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CHALLENGES OF SUSTAINABLE DEVELOPMENT AND COMPETITIVENESS OF AGRICULTURAL

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ABSTRACT

Agriculture has a significant impact on the entire humanity and because of that we analyze the the purpose of agriculture sector, especially the challenges of sustainable agriculture and the influence of competitiveness, which stems from the fact that the participation of agriculture in the economy of Serbia and Poland is at a relatively high level. In order to see more important performance and characteristics involved in the concept of challenges of sustainable development and competitiveness of agricultural, we will presents a brief overview of some specifics in two different countries - Serbia and Poland.

KEYWORDS

agriculture, competitiveness of agricultural, sustainable development, sustainable agriculture

INTRODUCTION

The world is becoming more and more global and integrated, so no matter how specific a country, a region in it or a municipality is, it is impossible for their agricultural production, trade or prices to be outside the influence of regional and world trends (SEDEV, 2017).

Simultaneously with the mentioned changes, important issues in the policy of sustainable development of agriculture are being developed and implemented, which in accordance with modern development concepts simultaneously connect and respect the economic, ecological and social dimensions.

Some authors (Praća et al., 2017) are of the opinion that sustainable agriculture is based on the use of technologies that maximize productivity and at the same time minimize negative effects on natural (land, water and biodiversity) and human resources (rural population and consumers). That is why the concept of sustainable agriculture was expanded to sustainable agricultural and rural development – SARD concept (Ristić, 2013, Stojanović, Manić, 2009).

According to the defined National Sustainable Development Strategy (2008), the long-term concept of sustainable development implies constant economic growth which, in addition to economic efficiency,

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technological progress, more clean technologies, innovation of the whole society and socially responsible business, ensures poverty reduction, long-term better use of resources, improvement of health conditions and quality of life and reduction of pollution to a level that environmental factors can withstand, prevention of new pollution and preservation of biodiversity.

Numerous sustainable agricultural practices are being promoted globally, including sets of metrics for various sustainable farming approaches that incorporate Sustainable Agricultural Practices -SAP (Coulibaly et. al., 2021). It is very important for decision makers to find ways to encourage farmers to switch to sustainable agricultural production, as well as to identify bottlenecks and problems in switching and problems in staying in sustainable agricultural production.

In order to see more important performance and characteristics involved in the concept of challenges of sustainable development and competitiveness of agricultural enterprises, we will present a brief overview of some specifics in two different countries - Serbia and Poland. Historically, they belonged to the same Eastern bloc of communist states, but after 1990 their paths of economic and political development diverged. Poland became a member of the European Union, Serbia remains outside this system. Nevertheless, the agrarian structure still has common features - small-scale farms dominate in both countries.

COMPETITIVENESS OF AGRICULTURAL – SERBIA AND POLAND

In contemporary economies farmers face numerous competitiveness challenges, in particular: low representation in the value chain, input and output price volatility, shrinking land resources while the demand for food is constantly growing and, adaptation to climate change. Additionally, in highly developed countries, including the EU, farmers must meet the high requirements of legislation related to environmental protection and animal welfare. The ability of farmers to respond to these pressures depends on structural characteristics (farm size, specialisation, location and age of the farm manager), with larger farms and more educated farm managers being able to adapt more easily.

Analyzing the indicators of the competitiveness of the agricultural sector, certain authors single out seven patterns of non-competitive behavior of governments and businessmen of developing countries, which can be clearly recognized in the domestic economy and the agricultural production sector (Paraušić, Cvijanović, 2014, Fairbanks, Lindsay, 2007):

- Excessive reliance on basic factors of production (natural resources, cheap labor, favorable exchange rate);
- Underdeveloped marketing;
- Lack of real understanding of the competitive position of domestic companies;
- Absence of vertical integration;
- Insufficient cooperation between companies and institutions in the value chain/absence of clusters;
- A climate of mistrust and mutual blame for bad results between the public and private sectors, as well as within the private sector;
- Reliance of companies on government support (through incentives, subsidies, protection from foreign competition).



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Based on the above, the previous analysis of the general conditions of agricultural competitiveness according to Đurić, Njegovan (2016) showed that:

- Serbia still relies to the greatest extent on basic factors;
- most of the exported agricultural products contain a large share of primary production factors and a small share of added value, in which the main role is played by knowledge applied through technology, marketing or design;
- little investment in factors that create added value prevents the development of more complex products and services, which can be competitive on international markets;
- a competitiveness strategy based solely on basic factors does not ensure the improvement of competitiveness positions in the international framework, but rather a deterioration.

Since the beginning of the 21st century, the contribution of agriculture to GDP has been declining, primarily as a consequence of the faster growth of activities in non-production sectors, primarily in trade. However, the share of agriculture in the GVA structure of the economy of the Republic of Serbia is still high, and exports to countries from the region and the EU are also increasing (Figure 1).

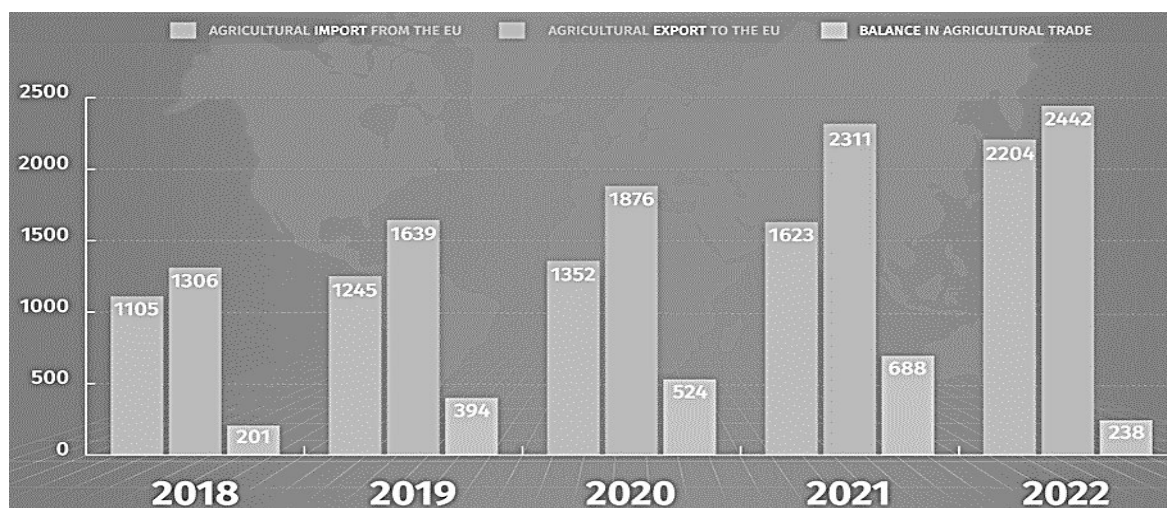


Figure 1. Serbia – EU trade in agricultural products (EUR millions).

Source: <https://europa.rs/trade>; Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia, 2024.

What has always stood out as part of competitive advantages for Serbian agriculture was reflected through natural conditions, land, relief and climate, however, despite favorable factor conditions and trade advantages, the competitiveness of Serbian agriculture on the domestic and international markets is low.

On the other hand, when we analyze the competitiveness of agriculture in Poland, we can say that Polish farmers are subject to international competition arising from mechanization and other issues related to increasing efficiency. But they must also deal with the resource management and the environment, which requires an improved system of training in farm management (Kiełbasa et. al., 2018). According to Poczta & Pawlak (2020) Poland's inclusion in the SEM area and the adoption of the rules of the Common Commercial Policy resulted in the creation and diversion of trade in agri-food products, and the comparative advantages achieved on the SEM became a source of favorable export specialization, allowing for relatively good use of the currently existing potential of agriculture and the food industry.



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What they also emphasize is the significant export potential of agricultural products not only on the EU market, but also on markets outside the EU, which would further strengthen the competitive position.

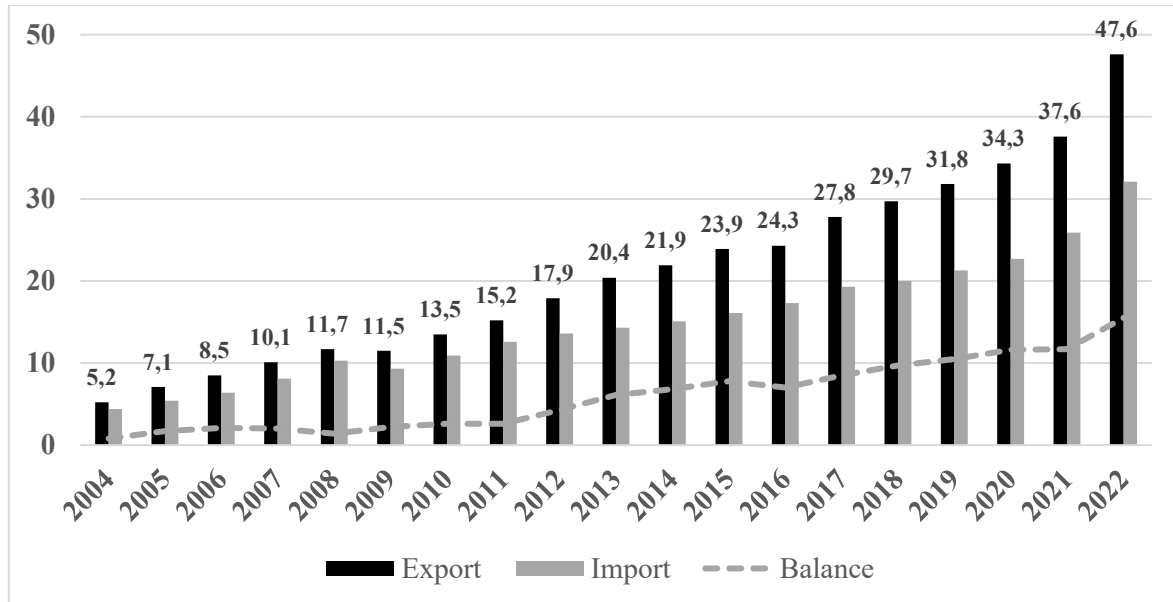


Figure 2. Polish foreign trade in agri-food products from 2004-2019 (EUR billion)

Source: own research based on data from Comext-Eurostat.

According to Kowalczyk & Kwasek (2020) radical changes in Polish foreign trade in agri-food products took place during the period of systemic transformation (Woś, 2000), and later after accession to the EU. Faster growth of exports than imports led to essential change in the foreign balance of the agri-food sector. Paradoxically, the advantages in foreign trade of Polish agri-food products are the result of the backwardness of agriculture, which is still dominated by traditional family farms, which distinguishes them from the industrial agribusiness sector in more affluent countries (Czyżewski & Stępień, 2011). But it is traditionally produced food that is valued by foreign consumers, which allows for an increase in the share of Polish food products in exports.

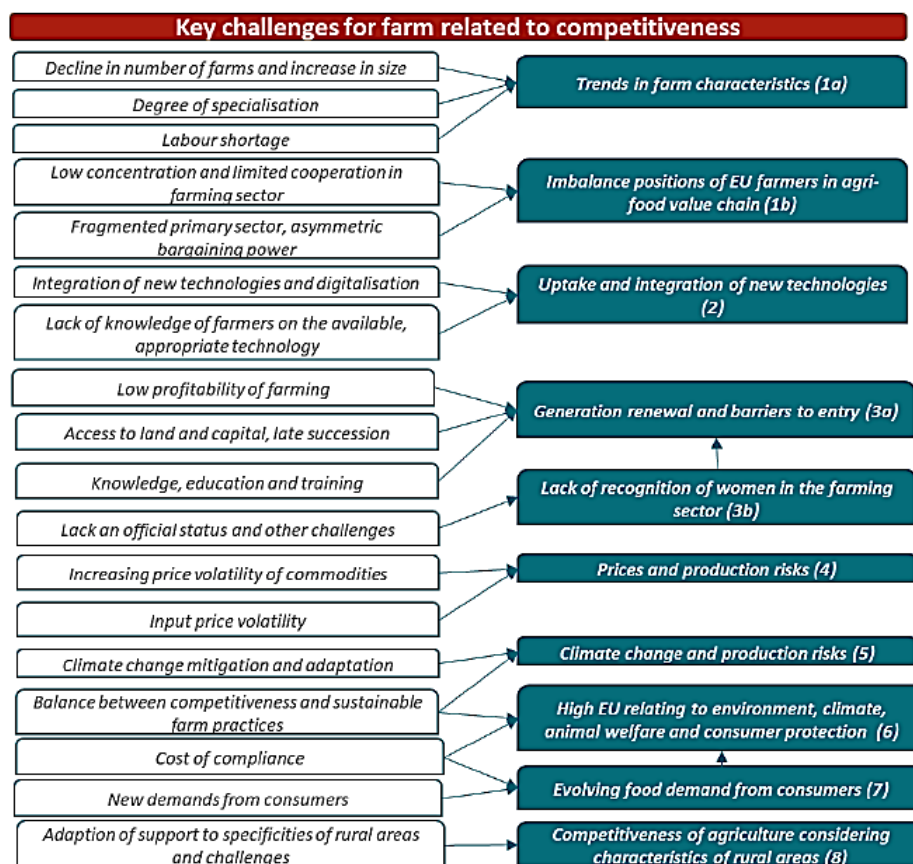
Although Poland's accession to the EU has brought positive changes in the agricultural sector, related to the improvement of the trade balance, growth in producers' incomes and increased investment expenditure, the competitiveness of the agriculture is very weak compared to other sectors of the Polish economy. The share in the generation of Polish GDP in the analyzed period did not exceed 3.0% (and less than 2.5% after 2021), despite the fact that 7% of the total number of employees in the national economy worked in agriculture at the beginning of 2024 (although in the mid-1990s it was as much as 22% of all employed people; Statistics Poland, 2024). Polish agriculture employs larger amounts of land and labor compared to other EU countries, but smaller amounts of capital, mainly due to the lack of own sources of financing. Poor equipment at work can significantly affect the efficiency and competitiveness of agriculture.

Some of the key challenges to farm competitiveness that we could analyse are the determinants that cover (Beck et al., 2024):

- 1) farms characteristics and position of the farmers in the value chain,
- 2) uptake and integration of new technologies by farmers,
- 3) human capital – young farmers and women,

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- 4) price and production risks,
- 5) climate change and production risks,
- 6) high EU requirements related to environment and climate, animal welfare and food safety,
- 7) evolving food demand from consumers.



Picture 1. Key challenges for the competitiveness of farms

Source: Beck et al., 2024.

More specific factors which could be analyzed as a key challenges for farm related to competitiveness was described on the Picture 1. starting with trends in farm characteristics - position in EU, integration of new technologies, prices and production risks, climate change and productions risks, characteristics of rural areas and others.

CHALLENGES OF SUSTAINABLE AGRICULTURE

More sustainable agricultural is one of the most important factor and challenges for the competitiveness of farms. One of the reason is the fact that agriculture has a significant impact on the entire humanity - positively and negatively. Good Agricultural Practices (GAP) are dened by the FAO as a “collection of principles to apply for on-farm production and post production processes, resulting in safe and healthy

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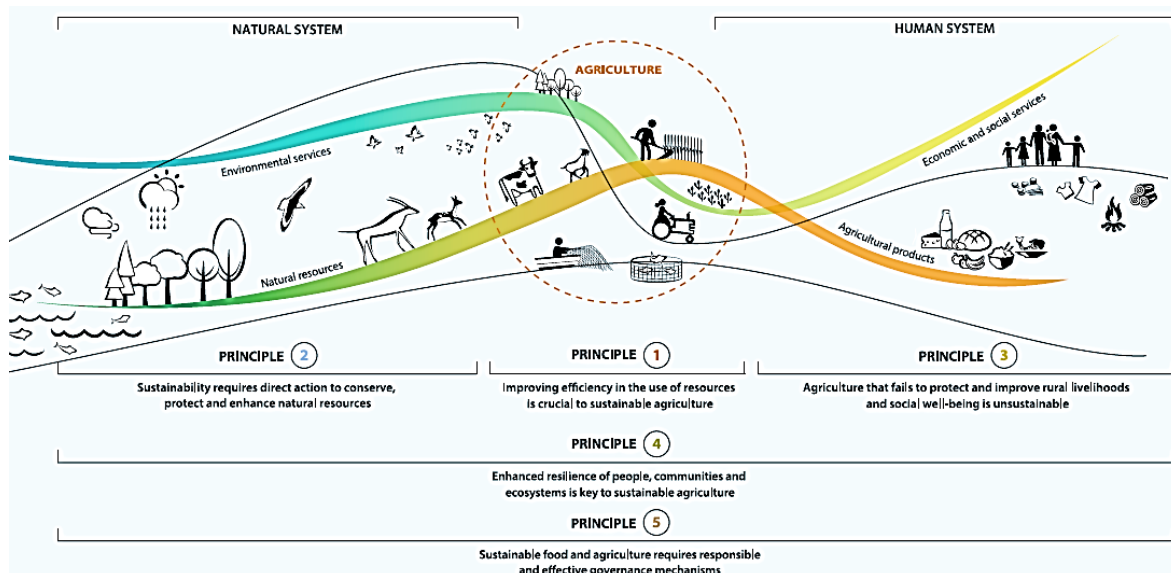
food and non-food agricultural products, while taking into account economic, social and environmental sustainability” (Sareen 2016).

The variations in the definitions and measurements of sustainable agriculture reflect the multi-dimensional and interdisciplinary nature of sustainable agriculture, and the needs to have a more holistic approach to monitor agricultural sustainability (Liu, 2023). According to Shelef et al. (2018) sustainable agriculture stands on four pillars: land management, resource management, human interface, and the ecosystem interface.

When we analyze the situation from the contest how agriculture could contribute and improve the living standards of all, in an economically, socially and environmentally sustainable manner, FAO has proposed the following five principles (UNESCO, WWAR, 2015, FAO, 2014):

1. Improving efficiency in the use of resources is crucial to sustainable agriculture.
2. Sustainability requires direct action to conserve, protect and enhance natural resources.
3. Agriculture that fails to protect and improve rural livelihoods and social well-being is unsustainable.
4. Enhanced resilience of people, communities and ecosystems is key to sustainable agriculture.
5. Sustainable food and agriculture requires responsible and effective governance mechanisms.

According to FAO (2014) the principles are interconnected and complementary and should often be considered simultaneously (Picture 2).



Picture 2. The five principles of sustainable agriculture

Source: UNESCO, WWAR, 2015, FAO, 2014.

Agriculture plays a central role in the European Green Deal, which includes various strategies to promote sustainable agriculture. Some of the strategies that stand out refer to the biodiversity strategy, strategies for the improvement and protection of rural areas, etc. What is important to point out is that the transformation towards sustainable agriculture cannot be expected after several revised strategies, but requires many other issues that may not be directly related to agriculture. That is, it is necessary to take into account social, economic, cultural, technical and environmental aspects, which is why it is



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important to involve all stakeholders and recognize that agriculture produces more than crops (both in a positive and negative sense) and start with local adaptation, and then wider. Accordingly, sustainable development requires the cooperation and efforts of each government individually, harmonizing the proposals and rules prescribed at the global level, then the cooperation of non-governmental organizations and stakeholders, with long-term planning focused on better environmental, economic and social policies. In this, Guth et al. (2020) who also indicate that the concept of sustainable development requires an integrated approach at all levels and in all sectoral policies, highlighting as an example the Common Agricultural Policy, one of the main purposes is to ensure a fair standard of living for the agricultural community, for example, through stable incomes and improving the quality of life in rural areas. According to Boix-Fayos and Vente (2023) at the core of the European Green Deal by 2050, there are three statements - no net emissions of greenhouse gases by 2050, economic growth decoupled from resource use, and no person and no place left behind and agriculture plays a central role in each of these three statements.

Analyzing the aspect of sustainable agriculture in developing countries, there is a need to better connect the Sustainable Development Goals (SDG) and organic agriculture, but when it comes specifically to Serbia, we can immediately see the existence of a rather large gap between the potential of their application and the actual situation. The root of the problem is that many global solutions are difficult to scale down to the local level and exploited by a large number of practitioners (Šeremešić et al., 2024). According to Tošović-Stevanović et al. (2023) the improvement of Serbian agriculture will be based on the postulates set within the EU – the European Green Agreement (EGA) and the instrument for its implementation, the Green Agenda for the Western Balkans (GAWB). Because the goal is to form sustainable agriculture through a circular economy, which will be based on competitive and productive agriculture, efficient use of resources in a way that minimizes pollution of climate, water, land, with the application of biodiversity.

The research conducted by the authors Wrzaszcz and Zieliński (2022) with a focus on the organizational aspect of agricultural production and the legal protection of ecologically valuable areas in Poland pointed to the fact that Poland has a great resource potential for the development of sustainable agriculture, but problematic aspects of the organization of production were also observed, which create a potential threat to the environment. Poland, as a member of the European Union, benefits from various support programs, such as the Common Agricultural Policy (CAP). Under the CAP, farmers receive subsidies for pro-ecological practices, such as organic farming, agroforestry, or water resource protection. There are also national programs that promote sustainable agriculture through education, agricultural advisory services, and financial support for innovation in agriculture. Research conducted by Smędzik-Ambroży et al. (2019) presented the thesis that Common Agricultural Policy subsidies improve the general level of economic sustainability of the agricultural sector, but in their current form they are not a sufficient instrument that serves the social sustainability of farms (especially small family farms).

Also, another study conducted in Poland was concerned with identifying key areas of research that can support the sustainability transition of Polish agriculture. Certain conclusions of the authors from that study (Wieliczko, Floriańczyk, 2022) indicated that although Polish strategic documents indicate the need for supporting these research areas, the actual progress in research and innovation required to stimulate the transition will be limited and fragmentary due to budgetary constraints. The development of sustainable agriculture in Poland also faces challenges related to the change in the mentality of farmers and their low pro-environmental education.



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CONCLUSION

The paper presents some specific factors which could be analyzed as a key challenges related to competitiveness of agriculture, analyzing the trends in farm characteristics as position in EU, integration of new technologies, prices and production risks, climate change and productions risks, characteristics of rural areas and others.

Analyzing the situation in Serbia and Poland, numerous weaknesses and limitations were identified in terms of improving competitiveness and the process of sustainable development of agriculture, but at the same time a large number of resource potentials and development opportunities, which should be used more efficiently. And what can be pointed out as a common denominator in a large number of countries, including the example of Serbia and Poland, is that in practice the competitiveness and sustainability of agriculture is achieved by coordinating a large number of activities, policies and strategies in the domain of not only agricultural activities, but also rural development, ecology, environmental protection, etc., which is why it is necessary to emphasize that positive effects in all countries will be seen only through good coordination of the above-mentioned strategies and policies, as well as from the modality of using appropriate funds, incentives and subsidies to achieve a competitive and sustainable agriculture, which is a long-term goal.

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