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ANALYSIS OF EXPERT OPINIONS ON THE PROSPECTS FOR BIOREGION DEVELOPMENT IN LATVIA

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The aim of this study is to examine how the bioregion concept is perceived in Latvia and to identify the key benefits, challenges, and risks characterizing its implementation potential, based on interviews with local and international experts. A qualitative research approach was applied, using semi-structured interviews with three respondent groups: (1) local stakeholders - institutional partners and community activists of the Gauja National Park bioregion, Latvia, (2) international experts from countries with established bioregional practices, and (3) regional/municipal experts from potential Latvian bioregions, including municipalities, businesses, and agricultural stakeholders. The results show that the bioregion is perceived as a development model rooted in local resources and cooperation, integrating economic, ecological, and social dimensions. Respondents highlighted the potential of bioregions to strengthen local economies, foster community participation, and preserve landscape values. At the same time, significant challenges were identified, including the lack of clear political and legal frameworks, insufficient economic incentives for farmers, and coordination difficulties. International experience demonstrates that sustainable bioregion development requires state-level support, institutional structures, and broad community engagement. It is concluded that bioregions can become an important regional development instrument in Latvia if strategic support and governance mechanisms are established to connect local communities, municipalities, and entrepreneurs within a shared development framework.

Keywords: *bioregion, biodistrict, sustainable rural development, regional policy*

INTRODUCTION

The development of rural areas in the 21st century is closely interconnected with global challenges such as climate change, biodiversity loss, and the imperative to secure sustainable food systems (Wezel et al., 2009). Within this context, the European Union's "Green Deal" (European Council, Council of the, 2025) and the "Farm to Fork" (European Commission, 2020) strategy set a target of increasing the share of agricultural land under organic farming to 25% by 2030, while simultaneously promoting short food supply chains, advancing the circular economy, and strengthening environmental protection. In this context, the bioregion approach is increasingly recognized as one of the most promising approaches to sustainable rural development, integrating economic, social, and environmental objectives and creating a locally anchored platform for collaboration and governance (Mazzocchi et al., 2021; Zanasi et al., 2020; Proškina et al., 2023). It is important to note that the concept of a bioregion is referred to by different names in the literature, as there is currently no universally accepted definition across countries and authors. Synonyms used include "organic district," "ecoregion", "bioregion", "biodistrict", and "organic territory" (Basile, 2014; IFOAM, 2020; Guareschi et al., 2020). This terminological diversity highlights the evolving nature of the concept and the need for contextual adaptation when implementing it in different regions.

A bioregion is defined as a functional territory in which diverse stakeholders, including municipalities, farmers, entrepreneurs, educational institutions, NGOs, and residents collaborate to manage local resources, develop organic production and short food supply chains, preserve the landscape, and strengthen social capital (Cuoco & Salvatore, 2014; Pugliese et al., 2015). The bioregion concept encompasses three interrelated dimensions: economic, social, and environmental, which together constitute the foundation for sustainable development (Basile, 2014; Poponi et al., 2021). The economic dimension is associated with strengthening the local economy, generating added value, and fostering the development of short food supply chains. The social dimension encompasses community cohesion, active citizen participation in decision-making, and the reinforcement of local identity (Pugliese et al., 2015; Lamine et al., 2023). Meanwhile, the environmental dimension emphasizes the sustainable use of resources, the preservation of biodiversity, and the maintenance of the landscape's aesthetic quality. (Pugliese et al., 2016; Wezel et al., 2009; IFOAM, 2020).

Maintaining a balance between these dimensions is essential,as an integrated approach can ensure long-term resilience and reduce risks associated with regional development (Guareschi et al., 2020; Plataniotis et al., 2023).

International experience demonstrates that bioregions can serve as an effective instrument for facilitating socio-ecological transition and revitalizing rural territories. The first bioregion was established in the Cilento area of Italy in 2009, and today this approach is implemented in more than 50 territories across Italy and other European countries, fostering stakeholder collaboration platforms, governance models, and support mechanisms (Cuoco & Salvatore, 2014; International Network of Eco Regions, 2023). Recent studies confirm that bioregions contribute to the transformation of food systems, enhance the resilience of local economies, and strengthen the social capital of rural communities (Favilli et al., 2018; Belligiano et al., 2019; Proškina et al., 2023).

In Latvia, the bioregion concept is relatively new and has largely emerged through civil society initiatives – led by local community activists and NGOs (notably the Greenfest association). The first bioregion in Latvia - the Gauja National Park (GNP) bioregion - was established in the autumn of 2023 through the signing of a Memorandum of Understanding between four municipalities, national institutions, private sector actors, NGOs, and more than 200 residents. (Nature Conservation Agency Republic of Latvia, 2023). The Memorandum outlines shared objectives aimed at promoting organic farming, preserving natural and cultural heritage, fostering sustainable tourism, reducing waste, and advancing public education (Bioregion, 2025). The GNP Bioregion covers an area of 91,786 hectares and serves as a pilot project for developing new models of collaboration, governance, and financing.

This study is motivated by the need to explore the potential of the bioregion approach as a tool for sustainable rural development in Latvia, to map its perceived benefits and risks, and to analyse public and stakeholder perceptions regarding its capacity to contribute to territorial development. The aim of this study is to examine how the bioregion concept is perceived in Latvia and to identify the key benefits, challenges, and risks characterizing its implementation potential, based on interviews with local and international experts.

RESEARCH METHODS

Within the framework of the study, a series of semi-structured, in-depth interviews were conducted with experts and stakeholders whose professional activities or institutional roles are closely related to bioregional development issues. The purpose of these interviews was to obtain an in-depth qualitative perspective on the implementation of the bioregion concept in Latvia, its potential benefits and risk factors, as well as possible governance models. The study was conducted using a qualitative research approach, specifically the semi-structured interview method, which, by allowing respondents to articulate their views freely, facilitated the collection of a diverse range of perspectives while maintaining sufficient comparability across respondents' accounts. The thematic blocks of the interviews encompassed the essence of the bioregion as a regional development instrument, the motivations and barriers to its formation, stakeholder collaboration and governance aspects, the integration of policy, education, and economic factors, as well as the anticipated benefits and potential risks.

Respondent selection was carried out purposefully, ensuring the inclusion of several key stakeholder and expert groups. The first group - Local stakeholders - consisted of five institutional partners (codes for experts G1-1 … G1-5) who had signed the Gauja National Park Bioregion Memorandum (representatives of the three municipalities within the bioregion – a deputy chair of the municipal council, a municipal council member, and the head of the municipal Development Department) as well as community activists, who provided perspectives on the integration of the bioregion into municipal policy, public participation, and territorial development. The second group - International experts - included five international bioregion experts from countries with well-developed bioregion practices (codes for experts G2-1 … G2-5): the Executive Director of GAOD – Global Alliance of Organic Districts; a professor at the University of Bologna, Department of Agricultural and Food Sciences; a representative of the Södertälje (Sweden) municipality (Sörmland Bioregion); and two representatives of the bioregion "100% Valposchiavo." These participants provided an international perspective and examples of good practice relevant to the Latvian context. The third group - Regional/municipal experts - included representatives of municipalities from potential Latvian bioregions, as well as representatives of conventional and organic farming enterprises and local food producers (codes for experts G3-1 … G3-13). Their participation made it possible to analyse the local-level perspective on the opportunities, challenges, and prerequisites for implementing a bioregion. The opinions of experts interviewed across all groups were anonymised and coded with letters in the text.

Interviews with representatives of the first and second groups took place from October 2024 to March 2025, whereas those with representatives of the third group were conducted from October 2023 to April 2024. The duration of the interviews ranged from 30 to 60 minutes, depending on the depth of the respondent's engagement. The conversations were held in person, and in some cases with third-group respondents, remotely. With the respondents' consent, the interviews were audio recorded and transcribed. The interview material was analysed using thematic analysis, focusing on recurring themes that characterise the perception of the bioregion, its implementation challenges, and its potential benefits.

This research paper was supported by the use of artificial intelligence (AI) tools. ChatGPT (Mar 14 version), developed by OpenAI, 2024, was used exclusively for language editing, translation, and improvement of linguistic quality. The scientific content, research design, conceptual development, and critical analyses were entirely created, structured, and validated by the project authors. No generative AI tools were used for the creation of scientific content, formulation of research ideas, or development of research approaches presented in this paper.

RESEARCH RESULTS AND DISCUSSION

The interview findings indicate that the bioregion is perceived as simultaneously generating economic, social, and environmental benefits. Respondents emphasized that the establishment of a bioregion enhances territorial viability, creates new opportunities for local entrepreneurs and organic producers, links food production with tourism, and contributes to the development of local food systems. Within the social dimension, the bioregion is perceived as an instrument that fosters community cohesion, encourages citizen participation, and strengthens local identity. From an environmental perspective, respondents highlighted the role of organic farming in preserving biodiversity, maintaining landscape aesthetics, and enhancing the credibility and authenticity of local products.

In the Latvian context, the economic dimension is particularly significant. Interview participants noted that the bioregion has the capacity to generate added value for local products by linking them to the landscape and cultural narrative, while simultaneously creating new market opportunities, for instance through public procurement and the development of ecotourism (Table 1).

Table 1. Respondents' Perceptions of the Bioregion's Benefits and Positive Impacts.

Category	Number of mentions in interviews	Key insights	Illustrative quotes
Economic Benefits – Local Economic Development	13	The bioregion strengthens the growth of SMEs and organic producers, generates new jobs, and supports the retention of economic value within the region.	"The local farmer will be motivated to grow only if there is a stable market." (G1-1) "This gives a new impulse to small producers and local businesses." (G1-5) "Bioregions strengthen the local economy by linking production and consumption." (G2-3) "It would stimulate entrepreneurship so that more people stay here and work." (G3-4)
Economic Benefits – Food System Integration	9	It promotes the integration of local products into school and kindergarten meals as well as public procurement schemes and connects agricultural production with tourism development and the creation of a regional brand identity.	"If you grow three tons of organic pumpkins for us, there will be a place to sell them." (G1-4) "Green procurement works, but it does not ensure local product consumption – it needs to be strengthened." (G1-1) "Public procurement is a lever to promote organic and local products." (G2-2) "Children should have local food on their plates – it is both about health and providing farmers with a market." (G3-5)
Social Benefits – Community Cohesion and Participation	10	It fosters a sense of belonging and trust, provides a shared goal, and motivates people to remain in the region.	"It is important that people see that the bioregion is also about them." (G1-3) "People are starting to talk to each other and collaborate, which was not common before." (G1-2) "Bioregions help strengthen the community and create a shared vision." (G2-2) "This would bring people together, giving them a shared goal to achieve." (G3-4)
Social Outcomes – Networking and Knowledge-Sharing Platforms	8	It establishes a platform for regular cooperation among municipalities, producers, and residents, and fosters knowledge exchange.	"The bioregion is not a formal structure; it is a network of collaboration." (G1-3) "It creates a space for cooperation and knowledge exchange across sectors." (G1-5) "It acts as a catalyst, bringing stakeholders together." (G2-2)
Environmental Benefits – Landscape and Cultural Heritage	8	The landscape represents the core of the bioregion's identity and an integral part of the region's image, enhancing the perceived authenticity of local products.	"We are not talking only about food, but about the place where it is produced – the landscape is at the heart of the bioregion's story." (G1-2) "The landscape is not just a backdrop – it is a resource and part of our cultural heritage." (G1-3) "Landscape is a key asset and gives authenticity to products." (G2-1) "This is our wealth – forests, lakes, and a clean environment – and it should also be used in tourism." (G3-3)
Environmental Benefits – Sustainable Land Management	9	Organic farming is a crucial tool for biodiversity conservation and ecosystem maintenance, however, adequate support mechanisms for farmers are essential.	"Fields are not just production areas; they are part of the landscape, which can be preserved through smart farming practices." (G2-1) "Organic farming is a tool to protect biodiversity and ensure ecosystem stability." (G2-2) "Organic farming is necessary, but we need to think about how to make it feasible for farmers." (G3-8)

These findings are consistent with the conclusions of Pugliese et al. (2015) and Favilli et al. (2018), who argue that bioregions contribute to shortening supply chains and ensuring stable markets for organic producers. In the Latvian case, experts emphasized the potential of tourism resources to support the development of local food systems and noted that such an approach can help retain income within the territory while enhancing the competitiveness of small and medium-sized enterprises.

The interviews also highlighted key aspects of the social dimension, emphasizing that the bioregion represents the materialization of shared community goals, fosters trust among residents and across sectors, and creates a space for the emergence of new initiatives. When compared with international practice, this appears to be one of the strongest functions of a bioregion, serving as a "catalyst" that brings together diverse stakeholders and facilitates knowledge exchange (Cuoco & Salvatore, 2014; Schermer & Kirchengast, 2008). Empirical evidence confirms that the establishment of a collaboration platform between municipalities, producers, and local communities is a critical prerequisite for ensuring long-term viability.

Environmental sustainability aspects were emphasized, linking them to the potential of organic farming and environmentally friendly agriculture practices, the aesthetic quality of the landscape, and biodiversity. This finding is consistent with other studies that highlight the contribution of bioregions to maintaining ecosystem services and promoting the sustainable use of resources (IFOAM, 2020; Mazzocchi et al., 2021). The association of a product with a specific place of origin was also mentioned as a factor that enhances consumer trust and strengthens regional identity.

There were recommended to avoid screenshots of diagrams or other graphic information in the text, especially if the fonts of such images are significantly smaller than the main text font of the article. A consistent formatting style for charts, photographs, and other figures must be used throughout the text.

Table 2. Respondents' Perceptions of the Challenges and Risks of Bioregion Implementation.

Category	Number of mentions in interviews	Key insights	Illustrative quotes
Lack of Policy and Regulatory Framework	11	There is no national-level policy or legal framework that systematically supports bioregions. Municipalities lack clear instruments for implementation.	"Without recognition at the national level, this process will always remain a grassroots activist movement." (G1-1) "Municipalities lack clear mandates and tools to implement it in practice." (G1-4) "It should be embedded in the regional development framework, not standing alone." (G2-2) "Societal will and political commitment at the national level are crucial." (G3-9)
Economic Barriers – Lack of Motivation	9	Conventional farmers do not always perceive an economic benefit; targeted incentives and guaranteed market outlets are needed to encourage conversion.	"Not everyone sees immediate economic benefits, and this becomes a barrier." (G1-3) "Economic incentives and stable demand are key drivers for conversion." (G2-4) "If a farmer does not see where to sell, they will not do it – guaranteed market access is needed." (G3-3) "Organic production is more expensive, and support is insufficient." (G3-11)
Risks to Public Participation – Formalistic Participation Risk	7	Decisions risk being made by a narrow group of actors, leaving residents feeling merely informed rather than genuinely involved.	"It is important to involve, not just inform." (G1-1) "If people do not see real benefits, they stay on the sidelines." (G1-5) "Community participation must be real, otherwise trust erodes." (G2-3) "We need to start by educating residents about what this concept means." (G3-12)
Leadership Dependency	7	The process is vulnerable when it relies on a few individual leaders or activists, making continuity uncertain.	"If the process relies on one leader, it is very vulnerable." (G1-4) "Everything depends on a few individuals – if they drop out, no one continues." (G1-3) "Leadership must be distributed to avoid collapse." (G3-3)
Coordination Challenges – Cross-Sectoral Collaboration	6	There is no permanent platform that ensures regular dialogue and cooperation between sectors and municipalities.	"We still lack a place where everyone meets – education, agriculture, tourism." (G1-2) "We need to think about a coordination center that connects the dots." (G1-1) "We need regular cross-sectoral dialogue." (G2-2)
Community Initiative Sustainability – Need for Governance Model	9	Without a structured governance model, community-driven initiatives risk losing momentum in the long term.	"If this remains only a civic format, sooner or later it will lose momentum." (G1-4) "It is important to understand who will coordinate the process; otherwise, it will stop." (G1-3) "It is crucial to establish a governance model before momentum is lost." (G2-3) "If a structure is not created, the movement may come to a halt." (G3-7)
Lack of Resources and Data	7	There are insufficient indicators and data to measure progress; municipalities lack the human resources and institutional capacity to sustain continuous work on bioregion development.	"There are not enough indicators and data to understand whether we are moving in the right direction." (G1-2) "Municipalities lack specialists who could work with this regularly." (G1-5) "We need monitoring tools to evaluate outcomes over time." (G2-4)

At the same time, the results of the interviews reveal a number of challenges that align with international discussions on the risks associated with bioregion implementation (Table 2). The most frequently mentioned challenge is the absence of a

national policy and regulatory framework – respondents in Latvia, as well as in other countries, emphasize that without formal political support the bioregion remains primarily a local activist movement (Favilli et al., 2018; Guareschi et al., 2020). Furthermore, the need for economic incentives to motivate conventional farmers to transition to organic production was highlighted, which is consistent with the findings of Belligiano et al. (2020) regarding barriers to conversion.

An equally important aspect is community participation – interviews frequently highlighted the risk that participation may remain formalistic, without exerting substantive influence on decision-making. This finding corresponds to what has been described in the literature as the "illusion of participation," which can undermine trust and hinder the development of local initiatives (Lamine et al., 2023).

Another key finding is the lack of a governance and coordination model: several respondents indicated that the current process is "leader-dependent," meaning that it relies heavily on the enthusiasm of a few activists. Such a model is inherently unstable and risks stalling unless a formal or at least coordinated structure is established. This aligns with international experience, which shows that the long-term sustainability of bioregions can only be ensured when a permanent governance framework is created, with clearly defined responsibilities and adequate resource provision (Zanasi et al., 2020; International Network of Eco Regions, 2023). The findings of this study confirm that the bioregion approach in Latvia is perceived as a comprehensive instrument for sustainable territorial development, synergistically encompassing the economic, social, and environmental dimensions. Consistent with insights from international research, bioregions can serve as "laboratories of innovation," simultaneously fostering economic growth, strengthening social cohesion, and promoting environmental protection (Guareschi et al., 2020; Zanasi et al., 2020).

CONCLUSIONS

Overall, the study demonstrates that the bioregion approach in Latvia is perceived as a promising instrument for sustainable rural development. However, its successful advancement requires three key preconditions: (1) the development of a coherent policy and regulatory framework at the national level, (2) the creation of economic incentives and support programs for local entrepreneurs and producers, and (3) the establishment of a coordinated governance model and effective mechanisms for community participation. Meeting these preconditions would enable the evolution of the current civil society–driven initiative into a durable and strategically anchored instrument for sustainable territorial development.

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