



Introduction

The relevance of the research: researchers are interested in the issue of sustainable biobusinesses: circular bio-economy business models are analyzed; perspectives of the circular economy and the biosector are investigated; the importance of circularity and sustainability is emphasized.

The aim: to determine the sustainability of biobusinesses key issues.

Theoretical background: synonyms of sustainable biobusiness are such as organic biobusiness, agri-bio business, agricultural biobusiness, green biobusiness can be found in research papers (Ronzon, T., Sanjuan, A., I., 2020; Lovric, M., et. all., 2020). The concepts of bio-business are presented below.

Author	Concept
Leipold and Petit – Boix, 2018	The term sustainable biobusiness refers to a business involving the use of biological processes in the energy, forestry, agricultural industries.
Toppinen et al., 2017	Businesses that apply scientific, green and technological principles based on biological agents are considered to be sustainable bio-businesses.
Heijman and Schepman, 2016	Sustainable bio-business is understood as a sector of organic production.
Pfau et al., 2014	Biotechnological progress that helps solving a global problems as part of bioeconomy.
Maunula et al., 2013	Sustainable biobusiness is an independent part of the biosector (circular bio-economy), where businesses turn natural resources into primary goods.
McCormick and Kautto, 2013	Sustainable biotechnology applied to agricultural process.

Methodology

Topical issues related to business development are investigated in this work.

The theoretical part is based on the analysis, synthesis, systematization and comparison of scientific literature, statistical data and documents.

The methodology provides which criteria must be taken into account when assessing sustainability indicators (Chartier ir kt., 2021; De Corato ir kt., 2018; Alexieva-Nikolova, ir kt.2021).

Ecologically sustainable biobusiness	<ul style="list-style-type: none"> - operates in a stable agroecosystem that ensures 1) optimized production, i.e. optimized natural resources (soil, water); 2) maximally closed physical and biological cycles; 3) maximally maintained biological diversity. - operates at the highest level of eco-efficiency, based on the principle of "producing more from less", meaning it adds maximum value using a minimum number of resources and having a minimum impact on the environment. - maximizes the positive impact on the environment.
Economically sustainable biobusiness	<ul style="list-style-type: none"> - maximizes the added value, should at least be sufficient to compensate the incurred costs. - productive production, maximum productivity. - reduces the risk of agricultural activity; e.g., a change in the interest rate or a sudden drop in price does not stop the activity.
Socially sustainable biobusiness	<ul style="list-style-type: none"> - social inclusion, which includes sufficient farmers' right to livelihood, income, health, work and good working conditions, education. - maintaining the identity, which allows the farmer to live according to his values, but the norms of society. - social capital, which creates a broad base of social support for agriculture.

Main conclusions

Biobusinesses can be developed through innovative business models that respect the principles of the circular economy: they aim for sustainability, efficient use of resources, and are formed through social, environmental and economic factors (United Nations, 2015).

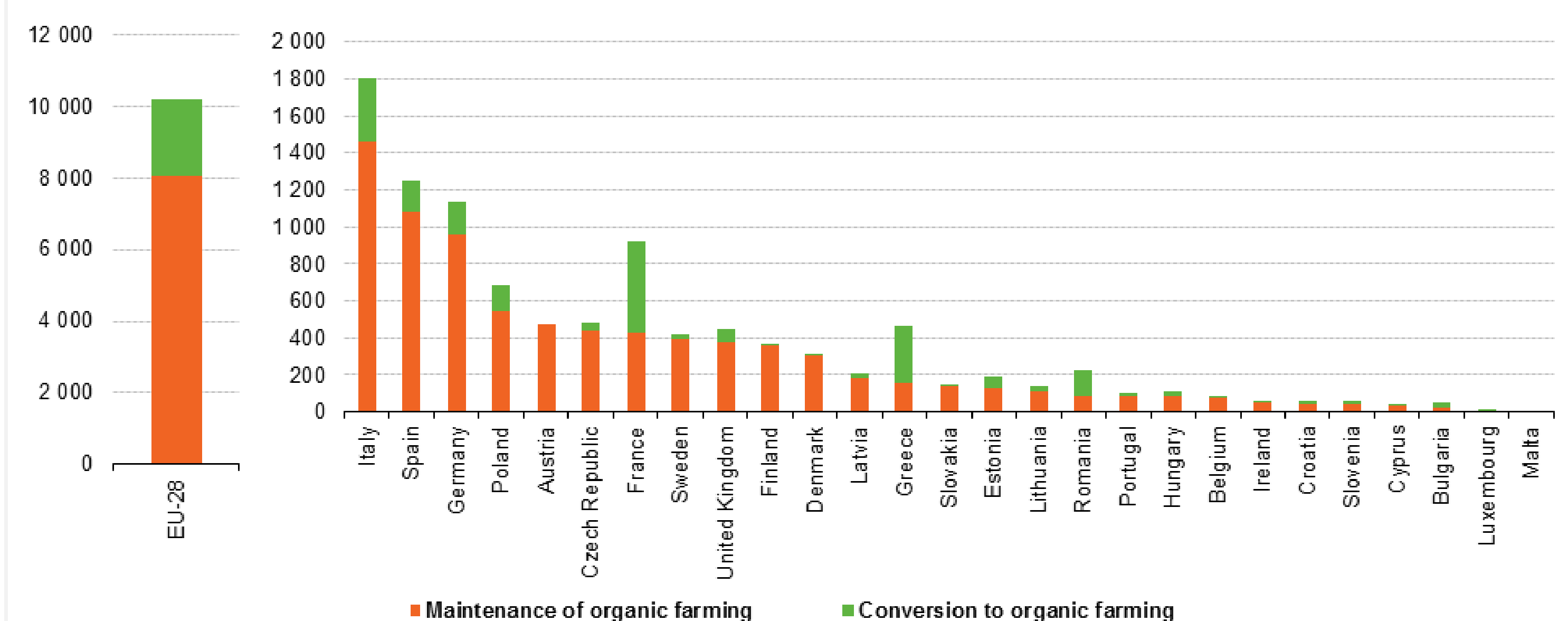
It has been found that the impact of sustainable production on added value creation (Shpychak ir Bondar, 2013), production amount from bio-waste (Kaplinsky, 2000), lack of effective management mechanisms in shaping the development of sustainable products (Herrala et al., 2011) have been increasing. Also, the aim of the sustainable biobusiness model is for companies to respond to sustainability issues and address excessive waste generation (Horvath, B., Khazami, N., Ymeri, P., et al., 2019).

In summary, it can be stated that the essence of sustainable biobusiness is the consideration of social and environmental aspects. There is a strong focus on avoiding waste altogether and turning it into high-quality secondary resources, which will require a well-functioning secondary market.

Results

Although the situation varies from country to country, the EU's main goal is to create a strong basic food supply level, especially in the face of a pandemic, conserving natural resources, developing sustainable growth, adaptation and innovation to bio-based economy. New, innovative biotechnologies and their development encourage the use of renewable biological resources in production and the conversion of them into innovative, sustainable and promising industrial products at competitive prices. Other EU strategies aim to halt the loss of biodiversity and ecosystem services worldwide. To promoting changes in production, the EU is developing programs that are expected to encourage to develop sustainable biobusiness.

Although the added value is different, all European countries, more or less, are developing sustainable biobusiness. Germany, France, Italy, the United Kingdom and Spain generated 64% of the total EU bioeconomy value added in recent years, but when evaluating a more sustainable biobusiness, it can be seen that half of France biobusinesses are sustainable (A ... environment, 2018). This shows that there is not one single sustainable biobusiness model in Europe but several models adapted to local contexts. The Figure shows how many companies are doing sustainable biobusiness in each country.



As can be seen, the sustainable biobusiness situation in different countries is different, but there is no doubt that sustainable biobusiness has perspectives.

Sustainability in biobusiness must be ensured in every dimension: economic, social, environmental.

Ecologically sustainable biobusiness	Resource usage	Pesticides; Energy; Water; Nutrients
	Quality of natural resources	Soil quality; Water quality; Air quality
	Biodiversity	Genetic diversity; Variety of species; Habitat
Economically sustainable biobusiness	Performance and efficiency	Labor productivity; Productivity of capital; Land productivity; Efficiency
	Profitability	Labor profitability; Return on equity; Return on assets
Socially sustainable biobusiness	Internal social sustainability	Professional pride; The latitude of the solution; Supervision
	External social sustainability	Animal health and body condition score; Prosperity; Landscaping; Social services
	Disposable income	All income (earned on or off the farm)
	Entrepreneurship	The scale of a farmer's entrepreneurship based on three main aspects: vision, strategy and management

