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UNESCO Transboundary Biosphere Reserves as laboratories of cross-border cooperation for sustainable development of border areas. The case of the Polish-Ukrainian borderland

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Abstract. This paper aims to assess the current and potential role of UNESCO Transboundary Biosphere Reserves (TBRs) as a platform for cross-border cooperation enhancing sustainable development of border areas characterised by unique natural and cultural heritage but lagging in socio-economic terms. The study covered three TBRs located in the Polish-Ukrainian borderland: West Polesie, Roztocze and East Carpathians. The quantitative (regarding subject matter, partners involved, amount of funding, etc.) and qualitative analysis (aimed at examining the objectives of the initiatives undertaken in line with the BRs' goals) included projects implemented under the CBC Programmes Poland-Belarus-Ukraine in the years 2004-2020. The results suggest that cross-border cooperation in the analysed areas was generally oriented toward TBR-related objectives, i.e., socio-culturally and ecologically sustainable development. At the same time, numerous barriers have been identified that limit the impact of cross-border cooperation on the sustainable development of the TBRs.

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1. Introduction

The main objective of Transboundary Biosphere Reserves (TBRs) is to promote the remarkable natural, cultural and landscape assets of the area to activate local communities to facilitate regional identity (including cross-border) and foster innovative approaches to economic development that are socially and culturally appropriate and environmentally sustainable. In the light of the contemporary perception of UNESCO Biosphere Reserves (BRs), they are not only a form of nature protection but also a platform for cooperation among various stakeholders in the field of programming socio-economic development based on the ideas of sustainable development (UNESCO, 2022). Thus, while UNESCO Biosphere Reserves are described in the literature as “laboratories for sustainable development” (Nguyen et al., 2011), TBRs can be considered laboratories of sorts for transboundary cooperation for the programming and implementation of local sustainable development principles in transboundary systems.

Of the twenty-two UNESCO TBRs worldwide, five are located in the Polish borderlands, including three in the Polish–Ukrainian borderland. Their establishment is one of the most positive results of cross-border cooperation at the national, regional and local levels. They cover mainly peripheral and relatively underdeveloped border areas requiring additional development factors. At the same time, these areas are characterised by unique natural and cultural assets that span the border, are the areas’ key endogenous resource, and may become a premise for the areas’ development (Wieckowski, 2013).

To date, the body of literature devoted to the UNESCO Biosphere Reserves, including TBRs, has dealt almost exclusively with issues related to the protection of biodiversity and landscape. However, there is a scarcity of papers devoted to one of its main objectives, i.e., the implementation of the principles of sustainable socio-economic development. With few exceptions (see: Taggart-Hodge & Schoon, 2016), the subject of cross-border cooperation under TBRs has also not been studied in detail to date. This article attempts to fill the research gap by drawing attention to the often-

neglected role of the TBRs in enhancing sustainable development of cross-border areas driven by the cooperation among various stakeholders using instruments of cross-border cooperation (CBC). The underlying assumption adopted in the study is the recognition that TBRs can provide a platform for effective management of sustainable development in cross-border areas that are characterised by unique natural and cultural heritage but that are lagging in economic terms. In the light of the above, the main objective of this paper is to assess the current and potential role of TBR as a platform for cross-border cooperation aimed at managing the sustainable development of border areas, on the example of the Polish–Ukrainian borderland. An analysis was carried out on the example of cooperation in the East Carpathians TBR, West Polesie TBR and Roztocze TBR within the framework of Cross-border Cooperation (CBC) Programmes Poland–Belarus–Ukraine (PBU) 2000–2006, 2007–2013 and 2014–2020.

2. Literature review

The UNESCO World Network of Biosphere Reserves under the “Man and Biosphere” Programme (MAB) is an international and intergovernmental initiative that originated in 1971 in order to link and reconcile nature and landscape conservation with sustainable development (Bridgewater, 2002; Ishwaran et al., 2008; Schliep & Stoll-Kleemann, 2010; Ruoss, 2013; Matar & Brandon, 2017). It represents an innovative and integrated approach aiming to harmonise biodiversity protection with social and economic development in territorial processes through complex spatial and governance arrangements (Van Cuong et al., 2017; Ferreira et al., 2018). Thereby, UNESCO Biosphere Reserves constitute a spatially explicit “compromise between economic, social, cultural and biodiversity protection objectives, in a sustainable development context” (Lourival et al., 2011). Performing a combination of complementary and integrated functions, Biosphere Reserves can be considered a special category of conservation areas containing a combination of zones with differing degrees of conservation intensity and various management approaches (Fall, 1999). The Biosphere Reserves zonation model has gradually evolved. Its

basic assumptions have been defined in the Sevilla strategy (UNESCO, 1996). Its design currently consists of a core nucleus (core area), a buffer and a transition zone, which together serve three main functions (UNESCO, 2022):

1. conservation of natural and cultural values,
2. logistic support for scientific research, monitoring, training and education
3. socio-culturally and ecologically sustainable economic and human development.

As Fall (2003: 93) notes, Biosphere Reserves “are therefore not simply protected areas, but rather place protected areas within a wider framework”, allowing for the achievement of various objectives, including those related to socio-economic development.

Among the total number of 727 BRs in 131 countries belonging to the World Network of Biosphere Reserves, there are 22 transboundary sites (UNESCO, 2022). A TBR “is formed of two, or more, Biosphere Reserves in different countries that meet along with one or several international boundaries, creating shared territories” (Fall, 2003: 96). *A set of Recommendations for the Establishment and Functioning of Transboundary Biosphere Reserves* (UNESCO, 2000) was drafted in Pamplona, Spain in 2000.

Areas located along national borders often have favourable conditions for the designation and establishment of protected areas (Ramutsindela, 2015; Więckowski, 2018). They contain valuable near-natural landscapes with a low level of human impact due to their peripheral and isolated location, economic and social marginalisation as well as relatively low population density (Mayer et al., 2019). Thus, the number of cross-border protected areas has been growing rapidly since the 1930s (Vasilijević et al., 2015), which is particularly evident in Central and Eastern Europe (Wieckowski, 2013; Mayer et al., 2019).

The literature points to several positive attributes of protected areas in cross-border arrangements, including conservation (as their essential function), stimulation of socio-economic development and promotion of cooperation fostering good neighbourly relations (Trillo-Santamaría & Paül, 2016). However, this requires a skilful balance of interests between different parties and partners. Cross-border protected areas consist in fact of several management units located in different

countries and operating in different legal and organisational systems (Fall, 1999). According to Kałuski (2015), among the various institutional forms of cross-border cooperation, e.g. Euroregions or European Groupings of Territorial Cooperation (EGTCs), it is the TBRs – as areas with precisely defined characteristics – that are best suited to combining environmental and local development objectives. Particularly favourable conditions for the development of such initiatives exist in the European Union due to the general paradigm of cross-border cooperation developed within the political integration process of the continent. EU instruments such as Interreg, European Neighbourhood Instrument (ENI) or European Neighbourhood and Partnership Instrument (ENPI) can embrace the environmental and land-use agenda. Therefore, they are an important factor in facilitating cross-border cooperation and can foster the development of protected areas crossing national borders (Trillo-Santamaría & Paül, 2016).

Today, protected areas are faced with complex objectives, not limited solely to landscape and biodiversity conservation, but including a diverse set of conservation, social and economic objectives (Watson et al., 2014). The protection of biodiversity provides an opportunity for the development of a variety of economic activities, particularly in the fields of recreation, tourism and education, ecological agriculture, handicrafts, etc., making an important contribution to socio-economic well-being and local development (Yakusheva, 2019). Despite some restrictions in terms of land use, development of industrial production and agricultural activity, the existence of protected areas is generally positively assessed by local communities, mainly due to their impact on local social and economic development (Zawilińska & Mika, 2013). There are examples where the creation of a Biosphere Reserve became an important factor in stimulating development processes in a given area (Nguyen, Bosch & Maani, 2011). Sometimes, factors of a socio-economic nature become as important drivers for the creation of protected areas as arguments relating to environmental protection. This is particularly true for cross-border protected areas (Vasilijević et al., 2015), as borderlands often demonstrate numerous characteristics of socio-economic peripherality.

Although UNESCO BRs are often described as learning sites for sustainable development (Schultz & Lundholm, 2010; Schultz et al., 2018; UNESCO, 2022) combining nature conservation with local development in ways that support both simultaneously, this latter component has been largely neglected in the body of literature (Matar & Brandon, 2017). At the same time, the importance of developmental goals as a key element of the Biosphere Reserves concept is constantly growing. In the light of the Rio+20 summit findings, BR has been recognised as a model tool for shaping sustainable development due to its holistic approach (Ruoss, 2013). Schliep and Stoll-Kleemann (2010) indicate that BRs are increasingly seeking to become an “accredited coordinator and facilitator in the regional development process”. To this end, they seek to bring together the various stakeholder groups in order to draw attention to the economic benefits resulting from the existence of the reserves. That is of high importance, as nature conservation objectives often face challenges in the context of development plans and the aspirations of the local community. According to Vasilijević et al. (2015: 26), “conservation will only succeed in many places if it can demonstrate that it delivers significant and meaningful socio-economic benefits”.

As most economic benefits are usually generated for the peripheral and mostly rural zones surrounding protected areas (Mayer et al., 2019), the outer boundaries of the TBRs are more flexible and fuzzier than those of legally defined protected areas, and thus better at integrating the natural heritage with people and their needs (Martino, 2001; Ishwaran et al., 2008). According to the Statutory Framework of the World Biosphere Reserves adopted during the UNESCO-MAB conference in Seville in 1995 (UNESCO, 1996), the BRs should be of sufficient size to fulfil all three of their functions. This mainly relates to delineating the transition zone that should extend over the territory where cooperation with the local population for sustainable development can be arranged (Schliep & Stoll-Kleemann, 2010). Buffer areas surrounding the archipelago of national parks and other protected areas (Więckowski, 2018) are often not legal but notional, like all the transition zones delimited in the BRs. The latter has fuzzy boundaries by design, due to the open nature of cooperation (Ishwaran et al., 2008).

There is no set organisational structure designed to coordinate individual BRs. Reserves are voluntary rather than regulatory, which means that they involve the coordination of numerous actors rather than single agency management (Pokorny, 2006). BRs provide the arena where a diversity of organisations and stakeholders, including public administration bodies, local communities, management agencies, scientists, non-governmental organisations, cultural groups, and others, interact at different scales and levels (Fall, 2003; Ferreira et al., 2018; UNESCO, 1996). Thus, the implementation of BR goals is dependent on existing networks and cooperation (Pokorny 2006), which in the case of TBRs also includes cross-border cooperation of entities from neighbouring countries.

3. Research materials and methods

The study on cross-border cooperation in the UNESCO TBR areas in the Polish–Ukrainian borderland is based on information derived from the keep.eu database that encompasses aggregated data regarding projects and beneficiaries of EU cross-border, transnational and interregional cooperation programmes (Keep.eu Database, 2022) (1). The performed research procedure, which allows for a spatial, subject and object analysis and interpretation of results, follows the approach proposed by Studzieniecki and Palmowski (2022). To analyse project descriptions and evaluate project objectives, this study applies a systematic review method, which limits bias by using a reproducible scientific process. A preliminary analysis was made of the information on all projects implemented under the CBC Programmes Poland–Belarus–Ukraine in the years 2004–2020 (2), the descriptions of which were available in the database. Subsequently, a selection of projects was made according to the procedure shown in Figure 1. Considering fuzzy boundaries of TBRs due to the open nature of the various stakeholders’ cooperation, the selection was made according to the following criteria:

- the project was implemented by two or more partners from the TBR areas,
- the project was implemented by at least one partner from the TBR areas and its implementation took place in the TBR areas,

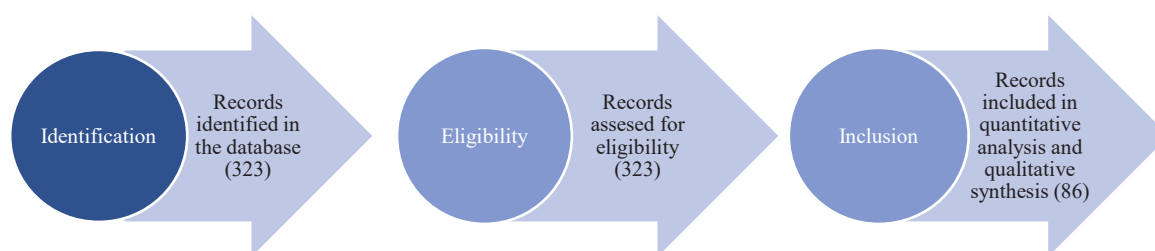


Fig. 1. Project selection procedure

Source: Own elaboration

- the project was implemented by entities from outside the TBR areas, but its implementation took place in the TBR areas.

The selected projects were subjected to quantitative analysis (descriptive statistics in terms of subject matter, partners involved, amount of funding, etc.) and a qualitative analysis aimed at examining in detail the objectives of the initiatives undertaken. The content analysis of the projects description was intended to verify: (1) whether they refer to the idea of TBRs, if so, (2) to which of the TBRs' objectives, and, finally, (3) whether and how the project was to serve the sustainable development of the area. This step allowed the identification of the orientation of cross-border initiatives towards sustainable development of the border area or better and more balanced use of local resources in light of the MAB Programme aims.

4. Research area

The Polish–Ukrainian borderland is a region with a very specific but remarkable cultural, ethnic, religious, political and socio-economic structure. Its dramatic history – the rotation of various Central European powers in the area, its merging and dividing into different nations, the redrawing of borders, and periodical transformation of their barrier and contact functions culminating in almost 50 years of political isolation – have formed the region's unique character but also caused significant heterogeneity across the region. Besides the historical development, its character is shaped by its high level of peripherality – in geographic as well as socio-economic terms. Not only does the very essence of borderlands place the region at the tail of the core–periphery hierarchy, but, since 2004, the Polish–Ukrainian borderland has also become

the periphery of the EU – the boundary between “us” and “them”, between “here” and “there”. It has become an interface of sorts between the East and the West; it has become their peripheries and a menacing symbol of their civilisational differences (Scott, 2011). As Dokoupil (2004) points out, such a symbolic divide might, however, constitute a barrier to the socio-economic development of borderlands, regardless the strength of existing cross-border ties. Heterogeneity, geographic peripherality, the region's predominantly rural character, low levels of urbanisation, weak urban network and a low density of towns combine to put the Polish–Ukrainian borderland among the least developed regions within each country, as well as in the whole of Europe (Jakubowski et al., 2017).

The West Polesie, Roztocze and East Carpathians TBRs have a combined area of 7,579.7 km² (7.8% of the borderland area), which overlaps with all five Polish–Ukrainian borderland regional territorial units (Lubelskie and Podkarpackie voivodships on the Polish side, and Volyn, Lviv and Zakarpattia oblasts in Ukraine). The three TBRs encroach the territory of 14 districts (poviats and raions), which are populationally rather weaker in the regional context (see Table 1). None of the districts exceeds or equals the regional units' average population density (except for Łęczyński powiat). The whole region of the Polish–Ukrainian borderland, moreover, faces a population outflow, which is worse in the TBRs than in the region as a whole. As Jakubowski et al. (2017) point out, the conditions are especially alarming in the Polish part. The average net migration rate on the Polish side is -3.3‰, while in Ukraine it is -1.0‰, with positive rates only in Zhovkivskij raion (0.4‰). That is mostly due to the fact that Ukrainians from the region tend to take advantage of the proximity of closer Western

markets, preferring seasonal labour migration to permanent emigration (Seidlová, 2020).

Nevertheless, the working migration is fundamental for the Polish–Ukrainian borderland, as the percentages of employed persons here are far below the national averages. The employment rate is critically low in the Ukrainian part especially, further decreasing in the districts of the TBRs. Likewise, the average monthly salaries in the area are often below the regional average and always below in the TBRs. The only exception is the Łęczyński powiat in the West Polesie TBR, where the average monthly salaries reach even 130% of the regional average, owing to the presence of a coal mine in Puchaczów that provides thousands of jobs with above-standard financial rewards.

Another important factor shaping the socio-economic development of borderlands is opportunities for conducting business. The highest numbers, which even slightly exceed the regional average, come from the districts with a developed tourism sector – particularly the Leski and Bieszczadzki powiats in the East Carpathians TBR. By contrast, in the same TBR, but on the opposite side of the border, there is the Turkivskij raion with 111 enterprises per 10,000 population, which is the borderland's minimum due to its peripheral position. The numbers of enterprises in the TBRs (see Table 1) give evidence of the region's general backwardness as well as a high level of internal heterogeneity.

Despite the underdevelopment in socio-economic terms, the Polish–Ukrainian borderland is characterised by unique natural assets. This creates favourable conditions for developing cooperation on transboundary conservation. The dynamic development of transboundary cooperation in Poland in the field of nature conservation took place only in the late 1990s. In 1998, the first trilateral Biosphere Reserve was established on the Polish–Slovak–Ukrainian borderland as a result of East Carpathians TBR being extended to include the Ukrainian part. This was accompanied by favourable circumstances, such as: opening of the borders and development of cross-border cooperation, spatial enlargement of protected areas and dynamic changes in the function of borders, which have influenced the emergence of new border crossings and the development of tourist infrastructure (Więckowski, 2018). In the following years, a trilateral West Polesie TBR on the Belarusian–Polish–Ukrainian border (in 2012) and a Polish–Ukrainian Roztocze TBR (in 2019) were established (Fig. 2, Table 2).

West Polesie TBR is characterised by boreal coniferous forests and temperate zone deciduous forests, as well as a great number of lakes, marshes, meadows, swamps and lake complexes with particular flora and fauna. The East Carpathians TBR is a transboundary mountain reserve covering the western edge of the East Carpathians. Roztocze

Table 1. Socio-economic characteristics of the powiats/raions of the UNESCO Transboundary Biosphere Reserves on Polish–Ukrainian borderland

TBR	Country	Voivodship/ Oblast	Powiat/Raion	Population (thous. p.)	Population density (per km ²)	Net migration (per 1000 p.)	Month salary (% of regional average)	Enterprises (per 10,000 p.)
East Carpathians	PL	Podkarpackie	Leski	28.4	32	-0.7	102.7	228
			Bieszczadzki	21.5	19	-5.1	94.4	231
	UA	Lviv Zakarpattia	Turkivskij	48.6	41	-2.6	100.5	111
			Velykoberez yanskij	25.9	32	-3.1	81.0	185
West Polesie	PL	Lubelskie	Włodawski	38.0	30	-3.6	88.2	200
			Parczewski	34.4	36	-5.0	91.1	190
	UA	Volyn	Łęczyński	57.2	90	-2.4	130.0	153
			Shatskyi	16.5	22	-0.8	83.9	162
Roztocze	PL	Lubelskie	Tomaszowski	81.9	55	-4.9	88.3	195
			Zamojski	105.3	56	-0.7	84.1	125
			Biłgorajski	100.3	60	-2.7	92.0	175
	UA	Lviv	Podkarpackie	54.7	42	-4.7	89.5	154
			Zhovkivskij	109.8	85	0.4	85.2	184
			Javorivskij	125.7	81	-1.1	96.6	186

Source: Own elaboration based on Local Data Bank (2022) and State Statistics Service of Ukraine (2022)

Table 2. Characteristics of the UNESCO Transboundary Biosphere Reserves on the Polish borders

TBR	Year of designation	Country	Surface (km ²)				Main areas of economic activity
			total	core area(s)	buffer zone(s)	transition zone(s)	
East Carpathians	1998	Total	2080.8	301.4	247.6	1531.8	Agriculture and forestry; in Polish part, also tourism
		Poland	1087.2	.	.	.	
		Slovakia	497.8	.	.	.	
		Ukraine	585.9	.	.	.	
West Polesie	2012	Total	2630.2	153.2	808.8	1668.2	Agriculture, tourism, weekend recreation, sustainable forestry, and fishing
		Belarus	480.2	43.7	253.4	183.2	
		Poland	1399.2	52.2	432.2	914.8	
		Ukraine	750.8	57.3	123.3	570.2	
Roztocze	2019	Total	3719.0	124.7	921.9	2672.4	Agriculture, forestry and tourism
		Poland	2970.2	91.5	803.9	2074.7	
		Ukraine	748.9	33.3	118.0	597.6	

Source: Own elaboration based on UNESCO 2022

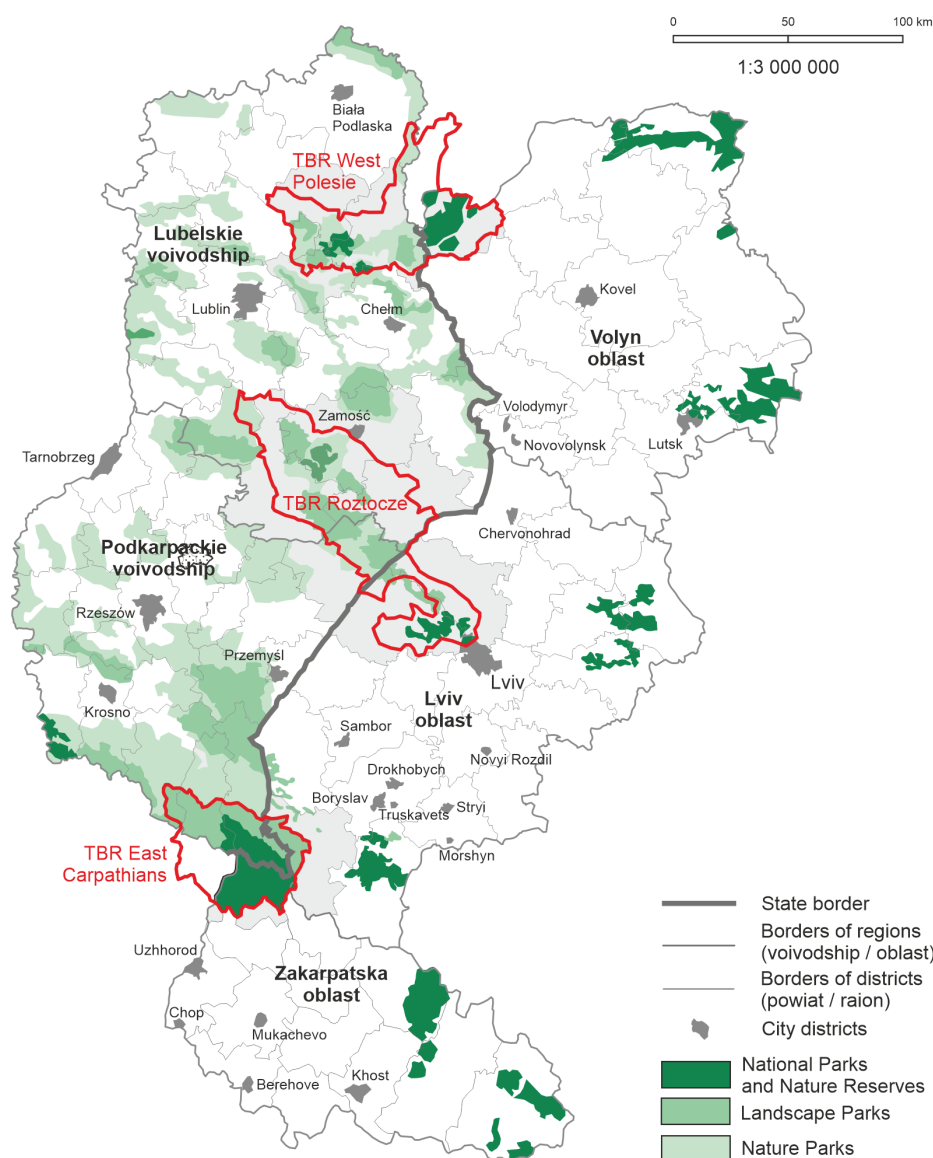


Fig. 2. Transboundary Biosphere Reserves on Polish-Ukrainian borderland

Source: Own elaboration

TBR is characterised by loess areas, a high density of ravines, numerous limestone hills cut by river valleys, and large wooded areas. Although the main economic activity in many cases remains agriculture, forestry and fishing, the TRBs have enormous tourism potential, as shown by the dynamic development of tourism infrastructure and the growing number of tourists (Brzezińska-Wójcik 2021; Dobrowolski et al., 2015; Kałamucka & Grabowski, 2021) (Table 2).

5. Research results

5.1. General characteristics of CBC in TBRs in the Polish-Ukrainian borderland

In the period 2004–2020, within the framework of the programmes 2000–2006 Poland–Ukraine–Belarus, 2007–2013 Poland–Belarus–Ukraine ENPI CBC and 2014–2020 Poland–Belarus–Ukraine ENI CBC, 323 projects were implemented with a total number of 965 partnerships. Of this group, 86 projects meeting the criteria adopted in the study were selected whose implementation involved 169 entities (not including the 11 partners from Belarus) within the frameworks of 233 partnerships. Successive editions of the CBC PBU programmes brought a gradual increase in the number of projects meeting the selection criteria: 13 in 2004–2006, 27 in 2007–2013 and 46 in 2014–2020 (Fig. 3). The projects included in the analysis represented 26.5% in the first edition of the CBC PBU Programme, 23.1% in the second edition, and 29.3% in the last

one. This indicates a rather clear orientation of the projects towards TBR areas, given that they occupy only 4.2% of the total eligible area in Poland and Ukraine (for CBC Programme PBU 2014–2020). The total value of the projects analysed was 94.3 million euros, of which, EU funding amounted to 83.5 million euros.

The analysis of the thematic scope of the projects must take into account the context of the priorities of each edition of CBC Programmes PBU. Neighbourhood Programme Poland–Belarus–Ukraine INTERREG IIIA/TACIS CBC (in 2004–2006) aimed to support cross-border cooperation on the eastern border of Poland (which at the same time constituted the external border of the EU) in developing links and building an atmosphere of trust. The 2007–2013 Poland–Belarus–Ukraine ENPI CBC Programme was directed at creating stable and lasting mechanisms for cooperation among administrative bodies, inhabitants, institutions and organisations, businesses and local communities, in order to better utilise the endogenous potential of borderland regions to support cross-border development processes. This aim was realised under three priorities:

- growth in competitiveness in cross-border areas, focused on actions promoting and supporting better conditions for doing business, developing tourism and improving the accessibility of the region;
- improving the quality of life, with consideration for environmental protection in borderland areas;

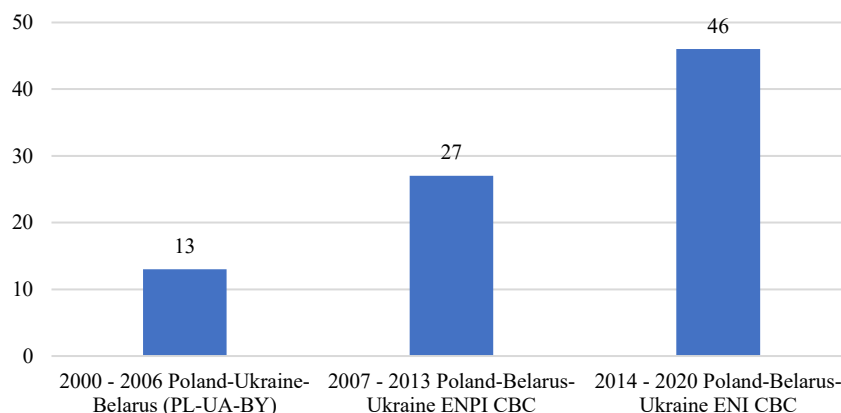


Fig. 3. The number of the analysed projects under the programmes 2000–2006 Poland–Ukraine–Belarus, 2007–2013 Poland–Belarus–Ukraine ENPI CBC and 2014–2020 Poland–Belarus–Ukraine ENI CBC
Source: Own elaboration based on Keep.eu Database (2022)

- network cooperation and local community initiatives, focused on actions promoting and supporting cross-border cooperation.

Finally, the 2014–2020 Poland–Belarus–Ukraine ENI CBC Programme promoted projects relating to the following thematic aims and dedicated priorities:

- promotion of local culture and conservation of historical heritage;
- improved access to regions, development of transport networks and communication systems that are durable and able to withstand the climate;
- joint challenges in safety and security;
- promotion of border management and management of security, mobility and migration.

Given the existence of two or more equivalent and complementary thematic priorities for many projects, two declared main themes and each was taken into account in the analysis. The themes of the projects analysed focused primarily on cultural heritage and arts (49 indications) and tourism (37 indications), with both themes often appearing together. Among the selected projects, both themes appear more often than in the group of all projects available in the database realised in the Polish–Belarusian–Ukrainian border area. In TBR areas, the share of projects dedicated to cultural heritage reached 57.0%, compared to 40.2% among all projects. The situation was similar in the case of

tourism; in the TBRs areas, the share of projects dedicated to this subject amounted to 43.0%, against 27.2% in the group of all projects. On the one hand, this result reflects the thematic priorities of the last two editions of the CBC Programme PBU (for 2007–2013 and 2014–2020). On the other hand, it confirms the priority given to the development of the tourism function based on the existing heritage as a key factor in stimulating local development. To a lesser extent, the themes of the projects implemented in the TBR area concerned the development of institutional cooperation and cooperation networks, transport connections, the development of the infrastructure and others. Only three projects addressed the TBR-relevant objective of sustainable management of natural resources (Fig. 4).

Local self-government units and their subsidiaries were the most involved in implementing the selected projects. They accounted for 65.1% of the total. The share of non-governmental organisations was also significant, amounting to 21.3%. Less numerous were state administration bodies, national parks, universities and religious organisations (Fig. 5).

Among the leaders of TBR-related cross-border cooperation were several local centres, such as Tomaszów Lubelski, Lubaczów, Zhovkva and Yavoriv (Roztocze TBR), Włodawa, Łęczna and Shatsk (West Polesie TBR) and Ustrzyki Dolne and Turka (East Carpathians TBR). At the same time, entities located in regional centres such as Lviv,

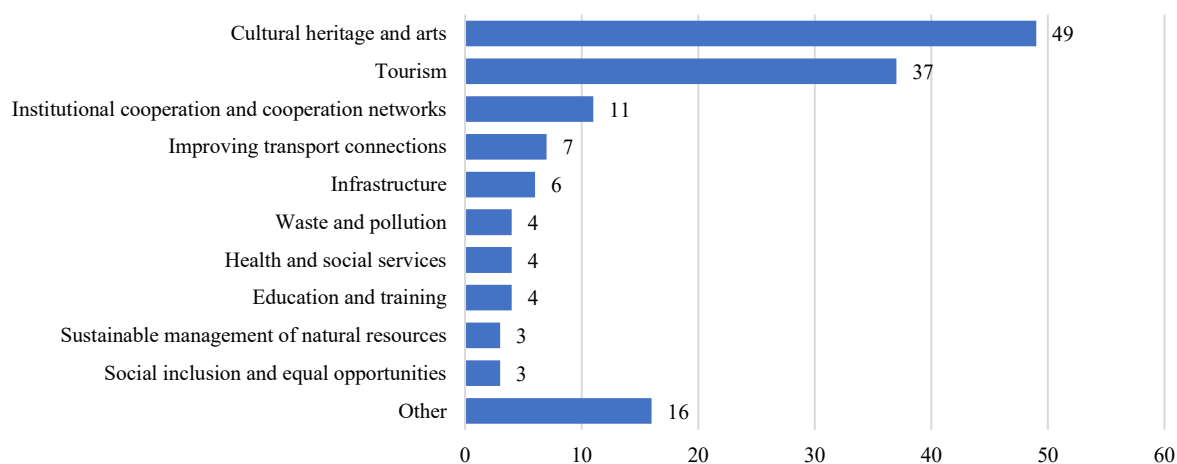


Fig. 4. The number of the analysed projects under the programmes 2000–2006 Poland–Ukraine–Belarus, 2007–2013 Poland–Belarus–Ukraine ENPI CBC and 2014–2020 Poland–Belarus–Ukraine ENI CBC

Source: Own elaboration based on Keep.eu Database (2022)

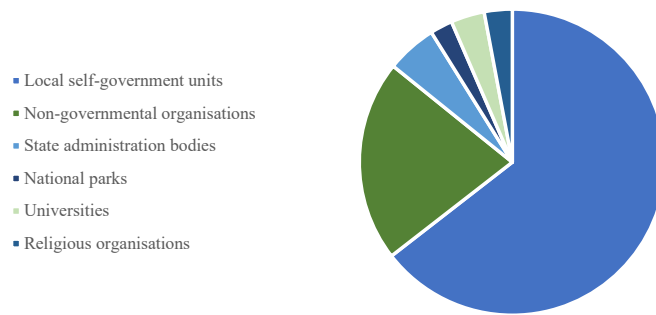


Fig. 5. Types of actors involved in the implementation of projects under the programmes 2000–2006 Poland–Ukraine–Belarus, 2007–2013 Poland–Belarus–Ukraine ENPI CBC and 2014–2020 Poland–Belarus–Ukraine ENI CBC
 Source: Own elaboration based on Keep.eu Database (2022)

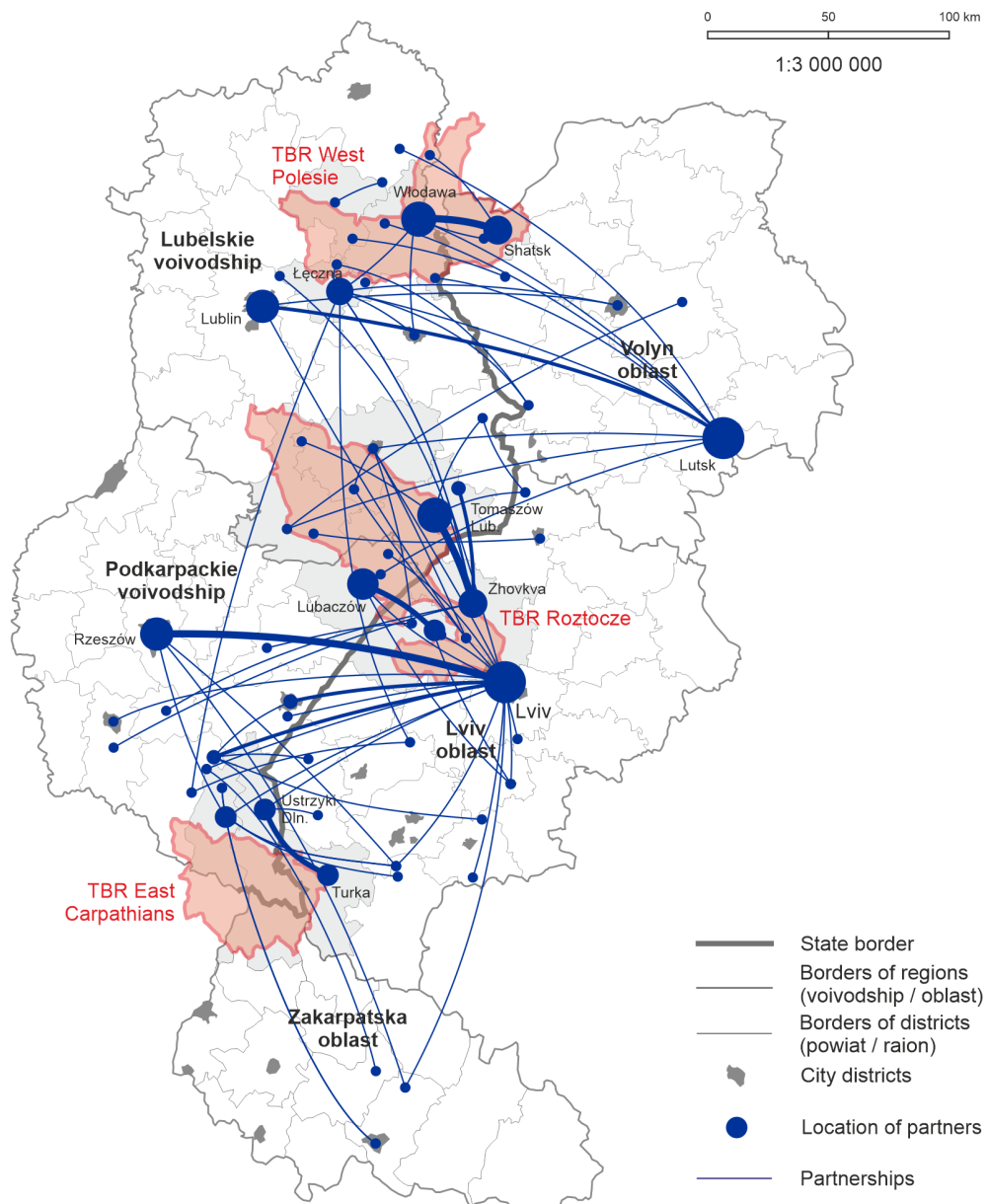


Fig. 6. Distribution of partnerships established in the course of implementing projects under the programmes 2000–2006 Poland–Ukraine–Belarus, 2007–2013 Poland–Belarus–Ukraine ENPI CBC and 2014–2020 Poland–Belarus–Ukraine ENI CBC
 Source: Own elaboration based on Keep.eu Database (2022)

Lublin, Rzeszow and Lutsk had a very large share in the implementation of TBR-related projects. A cartographic presentation of selected and analysed partnerships is shown in Fig. 6.

5.2. Subject matter and main objectives of CBC in TBRs in the Polish–Ukrainian borderland

In the light of the results of the quantitative analysis, the themes of the cross-border projects implemented in the analysed TBRs were mainly focused on protecting cultural heritage and developing tourism. Qualitative analysis (content analysis) largely confirms this observation, making it possible to distinguish several main categories of projects, taking into account their subject matter and assumed objectives.

The first group of projects concerned the promotion of tourist and cultural assets. In the first programming period, this was done mainly through the organisation of various events such as international music festivals, international integration days, open-air artistic events, scientific conferences, workshops, etc. In subsequent editions of the CBC Programme PBU, projects were also implemented to identify specific tourist assets and promote them through the development of various types of promotional materials, training in providing tourist information and tourist traffic services, or even more coordinated promotional campaigns on a broader scale. For instance, the Gampol project aimed at promoting natural heritage through the development and implementation of attractive offers for weekend tourists using modern territorial marketing techniques, while the UPLA project envisaged the creation of a tourism brand for the lake region, both projects being implemented in the West Polesie TBR.

The second group of projects include initiatives to create various types of tourism products. Several initiatives created different types of cross-border tourist routes. Some of the more interesting developments include: the creation of a trail of wooden sacral architecture and the Carpathian wooden architecture route, promoting one of the main features of the cultural originality of the Carpathians; the creation of a geotourist route comprising 28 geotourist objects chosen within the Polish–Ukrainian borderland;

and constructing or improving a 327-km-long cycle route enhancing the recognition of Roztocze TBR as shared natural heritage within the project B(L)ike Roztocze. Those projects aimed to contribute to the social and economic development of the borderland based on the tourism industry and the integration of the border communities into national, cross-border & international tourism routes. Sometimes, the implementation of this objective was combined with the restoration of historical monuments and, more rarely, with the creation of new tourist infrastructure.

The third group of initiatives includes investment projects. This category mainly included projects aimed at protecting the natural environment through the development or modernisation of sewage infrastructure and wastewater treatment plants in nature-value areas (West Polesie TBR, Roztocze TBR and East Carpathians TBR). The main driver for this type of investment was to improve the attractiveness and use of the natural heritage of border areas in the development of the tourist offering by improving sanitation (for instance, the projects Svityaz, Ksicher and RiversHeritage). Several projects involved the development of road infrastructure. These projects were aimed at increasing the accessibility of previously inaccessible TBR areas. This had a positive impact on the development of tourism. In some cases, however, projects were aimed at adapting road infrastructure to growing tourist traffic (the traffic increased before the investments in infrastructure).

Less numerous were projects dedicated to such important TBR objectives as protecting the natural environment (fourth group) or education for sustainable development (fifth group). Among the projects dealing with sustainable management of natural resources are those dedicated to water conservation (ProtectWater), the Carpathian bee (CarpathianBee) or fish migration and spawning grounds in mountain streams and rivers (Fish). A good example of the latter group of initiatives was the Bio-reserve project. It aimed at in-school and out-of-school environmental education and nature protection system management on both sides of the border to popularise the idea of a Biosphere Reserve as a model of sustainable valuable natural and cultural area management.

6. Discussion and conclusions

The Polish–Ukrainian borderland is characterised by its unique natural and cultural heritage. It also belongs to the least developed, peripheral regions of Europe, which need additional development impetuses. The UNESCO BRs concept may be the right answer to these expectations. They may provide opportunities to revive local economies by diversifying economic activities, primarily by developing sustainable agriculture and tourism (Ramutsindela, 2005; Nguyen, Bosch & Maani, 2011). The MAB UNESCO brand can be used as an economic advantage, as it offers possibilities for more effective tourism promotion (Mondino & Beery, 2019). These benefits appear to be even more important in the case of the TBR. Tourism is often the most important sector of the economy of border regions, and sometimes it is even perceived as the only chance for economic development. In this context, the tourist attractiveness of transboundary protected areas is determined by two key attributes – natural resources under legal protection and the border location, which is considered a tourist asset in and of itself (Więckowski, 2010), which is further enhanced by a rich cultural heritage. As a specific form of cross-border cooperation framework, the TBR should provide an opportunity to create an attractive tourist destination by popularising it and creating a common management system (Studzeniecki & Mazurek, 2007; Vasiljević et al., 2015; Studzeniecki et al., 2020). In this way, it should provide input for sustainable regional economic development and bring benefits to local communities and other stakeholders from all countries concerned.

The main objective of this study was to assess the role of TBRs in enhancing sustainable development of border areas driven by the use of cross-border cooperation (CBC) instruments. For this purpose, the example of the Polish–Ukrainian borderland was used. The study suggests that cross-border cooperation in the analysed areas was characterised by the predominance of projects oriented towards the third objective of the TBRs, i.e., socio-culturally and ecologically sustainable economic and human development. This was done mainly through the projects supporting the development of the region's tourist potential and tourist function. Often, the

projects implemented assumed the utilisation of cultural and natural heritage for socio-economic development by developing and fully exploiting tourist-oriented cultural infrastructure and tightening cooperation in this area between local borderland communities. Thereby, the cross-border cooperation addressed the main reasons for underutilisation of the development opportunities of the cross-border region in the field of tourism, such as insufficient marketing, lack of attractive tourist products and their promotion, peripheral geographical location and low communication accessibility, low quality of tourist infrastructure and capital barrier for the creation of attractive tourist products. Opportunities for the development of cross-border tourist destinations in the Polish–Ukrainian border region remain nonetheless limited due to the strong border barrier. While tourism became the main motive for cooperation, there was a noticeable almost-complete lack of initiatives aimed at developing other branches of the economy, such as sustainable agriculture.

The analysis of cross-border projects in the Polish–Ukrainian border area concerning TBR-relevant objectives indicates some opportunities, but also barriers that significantly limit their impact on the sustainable development of the cross-border area. In contrast to many projects implemented under the different editions of the CBC Programmes PBU, where the cross-border effect was rather weak, the projects implemented concerning the TBRs were characterised by a clear orientation towards spatial arrangements of a cross-border nature. The projects implemented were largely in line with the criteria of the calls for proposals. This gave prominence to issues related to heritage protection and institutional cooperation but limited the possibility of highlighting issues related to economic development. In addition, the existing priorities meant that, often under the cover of objectives related to stimulating sustainable socio-economic development, there were projects oriented towards meeting basic needs in terms of sewage or road infrastructure. Finally, the limited allocation of financial resources means that the direct economic impact of the projects implemented was rather limited, although the benefits of cooperation should be considered in a wider context.

Another important characteristic of cross-border cooperation in this field is the significant participation of actors from outside the TBRs. It seems that, due to

the peripheral location and low level of urbanisation, the analysed areas lack adequate resources (human capital, organisational capital) for large-scale activities. This is evidenced by the involvement of a relatively high percentage of entities from large cities, especially regional centres (such as Lviv, Lublin, Rzeszów or Lutsk). This makes the role of local leaders of trans-border cooperation all the more important, which include entities from Włodawa and Łęczna (in the West Polesie TBR) as well as Tomaszów Lubelski and Zhovkva and Lubaczów and Yavoriv (in the Roztocze TBR). On the other hand, a certain weakness in this respect is visible in the case of East Carpathians TBR (apart from Ustrzyki Dolne and Turka), which is characterised by a relative weakness of local stakeholders who might more extensively undertake various types of bottom-up initiatives. However, this observation remains consistent with the experience of other TBRs around the world (Trillo-Santamaría & Paül, 2016). A significant barrier to stimulating local development processes in the areas of TBRs is the lack of appropriate organisational structures responsible for coordinating cooperation among various stakeholders both within the country and across borders. In the case of the Polish–Ukrainian borderland, this problem was recently solved by the creation of the Roztocze Euroregion. Although cooperation in the Euroregion formula is not without its weaknesses, it is a well-established and relatively successful solution for facilitating cross-border cooperation at the EU's external borders (Studzieniecki et al., 2021). Supporting sustainable local development in the Polish–Ukrainian border region based on the natural and cultural values of the UNESCO TBRs and cross-border cooperation enhanced in the framework of the existing Euroregions (“Bug”, “Carpathians” and “Roztocze”) may be a positive direction for actions aimed at overcoming unfavourable development trends resulting from the region's peripherality. By linking the objectives of the TBR and the Euroregions, an innovative institutional platform may be created, allowing for appropriate management of local development in a cross-border context based on shared potentials and interactions. This should strengthen the model of sustainable socio-economic development that is based on indigenous assets.

7. Notes

1. Although the keep.eu database is the best source of information on cross-border projects financed under the Interreg and ENI/ENPI programmes, it does not contain information on all completed projects, including for the analysed area.
2. The study covered projects from 2004 to 2020, although the West Polesie and Roztocze TBRs were established in 2012 and 2019, respectively. This approach was considered appropriate due to the multi-year process of preparation for the establishment of both TBRs, which already in the preparatory period integrated regional and local partners around the idea of cooperation based on the objectives of the UNESCO MaB Programme.

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