



1. FOOD SYSTEMS AT THE CORE OF SUSTAINABILITY

The Global Food Systems Summit was convened by the UN Secretary General during the United Nations General assembly in September 2021. It presented key opportunities to set out a **new direction for the food systems, one that respect planetary boundaries, focuses on healthy diets for all and provide equitable and sustainable livelihoods.** The summit brought unprecedented attention to the impact of food systems, on climate and sustainability.

The Food Systems summit was a people summit: it called for, and heard the voices of small landowners, CSOs, experts, large agri-businesses, on the many issues related to food systems. This brought a different dimension to the usual discussions around agriculture, which are often very technical in content. Inclusivity, multi-stakeholder partnership and ownership were at the core of the debates, reflecting one of the key principles of Agenda 2030, to leave no one behind.

In Serbia, the preparation for the summit was led by the Ministry of Agriculture, Forestry and Water Management, with support from the UN team. Four dialogues were organized in Belgrade, and cities in Serbia, bringing new stakeholders and new perspectives around the table – Initial discussions focused on sustainable food production, inclusive value chains, food loss, food waste, and the role of education in promoting a healthy lifestyle. The dialogues exposed the complexity of the Food Systems concept, and the interconnections between food production, nutrition, economic gains, land management and environmental impact, pollution and food safety, the divide between the very small producers and the large, export-oriented businesses, and so much more. As the country completed its draft plan for a national pathway to sustainable food systems, it is clear that wider sectoral integration and cooperation, in fact, cross fertilization, between spatial planning, agriculture, health, environment, science and technology, education are needed.

Food Systems, in their current design, have large, often damaging impacts on nature, such as loss of bio-diversity, pollution and climate change. **Globally, between 20% and 33% of man-made greenhouse gas emissions are generated by food systems.** Agriculture is identified as a threat to 24,000 out of 28,000 species at risk of extinction. Extensive use of chemical pesticides and fertilizers and

monoculture are severely damaging soil and water; the dramatic reduction of the bee and other insect populations is endangering the sustainability and diversity of food production. At the same time, the food system bears the brunt of climate change effects, affecting crop yield, changing the patterns of rainfalls, etc. The food system agenda needs to be clearly linked with efforts for a deep transformation of the national economic system into one that delivers for people, planet and prosperity.

The national dialogs build on the existing strategy of the ministry of agriculture. The timing is critical, as Cluster 4 of the EU accession negotiations, on “Green Agenda and Sustainable Connectivity” was opened at the end of the year and the opening of Cluster 5, which covers much of the food systems is expected in 2022. The key recommendations are shared on page 8 of this update. They include:

- the promotion of decent livelihoods and diversification of rural livelihood,
- the acceleration of innovation, both in terms of knowledge development and access,
- boosting nature-based, nature- positive production and solutions across the food systems activities,
- revisiting the infrastructure for rural development,
- promoting sustainable consumption, safe food and healthy lifestyle among citizens,
- upscaling efforts around the management of food loss and food waste,
- upscaling green financing and innovative financing schemes for small farmers.

Today, it is not enough to produce food. **We need to design food systems that protect the earth and keep the dignity of people at the centre, ensuring enough food globally and decent work locally, while leaving no one behind.** We hope that you will contribute to these efforts.

As the **war in Ukraine threatens supplies of key staple crops** and food trade, the world faces an imminent food crisis. While Serbia food production system has demonstrated a strong resilience during the Covid-19 pandemic, food prices increased significantly in 2021. The cost of inputs (primarily fertilizer) had also tripled in the past year, along with rising energy prices. This combination threatens the sustainability of food systems. In this light, and within the acceleration of the wider green transformation and the energy transition, some of the recommendations outlined in this update should be addressed and implemented with a greater sense of urgency.

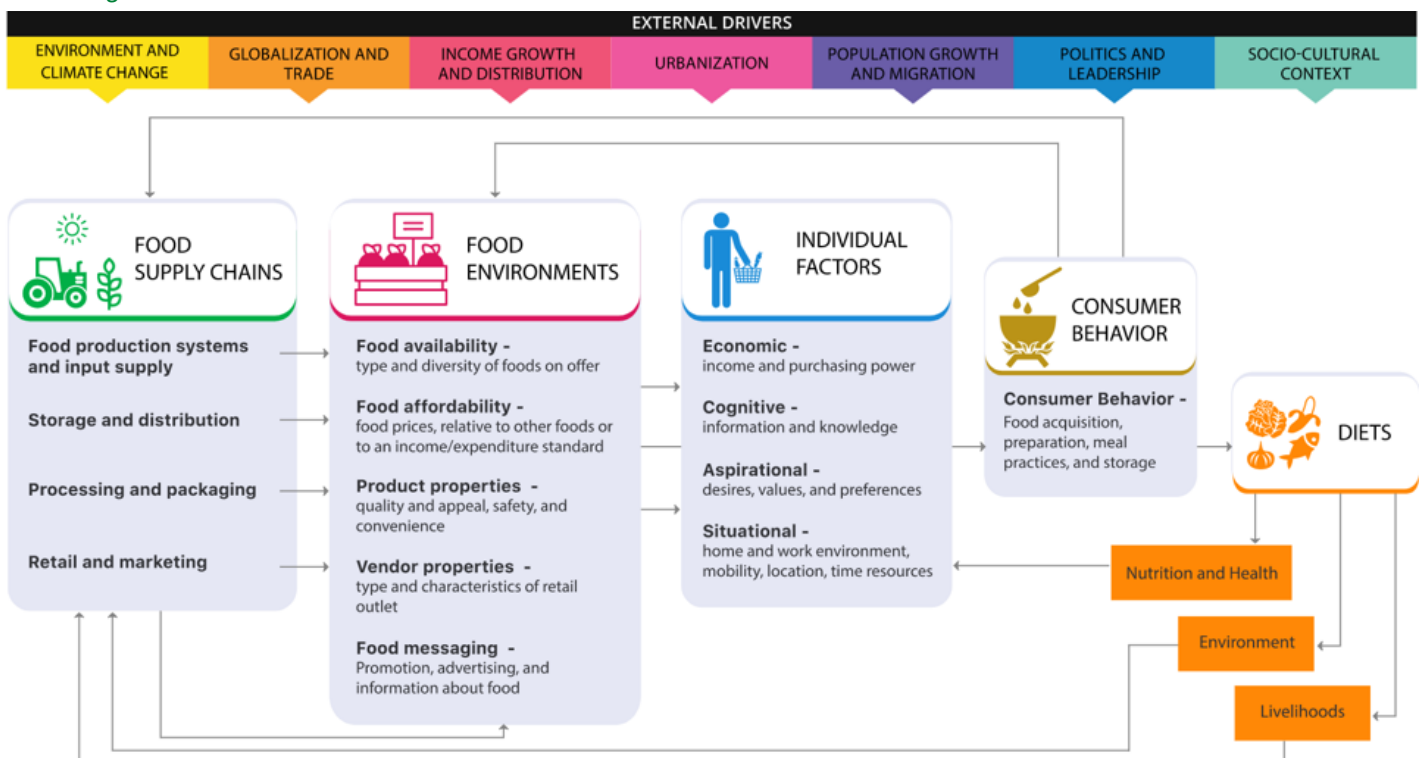
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i 2. WHAT ARE FOOD SYSTEMS?

Food systems¹ embrace the entire range of actors and institutions, with interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption, and disposal (loss or waste) of food products that originate from agriculture (incl. livestock), forestry, fisheries, and food industries, and the broader economic, political, societal, and natural environments in which they are embedded. Food systems are intertwined with external drivers, as shown in Figure 1, below.

Figure 1



Sustainable food systems deliver food security for all, respects planetary boundaries and does not compromise the rights of present and future generations. Integrated action on food systems is a critical lever to the achievement of the SDGs. A sustainable food system is aligned with all three dimensions of sustainable development. It is:

- profitable (economic sustainability) (SDG5, 8 and 9);
- just (social sustainability) (SDG 1, 5 and 10);
- nature-positive (environmental sustainability and circularity) (SDG 6, 13,14, 15).

At a global level, **food systems are responsible for 1/2 of human-induced pressures on biodiversity and 1/3 of greenhouse gas emissions.**² More emissions are generated in moving food from the farm to fork and in manufacturing inputs used on the farms, than in the actual production of food itself.³ Nearly one in three people in the world (2.37 billion human beings) did not have access to adequate food in 2020.⁴ Confronting the dual challenge of environmental and social sustainability requires a renewed emphasis on a diverse basket of food, with more emphasis on plant foods,⁵ and on a systemic approach encompassing all levers from farm to fork.

1 [Food Systems – Definition, Concept and Application for the UN Food Systems Summit](#).

2 Crippa, M., Solazzo, E., Guizzardi, D. et al. [Food systems are responsible for a third of global anthropogenic GHG emissions](#). Nat Food 2, 198–209 (2021) and Chatham House [Food System Impacts on Biodiversity Loss](#) (2021)

3 For more details on farm level versus pre and post production, see: FAO Stat, [Emissions Shares](#)

4 FAO, [The State of Food Security and Nutrition in the World 2021](#), page vi.

5 FAO & WHO, [Sustainable healthy diets: Guiding principles](#), 2019.

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3. FOOD SYSTEM STRENGTHS & CHALLENGES

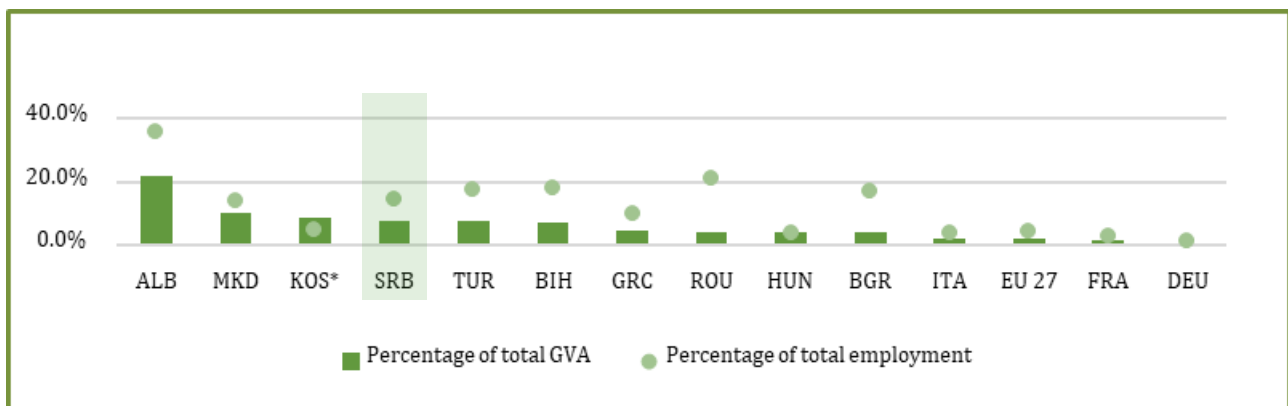
3.1 The Serbian food system plays a fundamental role in the country's economy, social and cultural fabric

The agriculture and food processing sectors account for 15% of total employment and 7% of total gross value added. The sector is competitive on regional and world markets. In 2019, Serbia had an agricultural trade surplus of 1.3 billion EUR, with an increase in agricultural exports of 13.3% year on year. **It supplies the population with varied and nutritious food, even during situation of crisis.** During the COVID-19 crisis, the sector of food production and food retail was the least affected, and Serbia did not need to ban exports of food and agricultural

goods to secure domestic supplies, unlike other countries of⁶ the region. Serbia's food imports are skewed towards processed products while unprocessed agricultural goods, where profit margins are lowest, still dominate exports. There are signs of change: the Gross Value Added (GVA) generated by the food manufacturing industry increased by 4.1% in the last ten years, now representing 2.4% of Serbian GVA, while employment increased by 0.7% to 4.3% of total employment (comparable EU averages are: 3% for employment and 2.1 for GVA).⁷

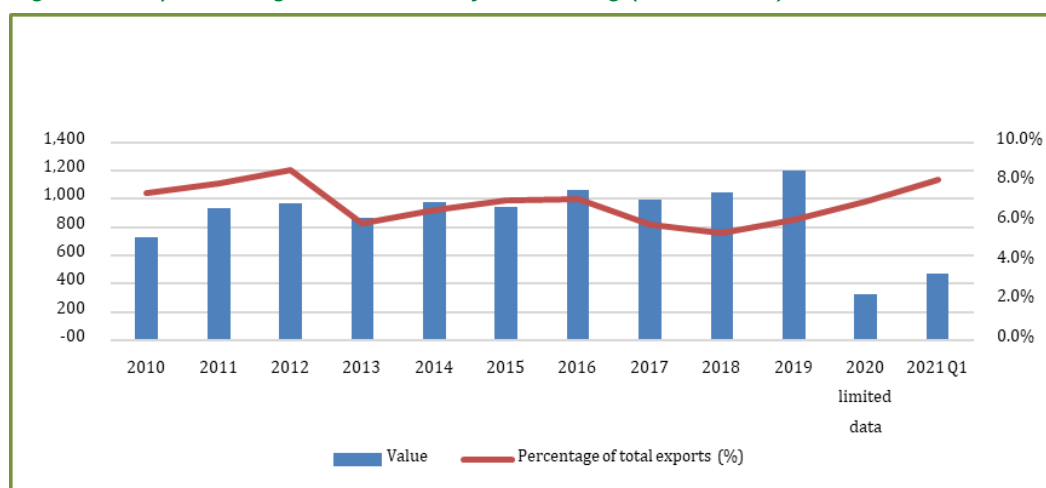
The performance of the Serbian agricultural sector has been particularly strong in niche sectors with high demand, e.g organic agriculture in Serbia doubled in the period 2012-2017.⁸ The agriculture and food sector in Serbia is increasingly attracting foreign direct investments, with 68 FDI projects in place estimated to have generated more than 25 thousand jobs.⁹

Figure 2 - Share of agriculture, forestry and fishing in total GVA and total employment



Source: FAO

Figure 3 - Exports of agriculture, forestry and fishing (million USD)



Source: SORS

6 At the deepest of the COVID-19 crisis, in the second quarter of 2020, the overall Serbian economy contracted by 6.3% & the food sector only contracted by 1.5%. CEVES, [The COVID-crisis and Serbia's SMEs: Assessment of Impact and Outline of Future Scenarios](#), 2020.

7 Data for Serbia is from SORS and for the EU from Eurostat and [Food and Drink Europe](#).

8 Jelena Golijan, 2021. ["The Development of Organic Agriculture in Serbia and Worldwide"](#), Contemporary Agriculture.

9 Development Agency of Serbia: <https://ras.gov.rs/>

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The Serbian agricultural sector is selectively embracing innovation. More than half of business entities in Serbia in the agricultural sector have been characterized as “innovative” with a significant upward trend in the number of innovative enterprises in the last 7 years.¹⁰ Enterprises, on the other hand, invest very little in R&D, while innovations are generally incremental in nature, i.e. there are very few businesses that have made radical innovations and developed a worldwide product through investing in research and development.¹¹ Many innovations are brought in by business-minded entrepreneurs who have identified opportunities in the agri/food transformation sectors, rather than through traditional farmers.

Food distributors, schools, municipalities, and cooperatives have started multiple, independent initiatives including:

- **Startups:** the MapMyApple mobile app – developed by Delta Agrar in collaboration with leading universities - allows farmers to recognize the risk of diseases and pests in apple orchards in just 1 click and in less than 1 minute, and automatically recommends the optimal protection program;
- **Food waste:** A platform for food surplus donations, based on blockchain technology, was developed by UNDP in partnership with retailer Delhaize. The platform enables humanitarian organizations to retrieve declassified fruits and vegetables from shops and distribute them to those in need. Donations for the period March-August 2021 exceeded 300 tons;
- **Cooperatives:** An online farmers’ market connecting women farmers to customers was developed by UN Women in cooperation with a local NGO, enabling women farmers from Western Serbia to reach customers during the COVID-19 lockdowns;
- **School food plans:** The Ministry of Education, Science and Technological Development selected 30 Serbian primary schools for Strength2Food’s school meals pilot scheme.

3.2 Inequalities persist in rural areas when compared with development in urban areas

- The “Gini coefficient” – as a measure of inequality – is higher overall in Serbia than in neighbouring countries, and the **divide between rural and urban areas is the highest in the region** (the Gini coefficient is of 36.1 in rural areas and 30.3 in urban ones);
- Absolute poverty, in Serbia, is twice as high in rural areas as in urban ones. In recent years, absolute poverty has declined in Serbia overall, but not in rural areas.
- Despite favourable climatic conditions and the high quality of the agricultural land - the average income of farms in Serbia is significantly lower than the EU-27 average;¹²
- In metropolitan areas in Serbia, in 2018, 78% of households had an internet connection, while in other inhabited areas this percentage stood at 63% (SIPRU, 2019). Disparities in land ownership are prevalent in rural areas: women are registered as owners or co-owners of less than 30% of cadastral records in all areas of Serbia except Belgrade;¹³
- Only 14% of farmers report using smart farming technologies, and 81% report that the high cost of farming equipment cost is the primary reason for not adopting smart technologies. Ninety-four per cent stated that they would adopt such technologies if there were support through subsidies.¹⁴

3.3 Resilience to climate risks and other risks remains a challenge

Agriculture in Serbia is **vulnerable to climate change related droughts and flood. At the same time, the combined emissions of the food system increased from 22% to 24% between 2015 and 2019.** Current land use and poor agricultural practices have contributed to soil erosion and soil degradation. Water use efficiency is among the lowest in Europe. Irrigation systems covers less than 1.5 percent of Serbia’s arable land, against 3.0 percent in Bulgaria, 5.0 percent in Hungary, and around 30.0 percent in Italy and Greece (World Bank, cit.). Storage capacities and collecting centres that have cooling facilities to preserve fruits and vegetables are also lacking. Irrigation and storage capacity are important for enhancing the resilience of the agricultural sector, but also to increase the production of fruits and vegetables that are nutrient-dense and competitively advantageous. vegetables and grapes sector.

10 SORS, European Community Innovation Survey 2016-2018

11 Government of Serbia, [Smart Specialization Strategy](#) 2020.

12 Aničić Jugoslav, “[Trends in development of Serbian agriculture after the economic crisis in 2008](#)” and CEVES Serbia Sustainable Development Issues: A Baseline Review, 2018.

13 FAO, [Achieving SDG Indicator 5.a.2 in the Western Balkans and Beyond](#), 2020.

14 ITU and FAO, [Status of Agriculture in Europe and Central Asia](#), 2020.

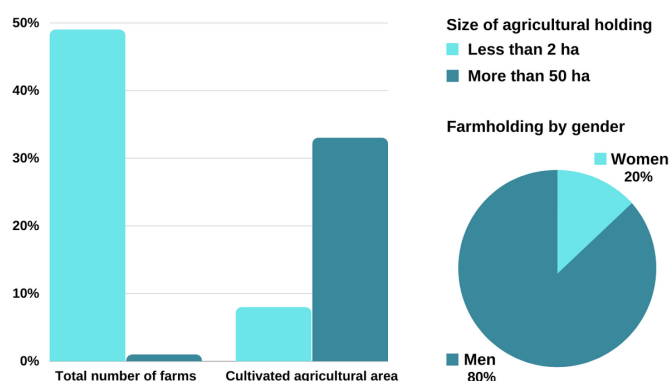
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3.4 Regional disparities in sector performance and the composition of crops persist

The autonomous province of Vojvodina, due among other factors to the larger farm size in the region, is the key driver of Serbia's agricultural competitiveness, while municipalities in the southern and eastern parts of Serbia are lagging.

Figure 4 - Duality of the Serbian agricultural sector¹⁵



Source: FAO & SORS

The above suggests that realizing the full potential of agriculture by maximizing efficiencies would at the same time contribute to the priority of LNOB and support gender equality.

3.5 Balanced nutrition and responsible consumer habits are not yet mainstreamed

The prevalence of moderate or severe food insecurity in the population was 12% in 2019 - on a downward trend from close to 13% in 2016¹⁶ - which compares favourably to that of even more developed countries in the sub-region.¹⁷ In contrast, access to nutritious and healthy food is still not available to all population groups: the prevalence of undernourishment increased from 4.1 to 4.6%,¹⁸ the prevalence of obesity/overweight¹⁹ in children increased especially among children from disadvantaged groups, and an estimated 24% of adults.

Food waste and food loss: It is estimated²⁰ that annually 770.000 tons of food is wasted or lost in Serbia. Communal waste generated by the City of Belgrade is at the high end of European average values. Households in the capital currently generate about 170 tons of waste, corresponding to 108.1 kg per capita per year.

3.6 IPARD and the use of subsidies

Serbia – as a candidate country – benefits from the instrument for pre-accession assistance for rural development (IPARD) focused on the agri-food sectors. Total assistance since 2015 was 175 million euros, the largest recipient in the Western Balkans. IAPRD III is expected to double this amount.

Specific components of the IPARD programme such as “Farm diversification and business development” directly contribute to sustainable development by ensuring the diversification of economic activities including ecotourism and eco-services. Complemented to EUR 55 million from the national budget, this facility supports farmers in the purchase of new equipment, machinery, mechanization, construction, extension, reconstruction, and reparation of facilities. The subsidies schemes are significantly underused for several reasons - lack of awareness by farmers, lack of risk-taking approach and perceived bureaucratic complexity.

3.7 Impacts of energy crisis / Ukraine crisis

Figure 5 - Prices of inputs pre Ukraine



Prices of inputs in agriculture Source: SORS

Impact of Ukraine crisis

Serbia exports about 1 billion worth of goods to the Russian Federation. About a third of Serbia's exports to the Russian Federation are concentrated in the sectors of fresh fruits (particularly apples) and processed food and agro-based products. In addition to thwarting exports to the Russian Federation and Ukraine, the crisis may result in additional pressures on the prices of imported components, and the cost of transport. 55% of total imports of fertilisers come from the Russian Federation (156 million USD).²¹ The crisis may further deepen vulnerabilities in supply chains that were just recovering from the fallout from the COVID-19 pandemic, due to the damage to port and transport infrastructure and the massive disruptions to trade in goods on the continent.

15 FAO, [Smallholders and family farms in Serbia](#), 2019 and SORS, [Farm Structure Survey](#), 2018.

16 [World Bank database](#).

17 E.g the prevalence of moderate or severe food insecurity was 13.9 in Romania in 2019.

18 FAO, [Regional Overview of Food Security and Nutrition](#) (2020) and [Global Nutrition report – Serbia country profile](#).

19 Prevalence of overweight Serbian children aged 7–9 years increased from 18.8 in 2015 to 20.6% in 2019.

20 Center for Environmental Improvement / UNEP

21 ICT, [Trade Map](#)

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4. RECENT INSTITUTIONAL FRAMEWORK & POLICIES

The fundamental tenets of agricultural policy in Serbia are the “Act on Agriculture and Rural Development” (updated in 2021)²² and the “Act on Incentives in Agriculture and Rural Development” (2013). These laws establish the mechanisms for the adoption and implementation of agricultural plans and strategies, define beneficiaries, amounts and types of incentives, etc. This system does not yet incentivize a transition to environmentally sustainable practices:

- Direct payments are conditioned by the existence of production (i.e. “production-coupled payments”), which distorts competition;
- There is no obligation to comply with Good Agricultural and Environmental Conditions for receiving subsidies;
- In 2019, over 77% of direct payments were made to meat and dairy producers, notably requiring high water and energy consumption and generating heavy discharge of wastewater solid waste and methane emissions.

In recent years, progress was made towards mainstreaming sustainable development in the sector as reflected by recent regulatory developments, as detailed in Table 1:

Table 1 - Recent Policy Developments

Text	Date	Relevant Provisions
The Common market organization (CMO)	June 2021	This framework document provides the broad lines under which the further organization and regulation of the agricultural sector can be placed; and defines rules related to producers’ associations. It is expected to play a role in the development of short food supply chains, deepening opportunities for local farmers and food producers to sell their produce directly to consumers or through a very limited number of intermediaries.
Bill amending and modifying the Law on Agriculture and Rural Development	November 2021	Introduces the new software solution “eAgrar”, to enable more efficient management of the Register of Agricultural Holdings and a more efficient management of incentive payments in agriculture and rural development.
Rulebook on control and certification in organic production and methods	November 2021	Further harmonizes Serbian legislation with EU legislation on organic production and labeling, covering production, processing, storing, transporting and trade.
Law on Climate Change	March 2021	Sets the basis for the establishment of a national system for policies, measures, and projections to be operationalized upon adoption of the relevant by-laws.

The adoption of the National Rural Development Program for the period 2021-2024 and the National Program for Agriculture for the period 2022-2024 are pending. Opening of Cluster 5 as part of the EU accession agenda is expected in 2022, and the adoption of an integrated food systems approach will greatly accelerate the reforms at stake.

Figure 6 - EU Cluster 5

Resources, agriculture & cohesion



The **UN family** is supporting food system transformation in Serbia primarily through policy and capacity support such as:

- Reducing the impact of agriculture and restore soil health and forestry regeneration (through forest and landscape restoration; increased capacities to assess the risk of diffuse agricultural soil pollution and support to organic agriculture).
- Enhancing the resilience of the agricultural sector to disasters and climate change by supporting the development of Serbia’s irrigation strategy;
- Fostering the adoption of sustainable forest management practices and good agricultural and environmental practices.
- Supporting territorial development management to further social cohesion.
- Developing of food-based dietary guidelines to inform consumer education campaigns and
- Support the formulation of nutrition-sensitive agricultural policies.

22 Draft Law on amendments to the law on Agriculture and Rural Development.





5. TRANSFORMING THE FOOD SYSTEM

Transforming the Serbian food system will become a foundation of Serbia's green transformation towards a more inclusive, sustainable, and equitable growth model, while contributing to the fight against climate change and biodiversity loss.

Serbia "National Pathways for Food Systems Transformation" document prepared for the 2021 Global Food Summit outlines multiple options and recommendations.

5.1 Accelerate, adapt and finalise the legislative and policy work to realise the combined ambitions of Cluster 5 and Agenda 2030

- Complete the regulatory framework in support of decoupling payments from production and include incentives to comply with Good Agricultural and Environmental Conditions.
- Improve regulatory and policy coherence across sectors.
- Develop an appropriate mix of financial support - focussed on competitiveness and capacity-building, subsidies, and investments for the implementation of agri-environmental and climate smart practices for small and medium-size producers that creates new opportunities, especially for young people.
- Roll out an overarching strategy for the reduction of food loss and waste.
- Strengthen regulatory enforcement to eliminate illegal dumping of waste and illegal logging and inspection services to curb proliferation of forged and poor-quality goods.
- Identify and address policy and regulatory gaps that prevent taking full advantage of the opportunities of public-private partnerships.

5.2 Align public spending with the food system priorities and boost private investments

- Investments in rural development, including in support of agricultural infrastructure,²³ research & development (R&D) and advisory services.
- Financing new and adapted irrigation schemes, with increased water use efficiency, as critical adaptation measures to climate change and competitiveness.

- Develop new financial instruments - such as green financing and innovative financing schemes for small farmers and matching grants and public guarantee funds - to stimulate the financial inclusion of small and medium-size producers, reduce financial risk, and improve access to private investment funds and IPARD support.
- Support the transition from exports of primary and unprocessed products and imports of even basic transformed foodstuff also by targeted finance to partnerships between agribusiness and micro and small enterprises.

5.3 Expand technical assistance and capacity-building at all levels:

- Support to farmers for the use of new technologies, improving quality and safety of products, adapting to recent consumer trends, and branding, labelling, marketing, price negotiations.
- Develop capacities for climate change adaptation
- Promote and further develop "protected geographical origin", "fine food" and "organic" products from Serbia including both agricultural products from specific regions and traditional products.
- Enhance both farms and families' capacity to separate, collect, and valorise organic waste and support conscious household food consumption, storage and use. Targeted interventions such as community fridges, food banks and cooperation with supermarkets and restaurants with civil society organizations would also be useful.
- Provide training to restaurants, supermarkets and food stores, to analyze and optimize the requirements to the procedure of assigning the shelf life to food products in order to exclude the possibility to consider the good quality food products as waste.
- Veterinary and phytosanitary cooperation should be supported by promoting effective balanced operational response to trans-border epizootics and plant diseases.

5.4 Expand knowledge and awareness-raising on all issues related to Food systems with both general and targeted audience:

- Through the agrarian extension services, expand the knowledge and use of subsidies, of business opportunities and risk management.

²³ The FAO "Smallholders and family farms in Serbia: Country Report", 2019.

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- Targeted programs for women agricultural entrepreneurs should be developed and expanded along with revised legal framework that promotes land ownership by women.
- Promoting sustainable consumption, safe food and healthy lifestyle among citizens, through consumer targeted campaigns that consider consumers' preferences, and the existing association between heavy, traditional foods and healthy foods, especially among the elderly and the rural population.²⁴
- Expand the pilot initiatives in schools around local food growing, healthy meals and nature protection.

5.5 The way forward

The potential for expanding Serbia's agricultural system is yet to be fully imagined, supported and developed. Various indicators – including on productivity, profitability, the size of farms, the use of modern technology, the intensity of production, the level and use of subsidies, the category of farms, the use of modern technology, the intensity of production, the level and use of subsidies, the category of produce.

An integrated approach to food systems will support key areas of public health, education and socio-economic integration with both sectorial and economy-wide growth effects, such as increased employment, poverty reduction and economic prosperity of rural areas. It will have positive implications for better climate adaptation, improved resilience, and increased use of agriculture's climate mitigation potential. It will also generate opportunities for the private sector.

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²⁴ Stojanović, Žaklina and Barjolle, Dominique, "Socio-economic and demographic profile of traditional and functional food consumers in Serbia"