Lynx lynx*), wolf (*Canis lupus*), wild cat (*Felis silvestris*) and brown bear (*Ursus arctos*) and feathered inhabitants such as woodpeckers and owls. This combination of big charismatic species and birds is unique and in the present are only on a few sites in whole Europe. Almost whole area of BR are included in the Natura 2000 network.

In 2010 the Poloniny Dark-Sky Park was officially proclaimed on the territory of the Slovak part of East Carpathians Biosphere Reserve. The park is Slovakia’s darkest site, where the night sky is preserved in its natural appearance. There are only a few such sites in the civilized world. Wooden temples of the Byzantine Rite, that are national cultural monuments, are part of the protected area. The oldest are from the 17th century. Some of them still hold Divine Liturgy to this day. The territory has rich and interesting history and culture, such military cemeteries of the First World War or local Ruthenian culture. The water quality in the territory of BR is very high. As a result, in 1987 the water reservoir Starina was built. It is the biggest water reservoir for drinking water in Central Europe with the surface of 240 hectares and volume 60 mil. m³ of water, that represents strategic source of water for whole eastern part of Slovakia (including big regional cities as Košice and Prešov).

BR challenges

The BR confronts a range of challenges that can be categorized as legislative or model of area management. The management arrangements within the BR borders are



Figure 3: Environmental activities in Budovatel'ská Basic School in Snina with majority of socially disadvantage children.

rather complex. The BR and NP are managed by the Administration of the Poloniny NP situated in the village Stakčín. There is no official biosphere reserve governing body. The most valuable habitats of the BR (2432, 77 ha – 8, 16 %) are designated as national natural reserves and nature reserves. These areas are strictly protected and no human activities are allowed there. The rest of the BR (NP) is open for forest harvesting, agriculture, water management and hunting. The park manages only mentioned strictly protected parts directly. Other land and natural supplies as forest, agricultural areas and water sources are managed by the various management bodies. Relationships among the park administration and the other management bodies are not always without controversies. The attractive cultural and natural heritage does imply developmental potentials, but under current legislation and policy, the BR is unlikely to have the capacity to take the lead on this.

The key challenge for the region seems to be the structural marginalization of the area due to its remote location, poor infrastructure and limited employment opportunities. Most of the villages don't have canalisation or running water, despite being adjusted to the water reservoir.

The unique potential of territory which was awarded by many certificates and marks

produce economic benefits for local community only to a certain extent. Despite large numbers of natural values, local people perceive nature protection as constraints on development that do not provide adequate alternatives to local entrepreneurship. Forests cover more than 80 % of the BR and less than half of the forests of the BR are in private. Forestry is the dominant economic activity and primarily providing opportunities for low-skilled jobs. Most of the generated revenues from natural supplies as timber from state-owned forests go directly to the state budget. Revenues from water supplies go directly to the water management body. That's why local inhabitants also doesn't have almost none benefits from natural sources. The present situation is result of past mistakes, there were unsuitable and insufficient communication with stakeholders and unreasonable restrictions came from the side of the state institutions.

The situation gets worse because of bad demographic situation. The territory of BR is situated in the District of Snina, which has become depopulated. Number of inhabitants rapidly has declined since 2000, natality is on the low level, population gets older and mainly young people leave the region in search of employment. The total number of inhabitants in municipalities in the BR declined by 16 percent between 2001 and 2012, according to the demographic statistics. In the region is lack of job



Figure 4 : Environmental education activities organised for clients of Social Services Facility in Osadné.



Figure 5 : Non - formal and engaging environmental education activities realised in primary school with majority of socially disadvantage children from Romany ethnic group.

opportunities with adequate salary, so people look for job in big cities in Slovakia or go abroad. This contributed significantly to the bad current socio-demographic situation of the area and turned it into most scarcely populated and one of the least developed regions in Slovakia.

There are 19 kindergartens, 14 primary schools, 1 special primary school for children demanded special approach, 2 gymnasiums, 2 secondary technical schools and 1 specialised secondary school for the handicapped in the District of Snina.

Initiatives/Actions on SDG 4

The East Carpathians BR contributes directly to sustainable development goal (SDG) - **SDG 4**. In the framework of environmental education activities on the territory of BR, one of its essential principle is to enable free access to fair and quality education for all children regardless of their origin, health condition and economic situation. Special attention is focused on socially disadvantage children, from whom most come from Romany community. We work likewise with physically/mentally handicapped students of United Boarding School in Snina, which part is also Special Primary School, and with primary schools with majority of socially disadvantage pupils – Primary School Budovateľská in Snina, Primary schools in

villages Klenová, Kolonica and Ubl'a. Also Social Services Facility in Osadné is place where is regularly organised environmental education activities.

It's necessary to cultivated qualities of developing child character with emphasis on emotional intelligence and give right direction to their value system towards responsible and perceptive attitude to environment. It is hard work especially in the case of young people from poor social conditions with unfulfilled basic life needs. They require close attention and specific working procedures to develop their positive approach to the environment. It is difficult to keep gained value, habits and good relation to nature for them in their families. We motivate them to carry and share new knowledge with whole community where they live.

Solving of environmental problems required public involvement, including young people from socially disadvantage groups. Only this approach make realisation of changes in society possible. Using of easy and engaging forms to involving young people to society-wide activities on regional level, motivating them, allowing them make decisions and face to their consequences, it is our collective way towards conscious citizenry. In this process it is necessary to respect individual ethnical and regional distinctivenesses of family background.



Figure 6 : Teaching of forest ecosystem at the occasion of International Day of Forests directly in forest.



Figure 7 : Romany pupils were actively participated in the knowledge – creative competition "Water is life".

The efforts of Administration of BR is implementation of environmental approach to educational process and support it by realising of environmental education activities with pupils and students from all social conditions. We've realised different projects in schools regarding relationship between man and biosphere, pointed on reasons and global consequences of human being to nature. We have used regional examples and focused on personal experiences of children with the surrounding nature of East Carpathians Biosphere Reserve.

Practical Outcomes/Achievements

Environmental education activities in schools of East Carpathians Biosphere Reserve are focused on young people of different age, ethnical and social conditions. The goal of this activities is enhancing environmental awareness of young people and fostering their love and respect to nature by non - formal teaching. Using of own enthusiasms and set them own example we would like to provide them friendly, creative and free background without bias, in which they can learn by playing. Usual environmental education activities in MBR VK are connected with annual observance day as are: World Water Day, World Wetlands Day, International Day of Forests, World Migratory Bird Day, World Wildlife Day, International

Day for Biological Diversity, Earth Day, European Arbor Day, European Day of Parks, International Animal Rights Day, etc.

Non - formal and engaging environmental education activities are realised in primary school with majority of socially disadvantage children from Romany ethnic group.

We try to bring out positive opinion to environment through environmental activities also in the case of children with lower level of knowledge. It is important raising their awareness, to intensify their mutual connection feeling and need to act gently and care for landscape and nature, in place they live. The learning programs are designed to evoke feeling of adventure and positive emotions. There are realised preferably out of school building or directly in natural environment and focused on getting to know about forest and water ecosystem. We used excursions on educational paths and recreation educational points as teaching aids in environmental education in East Carpathians Biosphere Reserve as well.

Management activities oriented on practical help to nature are suitable model to achieve good habits in relation to nature protection. This category of environmental activities represents cleaning of touristic paths, cleaning of water streams, planting trees, waste separation, etc..

Economic and ethnical differences between young people must not be barrier in school



Figure 8 : Cleaning of river Ulička in protected area Nature Monument Ulička aimed to engage pupils from socially disadvantage families.



Figure 9 : Practical activities oriented on making of bird nesting box by children - educational event called Bird's garden.

collective that is why the aim of environmental activities in BR is strengthening healthy, unrivalled background without bias in school by using different eco – games, competitions, group works. Best practises in this field represent events: "Water is life" – knowledge – creative competition, literary – art competitions on the different natural topics ("Tree is a big house", "Poloniny in the cube" "Life of the beasts", "Butterfly's beauty"), "Bird's garden" - educational event, that include making of bird nesting box by children.

Environmental education realised on the territory of BR create conditions and appropriate ground for opportunities to gain knowledge and right orientation of value system of young people regardless of nationality and social conditions with the goal to improve their life quality. Finally the purpose of activities is to stimulate curiosity of all students and their interest in their environment, to encourage them and leading to positive action via personal experience.

References

Aveis n. o., 2018: Development concept for sustainable protection end economical use of cultural and natural values of the District of Snina. 142 pp.

The Administration of Poloniny National Park, 2016: The Management Plan for the Poloniny National Park for period 2017 – 2016, 70 pp.

Education and training of Romany children and youth, electronic compilation from International science conference in Prešov, Prešov university in Prešov, Faculty of Human and Natural Sciences, 2003.

Jeník, J., Price, M. F. (eds.), 1994: Biosphere Reserves on the Crossroads of Central Europe. EMPORA, Prague, 168 pp.

Methodical guide for teachers and trainers of environmental education I, Matej Bel University in Banská Bystrica, Faculty of Natural Sciences, 1999.

Methodical guide for teachers and trainers of environmental education II, Matej Bel University in Banská Bystrica, Faculty of Natural Sciences, 2001.

Möller, L. (ed.), 2007: UNESCO Biosphere Reserves: Model Regions with a Global Reputation. UNESCO today. Journal of the German Commission for UNESCO, No. 2.

UNESCO, 2002: Biosphere Reserves: Special places for people and nature. UNESCO, Paris, 208 pp.

UNESCO, 2003: Five Transboundary Biosphere Reserves in Europe. Biosphere Reserves Technical Notes. UNESCO, Paris, 95 pp.

Vološčuk, I. (ed.), 1999: The National Parks and Biosphere Reserves in Carpathians. The Last Nature Paradises. SLYA, Poprad, 244 pp.

Vološčuk, I. (ed.), 2009: Biosphere Reserves in Slovakia. Slovak Committee for the UNESCO Man and the Biosphere Programme, Institute of Landscape Ecology, Bratislava, 64 pp.

Yakusheva N., 2016: Socio-demographic changes in and around protected areas and management responses. Case studies from the Carpathians: 211 - 223. In: Hammer T., Mose I., Siegrist D., Weixlbaumer N. (Eds.), 2016: Parks of the Future. Protected Areas

in Europe Challenging Regional and Global Change.Oekom, München, 278 pp

Correspondence:

Postal address:

Name: Poloniny National Park
Street or P.O. Box: Ul. Mieru 193
City with postal code: 06761 Stakčín
Country: Slovakia
Telephone: +421 577624424

Web site: <http://nppoloniny.sopsr.sk/>

Face book:

@East.Carpathian.BR

@NarodnyParkPoloniny

E-mail: poloniny@sopsr.sk



Figure 10 : Practical activity oriented on winter feeding of birds by children - educational event to aware their interest in nature.



Figure 11 : Education creative event with children from Romany Centre in Snina.