

1. FEEDING THE WORLD WITHOUT EATING THE PLANET: A COMPELLING GLOBAL PICTURE

Almost one in three persons in the world today can't access the food they need to live their fullest lives (FAO, [The State of Food Security and Nutrition in the World, 2025](#)), while 13% of food produced is lost between harvest and retail, and an estimated 19% is wasted in households, in the food service and in retail (UN, [Press release, 2025](#)).

At the same time, pressures from production, distribution and consumption of food are derailing ecosystems, jeopardizing the climate, and polluting air and water. Feeding our human family is costing us the Earth. In monetary terms, according to FAO the shortcomings of our food system are the equivalent of at least \$10 trillion a year, almost 10 percent of global GDP (FAO, [Hidden costs of global agrifood systems, 2024](#)).

To meet the challenge of feeding 10 billion human beings within the safe operating space of our planet, we need transformational change. This is not an impossibility: it has already happened, with the "Green Revolution" of the 1950s. And today, a myriad solution exists to turn food not only into a source of nutrition, but also of health and healing, an investment opportunity, a climate sink, and a means of protecting biodiversity and nature. The scale of the challenge demands that we connect food systems with other development agendas, including our efforts for climate, conservation, pollution, the urban transition, and equality, including gender equality.

Engaging policymakers, partners and citizens to realize the transformative power of food was the challenge set by the UN Food System Summit of 2021, and of the people's movement that led to, and followed the summit. This participatory process is continuing to bear fruit to this date. This and a number of other important participatory processes, unfolding synergistically, and opening countless opportunities for Serbia are reviewed briefly below [1].

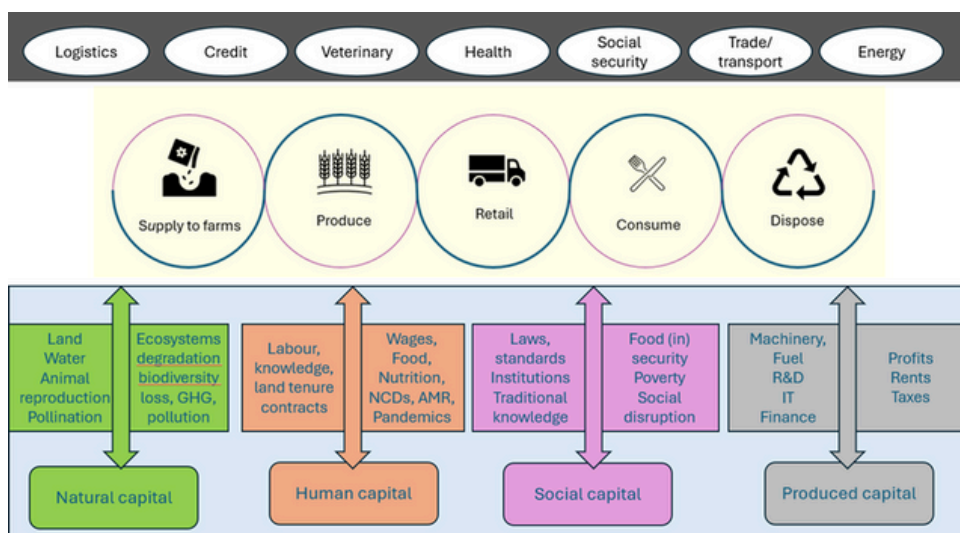
1.1. A systemic vision of food systems

Thinking in food policy has shifted fundamentally from a narrow sectoral focus on agricultural production to a more holistic, systems-based perspective that recognizes the interconnectedness of agriculture, health, environment, and society.

Food systems are now understood in their complexity, embracing the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption, and disposal – including loss and waste - of food products that originate from agriculture including crops, animal farming, forestry, fisheries, and food industries, and the broader economic, political, societal, and natural environments in which they are embedded (See Figure 1).

Food systems do not operate in a void and instead are critically dependent on enabling sectors such as logistics, credit, veterinary services, health, social security, transport, and energy, which intersect at each stage. Also, there are important feedbacks and interdependences between food systems and four key types of capital: natural, human, social, and produced. Each capital type provides specific inputs, such as land and water (natural), labour and knowledge (human), laws and food security (social), and machinery and finance (produced), while absorbing negative externalities including from biodiversity loss and pollution.

This holistic approach allows policymakers a better understanding of potential impacts of transformative interventions for sustainable and equitable food systems on resources, societal wellbeing, and economic outputs as well as for specific societal groups.



Author's representation based on FAO, SOFI Report 2023 and World Bank, Recipe for a livable planet, 2023"

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1.2 UN Food Systems Summit and Follow-up

The [2021 United Nations Food Systems Summit](#) catalyzed global momentum for food systems transformation, recognizing their central role in achieving the 2030 Agenda. Grounded in the leadership of governments, a broad ecosystem of support, including the UN, civil society, youth, local actors, Indigenous Peoples, the private sector, food producers, and others, this community is continuing its work, enshrining its commitments in “National Pathways” (see continuously updated [Database of National Pathways](#)). These Pathways outline how a nation will make its food system more sustainable, resilient, and equitable. They align with a country's unique needs and priorities and often involve a "whole-of-government" approach, integrating strategies across different sectors, and are designed to address systemic challenges, improve nutrition, and achieve broader development goals.

At the first and second UN Food Systems Summit Stocktakes (UNFSS+2 in 2023, and UNFSS+4 in 2025) countries reaffirmed their commitment to translate national pathways into action. A report prepared for UNFSS+4 shows that by 2025, 130 countries had developed national food systems pathways, 159 countries had appointed National Convenors to lead and coordinate efforts. 39 countries – including Serbia - revised their pathways during the 2023-5 biennium. Voluntary reporting also increased, with 114 countries submitting progress updates in 2025 ([Global Food Systems Transformation 2025: Progress Report](#)).

While this is encouraging, an independent systematic analysis of national food system pathways found that there is still a limited take up of systemic approaches, with the agriculture sector and food production taking a central role, while issues related to food distribution, processing, consumption, environmental impacts, labour conditions and animal welfare receiving less attention (Jeroen Candel et al. [National pathways for food systems transformation are limited in scope and degree of ambition](#), July 2025, Nature Food). This underscores the need for redoubling efforts on ambition and implementation.

Initiatives launched/presented under the UN Food Systems Summit process

In response to the 2021 UN Food Systems Summit call by Member States for a global funding mechanism to support the implementation of national food systems transformation pathways, the UN Food Systems Coordination Hub and the UN Joint SDG Fund created the Food Systems Transformation Window. The Window is the flagship platform to power national food system transformation as outlined in each context specific National Pathway, supporting the co-creation of bold, integrated solutions that reshape food systems and accelerate progress across the SDGs. It leverages the collective strength of the UN and strategic leadership from Resident Coordinators, at the service of national holistic visions steered by National Pathways steered by National Convenors. With an initial investment of US\$24 million in 26 countries, the joint programmes are leveraging over \$190 million of wider financing for food systems transformations.

-The Global Alliance for Improved Nutrition (GAIN) joined forces with FAO and the UN Food System Coordination Hub to launch the “[Food Systems Transformation Accelerator](#)”, with support by the World Bank, IFAD, and other partners. It aims to support up to 50 countries in accelerating transformation by building collective capacity for food system change to benefit people and the planet. As an [illustration](#), in Italy, Rural Development Programmes were leveraged to boost conservation agriculture practices, specifically in support of farmers that decide to shift away from methods that result in excessive soil and resource depletion, and move towards new systems that positively maintain soil fertility and biodiversity.

-“[3FS](#)” initiative”, co-led by IFAD, the World Bank, the UN Food System Coordination Hub and other partners to better understand the financial flows to food systems, including flows from the public budget, from external donors, and from the private sector and allocations to different priorities, like infrastructure, social assistance, nutrition etc.

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1.3 World Food Forum

The [World Food Forum \(WFF\)](#), meeting annually since 2021, is also playing an increasingly important role as a premier global platform dedicated to accelerating the transformation of agrifood systems, fostering multi-sector partnerships and innovative solutions through youth action, science, innovation, and investment.

The 2025 World Food Forum, held in coincidence with the FAO's 80th anniversary, further advanced this agenda under the theme "Hand in Hand for Better Foods and a Better Future", resulting in the mobilization of \$17.2 billion in investment opportunities, active youth engagement with 1,200 young leaders participating, and innovative collaborations in science and technology addressing climate resilience, digital agriculture, and sustainable water management.

Among other key topics, the 2025 Forum also showcased artificial intelligence (AI) solutions as supporting real-time surveillance, identifying emerging food safety issues through foresight, and enabling more data-driven, forward-looking decision-making at national, regional, and international levels.

Initiatives launched or presented at the World Food Forum

Recognizing the potential of youth in transforming agrifood systems, the World Food Forum (WFF), in partnership with Real Food Systems, launched the [Agrifood Leadership Education Programme \(ALEP\)](#), providing participants with essential skills, mentorship, and knowledge on agrifood systems transformation, sustainability, and related soft skills like communication and leadership. The programme has successfully engaged young people to improve food security, raise awareness of the climate impact of food choices, and develop projects for local agrifood solutions.

1.4 World Summit for Social Development (WSSD2)

The World Summit for Social Development (WSSD2) advanced food systems transformation by concretely linking social development goals with sustainable food practices.

For example, the [Doha Political Declaration](#) reaffirms a collective commitment to gender-responsive agricultural programs that empower women farmers through access to land, credit, and training, and to addressing systemic inequalities in food production. It also encourages community-based food security initiatives, such as local cooperatives and social protection schemes, which directly reduce poverty and enhance nutrition outcomes.

Food systems as the foundation of social development

For good practice regarding the key link between food systems and social inclusion, one needs to look no further than to Serbia itself. Serbia's Minister of Rural Welfare has recently proposed the introduction of a socially guaranteed pension for rural women over the age of 65 who have no income. The initiative is expected to cover around 221,000 women, with funding would come directly from the state budget, without affecting the pension fund's stability. This measure is a first step to address the persistent gender discrimination in the Serbian agricultural sector, where women represent 73.6% of the informal workforce but only 22.8% of registered farm holders, leading many women with limited documented contributions to the Pension Fund, which traps many older rural women into poverty.

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1.5 Food Systems under the UNFCCC

Emissions from food systems now represent almost a third of all GHG emissions or 32% in 2023 (FAO, [Greenhouse gas emissions from agrifood systems](#), 2025), while the livestock alone is responsible for about 32% of global methane emissions (UNEP and [Climate and Clean Air Coalition, Global Methane Assessment](#), 2021). Additionally, agriculture is by far the sector most impacted by climate change, including both climate-induced disasters and slow-onset events like droughts and heatwaves. These impacts have been quantified: every additional degree Celsius of global warming on average is projected to reduce the world's ability to produce food by 120 calories per person per day, or 4.4% of current daily consumption (Hultgren, A., Carleton, T., Delgado, M. et al. [Impacts of climate change on global agriculture accounting for adaptation](#), Nature, 2025). As our planet is now on pace for around 2.6°C to 2.8°C of warming by the end of the century, we are on the threshold of a catastrophic food security crisis. This notwithstanding, the inclusion of food systems in the negotiations process under the UNFCCC and the Paris Agreement has encountered numerous challenges.

Intense efforts under the Koronivia Joint Work on Agriculture (KJWA) to address the link between agriculture, climate change, and food security started in 2017 and continued with the establishment of the "Sharm el-Sheikh joint work" at COP27 in 2022. However important, the work under these processes has mainly focused on aspects related to food production, with a siloed approach, and has been mainly limited to adaptation to climate change, with scant mentions of the contribution of food systems to climate change.

The [COP28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems and Climate Action](#) marked a truly watershed moment with 150 signatories – Serbia among them – affirming that fully achieving the long-term goals of the Paris Agreement must include agriculture and food systems and committing, among others, to scale up adaptation and resilience for farmers and food producers; promote food security and nutrition through social protection systems, school feeding programs and more; and support workers in agriculture and food systems to maintain inclusive, decent work.

The Brazilian Presidency has once more put Food Systems at the centre of COP 30, with the endorsement of the "[Belém Declaration on Hunger, Poverty, and People-Centered Climate Action](#)", by 44 countries. At the Summit, other initiatives are being established and progressed by Members States and external partners, with support by the UN system, outside of the formal negotiating track (See box)

Examples of initiatives outside of COP negotiating track:

- "[Food Systems Transformation Science and Philanthropy Advisory Group](#)" launched in March 2025 to identify science-backed, investable food systems projects with a focus on strengthening food systems' resilience to climate change.

- [Alliance of Champions for Food Systems Transformation](#), launched at COP28 in Dubai as a strategic coalition of countries determined to act urgently, together taking a 'whole of government' approach across five key areas: Food nutrition and security; Adaptation and resilience; Equity and livelihoods; Nature and biodiversity; and Climate mitigation.

- [TAPP Coalition COP30 Declaration on Reform of Agri Food Systems](#) urging leaders to address meat overconsumption, shift subsidies, and implement GHG pricing in food systems.

- [Belem Declaration on Plant Rich Diets](#) a call by leaders of city and regional governments, NGOs, and other stakeholders for national governments to promote healthy and sustainable diets by drafting and implementing Action Plans for Plant-Based Foods.

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1.6 Food Systems under the Convention on Biological Diversity (CBD)

Agrifood sectors – crop and animal farming, forestry, fisheries and aquaculture – depend on biodiversity as the foundation for sustainable production, ensuring long-term food security and nutrition for all.

A few examples:

-At least 50,000 wild species are used globally for food, energy, medicine, materials and other purposes through fishing, gathering, hunting and logging.

-35% of crop production depends to some degree on animal pollinators, such as bees, birds and bats. The value of pollinators' contributions to global crop outputs is estimated to be USD 235–577 billion annually.

-Over 450 species are managed to help supply ecosystem services supporting food production – e.g. for pollination and pest control – with far more unmanaged species also essential to these services (FAO, [Delivering on the Kunming-Montreal Global Biodiversity Framework through agrifood systems](#), 2024).

At the same time, food systems are presently the biggest driver of environmental degradation and biodiversity loss. They are responsible for 90% of tropical deforestation; represent the main threat to 86% of species at risk of extinction, while causing 70% of all biodiversity loss on land and 50% in freshwater, as well as the degradation of many other precious habitats such as wetlands and grasslands (WWF, [Food Forward NBSAPs](#), 2024).

The [Kunming-Montreal Global Biodiversity Framework \(GBF\)](#) - adopted in 2022 under the CBD - sets an ambitious pathway with 4 overarching goals and 23 Action Targets for 2030 for a world living in harmony with nature by 2050. CBD Parties commit to implement measures as part of their National Biodiversity Strategies and Action Plans (NBSAPs).

Key food-related targets include:

-Sustainable Production: Halve the growth rate of agricultural land conversion, sustainably manage food-producing areas, and increase soil health to ensure food security and livelihoods.

-Reduced Environmental Impact: Decrease the risks from pesticides and other pollutants by half and prevent plastic pollution from entering the food chain.

-Consumption and Waste: Halve global food waste and promote sustainable consumption patterns by 2030.

-Equitable Benefit Sharing: Ensure fair and equitable sharing of benefits from the utilization of genetic resources, which are important for food and agriculture.

An assessment by WWF shows mixed progress: while 97% of NBSAPs and National Targets submissions include at least one measure related to agriculture and food systems, only half of these take a holistic food systems approach, including nature-positive food production, food loss and waste reduction, the promotion of healthy and sustainable food consumption, as well as measures for inclusive and sustainable governance (WWF, [Food Forward NBSAPs](#), 2024).

Recognizing that the implementation of the GBF will require further involvement of stakeholders from agricultural sectors, FAO, the Secretariat of the Convention on Biological Diversity and the academic community recently published [a voluntary roadmap](#) to identify and scale up opportunities to increase agricultural practices that respect biodiversity.

Initiatives to integrate food systems in biodiversity policies and plans:

-Initiative on Biodiversity for Food and Nutrition led by Brazil, Kenya, Sri Lanka and Turkey, and funded by the Global Environment Facility (GEF), aims to promote the sustainable use of biodiversity in programmes contributing to food security and nutrition, and counter the loss of diversity in diets and ecosystems.

-FAO's Agri-NBSAPs Support Initiative: supports the alignment of national strategies, such as food security and nutrition strategies, with the CBD Framework, through biodiversity-friendly agricultural practices.

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1.7 Planetary Health Diet 2 (EAT Lancet)

While taking place outside of the UN System, the annual Stockholm Food Forum has gained unique traction as the world's leading science-based convening for food systems transformation, convening leaders from across science, politics, business and civil society.

The 2024 Food Forum hosted the launch of the EAT-Lancet Commission 2025 report, the product of a multidisciplinary scientific panel established several years ago by the EAT research platform and the British medical journal The Lancet. It proposes a revised version of the Planetary Health Diet – launched 6 years prior - and proposes a framework for anchoring it within the safe operating space of our Planet, while also ensuring that it is delivered as part of a just and fair food system. More details in the text box.

Eat Lancet Commission:

The report is presented as a guide for humanity's future for healthy people on a healthy planet. It is structured around three pillars:

-Healthy Diets: The Planetary Diet advocates for a mainly plant based diet, limiting animal protein and dairy to one serving each, at a maximum. It has been derived by conducting randomized trials on the effects of diets, their association with disease and risk factors. Adherence to this diet correlates with a 25% reduction in overall mortality and could reduce premature mortality by 27%.

-Food System and Planetary Boundaries: The food system is the primary driver pushing five of nine planetary boundaries beyond safe limits. Transforming food production is key to restoring planetary resilience. Adopting the planetary health diet would result – amongst other benefits - in the reduction of CO₂ equivalent emissions by about 5 billion tons.

-Social Justice: The Planetary Diet is delivered within the framework that focuses on distributional, representational and recognitional justice, and highlights human rights related to food, work, and environment.

1.8 How? The Sevilla Commitment

The benefits from putting food systems on a path of climate neutrality, environmental stewardship, and social responsibility far are widely recognized to far outweigh related costs.

For example, investing in climate change mitigation measures that would put food systems on a path to net zero by 2050 would have a total cost of \$260 billion per year globally. These interventions would have multiple co-benefits, including reducing hidden costs externalities, estimated at \$4.3 trillion by 2030, or 16 times estimated annual investment costs (World Bank, [Recipe for a Livable Planet](#), 2024).

Development finance for this priority remains however woefully inadequate representing only 4.4% of development flows, with very limited change in the decade 2013-22 (FAO, [Development flows to agriculture 2013–2022](#), 2024). The percentages are even lower as regards climate finance: food systems received just 3.8% of total mitigation finance. This is ten times less than the mitigation finance received by energy systems and seven times less than the transport sector (Climate Policy Initiative, [Landscape of Climate Finance for Agrifood Systems](#), 2025).

Against this backdrop, the [Sevilla Commitment](#) – adopted at the 4th Conference on Financing for Development (FfD4) - underscores the importance of addressing food insecurity and malnutrition by investing in agrifood systems, through a long-term and strategic approach.

It highlights the necessity of fostering an enabling policy environment that supports and scales private sector investment in agriculture and food systems. This includes recognizing the crucial role of public investments in incentivizing and derisking private investment, thereby facilitating enhanced rural economies.

By improving infrastructure, logistics, and knowledge-sharing, private investments can significantly contribute to strengthening agricultural value chains and rural development. Together, these measures aim to create a sustainable and resilient agrifood system aligned with the goals of the Sevilla Commitment.

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2. THE AGRI-FOOD SYSTEM IN SERBIA: STRENGTHS AND CHALLENGES

Serbia expressed its commitment to the food systems transformation at the highest level, through the [Food Systems Pathway](#), developed in 2021 and the Roadmap for Food Systems Transformation (2025–2028) currently being finalized. Serbia's pledges - in these high-level strategic policy documents - include further support to nature-positive production methods and regenerative agriculture, development of short food supply chains and local food markets, promotion of healthy diets and reduction of food loss and waste.

Serbia is well positioned to respond to the global challenges reviewed in this paper, and to seize the opportunities unfolding at regional and global levels. It is currently in the final stages of developing a “Roadmap for Food Systems Transformation” to reshape the country's food system into one that is sustainable, resilient, inclusive, and aligned with national and global development goals.

This overhaul will be grounded in its unique context and strengths—its agricultural potential, rich regional diversity, and growing policy alignment with the EU Acquis and ongoing reforms. This section reviews the food systems' strengths and outstanding challenges, while the following one looks into the future and outlines opportunities for more collaborative and systemic action.

The Serbian agricultural and food sector supplies the population with varied and nutritious food, even during shocks. During the COVID-19 crisis, for example, the sector of food production and food retail was the least affected, reducing disruptions on food markets in the country. This resilience is also reflected by the relatively low percentage of the population that is food insecure, which at 9.5% is among the lowest in the sub-region (Data for 2023, [FAOSTAT](#)).

Nevertheless, the affordability of a healthy diet to the most vulnerable groups is still a source of concern, as partially evidenced by the relatively high share of the population (15.1%) who cannot afford a source vegetarian or animal-based protein every second day (SORS, [Poverty and Social Inequality](#), 2024).

Another priority are interventions in support of the adoption of healthy diets, including through education, community level initiatives and policy interventions to increase the accessibility and affordability of fruits, vegetables and legumes, in view of the high proportion of adults estimated to be living with obesity in Serbia in 2022 (22.5% of the total population, compared to 17% in the EU ([WHO Global Health Observatory](#), and [Eurostat](#))).

In 2024, agriculture, forestry and fisheries contributed 3.2% of the country's GDP, well above the European Union average of 1.2% ([SORS](#), 2025 and [Eurostat](#), 2025), and realized a trade surplus of €37 million. Yet the sector remains unattractive to foreign investments: it received only 2% of the country's total FDI between 2015 and 2023 (National Bank of Serbia, [Foreign direct investments in the period 2010 - 2023, by industry](#), 2024).

The sector's potential remains underutilized, because of three entrenched factors:

- Small farm size: farms have an average size of just 6.4 hectares, compared to the European Union average of 16 hectares, with 99.6% of agricultural holdings being family farms (SORS, [2023 Census of Agriculture](#), 2024).
- Insufficient skills of the labor force: only 0.3% of managers of agricultural holdings have received specific training in the domain of agriculture, while training opportunities are insufficient. This limits the sector's capacity to add value and create off-farm employment (SORS, [2023 Census of Agriculture](#), 2023).
- Technological underdevelopment: It can take decades for new technologies to scale, and there is a deep disconnect between research institutions and real-world agricultural challenges (World Bank, [Western Balkans Regular Economic Report No.24, Toward Sustainable Growth](#), 2023). This hinders competitiveness and income stability, particularly in the context of climate change.

The total hidden costs of the Serbian agrifood systems to the country's environment, society, and health are estimated at over 25 billion USD in PPP. In addition to the costs related to health, agrifood worker poverty has been estimated to result in hidden social costs of USD 50 million annually (at 2020 PPP) while negative impacts on the environment were estimated at over 3 billion (FAO, [Hidden costs of global agrifood systems](#), 2024).

The agricultural sector remains heavily gender discriminatory. While 82.1% of all women employed in agriculture are informally employed (SORS, [Labour market statistics](#), 2025), women account for only 22.8% of registered farm holders. They are the majority workforce on very small farms (less than 1 hectare), but their share drops below 50% on the largest ones.

Gender segregation is also evident in agricultural roles, with women more often engaged in gardening, plant care, food processing, animal care, food processing and marketing, while men typically handle heavy physical labor and machinery operations. Added to which, the average age of a family farm holder is 60, with only one in eleven under 40 (SORS, [2023 Census of Agriculture](#), 2024.)

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The economic profile of the agrifood systems is also marked by significant regional disparities, with Vojvodina being more developed, with larger farms and better infrastructure and technology, while the southern and eastern regions face higher poverty and underdevelopment ([Food Systems Pathway](#)). In addition, throughout the country there is a progressive decline in the utilization of both labor and agricultural land, due to the ongoing de-agrarization of the rural areas, with a shrinking agricultural workforce and the abandonment of farmland.

Most small producers face disadvantages compared to processors and traders. Agricultural land management policies need to be revised to prioritize access for small and medium-sized farms, especially for young farmers and cooperatives. This can be achieved by reforming the criteria for land leasing and encouraging local communities to adopt models of land use that provide wider benefits. Furthermore, land consolidation efforts should be accelerated, in particular in regions where fragmentation hinders productivity. More efficient land management will enable more equitable resource distribution, improve farm productivity and promote rural resilience.[2]

Comprehensive rural infrastructure development is also needed, along with youth-targeted incentives, to retain the younger population in rural areas, focusing on improved access to basic services and opportunities.[3]

Current incentives for rural development should be reassessed, to ensure that they are better tailored to specific needs and regularly evaluated to ensure that they continue to address the most pressing needs of rural communities and are coherent with environmental and conservation priorities.[4]

Government support for the agricultural sector has increased by 119% since 2020, reaching €726 million in 2023. Despite this growth, support is still lower than that of the European Union. For instance, in 2023 direct subsidy payments in Serbia averaged €167 per hectare (Ministry of Agriculture, 2024 – internal document), against a European Union average of €258 per hectare (European Commission [Summary Report on the Implementation of Direct Payments](#), 2022).

These subsidies primarily take the form of direct payments, while other support mechanisms – which have also increased – remain focused on specific crops and livestock production. Unlike the European Union's decoupled support under the Common Agricultural Policy, Serbia and other Western Balkan countries lack cross-compliance requirements (except for IPARD funds), leading to higher greenhouse gas emissions, environmental damage and reduced agricultural productivity (World Bank, [Western Balkans Regular Economic Report No.24, Toward Sustainable Growth](#), 2023).

Where the European Union accession process is concerned, progress by Serbia in cluster 5, focusing on resources, agriculture and cohesion, has been limited, with only one chapter having been opened so far. To open the remaining two, Serbia must update and implement key documents such as its action plan for agriculture and health and the Strategy for Food Safety, Veterinary and Phytosanitary Policy Alignment with European Union standards.

Despite its efforts to that end, progress from 2021 to 2023 was slow, with constant challenges in administrative efficiency, fund management under the IPARD programme and in the adoption of laws. Persistent delays, limited advancements in other necessary areas and food safety issues have impeded the country's alignment with the European Union acquis. Amongst others, the 2021 Law on the Regulation of the Agricultural Products Market, modelled on the European Union Common Agricultural Policy, has not been effectively implemented (EC, [Communication on Enlargement Policy](#), 2023).

Challenges also persist in aligning pesticide management with European Union standards and there is inadequate oversight and insufficient training for farmers in the proper application of pesticides (Malidža, Savčić-Petrić and Delić, [Results of a Survey of the Behavior of Plant Protection Product Users in the Republic of Serbia](#), 2022).

Serbia's food safety sector also faces significant challenges (State Audit Institution, [“Food safety in the Republic of Serbia” State Audit Institution's Report](#) 2023). The planning and legislative framework is incomplete, while the Expert Council for Food Safety has been largely ineffective, convening only seven times between 2017 and 2022 without adopting any formal decisions. The National Reference Laboratory is underutilized, and insufficient coordination among inspection services further complicates enforcement.

Moreover, the absence of a rapid alert system for food risks has left potential health hazards unaddressed. Reportedly, between 2019 and 2024, 74 notifications from the European Union regarding food imports from Serbia were not adequately communicated to the public, potentially exposing consumers to health risks (European Commission, [Rapid Alert System for Food and Feed database](#)).

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3. COUNTDOWN TO 2030: ACCELERATING SECTORAL CONVERGENCE, FINANCING AND IMPACT

Cognizant of the challenges briefly described above, Serbia is well on its way to proactively design and build an inclusive vision for food system transformation, progressing policy and institutional coherence and embracing a whole of government and whole of society agenda.

A key challenge will be the further integration of the agricultural sector in the country's climate policies, and in its international climate commitments, as enshrined in its "Nationally Determined Contribution" (NDC) and "National Adaptation Plan" (NAP). The emissions of the agrifood sector from farm to retail in Serbia are significant, representing 15 % of the total in Serbia.

Hence [Serbia's NDC](#) – developed with UN support - explicitly covers the agriculture sector. However, the document does not encompass the broader food sector, and in particular does not include a reference to healthy and sustainable diet, or a commitment to develop a roadmap for a plant rich diet, as per the examples of Denmark and Portugal NDCs.

A project supported by FAO, [Strengthened national expertise in carbon accounting for agrifood systems](#) will also contribute to enhance the uptake of a food systems perspective in Serbia's NDC, also by strengthening capacities building for strategic carbon accounting, which will be critical to attract and deliver investments in green technologies and drive innovation a for more efficient, climate-smart agrifood system, also through stronger public-private partnerships.

Serbia is vulnerable to the impacts of climate change with droughts, floods and heatwaves causing significant economic damage to the agricultural and food sector. Hence, [Serbia's NAP](#), acknowledges this priority, highlighting the agriculture-water management nexus as a priority. The Plan also sets out specific measures aiming to strengthen institutional and technical capacities, protect crops and livestock from hail, high temperatures and frost, and secure sufficient water for sustainable production and support the uptake of insurance, among others. Multi-sectoral collaboration is also emphasized, through the involvement of authorities, public services (e.g. agrometeorological services to improve monitoring and forecasting of weather conditions) local governments, and civil society.

At a higher level, Serbia spelled out a holistic vision for the transformation of its food system in the "Serbia Food Systems Transformation Roadmap 2025–2028". Its realization would also build upon the country's centers of excellence some of which are briefly described below.

3.1 Food Systems Transformation Roadmap 2025-28

Serbia's Food Systems Transformation Roadmap 2025–2028 is an ambitious, comprehensive strategic plan aimed at fundamentally reshaping the country's food system into one that is sustainable, resilient, inclusive, and fully aligned with both national priorities and global development agendas.

Rooted in Serbia's unique agricultural context and informed by international frameworks such as the United Nations Food Systems Summit (UNFSS) and the European Union's Green Deal, the Roadmap articulates a clear vision and operational framework to guide food system transformation over the critical 2025–2028 period. While not an official document, it has been unofficially approved as the final document by all parties involved in its development.

At its core, the Roadmap presents twelve interlinked transformation pathways that address key dimensions of Serbia's food system challenges and opportunities. These pathways encompass a broad spectrum of thematic areas including nature-positive and regenerative agriculture, organic and origin-based food branding, strengthening short food supply chains, regional specialization, rural value addition, public-private partnerships, nutrition and healthy diets, food loss and waste reduction, digitalization, veterinary and phytosanitary system modernization, multi-sectoral coordination, and climate change mitigation and adaptation.

Each pathway is designed not as a standalone intervention but as a strategic lever that collectively contributes to systemic change, fostering healthier diets, environmental stewardship, rural revitalization, and economic competitiveness. To enhance implementation efficiency and impact, the Roadmap clusters these twelve pathways into four thematic groups:

- **Sustainable Production and Climate Resilience:** Focusing on agroecological practices, regional specialization, and climate adaptation, this cluster promotes ecological sustainability and resilience to climate risks through initiatives like Biodistricts, which will serve as territorial living laboratories.
- **Market Access, Value Addition, and Economic Resilience:** This cluster supports rural economies by enhancing product branding, developing local markets and short supply chains, upgrading processing infrastructure, and fostering public-private partnerships to mobilize investment and innovation.
- **Nutrition, Inclusion, and Social Well-being:** Targeting the dual challenges of malnutrition and food waste, this cluster advances healthier diets through reforms in public food procurement (notably in schools), nutrition education, and circular economy approaches to reduce food loss and promote social equity.
- **Innovation, Infrastructure, and Governance:** Establishing an enabling environment for transformation, this cluster emphasizes digitalization, food safety systems modernization, and inclusive multi-sectoral governance mechanisms to coordinate efforts and ensure accountability.

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3.1 Food Systems Transformation Roadmap (cont'd)

The Roadmap's phased implementation approach begins in 2025 with foundational activities such as establishing a national multi-sectoral coordination task force, piloting innovative programs (including digital agriculture and Biodistricts), and initiating capacity building and baseline monitoring.

The 2026–2027 phase focuses on scaling successful pilots, expanding regional hubs, institutionalizing short supply chains, and launching national awareness campaigns. By 2028, efforts consolidate around system-wide evaluation, embedding food systems objectives into national planning, and ensuring sustainability of interventions.

Cross-cutting priorities permeate all pathways and clusters, including climate resilience, social inclusion (with special attention to women, youth, and smallholders), digital innovation, and regulatory alignment with EU standards.

The Roadmap underscores the importance of blended financing models, combining public funds, EU instruments like the Instrument for Pre-accession Assistance for Rural Development (IPARD), along with private investment, and donor support to mobilize the necessary resources. It also highlights the necessity of simplifying regulatory frameworks, strengthening knowledge and innovation ecosystems, and fostering participatory governance to sustain momentum and adapt to evolving challenges.

Ultimately, the Roadmap is a call to collective action that engages all sectors of society—government institutions, local authorities, farmers, civil society, academia, private sector actors, and international partners—to work in concert toward a food system that delivers equitable livelihoods, improved public health, restored ecosystems, and enhanced economic competitiveness. By translating strategic intent into operational clarity and fostering inclusive, evidence-based implementation, it positions the country as a regional leader in sustainable food systems transformation, contributing meaningfully to the achievement of the Sustainable Development Goals by 2030.



3.2 Examples of innovation in action

As Serbia progresses towards a more sustainable and just food system, it can build upon its existing areas of success, including its first Biodistrict, which has been officially established in 2025, its research and development ecosystem, particularly the Bio-Sense institute as well as the innovative Forest resilience projects. These are briefly described below.

- The [Kolubara Biodistrict](#) – the first in Serbia and the region - is a socio-economic community that integrates producers, consumers, and local governments to promote a healthy environment and local development, around sustainable and organic farming. The project is inspired by and officially twinned with Italy's Cilento Biodistrict, the first in Europe. Developed with the support of Serbia Organica, the Ministry of Agriculture, Forestry and Water Management of Serbia and the International Network of Eco Regions (IN.N.E.R.), it has also benefited from financial and technical assistance by UN Agencies under a UN SDG Fund project. Its grounding principles are community and collaboration, and sustainability. It has helped bridge traditional knowledge with new methods to improve soil health, supported biodiversity, and supported small farmers shift from conventional to organic practices and fostered closer connections with consumers interested in sustainable food. The district operates through participatory governance, where farmers, local authorities, and NGOs work together to develop policies that address both community needs and environmental goals.
- Research and development is an important component of the transition to sustainable food system. Serbia has invested in this priority, with EU support and the [BioSense Institute of Serbia](#) is a vivid example of the country's know how, cutting-edge innovation, and technology development. As a multidisciplinary center and a regional leader, it is also on its way to becoming a European Centre of Excellence in the field. It focuses, among others, on precision agriculture, digital farming, and smart food supply chain management, integrating sensor technologies, remote sensing, and data analytics to optimize resource use and reduce environmental impacts. The institute actively collaborates with farmers, industry stakeholders, and policymakers to pilot innovative solutions that enhance productivity while promoting ecological sustainability. BioSense also contributes to capacity building with its close collaboration with the Novi Sad university, and by providing training and knowledge transfer on sustainable practices and digital tools, fostering a new generation of skilled agricultural professionals. Its research supports climate resilience by developing adaptive strategies to mitigate risks from climate change. Through this work, BioSense aligns with Serbia's broader goals of sustainability and digitalization and will continue to play an important role in the country's food systems development.

