

Annales Universitatis Paedagogicae Cracoviensis

Studia Politologica 33 (2024)

ISSN 2081–3333

DOI 10.24917/20813333.33.10

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Institutionalization of Cross-Border Cooperation in the Field of Ecological Safety and Flood Protection on the Bug River: The Example of the Activities of the Polish-Ukrainian Commission for Border Waters

Introduction

Border rivers play a special role in shaping cooperation and security in border areas (Kałuski 1988; Kałuski 1994: 67–85; Kałuski 2010: 69–77; Kitowski, Oskierko 2019: 70–71). Analyzing this issue more broadly, it is worth emphasizing that it is primarily about their cultural, social, economic, technical and, of course, ecological significance (Bernat 2010a: 169–170; Górny 2012: 27). They constitute a natural boundary between countries, lands and areas, and at the same time unite local communities around common problems and threats, which may be of a different nature, both natural and artificial. Their significance, as well as the study of borders, is associated with the evolution of the so-called trend, which emerged in the 1960s studies in which as many as eight aspects of interests and directions of border research were distinguished, including those that analyze borders as places of changes, disputes or the occurrence of specific threats requiring joint action (Minghi 1963: 407–428, za: Dołzbłasz, Raczzyk 2011: 61).

One of these rivers, the fourth largest, is the Bug, which is a natural separation of Poland, Belarus and Ukraine. From the beginning, many connections between these countries were indicated, resulting from the location of the Bug River as a natural

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barrier, some of them concerned and still concern issues related to the management of border waters and their monitoring in connection with the risk of flooding or pollution. An important effect of cooperation is the Euroregion "Bug", established in the 1990s, which, in addition to the Polish and Ukrainian sides, was also joined by the Belarusian side (Furtak-Niczypouk, Jaszczuk 2016: 150–154; Studzieniecki 2015: 17). In its case, the need for cross-border cooperation resulted from solving problems in the field of spatial development, communication, transport, health care, culture, sports, improving the condition of the natural environment and making institutional and economic cooperation more flexible on both sides of the border (Osikowicz 2017: 241–242). The last aspect very well emphasizes the need to establish institutional bodies for border rivers. At the same time, it must be clearly stated that the deepening of institutionalization on the eastern border was influenced by formal issues, i.e. the Polish-Belarusian agreement, and especially the signing of the protocol on barter exchange in Chełm on May 8, 1992 or the Polish-Ukrainian document signed on June 30, 1992 on cross-border cooperation in various fields, the crowning achievement of the activities in the early 1990s was the establishment of the Regional Center for Cross-border Cooperation, which was focused on developing legal, organizational, scientific and technical solutions regarding bilateral activities (Borys, Panasiewicz 1996: 44; Przybyła 2014: 15–16; Gwizdała 2015: 452).

Therefore, in the study it was decided to focus on the role of cross-border cooperation in the ecological area through the prism of the functioning commissions for border rivers, with particular emphasis on the activities of the Polish and Ukrainian sides. Based on materials available on the websites of both bodies and other existing sources, the aim was to show the genesis of cooperation and analyze the current effects within the framework of the operating institutions.

General characteristics of the Bug River as a border river

The Bug is the fourth longest river in Poland (after the Vistula, Oder and Warta), with a length of 775 km, and at the same time it is a border river separating Poland from Belarus and Ukraine for a length of 399.08 km (Michalczyk, Sobolewski 2002: 111). The state border line on the Bug runs from the vicinity of the town of Gołęb, border marker no. 820 to border marker 1261 and the so-called channel between border markers 1261–1265 in the middle of the riverbed and is 333.98 km long. On the other hand, on the section of 65.1 km, i.e. from border marker no. 1265 to border marker 1346, the border line runs along the main stream of the Bug. The length of the border waters of the Bug on the Polish-Ukrainian border is 227.77 km, while on the Polish-Belarusian border it starts from the town of Orchówek and is 172.03 km. According to the border documentation, the water section of the border of Poland and Ukraine is 287.97 km in total and runs on the following rivers: Bug – 227.77 km, San – 59.21 km and Zawadówka Canal – 0.99 km. The Wiar, Wisznia, Szkło and Lubaczówka rivers, which cross the state border, also have a cross-border character („Polsko-Ukraińska Komisja ds. Wód Granicznych. Zasięg terytorialny współpracy; Rzeka Bug”). The river,

on the section of 207 km to the Zegrze Reservoir, runs only in the territory of the Republic of Poland. The sources of the Bug are located near the village of Werchobuż near Lviv, and in turn flows into the Narew (Kitowski, Oskierko 2019: 72). The average flow in the lower reaches is $154 \text{ m}^3/\text{s}$, which makes the Bug the fourth largest river in Poland. The San is a right-bank tributary of the Vistula, its sources are in Ukraine („Czysty Bug?”).

In the ancient and recent past, the Bug and its immediate surroundings played an important role in the history of both Poland and the neighboring areas. Analyzing the role of the Bug as a border river, it is worth noting that it was usually an internal river, previously it only played the role of a border river twice, in the years: 1795–1815 and 1939–1941. Apart from these short periods, its basin has always been located within the borders of one country: the Principality of Galicia-Volhynia, Poland, Russia (in the years 1815–1918) and Poland again. It was similar with the area of Zakarpattia, which belonged successively to: Hungary, Austria, Austria-Hungary and Czechoslovakia. It can therefore be stated that the Polish-Soviet border marked out in 1945 was a new phenomenon (Miszczuk 2007).

The name of the river is also an interesting issue. Linguists see sources related to Germanic tribes and relate it to the word „bougen” – an arc, a bend. In turn, historians indicate that over time this term replaced the older one, which probably sounded like „Nur” (proto-Slovak: „to immerse”, „to sink”, „to penetrate”). From the root „nur” come such words as „dive”, „diver”, „nora” or „nury” – a large group of water birds, which include ducks and grebes (Zwierzyńska, Szepielewicz 2014).

Threats in border areas

An important element of the functioning of borderlands is the study of their influence and role through the prism of cooperation, implementation of neighbourly relations, determination of directions and local government policy, including the degree and indicators of regional development, ongoing integration and revitalization processes. An important element, the field of shaping mutual relations, in addition to the economy and infrastructure, are security issues and counteracting existing threats (Czepil, Opióła 2013: 60). There are many phenomena on the borderlands that are important from the point of view of state security, especially research on border disputes, smuggling, international organized crime, which are processes that not only take place in the border area, but are also determined by the history, potential and structure of the regions and border areas (Wawrzusiszyn 2012: 134). As regards some of the threats indicated, smuggling is „illegal transportation and import of goods (especially drugs, weapons, cultural goods) prohibited to the territory of a given country or transportation of others across the border without paying customs duties, excise duties, and other dues to the state, and its profitability is directly proportional to the efficiency of the bodies combating smuggling” (Zarzycki 2020: 178; zob. Perkowska 2011: 200–202). In turn, international cross-border crime is an area of research and analysis of the Border Guard, it is a broader concept than migration and

it includes illegal migration issues, statistics, main initiatives in the field of counteracting and combating illegal migration, cooperation within the European Union and with neighboring countries. In addition to analyses related to illegal migration, you can also familiarize yourself with data on human trafficking („Raport o stanie bezpieczeństwa w Polsce w 2015 roku”).

The above-mentioned list of threats related to border and cross-border areas is not complete, it is also worth mentioning threats of natural origin, and there is no shortage of such in the Bug River basin. Their sources are the elements: water, fire, earth, air, i.e. floods, fires, earthquakes, tectonic and tectonic movements, tsunamis, hurricanes, droughts, etc. Some of them are of a cross-border nature, an example of which is the flood of 1997 and 2010 (Ładysz, Ładysz 2010: 2013: 134–135). A special example of natural hazards are cross-border health hazards. They are all hazards of chemical, environmental or extraordinary origin in the field of public health with international scope (Nowicka, Kocik 2018: 108–113; Dąbrowska-Kłosińska 2016: 53).

The above-mentioned aspects can be expanded and studied in a more interdisciplinary, detailed way, sample analyses, case studies of individual borderlands include issues of the role of local and district governments in creating cross-border cooperation or the influence, the role of a given Euroregion in shaping the development of the borderland and other issues. In addition, the protection of the state border can be analyzed in three ways, in particular taking into account the political dimension, i.e. actions taken to maintain public order and order, then the economic aspect, covering all instruments hindering the local development of borderlands and the national development, as well as the ecological direction, which can be identified with taking actions to counteract the spread of threats (Klepner 2014: 100; Marczuk 2016: 102–103).

Ecological safety and the main challenges on the Bug River

In the indicated possibilities of studying borderlands, the issue of security appears, which can be treated as a state, process, feeling, perception, situation, ability, need related to ensuring the functioning, duration, action and development of a given entity (zob. Stańczyk 2009: 239–255; Majer 2012: 9; Grubicka, Matuska 2023: 19–22; Wawrzusiszyn 2016: 218–219; Zięba 2012: 8). Security is terminologically related to threats, which constitute the possibility of the appearance of negatively, perjoratively defined, perceived phenomena, objects, items, etc. (Zdrodowski 2014: 12, 15). In other words, it is „any phenomenon (process, event) undesirable from the point of view of the smooth operation of the system” (Sienkiewicz 2015: 9). Taking security and threats into account in the analysis is important from the point of view of understanding and specificity of the problems on the eastern border discussed in the article.

First of all, when analysing the role of security in influencing the analysed Polish-Ukrainian borderland, it can be viewed from the point of view of the ecological dimension of security, which can be defined as a long-term process aimed at maintaining the proper condition of the ecosystem and its individual elements, related to

the policy of protecting people and property (Makowska 2022: 23; Kożak-Siara, Majkowska 2018: 141–142). Ecological security, also known as environmental security, is related to other types, i.e. flood protection, treated as „a process in which the actions taken are intended to support the improvement and maintenance of the quality of life and sustainable socio-economic development, reducing threats resulting from natural disasters and crises in the natural environment and in the sphere of health” (Strzelecka 2014: 154). There is also the concept of eco-security, which can be defined as preventing, counteracting, limiting the destruction of environmental resources, including land, air, water, flora and fauna. We can also come across hydro-security, which involves the rational and effective use of water resources, reducing losses, and sustainable management of water supply systems, which are an important element of the country’s critical infrastructure (Gryz, Gromadzki 2023: 19). In addition to the concepts described above, it is worth mentioning that we are also dealing with biological, chemical, technical and technological, and epidemic safety. These types are included in ecological safety (Górska-Rożej 2013: 94–96).

An inherent feature of ecological safety are the occurring threats, when it comes to the Bug River valley, attention should certainly be paid to those dangers that affect its ecosystem and the catchment system (Kawałko 2011: 46).

As far as tributaries are concerned, the following are particularly important from the point of view of water management and protection against pollution: left-bank tributaries – Pełtew, Udal, Bukowa, Huczwa, Wełnianka, Sołokija, Uherka, Włodawka, Krzna, Toczna, Cetynia, Liwiec and Grabar, while the right-bank tributaries include: Ług, Muchawiec, Leśna, Nurzec and Brok (Marszał, Kruk, Tybulczuk, Pietraszewski, Tszydel et al. 2009: 87–99). Many projects aim to counteract pollution of these tributaries and protect them, mainly through monitoring and implementation of technical measures.

The next ecological threats are related to the diversity of nature. Namely, the Bug River area is distinguished by a significant diversity of habitats and species occurring in them. In the section from Gołębie to Terespol, the occurrence of about a thousand species of vascular plants has been found. The fauna is also diverse – it includes almost 100 species of diurnal butterflies (about 70% of all Polish species), 44 species of fish (57% respectively) and 158 species of breeding and probably breeding birds (69%). Part of the Bug River valley is under protection – this is 37.6% of the area lying in the mentioned area of municipalities, from Włodawa to Mircz (Marszał, Kruk, Tybulczuk, Pietraszewski, Tszydel et al. 2009: 100–113). Each of the countries located in the Bug River basin has its own national forms of nature protection. Nevertheless, the range of unique areas does not end with the state border. In order to effectively protect them, as well as to preserve the unique cultural heritage of the Bug River valley, the *Transboundary Biosphere Reserve West Polesie* was established in 2012. It was established on the Polish–Belarusian–Ukrainian border and consists of three national biosphere reserves: West Polesie in Poland, Bug River Polesie in Belarus and the Shatsk Biosphere Reserve in Ukraine. Actions are being taken within the framework of Poland’s ecological policy to protect river valleys, fauna and flora. Some of them are of a legal nature, while others require further institutionalization and activation.

Significant anthropogenic threats to the natural values of the border section of the Bug River valley are the processes of the disappearance of wetlands, recorded along the entire length, this is the type of environment most characteristic of the valleys of large rivers, of great ecological significance, of priority landscape rank. Additionally, there is fragmentation of floodplain forests. The second process is the increasingly intensive development and investment in areas close to border crossings, small in area, but in the long run, which may interrupt the continuity of the ecological corridor at several points. New threats may be caused by the expanding summer house estates and the related technical infrastructure, especially in the Podlasie section. The consequence of transformations is often the disharmony of the landscape and the fragmentation of valuable natural areas, disturbing its functioning and hindering the effective protection of biological and landscape diversity. Particularly dangerous for the values of the border section of the Bug valley is the development of the border crossing infrastructure, the inflow of cross-border pollution from Ukraine and Belarus, chaotic development and spontaneous disorderly development of tourist areas and uncontrolled development of agritourism. We should also not forget about the threat of excessive noise on the main communication routes, especially near border crossings (Bernat 2010b: 264).

Research conducted in 2005 on the border section of the Bug (363 km) showed that the water in that section of the river belonged entirely to the IV and V quality classes, i.e. poor (92%) and bad (8%). In 2009, an ecological disaster occurred on the Bug and Narew. 200 tons of dead fish were caught from these rivers. In 2010–2012, the quality of the Bug waters was assessed on the section from Kryłów (the first measurement point after the Bug flows in from Ukraine). Up to Dorohusk, the water showed a poor ecological status (class IV), up to Terespol – moderate status (class III), after which the water status deteriorated again to poor. As a result of the emerging problems, it was recommended to intensify cross-border cooperation within the commission for border waters (Bernat 2010b: 264).

Cooperation between Poland, Ukraine and Belarus on the Bug River

Within the framework of ecological security, many different undertakings are undertaken, some of them are of a formal, institutionalized nature and take place within the framework of intergovernmental bodies, such as commissions and councils for borders, regional, border or cross-border cooperation. Their role is to provide directions for cooperation across borders, set goals, monitor fundamental problems and ensure that cross-border activities are in line with the state's foreign policy. In general, the areas of interest of commissions and councils of a border or interregional nature, apart from issues related to ecological security, are matters related to transport, border crossings (with non-member states of the European Union), spatial planning issues, cooperation and mutual assistance during catastrophes and natural disasters or other serious accidents, the condition of Euroregions, economic and technical cooperation, health care, medical rescue, education and culture (Bartosiewicz 2008: I–IV, Kreft 2008: I–IV).

On the eastern border, the legal basis for cooperation is defined by the *Agreement between the Government of the Republic of Poland and the Government of Ukraine on cooperation in the field of water management on border waters* of 10 October 1996 (Journal of Laws of 1999, No. 30, item 282). Based on Article 15, paragraph 2 of this *Agreement*, the Polish-Ukrainian Commission for Border Waters was established (Sko-czylas 2012: 68; Marczuk 2016: 96–101). The strategic goal of cooperation was to ensure the rational management of border waters and improve their quality, as well as to ensure the preservation of ecosystems. The conclusion of the *Agreement* was guided by the belief that the protection and use of border waters, protection against damage caused by border waters are important tasks, the effective solution of which can only be ensured by close cooperation in the field of water management (Mioduszewski, Szymczak, Kowalewski 2011: 180). It is also about monitoring the state of border waters, which means all watercourses, including rivers and other surface waters, through which the border runs, and surface and underground waters crossed by the state border. Polish-Ukrainian cooperation covers a significant part of the transboundary catchment area of the Bug and San rivers, rivers that are part of the international Vistula River Basin Area¹.

The institutional manifestation of cooperation is the aforementioned Polish-Ukrainian Commission for Border Waters, which consists of representatives of the Parties consisting of Government Plenipotentiaries, their Deputies, Secretaries, Members and Heads of Working Groups, who are elected from among the relevant water management bodies. The function of the Government Plenipotentiary for Cooperation with Ukraine is performed by a representative of the ministry responsible for water management (Ministry of Infrastructure), in the rank of deputy minister. The functions of Deputy Plenipotentiary and Secretary are also performed by representatives of the ministry responsible for water management. The members of the Polish Delegation are representatives of the State Water Management Polish Waters, including the Regional Water Management Boards in Lublin and Rzeszów, the Catchment Board in Przemyśl, the Institute of Meteorology and Water Management – State Research Institute, the Chief Inspectorate for Environmental Protection and the Border Guard Headquarters. The Plenipotentiary of the Council of Ministers of Ukraine for Cooperation with Poland is a representative of the State Agency for Water Resources of Ukraine in the rank of chairman or his deputy. The task of the Plenipotentiaries and their Deputies is to ensure the fulfillment of the obligations of the parties under the *Agreement*. They maintain direct contact, appoint experts and convene meetings if necessary. The secretaries are responsible for drawing up minutes and other cooperation documents. The Commission meets once a year to assess the work being done, listen to the reports of the working groups and approve work plans („Polsko-Ukraińska Komisja ds. Wód Granicznych. Struktura organizacyjna Polsko-Ukraińskiej Komisji ds. Wód Granicznych”).

The cooperation is divided into four areas and is carried out throughout the year within the Polish-Ukrainian working groups, which operate on the basis of the

¹ The area of cooperation results from the location of the Polish border in the east.

Commission's statute, mandates and regulations, as well as work plans approved during the Commission's meetings.

Thus, the Working Group for Hydrometeorology and Hydrogeology (hereinafter referred to as the HH Group) conducts research, observations and exchange of data in the field of hydrometeorology and hydrogeology of transboundary waters. On the Polish side, the Institute of Meteorology and Water Management – State Research Institute based in Warsaw is responsible for the tasks of the HH Group. The Hydrological and Meteorological Station in Lublin-Radawiec and the Polish Geological Institute – State Research Institute PIG-PIB Carpathian Branch also cooperate within the HH Group. On the Ukrainian side, the Ukrainian Hydrological and Meteorological Center is responsible for cooperation with the help of the Regional Hydrological and Meteorological Center in Lviv and the Regional Hydrological and Meteorological Center of the Volyn Oblast in Lutsk. As part of the work of the HH Group, there is a daily exchange of operational hydrological and meteorological data for the preparation of hydrological forecasts for the needs of water balances, they are exchanged in quarterly cycles. Forecasts for daily hydrological protection are also analyzed on an ongoing basis.

Another group – the Working Group for the Protection of Transboundary Waters from Pollution (hereinafter referred to as the OW Group) is responsible for monitoring the state of transboundary waters. Its tasks include monitoring the state of transboundary waters. On the Polish side, the Chief Inspectorate for Environmental Protection – Regional Departments of Environmental Monitoring in Lublin and Rzeszów are responsible for the group's tasks. The Central Research Laboratories of GIOŚ, branches in Lublin and Rzeszów are responsible for the analysis of samples. On the Ukrainian side, the Water Resources Management Board in Lviv, subordinate to the State Agency for Water Resources of Ukraine, the Regional Office of Water Resources of the Volyn Oblast, the Lviv Regional Center for Hydrometeorology and the Volyn Oblast Center for Hydrometeorology are responsible for cooperation.

The third working group – the Working Group for planning transboundary waters (hereinafter referred to as the PL Working Group) is responsible for planning the management of transboundary waters in terms of their use for utility purposes and implementing EU water regulations in the Bugui San river basins. On the Polish side, the State Water Management Polish Waters, in particular the Regional Water Management Boards in Rzeszów and Lublin, are responsible for the group's tasks. The Marshal's Office of the Lublin Voivodeship and the Regional Directorate for Environmental Protection in Lublin also cooperate. On the Ukrainian side, the Water Resources River Basin Board in Lviv, subordinate to the State Water Resources Agency of Ukraine, is responsible for cooperation. The newly established river basin boards also cooperate. In cooperation with the Ukrainian partner, it is important to know the political and economic situation of the parties. The role of the PL Group is to exchange information on the directions of water policy, planning and management of water resources, as well as to inform each other about changes in regulations and institutional structure. The fourth and last working group within the Polish-Ukrainian Commission for Border Waters deals with flood protection and is called the Working Group for Flood Protection, Regulation and Land Reclamation (hereinafter referred

to as the OP Group). Its role is to maintain the patency of watercourses and to secure border areas in order to protect against flooding. On the Polish side, the State Water Management Polish Waters is responsible for the group's tasks, in particular the Regional Water Management Boards in Lublin and Rzeszów. On the Ukrainian side, the River Basin Management Board for Water Resources in Lviv, subordinate to the State Water Resources Agency of Ukraine, is responsible for cooperation, and the newly established river basin management boards cooperate. The OP Group conducts detours of border waters, during which problems and necessary maintenance works within border waters and water facilities are located („Polsko-Ukraińska Komisja ds. Wód Granicznych. Polsko-ukraińskie Grupy Robocze”).

As for cooperation with Belarus, the legal basis for cooperation has only recently been created. The *Agreement between the two Parties on cooperation in the field of protection and rational use of transboundary waters* was signed on February 7, 2020 in Białowieża, after nearly 20 years of negotiation work (Koślicki 2020)². It is worth noting that this is an important agreement for Polish-Belarusian border relations, because more than half of the length of this border is made up of water sections (over 240 km out of 418.24 km). In addition, thanks to its conclusion, Poland will have regulated bilateral principles of cooperation in the field of border waters with all neighboring countries (these issues are already the subject of Poland's bilateral agreements with the Federal Republic of Germany, the Czech Republic, Slovakia, Ukraine, Lithuania and Russia) (Koślicki 2020).

The *Agreement* was aimed at making cooperation on the Bug and Svislach rivers more flexible, and also aimed at regulating planning, investment and maintenance activities in the field of water management, exchanging information on ecological safety and flood protection. For this purpose, increased emphasis is placed on establishing cooperation bodies – commissions and working groups. The aim is to improve catchment management. Thanks to mutual efforts, it will be possible in the future to attract tourists and improve the condition of transboundary waters and ecosystems (Bielak-Bielecki, Miazga, Michna, Parcheta, Skwarek et al. 2015: 9).

As part of Poland's cooperation with Ukraine and Belarus, many actions have been taken to ensure ecological safety and protection against floods. Although it is difficult to compare the scope and achievements developed within the framework of many years of Polish-Ukrainian cooperation with the effects of the struggles of the Polish and Belarusian sides that have only just emerged, it is worth pointing out the following key areas, which are joint hydrological and hydrogeological research and observations and the exchange of information in these areas, conducting water monitoring to determine their quality and quantity, drawing up water-economy balances and agreeing on water classification, protection against pollution and excessive

² The strategic objective and principles of the *Agreement* are consistent with the legal regulations on water management in the Republic of Poland and the European Union. The conclusion of the *Agreement* will also contribute to the implementation of the obligations arising for Poland and Belarus from the provisions of the *Convention on the Protection and Use of Transboundary Watercourses and International Lakes*, signed in Helsinki on 17 March 1992 (Journal of Laws of 2003, item 702), to which both countries are Parties.

abstraction. The indicated directions of cooperation can be classified as ensuring ecological safety, and specifically combating pollution. Another group of projects is related to flood protection and drought prevention, and here we can indicate: preventing and eliminating technical obstacles, maintaining the natural course of border riverbeds, their monitoring, joint use of water facilities or implementation of cross-border projects aimed at the rational use of transboundary waters³.

It is worth noting that in connection with the outbreak of the conflict in the east, both sides – Poland and Ukraine – signed a *Memorandum between the State Water Management Company Polish Waters and the State Water Resources Agency of Ukraine* on cooperation in the field of European integration and water management. The purpose of the document was to provide the Ukrainian side with assistance in preparing for the implementation of EU law on the eastern border. Another issue was to improve the quality of ecosystems on both sides of the border. In the future, it was decided to undertake the reconstruction of water infrastructure. As reported by the Ukrainian side, as a result of military operations, hydrotechnical structures, often treated as barricades, suffered significant damage („Podsumowanie współpracy polsko-ukraińskiej w 2022 roku”).

Summary

The subject matter discussed in the study concerns the importance of institutionalizing cross-border cooperation and catchment management in the Bug River area and its impact on shaping ecological safety. As mentioned in the study, the institutional manifestation of cooperation is the aforementioned Polish-Ukrainian Commission for Border Waters, which consists of representatives of the Parties, who generally represent representatives of public administration related to the water management sector and other related departments. Four working groups operate within the Commission, whose activities focus on several basic areas: hydrometeorology and hydrogeology, protection against pollution, planning border waters, flood protection, and regulation and land improvement.

In addition to institutional cooperation, meetings and exchange of experiences, developing directions for counteracting floods, an important element of the Commission's activities is also formulating recommendations for the Parties to cooperation, which concerns the implementation of technologies and investments for effective catchment management. It is known that technical means, investments and organizational solutions also serve the water supply system in the event of long-term droughts (Molendowska, Ostrowska, Górski 2021: 131–132).

However, the most important objective of the Commission's activities is to support a strategic approach to flood protection, i.e. integrated actions, including periodically developed studies of conditions and directions of spatial development,

³ Prepared on the basis of materials collected within the framework of cooperation on border rivers.

which enable, among others: exclusion of green areas valuable for retention and infiltration of rainwater from development, protection of aquatic ecosystems and their buffer zone from development, ensuring spatial connectivity of green and blue infrastructure, designation of areas for development and/or definition of principles of such development (e.g. share of biologically active areas, necessity of water retention, limitation of the use of impermeable surfaces) (Wagner, Januchta-Szostak, Waack-Zajac 2014: 108–109). While the discussion of the role of technical solutions can be the subject of a separate publication, it is worth pointing out that in Poland, a number of planning solutions have been undertaken in the field of shaping solutions for flood protection. These include: flood risk management plans, preliminary flood risk assessment, flood hazard and risk maps, and plans for counteracting drought effects in river basin areas. Apart from them, we have many other organizational and planning solutions regarding the implementation of flood prevention monitoring in border areas.

Another group of activities that constitute the subject of cross-border cooperation on the Bug River are instruments classified as so-called forecasting and monitoring instruments, i.e. the development of forecasting measures, meteorological and hydrological warnings, organisation of protection and evacuation.

Soft initiatives are also important: information policy among residents, education on development and individual protection of buildings in flood areas. (Januchta-Szostak 2012: 93). In general, the activities carried out by the Commission in the field of ecological security on the eastern border include legal and institutional, economic and investment, social and technical solutions (Kledyński 2011: 244–245).

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Institutionalization of Cross-Border Cooperation in the Field of Ecological Safety and Flood Protection on the Bug River: The Example of the Activities of the Polish-Ukrainian Commission for Border Waters

Abstract

The article analyzes the role of the Bug as a border river in shaping security in border areas, in particular, theoretical issues related to the analyzed problem are presented and a catalog of threats related to the location is selected along state borders. However, the starting point is the characteristics of the Bug River; in particular its cultural, social, economic, technical and, of course, ecological importance. The text aims to present the institutional role of the river, which is a natural separation of Poland, Belarus and Ukraine. From the beginning, many connections between these countries were pointed out, resulting from the location of the Bug River as a natural barrier, some of them concerned and still concern matters related to the management of border waters and their monitoring in connection with the risk of flood or pollution. The last aspect very well emphasizes the need to establish institutional bodies for border rivers. Therefore, the study decided to focus on the role of cross-border cooperation in the ecological area through the prism of the functioning commissions for border rivers, with particular emphasis on the activities of the Polish and Ukrainian sides. Based on materials available on the websites of both bodies and other existing sources, the aim was to show the genesis of cooperation and analyze the current effects within the operating institutions.

Keywords: border river, Bug, institutionalization, cross-border cooperation, Polish-Ukrainian Commission for Border Waters