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BIOREGIONS AS AN APPROACH TO SUSTAINABLE PRODUCTION AND CONSUMPTION

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Territorial development and the principle of sustainability are inseparable concepts. The Sustainable Development Goals emphasize the role of policy decisions in fighting against inequality and problems in the world across various dimensions of sustainable development: social, economic and environmental. Given the fact that the current way of life of society is considered to be the main cause of environmental problems, because of which overall development is slowed down, it needs to be changed in order to ensure ecological sustainability. Modern societies should be directed towards sustainable development, environmentally friendly actions and green management should cover the entire set of interactions within the socio-ecological system across all segments in relation to environmental management and production and consumption of goods and services, including food. The solutions could be developing of concepts of bioregion or organic management region, which involve a holistic approach to identifying and analysing reality in these territories and defining the development paradigm. Bioregions are areas where farmers, producers, public authorities, non-governmental organizations, tourism operators and residents mutually agree to manage local resources based on an agroecological approach and organic farming principles. The creation of bioregions is aimed at sustainable development of territories, promotion of the local economy and development of domestically produced food and local food chains, while preserving the landscape, cultural heritage and gastronomic peculiarities characteristic of the territory at the level of local communities. Therefore, the present research aim is to investigate the theoretical aspects of sustainable territorial development and to identify the nature of the bioregion system.

Keywords: *bioregions, rural development, sustainability, organic district*

INTRODUCTION

Regional development is an essential factor in national growth, and the key goal of it is to increase the quality of the living environment. Therefore, it is important to examine the definitions of a region. In general, regional development is a broad concept that relates to economic, social and environmental development. Regional development is considered to be the main aspect of sustainable territorial development, thereby creating balanced and prosperous communities. Regions are viewed as a general research topic in various fields, e.g. geography, economics, territorial planning and sociology. In each of these fields, the understanding of a region as a territorial unit differs slightly (Bite, 2014; Gonzalez, 2018). A region could be defined by selecting certain criteria from the whole set, the criteria are going to differ, depending on the branch of science in which the concept is applied; however, the basic criterion remains the same – a region in its essence is a territory characterized by a set of characteristics of cultural homogeneity, economic activity and political processes. Central place theory defines a region as an area where settlements are arranged in a hierarchical system, and their positions in the hierarchical system are determined by the amount of goods and services supplied and the maximum distance that potential buyers wish to travel to purchase the goods and services. A limitation of this theory lies in the fact

that the theory helps to identify a region where firms oriented towards buying/selling are located, whereas, for example, labour or financial investment is not considered in identifying the boundaries of the region (Dawkins, 2003). The nodal region theory states that functionally, the flows of labour, capital, goods and services are internally integrated more within some regions than they are connected to other regions (Grillitsch, Sotarauta, 2020).

In contrast, J. R. Markusen proposes to use interdependence between natural resources and human populations for identifying regions (Kokko, 2004). According to him, regions have historically developed, affected by the population living in the particular territory that possesses the territory as a physical environment differing from that in other territorial units, and this population also has a distinct social, economic, political and cultural environment. This theory recognizes the fact that regions have historically formed owing to the interaction between the population of the territory and the local natural resources.

Territorial development and the principle of sustainability are inseparable concepts. For sustainable development, it is important to create a balance between three basic elements of sustainability: economic growth, social inclusion and environmental protection. Given the fact that the current way of life of society is considered to be the main cause of environmental problems, because of which overall development is slowed down, it needs to be changed to ensure ecological sustainability. However, the needs of society cannot be fully satisfied based only on the environmental dimension, and the economic, social and cultural dimension are also important. The processes that promote progress are complex, and the various aspects that contribute to development are often unpredictable; consequently, some of the processes involve correcting mistakes made in the past (Hassink et al., 2019). Climate change, which is caused by human activity and threatens the existence of the entire planet, is an example that clearly shows that the past processes are the reason for seeking new opportunities for development (Tosics, 2017). This determines the need to seek solutions to the sustainable development of rural areas, which would affect rural areas socially, economically, culturally and environmentally. In this context, one of the potential solutions could be the creation and development of bioregions. Bioregions are areas where farmers, producers, public authorities, non-governmental organizations, tourism operators and residents mutually agree to manage local resources based on an agroecological approach and organic farming principles. Therefore, the present research aim is to investigate the theoretical aspects of sustainable territorial development and to identify the nature of the bioregion system.

RESEARCH METHODS

The theoretical and political aspects of territory development, conducting an in-depth study of the region as a concept, the study of sustainable territory development and the study of rural territory development, based on the agroecology approach, as well as the study of policy planning documents related to sustainable territory development were used in the research. For the purpose of the study the research methods included a monographic descriptive, abstract-logical analysis and synthesis methods.

RESEARCH RESULTS AND DISCUSSION

Various foreign research studies view the development of a rural area is both from the perspective of agricultural development and from the perspective of rural development. Nowadays, agriculture is considered to be a set of activities that can contribute to the development of territories by integrating many services, from rural tourism and food production to consumption, as well as by improving rural landscapes and related ecosystem services (Pugliese et al., 2015; Parente et al., 2018). Public perception tends to change, emphasizing concerns about the agricultural and environmental practices implemented, reducing the negative impacts of agricultural activity and promoting a more sustainable food system (Rosa, 2017). Society highly values the need for local economic development, preservation of cultural values and pro-social values. However, rural residents themselves can make a significantly stronger influence on their daily behaviour patterns than the mentioned factors, as this forms the basic prerequisites for their lifestyle (Naglis-Liepa et al., 2022). The philosophical basis of rural development policy is the idea of balance aimed at providing the population of rural areas with conditions where the population could become self-sufficient through sustainable agriculture, thereby reducing dependence on external investments.

To meet the needs of future generations, the agroecological approach is applied to transform current food chains and agricultural systems, dealing with the root causes of problems and providing holistic and long-term solutions based on joint action, knowledge sharing, innovation and combining traditional methods with the latest technologies (Yin et al., 2022). The understanding and meanings of the term agroecology are different, depending on the agricultural, environmental and policy contexts (Bellon, Ollivier, 2018). In France, for example, the emphasis is put on the practical application of agroecology, in Germany on agroecology as a branch of science, while in Brazil agroecology is associated with a social movement (Douwe van der Ploeg et al., 2019; Lamine et al., 2021). An analysis of the latest research and data reveals that the main principles of agroecology are focused on a systematic approach to the development of territories, which involves territory user groups (stakeholders involved) and territorial administration, as well as the incorporation of ecological, economic and social aspects into sustainable food systems.

According to B. Salvatore and E. Cuoco, as well as in view of the above-mentioned aspects and opportunities for rural areas, the implementation of the idea of bioregions in practice as an approach to sustainable production and consumption could to be one of the potential solutions to change the direction of current regional development, as the bioregions are aimed at fostering the local economy through organic farming (Cuoco, Salvatore, 2014). The development

of bioregions or organic management regions involves a holistic approach to identifying real opportunities in these areas (Savory, Butterfield, 2016), as well as analysing and defining the development paradigm. The idea of bioregions is aimed at fostering the local economy by developing the rural environment in a particular geographical area and doing it in a way that is friendly to society and nature, thereby promoting local food production and processing, preserving traditional landscapes and cultural heritage, as well as emphasizing the gastronomic peculiarities of the area. Salvatore Basile, president of the International Network of Eco-regions (I.N.N.E.R.), defines a bioregion as a non-administrative but functional geographical area where an alliance is created between farmers, residents, tourism operators, associations and public administrations for sustainable resource management. Cooperation emerges based on the organic principles and practices of production and consumption (organic farming, short food supply chains, supply and demand groups, quality restoration). A bioregion functions in accordance with the principles and techniques of organic production and consumption: "organic" lifestyle, healthy diet, human relations, nature protection, as well as promotion of the territory and its peculiarities. A bioregion as a term varies, depending on where the region is located. At the international level, the terms bioregion, bio-district, eco-region, bio-village and eco-village are mostly used (Adamowicz M, Zwolińska-Ligaj M., 2020; Bottero et al., 2019). According to the guidelines for the creation and maintenance of bioregions developed as part of the project EduEcoRegions, the variants of the term do not change the basic idea, as any such a territory is oriented towards nature protection, organic lifestyle, healthy nutrition and human relations, which at the same time promotes economic growth (Bio-District/Eco-Regions, s.a.).

The concept of a bioregion could be applied to food production to the greatest extent, yet the promotion of food produced in the bioregion closely relates to the development of local food systems, the promotion of the territory itself and the tourism strategy (Dias et al., 2021). As a result, the rural economy is diversified and businesses gain greater economic independence, thereby contributing to the local potential and the image of the territory. In the regional context, movements that advocate local food, reduce the ecological footprint of farming, increase nutritional value in food, strengthen the community's agricultural activity and develop food and cultural or culinary tourism, emphasizing the unique products and dishes of the particular region, are of fundamental importance (Jibb, 2019).

Bioregions are areas where several agents or stakeholders (local farmers, consumers, national and local government institutions, educational institutions, various associations and tourism operators) collaborate to sustainably manage local resources based on the principles of organic farming (Gureschi, et al., 2020). It follows that the concept of a bioregion is based on the social, economic, cultural and environmental dimensions (Paula, Kaufmane, 2020) aimed at diversifying the rural economy, increasing economic independence of local businesses, developing the local potential and improving the image of the territory. The social dimension involves the principles of social cohesion based on sustainable and inclusive territorial development strategies focused on the farmer to contribute to the resilience of local communities, social cohesion and cultural exchange. The economic dimension focuses on economic gains for agricultural, tourism, cultural, food etc. businesses if joining the bioregion, creating stable and fair local markets that are accessible to organic producers and tourism service providers. It aims at increasing employment in rural areas through municipal public procurement, as well as simplifying the organic certification process and facilitating the purchase or rental of land by young farmers and ensuring food origin traceability for consumers. The environmental dimension entails the protection of natural resources and biodiversity, agro-ecological principles and the preservation of scenic values and promotes participation in shaping landscapes and implementing agro-ecological system solutions in practice. The cultural dimension involves the quality and attractiveness of the cultural environment, as cultural heritage and cultural values to some extent stagnate if they are not kept alive and nurtured, thereby contributing to an awareness of local culture and identity in the entire society.

Depending on where a bioregion is located in the country and the relevant regulatory framework, the principles based on which bioregion agents operate might differ. For example, bioregions are created in areas where the proportion of organic agricultural producers and businesses that produce ecotourism services and traditional culinary products is already high. Another opportunity is to create bioregions in specially protected nature areas, thereby promoting the preservation and sustainable use of biodiversity. Unique and often endangered species of plants and animals are located, important ecological processes occur and economic activity is often limited in such areas; therefore, the organic farming approach is an opportunity to foster the economic development of such areas.

In the bioregional context, organic farming could be viewed as part of the concept of bioregion development, which is an innovative and sustainable approach to rural development to transform the current food system as well as the current understanding of communities, with organic farmers playing a key role (Zanasi et al., 2020; Stotten et al., 2017). For agriculture to be sustainable, it should be an ecologically sound, economically viable and socially responsible industry (Tambovceva, 2016) operating in accordance with policy documents. Agriculture meets basic human needs; however, as agricultural productivity increases, the negative impacts of agriculture on the environment, including biodiversity loss, soil degradation, water pollution and other climate changes, tend to increase. The examples of existing bioregions in Italy, Spain etc. show that the status of biological region does not oblige all farmers to immediately change their farming approach from conventional to organic; however, the practice shows that the interest of farms located in biological regions to farm land organically increases over time.

Assuming that in practice, the creation of bioregions could increase the interest of farmers in farming land organically to reduce the negative environmental impacts of agriculture, it is important that an understandable and logical regulatory framework is developed, specifying the rules and guidelines for sustainable agricultural practices, incl. for bioregions. In this way, through agriculture as a set of activities, it is possible to promote the development of rural areas by integrating: 1) the quality of landscapes, 2) ecosystem services, 3) food production and consumption (Parente et al., 2018).

The possibility of promoting sustainable business development through the creation of bioregions is emphasized in the new European Union Action Plan for the Development of Organic Production, presented by the European Commission in March 2021. It defines a bioregion as a geographical area where farmers, the public, tourism operators, non-governmental organizations and municipalities enter into an agreement for the sustainable management of local resources based on organic practices and principles. The European Commission's vision for the development of rural areas in the EU identifies challenges and concerns that rural areas face, as well as highlights some of the potential opportunities that could be implemented in the rural areas (A long-term Vision for the EU's Rural Areas..., 2021). According to the statement, rural areas should play a key role in achieving the European Union's Farm to Fork strategy and biodiversity targets, which are part of the European Green Deal. The goal set by the European Green Deal envisages achieving a target of 25% agricultural land under organic farming in all EU Member States by 2030. Accordingly, the related Field to Fork strategy aims to promote sustainable food systems and is followed by the Action Plan for the Development of Organic Production, which envisages applying the bioregional approach as one of the actions to be taken and encourages the Member States to support the development of bioregions. Besides, it should be emphasized that the experience of European countries where biological regions are often created to protect and promote economic development in specially protected nature areas, thus protecting rare animal and plant species and preserving biodiversity, while also promoting economic activity. The approach of both specially protected nature areas and bioregions is aimed at nature protection and biodiversity preservation, as well as a sustainable use of territorial resources. which is part of the country's natural capital.

CONCLUSIONS

The basis of sustainable territorial development is an individual, as well as organizations and communities, aimed at creating a balance between the three basic elements of sustainability: economic growth, social inclusion and environmental protection. The concept of bio-regions could be applied to food production, while the promotion of food products produced in a bio-region strongly relates to the development of local food systems, the promotion of the territory itself and the tourism strategy. The bioregional approach is appropriate for the development of territories because it promotes ecological sustainability, social justice and an awareness of place identity, taking into account the individual characteristics of each potential bioregion – local traditions and culture –, aimed at creating opportunities for business and employment growth, as well as more resilient communities that can adapt to various changes and at encouraging residents to stay in or return to rural areas, which is the most important factor in balanced economic development in the future.

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