

STATE AND DEVELOPMENT OF ORGANIC AGRICULTURE IN SERBIA

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Abstract

The paper first contains a brief overview of the role of organic agriculture in the sustainable development and the state of the sector in the world and in the EU. The following is an analysis of the organic production structure and export results in Serbia and an assessment of the organic policy and legal framework in light of their harmonization with the EU. Priority measures for improvements within the organic sector are given in the conclusion.

Key words: *sustainable development, organic agriculture, organic area, producers and markets, organic policy and legislation, Serbia.*

Introduction

Research related to the planetary boundary framework has found that the levels of anthropogenic influences of four biophysical processes / features of the Earth's system (climate change, biosphere integrity, biogeochemical flows and land-system change) have exceeded the established limits. The last three have a strong regional dynamics, in particular, nitrogen and phosphorus that accumulate in the areas of intensive agriculture to affect the global nutrient flows. This allows redistributive measures to be taken to maintain the globally aggregated boundary value (Steffen et al., 2015).

According to the Report of the Food and Land Use Coalition (FOLU, 2019), the obligations arising from the 2030 Agenda for Sustainable Development and the Paris Agreement on Climate Change motivate people to build a new system of food and land use based on environmental protection and health, food security and social justice improvements. This assumes, inter alia, a large-scale shift to productive regenerative agriculture that, combining traditional production practices with advanced precision farming technologies and bio-based fertilizers and pesticides, moves sustainable agriculture from being “non-degrading”

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to being “enhancing” (FOLU, 2019; Burgess et al., 2019). Organic agriculture belongs to the set of regenerative agricultural systems and practices (Ellen MacArthur Foundation and SYSTEMIQ, 2017; Burgess et al., 2019). Furthermore, according to the Rodale Institute (2020a, 2020b), based on three pillars (soil health, animal welfare and social justice), and committed to continuous innovation and improvements towards best practices across the set of sustainability dimensions, regenerative organic agriculture and related certification system go “beyond organic”.

The FOLU position on the need to “scale regenerative farming practices, and gradually integrate them into mainstream agriculture to make it more sustainable” (FOLU, 2019), is in line with IFOAM and SOAAN Organic 3.0 concept that promotes “increasing adoption of organic principles in mainstream agriculture in order to improve global sustainability through growing the organic sector (certified and non-certified) while making it more sustainable”. This strategy requires: innovation fostering, continuous progress towards best practice, multiple options to assure transparent integrity³, building alliances for common sustainability goals⁴, farm-to-consumer empowerment, and true value and cost accounting (Arbenz et al., 2016).

EU organic legislation defined organic production as “an overall system of farm management and food production that combines best environmental and climate action practices, a high level of biodiversity, the preservation of natural resources and the application of high animal welfare standards and high production standards in line with the demand of a growing number of consumers for products produced using natural substances and processes” (Reg. (EU) 2018/848).

Organic systems generate lower yields compared to conventional agriculture, but organic price premium results in greater profitability (Crowder, Reganold, 2015; Clark, Tilman, 2017). It is necessary to scale up certified organic production and short supply chains to secure a consumer-derived price premium (Burgess et al., 2019; Filipović et al., 2013; Popović, Mihailović, 2020), as well as organic research and innovations, and their dissemination and adoption (EIP-AGRI, 2013; Pérez-Ruíz et al., 2014; Rööös et al., 2018).

According to FIBL and IFOAM 2018 data, there were 2.8 million organic producers in the world, of which in the EU almost 330,000, most in Italy (more than 69,000). A total of 71.5 million ha (1.5% of farmland) was organically managed,

3 Including participatory guarantee systems (PGS) for short supply food chains and alternative food networks (IFOAM, 2017, 2019).

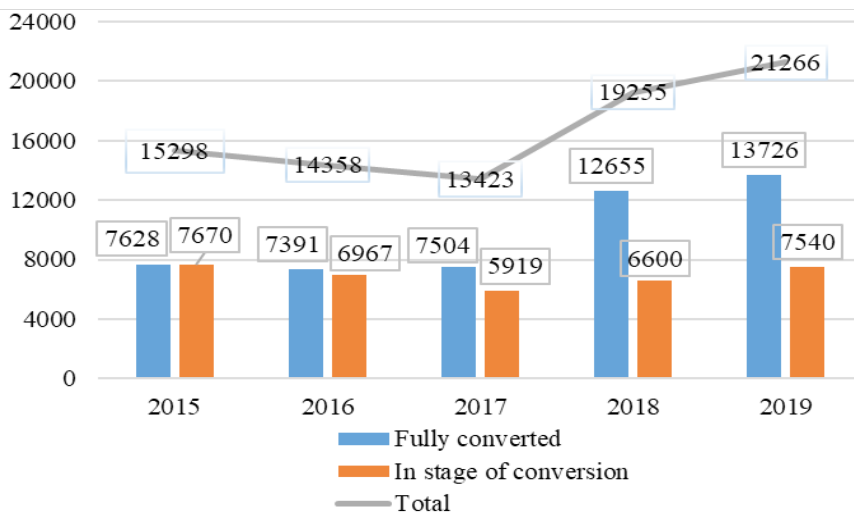
4 Potential allies include agroecology, fair trade, food sovereignty alliances, urban agriculture...

mostly in Australia (35.7 million ha). The organic area increased by 2.9% compared to 2017. Liechtenstein, Samoa and Austria were the countries with the largest share of organic area in total agricultural land (38.5%, 34.5% and 24.7%, respectively). A total of 13.8 million ha (7.7% of farmland) was organically managed in the EU, mostly in Spain, France and Italy. The organic land increased by 7.6% compared to 2017. In addition to Austria, eight other EU countries have a share of organic area in the agricultural land of more than 10% (Willer, Lernoud, 2020). One of the EU Farm to Fork Strategy objectives is to have at least 25% of the EU’s agricultural land under organic farming by 2030 (EC, 2020a). The global organic market amounted to almost 97 billion euros, of which the US 40.6 billion euros and EU 37.4 billion euros. French organic market recorded the highest growth (15.4%). Expenditure on organic food per capita was highest in Denmark and Switzerland (312 euros). Denmark had the largest share of organic in the food market of 11.5%. In 2009-2018, EU organic market has more than doubled (Willer, Lernoud, 2020). Organic food consumption increased during Covid-19 lock-in in Europe, and retailers expect at least part of that increase be permanent (Escodo, 2020).

Organic agriculture in Serbia

Organic production has a tendency to grow. In 2019, 6,119 organic farming certificate holders and their associates were engaged in organic agriculture (SORS, 2020) as well as 21,266 ha of fully converted and in-conversion land (0.61% UAA compared to 0.44% in 2015) (Chart 1).

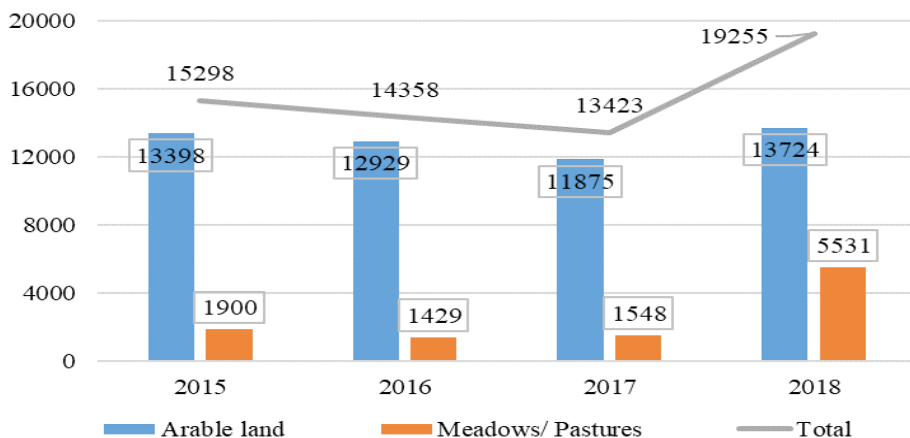
Figure 1. Organic land, 2015-2019. (ha)



Source: SORS, 2018, 2020.

After the decrease in 2016 and 2017, in 2018 the organic arable land⁵ was increased, and significant areas of meadows and pastures were included in organic production⁶ (Chart 2).

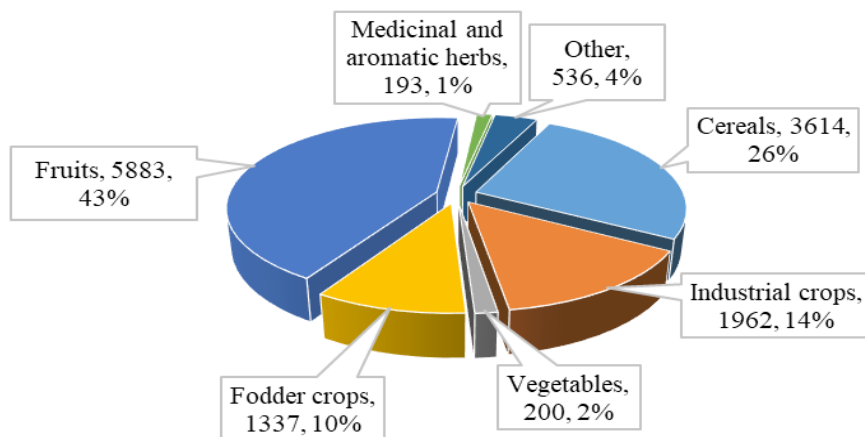
Figure 2. Organic land use, 2015-2018.



Source: MAFWM – DNRL, 2020.

The largest arable land in organic production in 2018 was occupied by fruits (43%), cereals (26%) and industrial crops (14%)⁷ (Chart 3).

Figure 3. Organic arable land use (ha)



Source: MAFWM – DNRL, 2020.

⁵ Arable land here in a broader sense (incl. permanent crops).

⁶ Data on organic land use in 2019 are not yet available.

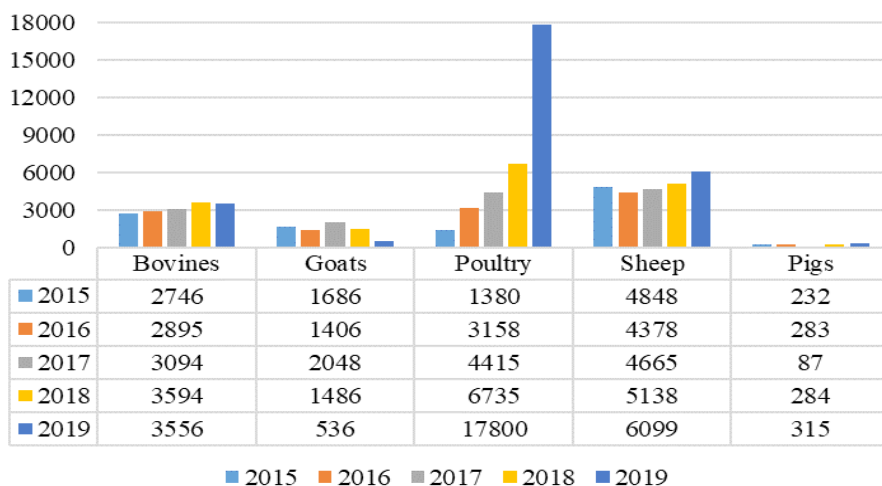
⁷ According to the preliminary MAFWM data, the order is the same in 2019, but with partly different shares (fruits 33%, cereals 30%, industrial crops 14%) (Jovanović, 2020).

Climatic, relief, hydrological, geological and pedological features shape the spatial distribution of organic agriculture as well as types of farms and locally specific production practices, processing capacities, transport accessibility, market proximity, and eco-organic tourism potentials, especially within and around protected areas (Popović et al., 2011; El-Hage Scialabba, Williamson, 2004; Filipović et al, 2013; Popović, Mihailović, 2020).

The Region of Southern and Eastern Serbia had the largest share in the total organic area in 2018 of 45.3%, the Region of Vojvodina 31.0%, and the Region of Šumadija and Western Serbia 23.5%. Organic fruit production was usually performed on small family farms, integrated with non-certified crop and livestock production and covered by the group certificate, mainly in the Region of Šumadija and Western Serbia (59.4%), in the Kolubara, Mačva and Rasina districts, and in the Region of Southern and Eastern Serbia (36.7%), in the Toplica district. Cereals and industrial crops were mostly grown on farms specialized for organic field crops in the Region of Vojvodina (69.0% and 64.9%, respectively), in the South Banat and South Bačka districts, and in the Region of Southern and Eastern Serbia (26.5% and 33.7%), in the Zajecar district. Organic meadows and pastures are concentrated in the Region of Southern and Eastern Serbia (73.4%), in the Pirot district (MAFWM – DNRL, 2020).

Rise in organic livestock herds, which took place on larger farms with integrated organic fodder production, was recorded in 2015-2019, especially in the number of poultry, sheep and bovines (Chart 4).

Figure 4. Organic livestock, 2015-2019, number of animals



Source: SORS, 2020; MAFWM – DNRL, 2020.

According to the data for 2017, poultry (laying hens) was raised mainly in the Region of Šumadija and Western Serbia (58.8%), in the Zlatibor and Pomoravlje districts, and in the Region of Vojvodina (34.3%), in the South Banat district. The largest number of sheep was bred in the Region of Southern and Eastern Serbia (67.8%), in the Pirot district, and in the Region of Vojvodina (28.8%), in the North Bačka district, where the largest number of goats was also bred (70.5%). The Pirot district was the second area in the number of bovines in organic breeding (13.5%), after the South Bačka district of the Region of Vojvodina (69.9%), known for certified organic milk production⁸ (MAFWM – DNRL, 2020).

Exports of organic products in 2018 amounted to 27.4 million euros, and it was dominated by frozen raspberries (58.1%), frozen blackberries (10.1%), apple concentrate (8.5%) and frozen cherries (5.6%). The largest share of exports was placed on the EU market, to Germany 27,1%, the Netherlands 12.7%, Austria 11.2%, and Italy 9.9% (MAFWM – DNRL, 2020).⁹ The domestic market mainly consists of market niches of larger cities. Imports are dominated by processed products, which are sold through large retail chains.

Political and legislative framework

The unavailability of inputs and short length of the lease of state land for organic production, lack of storage capacities in vegetable production, low level of processing and inadequate packaging of fruits, lack of certified slaughterhouses and dairies in organic livestock production in southern Serbia and undeveloped short supply food chains are the main weaknesses of the organic sector (Simić, 2017; PPD for Development, 2018).

The goals of organic agriculture development (National RDP 2018-2020, Official Gazette of RS, 60/18) are aimed at solving these obstacles, primarily the goals related to: support for organic production as an integral part of national (and local) agricultural and RD programs and IPARD support; intensification of applied research in organics (including linkage with EU organic research and innovation programs); and organic market development with emphasis on continuous adjustment of control and certification systems to EU standards, within the process of harmonization with the EU acquis.

8 Farma Organica, <https://farmaorganica.rs/?lang=en>.

9 According to Customs Administration, organic exports in 2019 amounted to 29.75 million euros and consisted mainly of frozen raspberries, apple concentrate, frozen blackberries and frozen cherries. More than a third of this value was realized in Germany (Vujanac, 2020).

The EU Regulation *on organic production and labeling of organic products* (2018/848), which will apply from 2022 (EC, 2020b), inter alia, provides for: strengthening and harmonization of production rules, phasing out a number of exceptions and derogations, strengthening the control system with stricter precautions and vigorous supply chain checks, extended list of organic products, a system of group certification for small farmers, and phasing out the system of unilateral equivalency in trade with third countries and shift the recognition of control bodies to the compliance regime. A new Action Plan on organic farming is expected in early 2021 (EC, 2020c).

System of control and certification of organic products in Serbia was harmonized with EU regulations (Simić, 2017), but further adjustments are needed (ECA, 2019). The new Rulebook *on control and certification in organic production and methods of organic production* (Official Gazette of RS, 95/20) regulates in more detail the control in organic production and corrective measures in case of irregularities. The Rulebook also regulates the organic production of wine and revises the list of active substances in plant protection products permitted for use in organic production, expanding the list of these products and increasing their availability. A new Law on organic production is expected by the end of 2021 (PPD for Development, 2020).

Conclusion

Having regard to the global strategic framework for organic agriculture and new organic legislation in the EU, growing demand for organic products on the world market and good production and market prospects, but also serious obstacles for organic operators in Serbia, the following priority measures for improvements within the sector stand out: continuous harmonization of the legislative framework for organic production with EU legislation; legislative and financial support to the production, processing, control and certification of organic products; and funding and promotion of organic research and innovation, and their dissemination and adoption, in order to increase productivity and market competitiveness. The promotion of group certification is particularly important for large number of smallholders. However, many of them, especially those in protected areas, tourist areas and urban agriculture remain outside the third-party certification and are not able to realize organic price premium. It is therefore necessary to strengthen short supply chains and alternative food networks, promote local partnerships and support the development of participatory guarantee systems.

Literature

1. Arbenz, M., Gould, D., Stopes, C. (2016): *Organic 3.0—for truly sustainable farming and consumption*. IFOAM Organics International, Bonn and SOAAN, Bonn.
2. Burgess, P.J., Harris, J., Graves, A.R., Deeks, L.K. (2019): *Regenerative Agriculture: Identifying the Impact; Enabling the Potential*. Report for SYSTEMIQ. UK, Cranfield University.
3. Clark M., Tilman, D. (2017): *Comparative analysis of environmental impacts of agricultural production systems, agricultural input efficiency, and food choice*. Environmental Research Letters 12, 064016, <https://doi.org/10.1088/1748-9326/aa6cd5>.
4. Crowder, D.W., Reganold, J.P. (2015): *Financial competitiveness of organic agriculture on a global scale*. PNAS, 112(24), 7611-7616.
5. EIP-AGRI Focus Group on Organic Farming. (2013): *Optimising Arable Yields. Recommendations and Outputs*. Final Report, https://ec.europa.eu/eip/agriculture/sites/agri-eip/files/fg1_organic_farming_final_report_2013_en.pdf. (5.11.2020).
6. El-Hage Scialabba, N., Williamson, D. (2004): *The scope of organic agriculture, sustainable forest management and ecoforestry in protected area management*. Environment and Natural Resources Working Paper No. 18. Rome.
7. Ellen Macarthur Foundation and SYSTEMIQ. (2017): *Achieving “Growth Within”*, <https://www.ellenmacarthurfoundation.org/publications/achieving-growth-within> (7.11.2020).
8. Escodo, P. (2020): *Going beyond organic*, <https://www.eurofresh-distribution.com/news/going-beyond-organic> (6.11.2020).
9. European Commission. (2020a): *Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system*. COM(2020) 381 final.
10. European Commission. (2020b): *The future of organics. New legislation from 2022*, https://ec.europa.eu/info/food-farming-fisheries/farming/organic-farming/future-organics_en (18.11.2020).
11. European Commission. (2020c): *Action Plan for the development of EU organic production*. Roadmap. Ares(2020)4611911-04/09/2020.
12. European Court of Auditors – ECA. (2019): *The control system for organic products has improved, but some challenges remain*. Special Report No 4, Luxembourg.

13. Filipović, V., Popović, V., Subić, J. (2013): *Organic Agriculture and Sustainable Urban Development: The Belgrade – Novi Sad Metropolitan Area Case Study*. In M. Radović Marković, D. Vojteski Kljenak, D. Jovančević (Eds.), *Employment, Education and Entrepreneurship – Rural Entrepreneurship: Opportunities and Challenges*, 337-353. Belgrade, Faculty of Business Economics and Entrepreneurship.
14. IFOAM – Organics International. (2017): *The Full Diversity of Organic Agriculture: What We Call Organic*. Position Paper. Bonn Germany.
15. IFOAM – Organics International. (2019): *PGS Guidelines. How to Develop and Manage Participatory Guarantee Systems for Organic Agriculture*. Bonn, Germany.
16. Jovanović, M. (2020, 13 November): Increasing demand for organic products. Here's how to get the label "Organic" in Serbia. *Biznis.rs*, <https://biznis.rs/vesti/sve-veca-potraznja-za-organskim-proizvodima-evo-kako-dobiti-oznaku-organic-u-srbiji/> (15.11.2020).
17. Ministry of Agriculture, Forestry and Water Management. Directorate for national reference laboratories (MAFWM – DNRL). (2020): *Organic production in Serbia*, http://www.dnrl.minpolj.gov.rs/en/ona_nama/organska/organska_proizvodnja_u_srbiji.html (14.11.2020).
18. *National Rural Development Program 2018 – 2020*: Official Gazette of RS, no. 60/2018.
19. *Organic Milk Farma Organica*, <https://farmaorganica.rs/?lang=en> (16.11.2020).
20. Perez-Ruiz, M., Slaughter, D.C., Fathallah, F.A., Gliever, C.J., Miller, B.J. (2014). *Co-robotic intra-row weed control system*. *Biosystems Engineering*, 126, 45-55.
21. Popović, V., Nikolić, M., Katić, B. (2011): *Use and Protection of Agricultural Land in Serbia*. IAE, Belgrade.
22. Popović, V., Mihailović, B. (2020): *Business Models for Urban Farming in and Around Urban Protected Areas: EkoPark Belgrade Case Study*. In A. J. Vasile, J. Subić, A. Grubor, D. Privitera (Eds), *Handbook of Research on Agricultural Policy, Rural Development, and Entrepreneurship in Contemporary Economies*, 89-107, IGI Global.
23. Public-private dialogue for development (PPD). (2018): *Info sheet - Dialogue on organic production*, <https://www.jpdr.rs/javno-privatni-dijalog-o-organskoj-proizvodnji.php>. (15.11.2020).
24. Public-private dialogue for development (PPD). (2020): *Development of organic agriculture through strengthening local support*, <https://www.jpdr.rs/razvoj-organske-poljoprivrede-kroz-ja%C4%85Danje-podr%C5%A1ke-na-lokalu.php>. (18.11.2020).

25. Regulation (EU) 2018/848 of the European Parliament and of the Council on organic production and labelling of organic products and repealing Council Regulation (EC) No 834/2007. OJ L 150.
26. Rodale Institute (2020a): *Regenerative organic agriculture*, <https://rodaleinstitute.org/why-organic/organic-basics/regenerative-organic-agriculture/> (5.11.2020).
27. Rodale Institute (2020b): *Framework for Regenerative Organic Certified™*, https://regenorganic.org/wp-content/uploads/2020/11/_ROC_Framework.pdf (5.11.2020).
28. Rööös, E., Mie, A., Wivstad, M., Salomon, E., Johansson, B., Gunnarsson, S., Wallenbeck, A., Hoffmann, R., Nilsson, U., Sundberg, C., Watson, C.A. (2018): *Risks and opportunities of increasing yields in organic farming*. A review. *Agronomy for Sustainable Development* 38, 14.
29. *Rulebook on control and certification in organic production and methods of organic production*. Official Gazette of RS, 95/2020.
30. Simić, I. (2017): *Organic Agriculture in Serbia At a Glance 2017*. Serbia Organica, Belgrade.
31. Statistical Office of the Republic of Serbia (SORS). (2018): *Statistical Yearbook of the Republic of Serbia, 2018*.
32. Statistical Office of the Republic of Serbia (SORS). (2020): *Statistical Yearbook of the Republic of Serbia, 2020*.
33. Steffen, W., Richardson, K., Rockström, J., Cornell, S.E., Fetzer, I., Bennett, E.M., Biggs, R., Carpenter, S.R., de Vries, W., de Wit, C.A., Folke, C., Gerten, D., Heinke, J., Mace, G.M., Persson, L.M., Ramanathan, V., Reyers, B., Sörlin, S. (2015): *Planetary boundaries: Guiding human development on a changing planet*. *Science* 347(6223). DOI:10.1126/science.1259855.
34. The Food and Land Use Coalition (FOLU). (2019): *Growing Better: Ten Critical Transitions to Transform Food and Land Use*. The Global Consultation Report. <https://www.foodandlandusecoalition.org/global-report/> (05.11.2020).
35. Vujanac, P. (2020, Jun 09): *Almost 95% of organic products in Serbia go for export, and there is a simple reason for that*. Blic, <https://www.blic.rs/biznis/vesti/skoro-95-organskih-proizvoda-u-srbiji-ide-za-izvoz-a-za-to-postoji-jednostavan-razlog/x32txz9> (19.11.2020).
36. Willer, H., Lernoud, J. (Eds.) (2020): *The World of Organic Agriculture. Statistics and Emerging Trends 2020*. FiBL, IFOAM – Organics International.