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# METHODOLOGICAL APPROACHES TO ASSESSING THE DEVELOPMENT OF CROSS-BORDER CO-OPERATION OF UKRAINIAN REGIONS

### Stepan Vaskiv<sup>1</sup>

Abstract. The research highlights the objective need and the problems of assessing the development of crossborder co-operation in Ukraine, especially in the conditions of critical economic and social instability caused by a full-scale invasion and its consequences. The purpose of the article is to scientifically substantiate methodological approaches to the assessment of cross-border territorial co-operation and the construction of a balanced and multi-level information and analysis system. In order to achieve this goal, the methods of analysis and synthesis, grouping of indicators, theoretical generalisation and content analysis were used. It has been established that there is no generally accepted methodology for evaluating these processes. Furthermore, the methodologies that do exist cover a range of spheres and mechanisms of interaction with European countries, with a particular focus on specific programmes and initiatives. Additionally, it was determined that Ukraine lacks a systematic approach to monitoring the aforementioned processes, despite the Ministry of Community and Territorial Development of Ukraine's obligation to regularly furnish data on the advancement of the goals set forth in the State Program for the Development of Cross-Border Co-operation of Ukraine for the 2021-2027 period. It is proposed to expand the system of indicators for relevant monitoring by adding a number of basic indicators (GRP, investment activity, international image of the territory). The findings of the study substantiate the issue of inadequate substantiation of the theoretical and methodological foundations of cross-border co-operation of Ukrainian territories in the context of war and the challenges posed by European integration. This proves the need to develop a multi-level system for monitoring cross-border co-operation at the level of the state, macro-raions, oblasts and hromadas (raions) with a list of clear criteria and evaluation indicators that would take into account the basic principles, main tasks and risks of such co-operation. It is of the utmost importance to acknowledge the invaluable experience of European countries in the assessment of cross-border relations, particularly in the construction of domestic methodology and the search for additional data sources. The foundation for future research in this area can be an evaluation of the extent to which the objectives set out by the Ukrainian state for the development of cross-border co-operation have been met, and an assessment of the potential for further progress.

**Keywords:** cross-border co-operation, regional development, security challenges, methodological approaches, system of indicators.

JEL Classification: F50, R10, R58

#### 1. Introduction

The contemporary geopolitical and economic context in Ukraine, shaped by novel risks and realities, has the potential to impede cross-border co-operation, particularly with EU Member States, and to diminish its efficacy. Even at this early stage of its candidacy for EU membership, Ukraine is already facing significant economic challenges from Poland and Slovakia. These include concerns about intensifying competition from Ukrainian agricultural producers,

non-tariff trade restrictions on Ukrainian imports in Romania, the Hungarian leadership's blocking of many EU decisions regarding financial and military support for Ukraine, as well as negotiations regarding its membership in the Union. Additionally, large-scale infrastructure and transport projects with Moldova have been suspended due to prospective investment and other risks.

It is evident that with the beginning of the fullscale invasion of Ukraine by the Russian Federation,



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the threats, risks and limitations of cross-border relations have only increased, and therefore it is extremely important to identify and solve problems of cross-border relations with neighbouring territories in a timely manner, as well as to have an adequate methodological basis for assessing the development and effectiveness of cross-border co-operation in the new realities. This determines the relevance of this study and the corresponding theoretical and practical significance.

The contributions of scientists such as V. Markovych (2018), S. Matkovskyy (2011, 2014), N. Mikula (2004), N. Pavlikha and O.Korneliuk (2019), M. Resler and T. Rejs (2023), I. Shkola and B. Korop (2010), and T. Tereshchenko (2004) have been instrumental in advancing the methodological approaches to the assessment of cross-border territorial co-operation. However, the insufficient substantiation of the theoretical and methodological foundations for intensifying cross-border co-operation in the context of war and European integration challenges remains problematic. However, there is no specific generally accepted methodology for assessing these processes, as they cover different areas and mechanisms of interaction with European countries, numerous programmes and initiatives. The objective of the research is to provide a substantiation of the existing methodological approaches to the assessment of cross-border co-operation of territories and the construction of a balanced and multi-level information and analytical system.

### 2. Regulatory and Legal Support for the Formation and Implementation of Methodological Approaches to the Assessment of Cross-Border Co-operation

Methodological orderliness is an indispensable prerequisite for the harmonisation of state statistics with the EU statistical system. Furthermore, it constitutes an objective factor conducive to the successful management of cross-border relations in the current context, given that Ukraine currently receives substantial humanitarian, financial and military assistance from a range of European organisations and funds. This necessitates the implementation of an appropriate evaluation and reporting process, the objective of which is to confirm the targeting and effectiveness of the support provided. Furthermore, the potential for international territorial co-operation at the community (hromada) level and other analogous territorial units is also increasing, with this being directly regulated by the recently enacted Law of Ukraine, dated 24 April 2024. In this context, the necessity for the development of a multi-level system for monitoring cross-border co-operation is being discussed (Matkovskyy & Vaskiv, 2011; 2014). This system should be implemented at the level of states or macro-raions, regions and hromadas (raions), and should include a list of assessment criteria and indicators that take into account the basic principles, main tasks and risks of such co-operation. The experience of European countries in the assessment cross-border co-operation of prove invaluable in the construction of domestic methodology and the search for additional sources. Thus, at the initial stage of the study, the following main issues are primarily considered, which need to be harmonised and systematised in accordance with the new Ukrainian legislation and EU policy:

- (1) Levels of cross-border co-operation (taking into account the new approach to the classification of territorial units of Ukraine, comparable to the European system);
- (2) goals and objectives according to different types (mechanisms) of co-operation;
- (3) risks and opportunities at each level of the relationship;
- (4) principles and methods of cross-border co-operation research, as well as the types of data required for their use (qualitative and quantitative);
- (5) data sources or their absence due to analytical and methodological gaps;
- (6) opportunities and limitations of applying the European experience of similar studies in Ukraine in the context of security challenges.

In order to reconcile the regional statistical indicators of Ukraine with the Eurostat database as part of the implementation of the Association Agreement between Ukraine and the EU, the State Statistics Service of Ukraine developed and approved the Statistical Classification of Territorial Units of Ukraine (NUTS-UA) in accordance with the order of July 18, 2024 (Statistical classification of territorial units of Ukraine (NUTS-UA), 2024). In accordance with EU Regulation No. 1059/2003, Ukraine is subdivided into territorial units at three levels for statistical purposes. The NUTS-UA1 classification encompasses eight macro-regions, while the NUTS-UA2 comprises 27 regions, including oblasts, Kyiv, and Sevastopol. The NUTS-UA3 classification, on the other hand, is divided into 138 raions. It is also noteworthy that the introduction of the revised Statistical Classification of Territorial Units of Ukraine will facilitate the resolution of the issue of data provision for cross-border co-operation, particularly in regard to the comparability of methodology and data at varying territorial levels.

The revised legislation pertaining to international territorial co-operation and the novel methodologies employed to provide statistical support are supplementary to the State Programme for the Development of Cross-Border Co-operation for 2021-2027 (The Resolution of the Cabinet of

Ministers of Ukraine "On Approval of the State Programme for the Development of Cross-Border Co-operation for 2021-2027", 2021). The programme defines the goals and tasks of the further development of cross-border co-operation, determines organisational and legal mechanisms and means of achieving the goals in accordance with the State Strategy of Regional Development for 2021-2027 (The Resolution of the Cabinet of Ministers of Ukraine "On Approval of the State Strategy for Regional Development for 2021-2027", 2020) and regional development strategies of border regions of Ukraine. In accordance with the stipulations of the Program, cross-border co-operation represents an efficacious instrument for the interaction of subjects and participants, with the objective of ensuring local and regional development, supporting economic progress, enhancing the competitiveness of regions and disseminating innovations. The implementation of such tasks contributes to an improvement in the quality of life of the population of Ukraine's regions, bringing them closer to the average European standard. Furthermore, it facilitates the implementation of the European integration vector at the regional and national levels.

In the scientific discourse and practical activity, a plethora of methods for evaluating cross-border cooperation of territories are employed. Such methods may include the analysis of political, economic and socio-cultural aspects of international relations; the study of the effectiveness of cross-border projects and programmes (for example, monitoring the implementation of programmes based on target indicators and actual results); and the assessment of the impact of cross-border relations on the development of each of the involved parties.

# 3. Principles, Objectives and Levels of International Territorial Co-operation of Ukraine

In order to ensure the relevance of the analytics and the correct interpretation of the results of the analysis, it is essential to observe the fundamental principles that underpin the assessment of cross-border co-operation of territories. It is proposed that the four basic principles identified by T. Tereshchenko in his research be employed:

- Target orientation (compliance of the implemented projects and cross-border co-operation activities with the main goals and objectives set when the Euroregions were created, as well as with the relevant regional, sectoral, national strategies, programmes and priorities);
- comprehensiveness (determination of the overall impact of cross-border relations on the socio-economic development of border areas through the assessment

of economic, social, environmental, financial, budgetary, infrastructure, cultural and educational indicators of cross-border co-operation);

- effectiveness (checking the establishment of good neighbourly relations between the subjects of cross-border activities; overcoming various barriers between the border regions of neighbouring countries; solving problems not only of the border administrative-territorial units, but also of the state as a whole);
- multilevel (determining the results of cross-border co-operation at three levels) (Tereshchenko, 2004).

In light of the aforementioned considerations, it is imperative to conduct an assessment at the national level (macro-level) in the context of cross-border cooperation research. This assessment should encompass an investigation of socio-economic development, foreign economic activity (cross-border trade and foreign investments), and the programmes and projects of cross-border co-operation. At the regional level, the evaluation of regional factors of socio-economic development, territorial asymmetry, foreign economic activity of regions, cross-border programmes and projects in the region is conducted. At the local level, the assessment of cross-border co-operation of districts, communities or individual settlements is carried out, as well as the modelling and strategising of the activation of cross-border co-operation at the local level (Table 1).

This is corroborated by I. Shkola and B. Korop, who, in their study of cross-border co-operation at the local, regional, state, and pan-European levels, emphasise the necessity of defining the goal, object, subject, goals, methods, and evaluation indicators for each of these levels (Shkola, Korop, 2010).

In order to provide an overview of the most common theoretical and methodological approaches, a methodology for assessing cross-border territorial co-operation has been developed. This methodology comprises five stages, which are outlined below.

Stage I. Definition of the research objective (comprehensive assessment of the development and effectiveness of cross-border co-operation), units of analysis (cross-border territories), subject (processes of cross-border activity) and tasks (level of effectiveness of cross-border co-operation over a certain period, key trends in its development and methods of activation).

In addition to identifying the purpose, tasks, objects and subject of research, this stage entails an assessment of the current state of interterritorial co-operation, clarification of problematic aspects and potential opportunities.

Stage II. Identification of mechanisms or forms of cross-border co-operation as objects of analysis: basic (Euroregions, associations of Euroregional co-operation (clusters, industrial parks, partnerships, agreements, projects, trade, cloning)) and innovative

Table 1
Levels and objectives of Ukraine's international territorial co-operation adapted to European statistical reporting

Levels	Objectives	Analysis objects
Transnational (macro-level)	Involvement of entities and participants at the national, regional and local levels in the implementation of joint projects and programmes with relevant entities and participants of foreign countries to address common problems at the international, state, regional and local levels, expand good neighbourly relations and achieve a higher degree of territorial integration into the global community.	
Cross-border regional	Solving common problems of the border regions and territories of Ukraine and neighbouring states through the optimal combination of their capabilities and resources on a contractual basis (namely, through: (1) implementation of joint projects and programmes; (2) conclusion of agreements on cross-border co-operation; (3) formation of or accession to Euroregional co-operation; (4) accession to the European Grouping of Territorial Co-operation (EGTC) to solve specific problems; (5) creation of a Euroregion.	NUTS-UA2: 27 regions (24 oblasts: Vinnytsia, Volyn, Dnipropetrovsk, Donetsk, Zhytomyr, Zakarpattia, Zaporizhzhia, Ivano-Frankivsk, Kyiv, Kirovohrad, Luhansk Lyiv Mykolaiv Odesa Poltava Rivne Sumy
Cross-border sub-regional (raions, hromadas, settlements)	Addressing common challenges and problems at the local level with relevant actors and stakeholders in foreign countries (e.g., exchange of experience and resources between border towns or villages, joint projects and programmes, partnerships between local governments, territorial co-operation groups, etc.).	NUTS-UA3: 138 raions (for example, the Carpathian region or macroregion 07 includes 22 raions, specifically in Zakarpattia Oblast: Berehiv Raion, Mukachevo Raion, Rakhiv Raion, Tiachiv Raion, Uzhhorod Raion, Khust Raion; in Ivano-Frankivsk Oblast: Verkhovyna Raion, Ivano-Frankivsk Raion, Kalush Raion, Kolomyia Raion, Kosiv Raion, Nadvirna Raion; in Lviv Oblast: Drohobych Raion, Zolochiv Raion, Lviv Raion, Sambir Raion, Stryi Raion, Chervonohrad Raion, Yavoriv Raion; in Chernivtsi Oblast: Vyzhnytsia Raion, Dnistrovskyi Raion, Chernivtsi Raion).

Source: summarised by the author on the basis of the current legislation on international territorial co-operation and the new statistical classification of administrative and territorial units of Ukraine

(European Grouping of Territorial Co-operation – EGTC) forms.

Stage III. Development of a system of indicators and sources of their provision in accordance with specific forms of cross-border co-operation or on the basis of a certain methodological approach. At this stage, the goals and objectives of co-operation between the territories to be achieved are taken into account.

Stage IV. The study of the impact of cross-border co-operation on the socio-economic development of territories at different levels: interstate (intensification of integration processes through cross-border co-operation), regional (assistance in reducing disparities in the socio-economic development of regions), sectoral (increasing the level of development of individual sectors) and social (meeting the social needs of the population).

Stage V. Completion of the assessment and monitoring of the effectiveness of cross-border co-operation and identification of ways to intensify it. At the final stage,

the strategic directions of co-operation development and the mechanisms (resources, tools, methods, procedures) for achieving them are adjusted.

# 4. System of Indicators for Assessing Cross-Border Co-operation of Territories

It is quite obvious that building a system of indicators to assess cross-border co-operation of territories, as well as the sources of their provision, depends on the purpose, objectives and objects of the study. The basic (key) indicators here can be both basic indicators (macro- and meso-level) and the specific indicators of the effectiveness of the implementation of a specific form of co-operation (for example, the Euroregion) or the effectiveness of the implementation of a specific program.

In this aspect, the author fully supports the position of the majority of domestic scholars who believe that

the development and effectiveness of cross-border co-operation is difficult to assess by direct methods. This signifies the necessity to implement indirect, methodical approaches based on a number of basic (key) indicators, in particular with regard to crossborder trade, mutual foreign trade relations and investments, volumes of financing from international funds and structures, and the socio-economic effects resulting from the implementation of activities and projects of cross-border co-operation. As N. Mikula (2004) asserts, the quality of life of border residents can be evaluated through indirect assessment, which also allows for comparisons to be made with other regions and the national average. Furthermore, a crossborder region based on a three-level scheme is put forth as a foundation for research: the principal systemic aspects of the region, the subsystems of the region, and the processes and stages of the region's formation and development. It is important to acknowledge that the application of this approach is constrained by methodological limitations, particularly with regard to the accessibility of raw data for analysis (as exemplified in the context of cross-border trade) and the inclusion of indicators that are challenging or impractical to adjust and regulate at the regional level (such as those pertaining to infrastructure

development and the financial support of international institutions).

The study of the conditions for the development and effectiveness of cross-border relations of the country involves the analysis of basic socio-economic indicators of cross-border territories. These include the volume of the regional gross product, the size of the average wage, the level of economic activity and the share of unemployment. Additionally, indicators of foreign economic activity are considered, in particular the volume and dynamics of foreign trade (export, import) and foreign investments. Furthermore, participation in relevant programmes, projects and initiatives represents a crucial aspect of cross-border co-operation development (Figure 1). The analysis of these indicators enables a comparison of the Ukrainian territories engaged in cross-border relations with other territories, facilitating an assessment of the degree of asymmetry in their development.

When analysing the economic aspect of crossborder relations, it should be noted that border regions are more likely to interact with neighbouring countries than with other regions of their own country.

In addition to the influence of historical factors, the specialisation of the region as a trade "gateway" of a certain country with a group of neighbouring

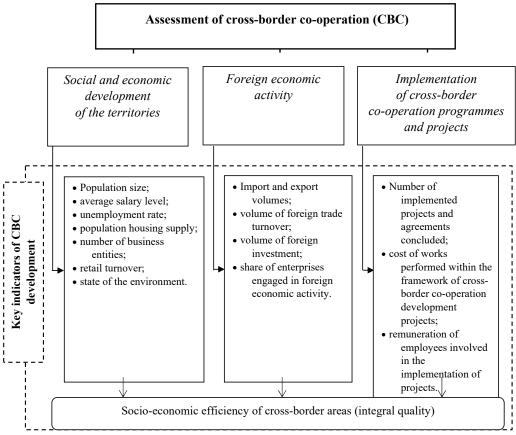


Figure 1. Key indicators of development and efficiency of cross-border co-operation of territories

Source: systematised by the author on the basis of (Mikula, 2004; Pavlikha, Korneliuk, 2019)

countries is a significant explanatory factor. In this context, it is possible to study the balance of foreign trade of the border territories, in particular by examining the following factors: partner countries (regions), commodity structure, structure of raw materials and products produced from them, volumes of barter, volumes of humanitarian aid and types of vehicles, and so forth (Vaskiv 2010; 2011).

Furthermore, it is important to consider the concept of socio-economic efficiency in the context of cross-border co-operation between territories. The position put forth by V. Markovych is endorsed here, wherein the term is defined as a specific level of efficacy, quantified by the ratio of beneficial socio-economic outcomes (effects) of cross-border co-operation and the resources deployed to ensure its viability (material and immaterial costs, implemented measures) (Markovych, 2018). Concurrently, the social dimension of efficiency is also evaluated in accordance with the expectations of the population and the fundamental social demands.

For a comprehensive assessment of these processes, it is considered necessary to use a separate system of indicators for each form of cross-border co-operation, distinguishing between basic (Euroregions), functional and innovative forms (cross-border clusters, industrial zones, parks, partnerships, etc.). Thus, for the analysis of Euroregions, the experience of EU countries (Resler, Rejs, 2023) suggests taking into account information on mutual consultations of authorities and public authorities, co-operation in various fields with other Euroregions and European international and interregional organisations, using the following indicators:

- Number of implemented projects and concluded agreements;
- their ratio at different territorial levels;
- financing in areas of cross-border co-operation;
- payment of employees involved in project implementation;
- social impact of these forms of co-operation (increased employment, improved social protection, etc.).

The study of functional forms (joint projects and programmes, exchange of experience and experts, co-operation in trade and investment, infrastructure development, environmental protection, cultural exchange) is based on the indicators of foreign trade with neighbouring countries and their border regions, the ratio of these indicators with other regions; indicators of investment activity, the number of joint ventures with partners from neighbouring countries.

To analyse *the development of border infrastructure*, it is necessary to take into account, for example:

- The number of border crossing points and their capacity;

- provision of transportation of goods and people in the border region by carriers and various modes of transport;
- length of constructed and reconstructed roads (Pavlikha, Korneliuk, 2019).

The sources of most statistical and administrative data are central level authorities (special ministries and agencies), regional level authorities (state oblast administrations) and local self-government, internal and external institutions regulating cross-border co-operation, and territorial statistical offices. For certain specific data, it is also necessary to use expert assessments.

An example of a set of *specific indicators* for assessing a country's international territorial relations based on the results of a specific programme is the indicators for monitoring the implementation of the aforementioned State Programme for the Development of Cross-Border Co-operation of Ukraine for 2021-2027 (Table 2).

According to the provisions of the Programme, the Ministry of Infrastructure (now the Ministry of Communities and Territories Development) of Ukraine is obliged to inform the Cabinet of Ministers of Ukraine on the progress of the Programme implementation by March 15 each year, using the indicators listed in Table 2. During the three years of this programme document, no information on the implementation of the declared tasks was found, despite the obligation of the Ministry of Communities and Territories Development of Ukraine to regularly provide data on monitoring the implementation of the Programme.

#### 5. Conclusions

The theoretical and methodological foundations of cross-border co-operation in the context of war and European integration remain inadequately substantiated, and the challenges this presents remain a significant issue. No specific, generally accepted methodology exists for evaluating these processes. Those that do exist cover various spheres and mechanisms of interaction with European countries, numerous programmes and initiatives.

The results of the analysis enabled the substantiation and establishment of a systematic and methodical approach to the assessment of cross-border co-operation of territories, taking into account current programme developments and normative changes, as well as the security challenges of the evolving economic landscape. The comprehensive methodology encompasses both fundamental indicators, such as gross regional product, economic activity, and foreign trade, as well as specific indicators pertaining to investment activity, environmental safety, and the international image of the country and territories.

Table 2 Indicators for monitoring the implementation of the State Programme for the Development of Cross-Border Co-operation of Ukraine for 2021-2027

Indicators	Units of measurement	Value of the indicator in the base year*.	Interim and target values in 2022 and 2027	Data sources
Unemployment rate in the border regions of Ukraine	%	9,2 (2019)	6% in 2022 with a further downward trend of 0.2% annually	The State Statistics Service of Ukraine
2. Volumes of exports and imports of goods and services in the border regions of Ukraine	million USD	volume of export: 26329,9 (2019) and volume of import: 22952,6 (2019)	Increase the indicator by 5% annually [author's note: it is proposed to start from the total trade turnover (E+I) on average for one region, in particular, 2,737.9 million USD in 2019]	The State Statistics Service of Ukraine
3. Number of workplaces in traditional and promising activities in the border regions of Ukraine	units		1,500 jobs created in 2022 with a further upward trend	The State Statistics Service of Ukraine
4. Number of new business entities in the border regions	units	194170 (2019) or 12,136 on average per region	About 600 new businesses in 2022 with a further upward trend	The State Statistics Service of Ukraine
5. Logistics Proficiency Index of Ukraine (World Bank LPI)	ranking	66 (2018)	Ukraine's ranking in the top 50 world rankings	The World Bank
6. Share of the area of territories and objects of the nature reserve fund in the total area of the border regions of Ukraine	%	6,8 (2019)	7.01% in 2022 with a further upward trend of 0.07% annually	The State Statistics Service of Ukraine
7. Forestry in the border regions of Ukraine	%	20,72	20.92% in 2022 with a further upward trend of 0.05% annually	The State Agency of Forest Resources of Ukraine
8. Length of roads built and reconstructed	km		About 1,531 km of roads by 2022 with a further upward trend	The Ministry of Infrastructure of Ukraine**
9. Number of Euroregional co-operation associations established	units		at least 3 associations by 2022 with a further upward trend	The Ministry of Infrastructure of Ukraine**
10. Number of established intergovernmental councils, commissions, working groups on cross-border co-operation (including with the Black Sea region)	units		At least 2 intergovernmental councils, commissions, working groups in 2022 with a further upward trend	The Ministry of Infrastructure of Ukraine**

Notes: \* average or total values for all border regions of Ukraine (18 regions) in 2019

 $Source: compiled \ on \ the \ basis \ of \ the \ current \ State \ Programme \ for \ the \ Development \ of \ Cross-Border \ Co-operation for \ 2021-2027 \ ("..."-data \ not \ specified \ in \ the \ Programme)$ 

Despite the obligation of the relevant ministry to conduct an annual review of the implementation of the goals and provisions of the State Program for the Development of Cross-Border Co-operation of Ukraine, no such review was carried out. In light of the aforementioned circumstances, an assessment of the degree of fulfilment of the established objectives and the potential for their realisation can serve as a foundation for future research in this domain.

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