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# Food security and crises: evidence from the Western Balkans

Attila Jámbor<sup>1</sup> and Ágnes Varga<sup>2\*</sup> 

## Abstract

**Context** The world has experienced many global shocks in recent years, especially affecting vulnerable countries, people and groups. The analysis of recent impacts helps us to better understand how to build more sustainable agri-food systems.

**Objectives** This paper aims to analyse the situation and main determinants of food security in the Western Balkans in light of the recent crises to ensure higher resilience for the future.

**Methods** It follows a threefold approach. First, the food security situation in the different countries was analysed quantitatively using descriptive statistics of the main indicators on a time-series basis and the main determinants of food security. Second, the results of the semi-structured interviews with local experts were presented to understand the reasons for the changing patterns of food security. Third, results were validated during a hybrid workshop.

**Results** Our findings suggest that food security and food supply were stable in most cases, while a large number of small farms, rural depopulation, climate change and harmonisation of food systems were cited as the main challenges. The COVID-19 pandemic did not appear to have a serious impact on food security, although it has certainly accelerated the restructuring within the agri-food sectors. However, the war in Ukraine has had a greater impact, particularly in terms of high price inflation and rising prices for agricultural inputs.

**Conclusions** This paper analysed the food security situation in the Western Balkans in the light of recent crises. Although the region has made good progress in reducing poverty and inequality in recent decades, the COVID-19 pandemic and the war in Ukraine appear to have stalled or, in some cases, even reversed this progress. This paper provides a number of policy recommendations based on the results to shape future policies of the region towards higher resilience.

**Keywords** Food security, Determinants, Crisis, Western Balkans

**JEL Classification** Q18

## Introduction

Lockdowns, food supply chain and trade disruptions, sharp increases in food and input prices, food inflation and energy dependency—all countries have experienced many of these global shocks in recent years. We are currently experiencing times of crises exacerbated by the intensification of natural disasters, the consequences of a global pandemic and the war in Ukraine [1, 12].

In this context, ensuring food security is increasingly important for many developing countries [3, 26],

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including those in the Western Balkans. The Western Balkans is located in Southern and Eastern Europe and refer to six countries: Albania, Bosnia and Herzegovina, Montenegro, Republic of Kosovo, Republic of North Macedonia, and Republic of Serbia. Recent crises have created new challenges and exacerbated existing ones [31, 32], so it is important to better understand these challenges and the responses of different countries to develop holistic, evidence-based policies for more affordable and healthy diets in the future. The reasons for choosing Western Balkans as a study region were (1) its closeness to the European Union which promises interesting insights on how countries aimed at joining the European Union could cope with recent crises in terms of food security; (2) the limited amount of research on this topic in this region as evident from the literature review section and (3) the special interest of FAO for whom a part of this research was delivered to.

Food security is crucial for the region, as agriculture is an essential source of employment and accounts for a relatively large share of GDP and the economy [10]. However, the region's agri-food sectors and rural economies appear to be underdeveloped, with slow productivity growth, high unemployment rates, persistent outmigration, fragmented land structures and weak value chain organisation [8, 20, 28]. Although ensuring food security is a priority in all countries in the region, the respective sectors are highly vulnerable and increasingly exposed to external shocks [21].

This paper aims to analyse the impact of recent crises on the food security situation in the Western Balkans. To that end, it assesses the food security situation of each country based on the most relevant indicators over time and analyses the main determinants of food security. In addition, as a qualitative approach, it presents the results of the semi-structured interviews conducted with local experts to understand the reasons behind changing food security patterns.

This paper contributes to the existing literature in three ways. First, it provides an overview of the recent trends in food security in the Western Balkans in light of the latest available data. Second, it assesses the impact of recent crises on food security, including the COVID-19 pandemic and the war in Ukraine, by conducting interviews with local stakeholders, thereby providing information unavailable from data sets. Third, it summarises lessons learned and policy recommendations on improving food security in many prospective EU member (or candidate) countries.

This paper is structured as follows: "[Literature review](#)" section reviews the literature on food security in the Western Balkans, and "[Methodology](#)" section describes our methodological approach. "[Food security in the](#)

[Western Balkans](#)" section presents recent trends in food security in the Western Balkans, including those affected by the recent crises. "[Insights from the interviews](#)" section provides insights into local food security issues from the interviews, and "[Conclusions](#)" section concludes this paper.

### Literature review

Research on the impacts of crises on food security in the Western Balkans is limited. Some of the articles focuses on general trends in food security in the region. Kovljenic and Raletic-Jotanovic [17], by using descriptive statistics, found that Slovenia was the most food-secure country in the region, while the lowest level of food security was observed in Bosnia and Herzegovina. As Serbia has good agricultural export indicators, the region could be partially self-sufficient, but cooperation between the countries is poor, according to Haas et al. [13] and Brankov and Matkovski [6]. Brankov et al. (2022) analysed the food self-sufficiency and vulnerability of South Eastern European countries to future crises and found that the region has a high level of self-sufficiency and is ready to respond to the challenges posed by crises. However, the authors called for regional cooperation on food security. At the same time, Wassénus et al. [30] pointed out that self-sufficiency alone is not enough, as diversity can also play an important role in crises.

Other authors were in search for the determinants of food security. Kovljenic and Raletic-Jotanovic [17], for instance, by investigating the countries of the former Yugoslavia, showed that the overall level of economic development, population growth, foreign trade and investment in agriculture had a significant impact on the level of food security in the region. Brankov and Lovre [5] highlighted that Slovenia's relatively high economic development was key to its food security position. Matusiak et al. [23] identified the lack of skilled workers, geographical location, poor infrastructure, lack of finance and limited production and operational capacities as well as the high price of input raw materials as the key issues. Low GDP and agricultural productivity (compared to the European Union), high dependence on fertiliser imports, high levels of corruption, weak institutional frameworks, and under-regulation of the food safety control system were found to be key determinants by Brankov and Matkovski [6] and Matkovski et al. [21]. Aramyan et al. [4] added that small farm sizes and low productivity, limited export quality and the lack of compliance with standards as well as rural–urban and gender disparities were the key determinants to be addressed.

As to the impact of crises on food security, ACIT [2] suggests that the cumulative effects of energy and fertiliser prices and trade restrictions were critical besides

sole supply disruptions when analysing the impact of the war in Ukraine on food security in the region. Matkovski et al. [21] found that food security in the region was not at risk due to recent crises, though their results showed that the Western Balkan countries were highly vulnerable to external shocks. In their research, Brankov and Matkovski [6] identified the main factors affecting the food supply in the Western Balkans.

In Table 1, we have evaluated them according to the four dimensions of food security.

Another part of the literature analyses food security from a policy perspective. Erjavec et al. [11] investigated the possibility of EU membership for the Western Balkan countries. They suggested that harmonisation is one of the biggest challenges, which was also previously highlighted by Simonović et al. [25]. Martinovska Stojcheska et al. [20] further showed that competitiveness, environmental protection, and rural development are key areas of agri-food policy in the region. A recent study [2], based on recent evidence, adds that farm-to-school schemes and market stabilisation mechanisms can contribute to stabilising food security. Radovanovic et al. [24] went further and called for increased capacities for innovation and technological development, strengthened R&I resources, increased productivity by modernisation and digitalisation, and enhanced integration of local agri-food value chains into global value chains. Aramyan et al. [4] recommended investing in trade and transport infrastructure, creating incentives for youth in rural areas, and increasing yields through technological innovation, education, and cultivation of unused lands, while maintaining a balance between efficiency improvements and sustainability. Djordjevic et al. [9] highlighted that improvement of advisory services, provision of investment support targeted to small farmers with better access to finance and enhanced support for cooperation and bottom-up initiatives for partnerships would

boost farmers participation in short food supply chains and would therefore also contribute to improving food security. Matusiak et al. [23] suggested that Western Balkan countries should focus on providing premium rather than cheap products as they have the potential to provide high-quality, ecological products that can be competitive even with a relatively higher selling price.

On the whole, it is evident from the above that there is a research gap in analysing the impacts of recent crises on the food security situation of the Western Balkans which this article aims to fill.

### Methodology

This paper applies a threefold approach to analyse the impact of recent crises on food security in the Western Balkans. First, it presents some descriptive statistics on the state of food security in the Western Balkans by analysing recent changes in known food security indicators. In addition, this paper also analyses developments in various determinants of food security. Our analyses cover the period from 2000 to 2022 and include all countries in the Western Balkans except Kosovo, as data are unavailable. Table 2 summarises some of the basic characteristics of our dataset.

Second, this paper presents the results of the semi-structured interviews conducted with local experts from the Western Balkan countries. The interviews were conducted online (via MS Teams) between September and December 2023 (except for Albania, where live interviews were conducted). Experts were found with the help of FAO REUD Office by contacting local offices requesting for their help. We have reached a nice diversity of experts coming from different fields and backgrounds. Several interviewees highlighted the unreliability of the datasets for the European and Central Asian (ECA) countries due to data problems and changing methodologies, which was another reason to validate the results. Seven

**Table 1** Risk impact of some processes on the main characteristics of food security in the Western Balkans

Process/characteristics	Availability	Access	Utilisation	Stability
Lower agricultural productivity than in the EU	X			X
Decline in farmland	X			X
Ageing and decline of the rural population	X			X
Youth migration from rural areas	X			X
Land abandonment	X			X
Urban sprawl		X		X
Large proportion of income-vulnerable groups		X	X	
High fertiliser import dependence	X			X
Temperature increase—lack of irrigation	X			X
Natural disasters: floods, earthquakes	X	X		X

Source: Adapted from Brankov and Matkovski [6]

**Table 2** Basic characteristics of the data used

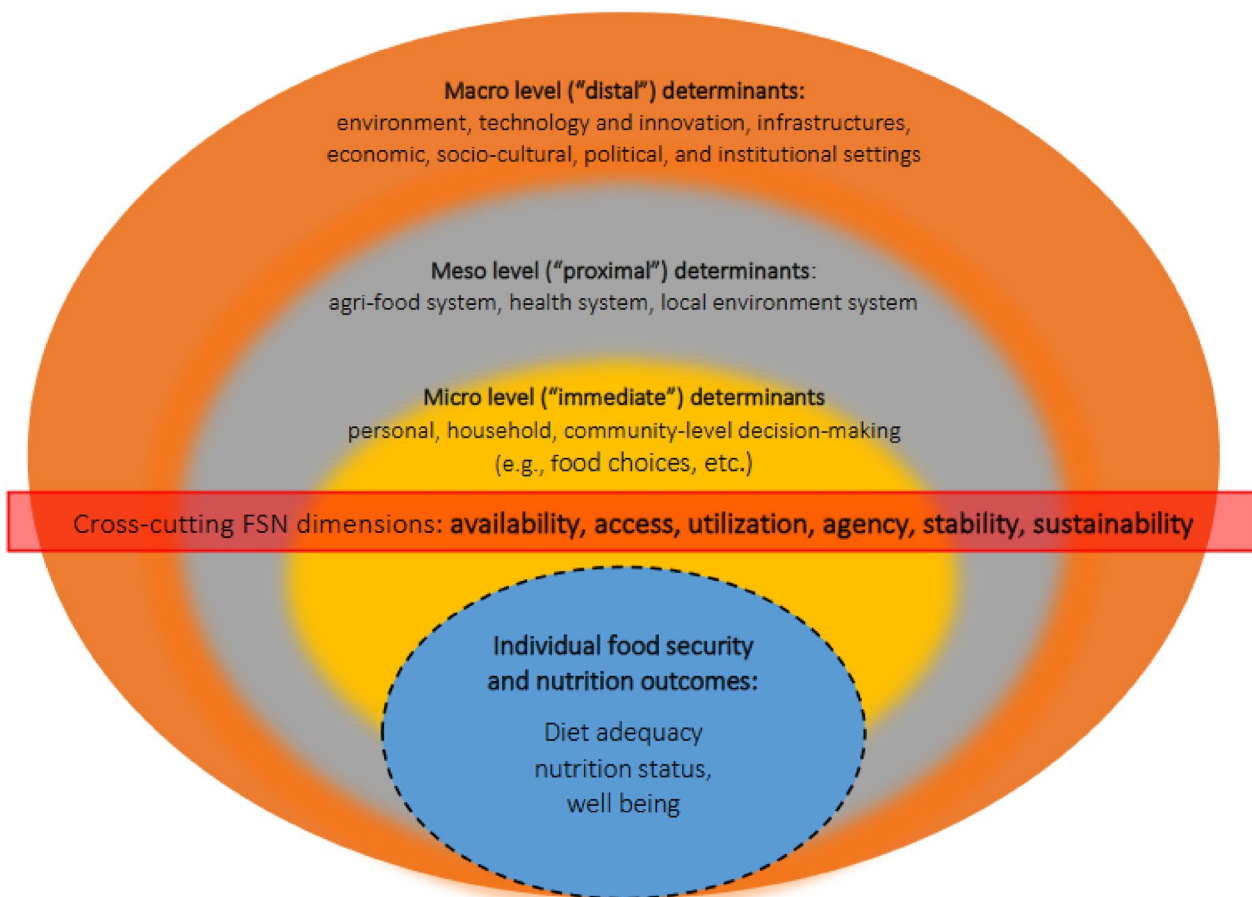
Indicator name	Unit of measurement	Source
Prevalence of undernourishment	Percentage	FAOSTAT Food Security Indices
Percentage of children under 5 years of age who are stunted	Percentage	FAOSTAT Food Security Indices
Percentage of children under 5 years of age who are overweight	Percentage	FAOSTAT Food Security Indices
Prevalence of obesity in the adult population (18 years and older)	Percentage	FAOSTAT Food Security Indices
Annual population growth	Percentage	World Bank WDI
GDP per capita	Constant 2015 USD	World Bank WDI
Value added of the agriculture, forestry, and fishing sectors	Constant 2015 USD	World Bank WDI
Agri-food export and import	1000 USD	FAOSTAT Trade Indices

interviews were conducted in Albania, three in Bosnia and Herzegovina, three in Serbia, two in Montenegro and two in North Macedonia. The interview questions are available in the Appendix.

Third, our results were validated during a hybrid workshop organised by FAO REUD on 11 December 2023 with the participation of an expert panel,

consisting of a diverse set of different stakeholders from all countries of the Western Balkans, selected together with FAO REUD Office.

Figure 1 visualises our methodological approach, suggesting this article focuses on macro level determinants of food security.



**Fig. 1** Methodological approach of the study. Source: HLPE [14]

### Food security in the Western Balkans

The prevalence of hunger and food insecurity in ECA countries, including the Western Balkans, has been low compared to the global average for many decades [12]. As shown in Fig. 2, the regional averages for the prevalence of undernourishment have declined since 2000 and are well below global averages. Albania has the relatively highest level of malnutrition in the Western Balkans, although it is decreasing significantly, while Bosnia, Herzegovina and Serbia have the lowest. It should be noted, however, that official statistics in the region are not always reliable, as many local experts point out (see below).

As with undernourishment, stunted growth in children under 5 years of age significantly declined from 2000 to 2022. FAO [12] data suggest that the number of stunted children were at least halved in all countries except Montenegro (Albania could reduce the number by as much as 70%), implying a favourable trend and increased chances for more children to grow up in a food-secure environment. As the consequences of inadequate nutrition in childhood can be lifelong [18], Hyska et al. [15] highlighted the importance of school nutrition programmes in the context of their research in Albania.

However, besides low levels of undernourishment, the Western Balkan region has increasingly been faced with the problem of obesity. Although generally reflected as a problem of the ‘developed’ world, obesity in the Western Balkans has continuously increased since 2000, as shown in Fig. 3.

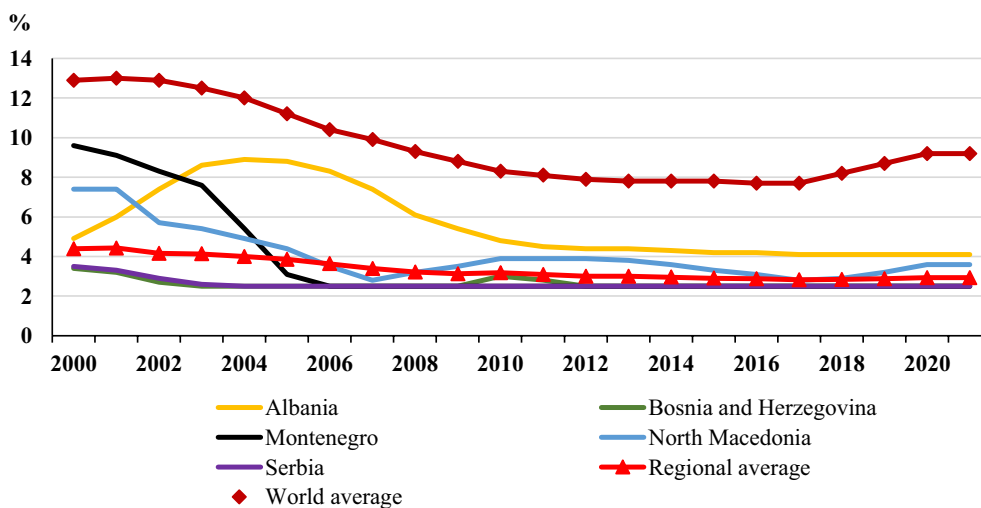
Unlike undernourishment, the number of obese people in the region’s adult population was almost double the world average over the period analysed. Montenegro and North Macedonia had the relatively highest

levels of obesity in their populations, while Bosnia and Herzegovina had the lowest levels.

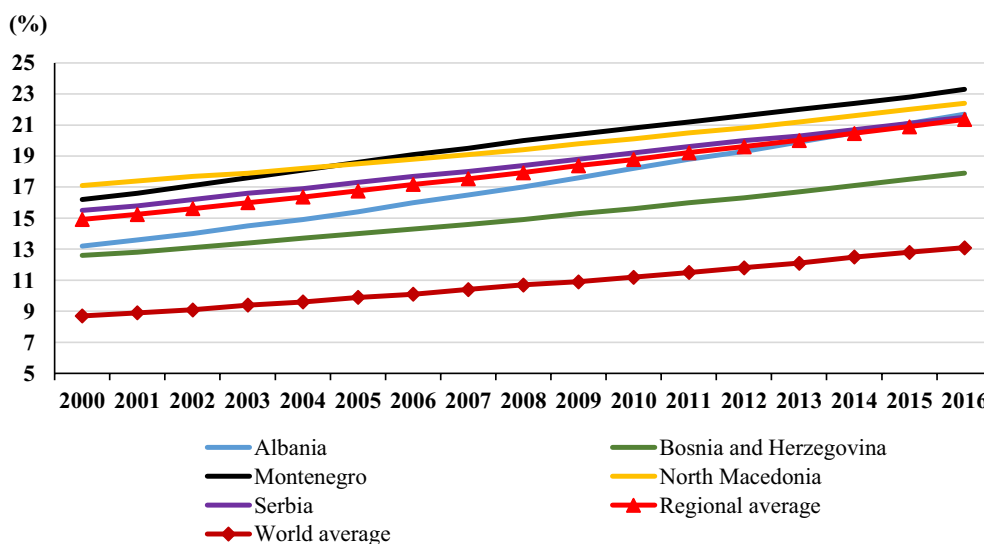
Interestingly, however, obesity in children under 5 years of age did not follow this trend; FAO [12] data show an increase from 2000 to 2007/08 and a decrease since then, resulting in a 30% decrease in the regional average when comparing obesity levels between 2000 and 2016. This shows good signs of better health prospects for the next generation.

Numerous factors are behind the above trends of food security; however, this article uses the framework of Koveljenic and Raetic-Jotanovic [17] and focuses on the most significant ones: population growth, economic development, investment in agriculture and foreign trade. Population growth, for example, is one of these factors that strongly influences food security. In 2022, the world population reached 8 billion people and seemed set to continue growing in the coming decades, which suggests a higher demand for food [12]. Although enough food is available for everyone, 30% of the world’s population still lives in insecure conditions, and 10% suffer from hunger [12].

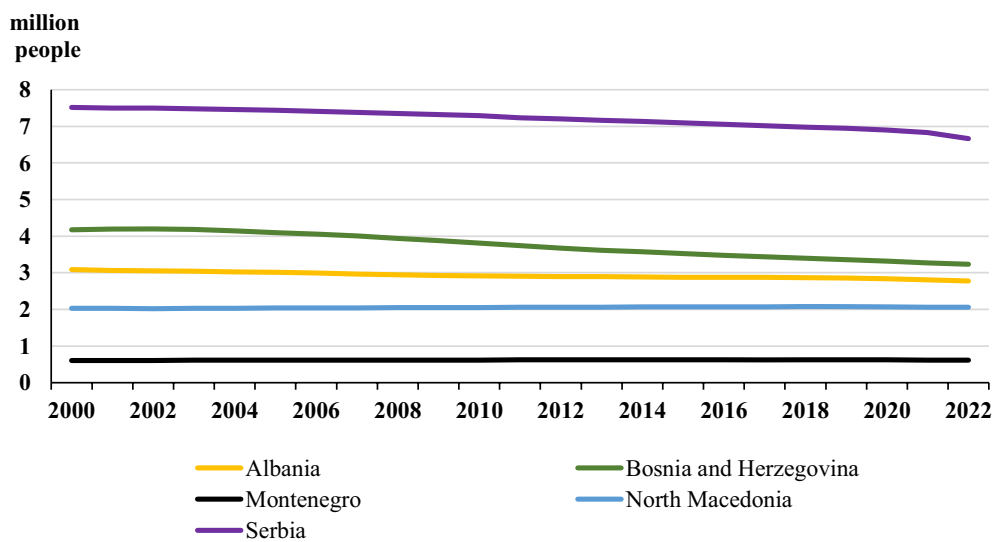
The Western Balkan countries suffer from low fertility rates, demographic ageing and emigration—in short, an unfavourable demographic situation [17]. As shown in Fig. 4, the regional population is on a declining trend compared to global population growth, especially in recent years. Albania and Serbia lost 10% of their population between 2000 and 2022, while Bosnia and Herzegovina lost 23%. Meanwhile, Montenegro and North Macedonia increased their populations by 2% over the same period. There are many reasons for these declines, ranging from the 1992 war to an ageing population, low



**Fig. 2** Prevalence of undernourishment in the Western Balkans, 2000–2021, in percentages. Source: Own composition based on FAO [12] data



**Fig. 3** Prevalence of obesity in the adult population in the Western Balkans, 2000–2016, in percentages. Source: Own composition based on FAO [12] data



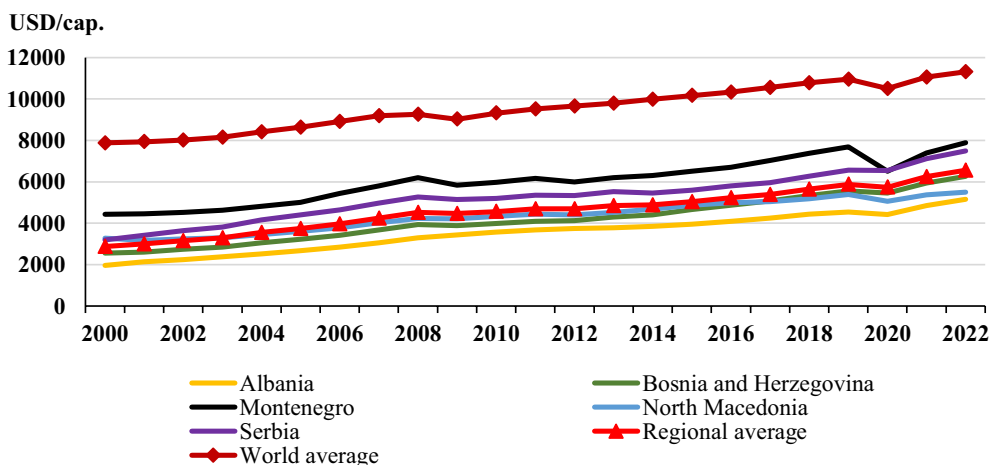
**Fig. 4** Annual population in the Western Balkans, 2000–2022, million people. Source: Own composition based on World Bank [33] data

fertility rates and a deteriorating economic situation, especially in rural areas [11, 20].

As noted by Brankov and Matkovski [6], the region’s agriculture relies on natural resources and labour workforce rather than new technologies and investment, therefore, the decline in the rural population is currently a risk factor for food security. At the same time, the emigration of young people from rural areas makes introducing new technologies and transferring agricultural knowledge difficult. In the absence of young people, there is no generational change among small producers, which significantly impacts the food dependency

of households and localities, forcing them to change their food security strategy [16].

In addition to population growth, the general level of economic development, usually measured by GDP per capita, is another important determinant of food security. As Fig. 5 shows, the regional average of GDP per capita does not reach two-thirds of the global average but continues to grow faster, suggesting a slow catch-up process. Albania had the lowest GDP per capita in the region over the period analysed, followed by North Macedonia and Bosnia and Herzegovina. Montenegro and Serbia had the relatively highest levels of GDP per capita.



**Fig. 5** GDP per capita in the Western Balkans, 2000–2022, in constant 2015 USD. Source: Own composition based on World Bank [33] data

The literature notes that economic growth is a necessary but insufficient condition for economic development [7, 12]. A higher income implies higher purchasing power and caloric intake, suggesting greater food security. Furthermore, higher levels of economic development have been found to be associated with agricultural development and productivity, contributing to the reduction of poverty and malnutrition [12, 22].

Investment in agriculture is another key determinant of food security, especially in rural areas, where most of the world’s poor live. Agriculture generally accounts for a higher share of the GDP in developing countries and contributes relatively more to economic development than in developed countries.

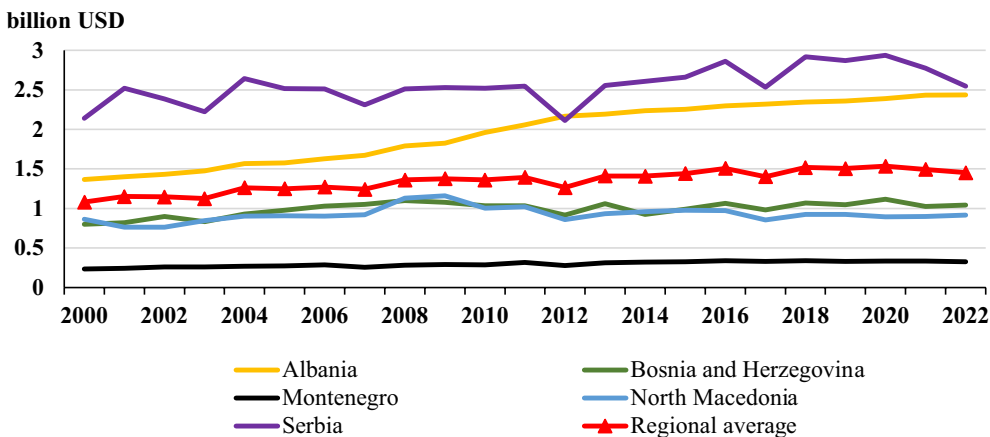
Measured in terms of value added in agriculture, forestry and fisheries, agricultural investment in the Western Balkans shows an upward trend, with an average increase of 35% compared to 2000 levels, although this

is still below the world average (Fig. 6). Albania had the highest growth in agricultural value added (+78%) over the period analysed, while North Macedonia had the lowest (+6%). In absolute terms, Serbia had the highest level of agricultural value added, followed by Albania.

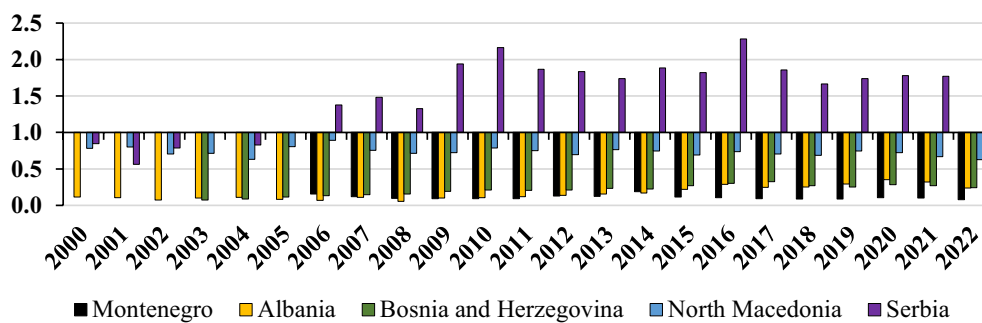
To successfully join the EU, the productivity of agriculture in the Western Balkans must be increased, which can only be achieved by investing in new technologies. Land efficiency lags far behind the EU (1:1.5) and not behind labour efficiency (1:4.5) [19].

Finally, besides domestic production, foreign trade also plays a role in food security. Although the exact relationship between proponents of liberalisation and protectionism is controversial, it is clear that a country’s trade performance and its position on food security are linked [17].

As shown in Fig. 7, Serbia is the region’s breadbasket, with a positive ratio between agricultural exports and



**Fig. 6** Agriculture, forestry, and fishing value added in the Western Balkans, 2000–2022, in constant 2015 billion USD. Source: Own composition based on World Bank [33] data



**Fig. 7** Agri-food export/import ratio in the Western Balkans, 2000–2022. Source: Own composition based on World Bank [33] data

imports, while all other countries are heavily dependent on agricultural imports. Montenegro had the lowest ratio of food exports to imports in the analysed period, indicating the highest dependency, followed by Albania, Bosnia and Herzegovina and North Macedonia. The trend is favourable for Albania, Bosnia and Herzegovina and Serbia, which export more than they import compared to 2000, while Montenegro and North Macedonia show a decreasing export/import ratio.

The Western Balkans region is heavily dependent on imported fertilisers. In 2020, Serbia produced around 30% of its total fertiliser needs, and Bosnia and Herzegovina around 15%. The rest of the region—Montenegro, Albania and North Macedonia—is completely dependent on imports. Due to extensive agriculture, the region has satisfactory input efficiency in pesticides and fertilisers. All this supports sustainable regional production, which is critical, as the focus will be on input efficiency in food production in the coming decades [6, 22].

### Insights from the interviews

In addition to the quantitative analysis, semi-structured interviews were conducted with local experts from the Western Balkans to further analyse and better understand the local determinants of food security, as well as recent changes that cannot be analysed due to the evident lack of data (e.g. the impact of the pandemic, the war in Ukraine, etc.).

The interviews were conducted in September and October 2023 via online channels (except for Albania, where the interviews were conducted live). Several interviewees pointed out the unreliability of the datasets for the Western Balkans due to data issues and changes in methodology, which was another reason for validating the results through interviews.

The local experts were identified through personal contacts and networks. Notes were taken during the interviews, and all possible errors and misinterpretations are the sole responsibility of the authors of this article. The

list of interview questions can be found in Appendix. The main findings of the interviews are organised according to the main themes that emerged during the interviews for enhanced coherence.

### Stable domestic food stability

The topic of the stability of domestic food supply emerged several times in the majority of the interviews as an issue with a significant impact on food security. Most experts agreed on the need for a country to be self-sufficient, at least to some extent, to reduce dependence on food imports, especially in times of crisis. All experts consider Albania to have a stable food supply, with no food availability problems for most agricultural and food products. However, the country has a steadily declining agri-food trade balance and is a net food importer. Local experts highlighted that food security in Albania is important from a nutritional point of view, as many groups in society are vulnerable, such as rural and suburban households close to the poverty line, as well as women and children (partly due to the lack of school food programmes). As one of the experts interviewed stated, “Many rural households are now dependent on food that they originally produced”, referring to the changing lifestyle of rural families. Due to the lack of local work opportunities, many rural families are now working in cities and buying food they used to produce for themselves. The proportion of people at risk of poverty and social exclusion is around 20–25%, however, note that this can be much higher for specific groups and can vary in time due to fragile safety nets. On the other hand, the lack of school feeding programmes is a major contributor to obesity among schoolchildren and adolescents as the lack of nutritious food at school ends up in buying processed and highly prepared food full of calories, according to local experts.

Bosnia and Herzegovina are considered to be highly dependent on food imports and lack a stable food supply in most products. It seems that after almost 30 years of the Balkan War, the country is still unable to produce



agri-food products at pre-war levels. Low productivity and especially yield instability, mainly due to climatic factors, have been identified by the experts as key issues in terms of food security and lack of competitiveness. The stability of domestic food supply varies, of course, from product to product, with extreme dependence on cereals on one hand and complete stability in milk, fruit, and vegetables on the other. It should also be noted that the country depends entirely on agricultural inputs such as fertilisers, pesticides, seeds and animal feed (this proved to be a serious vulnerability during the crisis; see below for more details). Agricultural and food trade is regionally oriented, with the European Union, together with the CEFTA countries and Turkey, remaining the main trading partners in terms of both exports and imports. The lack of stable supply in most products results in trade deficit. Farmers regularly complain that foreign products are cheaper than those produced locally which is another sign for the lack of their competitiveness.

In Montenegro, a wide range of food products is readily available in supermarkets, local shops, markets and restaurants. However, it is important to note that, like everywhere else, there may be occasional shortages of certain products or seasonal foods. On the other hand, Montenegro is a net importer of food and is almost entirely dependent on imports from CEFTA and EU countries.

In North Macedonia, food stability is mainly an issue when crises arise; the country is a net importer of food, especially cereals and meat. Agri-food imports, including inputs, generally come from Serbia, Russia, and Ukraine.

As our quantitative analysis also shows, Serbia is considered the breadbasket of the Balkans; it has a stable food supply and the only net exporter of agri-food products. The country has favourable climatic conditions for agricultural production and trades mainly with neighbouring countries and the European Union.

#### **Fragmented land and farm structures**

Land and farm structures were also found to be important determinants of local food security. In Albania, for example, experts estimate that there are about 350,000 small and (semi)subsistence farms with an average farm size of about 1.2 hectares, generally fragmented into 5–7 non-contiguous plots. This nanostructure of 0.2 ha of average plots, resulting from the ideology of equity and fair compensation after the collapse of the Soviet Union, is not suitable for efficient and modern agricultural production. In addition, farmers do not always have ownership rights to the land they cultivate, implying a lack of investment in a generally underfunded agricultural system, as is evident from policy documents. As one expert said, “The Achilles heel of Albanian agriculture

is definitely the chaotic use of land titles and ownership rights, eroding trust and ending up in family conflicts”.

Similar situations were mentioned in other countries where, according to interviewees, the majority of the farms produce mainly for subsistence, so the marketability of their products is low. The transition process from planned to market economy has led to an increase in the number of farming households. However, infrastructure development (roads, construction, etc.) as well as urbanisation and climate change have reduced the amount of land available, which will further reduce the size of farms in the future, reinforced by local inheritance laws and customs (distribution of property to successors).

#### **Depopulation of the countryside**

As our quantitative analysis shows, the population of the Western Balkans is declining or, at best, stagnating. The interviews revealed that it is mainly rural areas that are being depopulated. Outmigration and emigration trends are clear in all the countries analysed, with many young people and families either moving to larger cities or leaving the country (the main destinations being Western European countries) in search of better jobs and living conditions. Remittances are playing an increasingly important role in the lives of local families, and in some cases, such as Serbia, they are estimated to reach 10% of the GDP.

The main reasons for such movements include a lack of adequate services and infrastructure, poor education and social security systems, political crises, dysfunctional institutions, abuse of power in the workplace and an ever-changing environment that creates constant uncertainty. This situation has serious consequences for local agriculture, mainly consisting of subsistence and semi-subsistence farms, especially in countries where agriculture employs 20–30% of the population, causing significant labour market deficiencies in both quantity and quality of jobs.

#### **Poorly functioning local supply chains**

Our interviews also revealed that poorly functioning supply chains seriously affect local food security. Cooperation between farmers varies from sector to sector, but in general, most farmers prefer to pursue individual strategies. Negative memories of Soviet collectivisation impede cooperation between farmers, although local integrators sometimes manage the vertical integration of supply chains.

A significant problem in local supply chains is the high proportion of post-harvest losses in Albania, which indicates poor infrastructure and management of agricultural produce. Cooperatives are not popular among farmers in Bosnia and Herzegovina (due to negative experiences

with socialist forms of cooperatives), and they are not in a position, both organisationally and financially, to manage the purchase and sale of agricultural products. This task has been taken over by processing and trading companies whose regional or global interests do not always coincide with those of local producers. These companies sometimes finance small farms through working capital contracts, while small farms are usually self-financing due to the lack of government subsidies and limited access to credit. In addition, the limited access to finance on small farms also requires better cooperation. Due to the insecure land rights described above, the lack of collateral makes bank loans almost inaccessible for small farmers and harbours high risk potential (especially in times of crisis). Education also plays a role, as better-educated farmers with larger farms have a different attitude towards loans and credit.

#### **Increasing the role of the climate**

In all the interviews conducted, local experts highlighted the importance of the changing role of the climate as a serious challenge to food security. Recent weather shocks and unstable yield patterns call for climate-smart solutions. In some countries, such as Albania, one of the biggest problems highlighted by experts was the outdated 50-year-old irrigation system, which relied on large reservoirs and primary and secondary canals. The system is now disconnected from the main users because of recent land, road and house construction programmes. In northern Macedonia, poor soil quality, outdated machinery, the increased number of weather extremes, a lack of resources for appropriate inputs and sometimes a lack of knowledge put local farmers under great pressure to mitigate the impacts of climate change.

#### **Lack of harmonisation of food safety systems and standards**

The experts interviewed in all countries identified food safety and harmonisation of standards as key issues. However, non-standardised quality was found to be a major problem, together with a lack of harmonisation with EU standards, including those related to climate change, environmental protection and water management. Local experts also identified food safety and testing capacity, including the provision of satisfactory laboratory equipment, as an important issue to highlight.

Albania generally lacks an EU-type food safety system, as well as local standards and storage and processing capacity, which limits its ability to export its generally good-quality agricultural products. Although it varies by product and sector, the full potential of Albanian agriculture to become a regional breadbasket will remain hidden until these problems are addressed. In Bosnia and

Herzegovina, the lack of licences to export products of animal origin to European and Russian markets hampers export potential.

#### **Crises have raised awareness of food security**

The recent crises have had different effects in the Western Balkans, but they have raised awareness of food security. On one hand, it seems from the interviews that the COVID-19 pandemic has played only a limited role, looking back to 2023. Agriculture was largely exempt from restrictive measures, and during the pandemic, most measures, such as trade facilitation measures, exceptional market measures, and support for selected sectors, were aimed at ensuring a stable food supply. All Western Balkan countries facilitated the free movement of farmers and agricultural labour and eased farmers' access to state support. No measures were taken that specifically targeted vulnerable rural households, and prices remained essentially unchanged in the absence of food and labour shortages. Albania's main policy, for example, was to let the market regulate itself, so the country allowed food prices to fluctuate and did not report any major changes in their levels related to the pandemic. As most countries have good trade relations with their neighbours (what some experts call "neighbourly solidarity"), food availability was not a problem during the pandemic. However, in some countries, such as Bosnia and Herzegovina, there were measures such as administrative control of food and fuel prices, increased spending on reserves, and facilitated free movement of agricultural labour and seed distribution programmes.

On the other hand, the war in Ukraine has caused prices for food, animal feed, seeds and fertiliser/pesticides to skyrocket in the Western Balkans. Inflation rose to 14–20%, leading in some cases to a doubling of prices for fertilisers and agricultural inputs (while quality declined) and prompting government intervention. Many local experts complained about drastically rising local food prices, which were sometimes even higher than on Western European markets, and the increasing share of household budgets spent on food (in North Macedonia, this share was estimated to rise to 51% in 2022).

Local governments decided to take various measures to limit the impact of the war on the local economy, including the agricultural and food sectors. These included price controls on basic foodstuffs, raw materials and fuel; quantitative restrictions on food consumption; support for public storage and procurement; the promotion of inputs; and the creation of more flexible conditions for receiving direct payments and bank loans for agricultural activities.

However, it seems that "recent crises speeded up the consolidation process with exposed vulnerabilities", as

one expert summarised the current situation. Land rents and land abandonment have increased, and even more people have started to migrate from the countryside due to deteriorating living conditions. Nevertheless, the impact of the pandemic and the war was not uniform across sectors, as cereal farmers, for example, found it easier to sell their products at better prices.

### Limited role of food security policies

All experts agreed that local food security policies and strategies in the Western Balkans, where they existed, had a limited role in ensuring stable food security patterns. Most local experts complained about ad hoc and fire-brigade policymaking, constantly changing priorities, corruption, an instable institutional background, and a limited budget for food security (and agri-food policy). Experts are calling for more targeted and harmonised programmes for the CAP, especially for countries on the doorstep of EU accession.

The following list of joint policy recommendations emerged from the interviews:

1. *There is a need for monitoring and rapid response.* The pandemic forced all countries to monitor and respond rapidly to market developments. These efforts do not appear to have been sustained after the pandemic, leaving local communities vulnerable to shocks such as the war in Ukraine. There is an urgent need to establish and maintain a monitoring and evaluation framework in all countries based on continuous data provision to prepare for future shocks and manage ongoing shocks. Local data collection and analysis are urgently needed to provide up-to-date information on food security trends.
2. *Crisis preparedness frameworks are needed.* Short-term thinking and ad hoc solutions have not successfully dealt with crises. There is a strong need for a more permanent, comprehensive framework for crisis preparedness and management, including crises caused by natural disasters [29].
3. *Long-term food security strategy.* Most countries lack a clear vision for the future of their agricultural and food systems. This is particularly risky in crises and increases the vulnerability of households and local communities. The development and thoughtful implementation of a long-term food security strategy are urgently needed.
4. *Harmonise food safety and standards.* The lack of harmonisation of local food safety systems continues to place countries in a vulnerable and dependent position vis-à-vis their trading partners. Harmonisation should be a key policy priority, particularly for countries seeking to join a larger community or market like the EU.
5. *Achieve stable domestic food supply.* A minimum level of stability of supply in basic foodstuffs and agricultural inputs is urgently needed to ensure local food security and to cope with potential shocks. This is particularly true for many countries in the region that are heavily dependent on grain imports. It also aligns with the changing global economy, trade relations and how economists think about food security. However, domestic food supply stability does not automatically mean food security, as dependence on inputs can also contribute to food insecurity.
6. *Empower small-scale producers.* One of the biggest obstacles to local agricultural and food production is the lack of competitive farms due to fragmented land structures. The creation of family farms with adequate land rights and titles and a competitive amount of agricultural land is key to future food security. Support for family farmers must be better targeted to their specific needs, such as access to input and output markets. Particular attention needs to be paid to access to finance and investment for this group. As Toma et al. [27] also pointed out, small-scale producers can be especially crucial for maintaining the stability of food security.
7. *Support investment in infrastructure and technology.* Modern agricultural activities require modern infrastructure and technology; investment in these will contribute significantly to local food security in the long term. For many countries, investment in collection and processing centres, greenhouses and sustainable irrigation systems would be especially beneficial, reducing post-harvest losses and solving the logistical problems many countries face. Reliable transportation and distribution systems as well as development of testing capacities, extension services and technical training are also highly needed. Responsible investment in agriculture and food systems greatly contributes to food security and nutrition.
8. *Support processing and higher value-added in agriculture.* A diversified production base is recommended by most experts consisting of lower and higher value added products. Most experts strongly recommend investing in local food processing plants.
9. *Sustainable and responsible resource use.* The effects of climate change are now being felt in all countries in the region, albeit to varying degrees. Sustainable management of resources and adapta-

tion to and mitigation of climate change, including modern land management practices and resilient species, appear to be the only way forward.

10. *Enhance the diversification of agri-food markets and products.* Increasing dependence on agri-food imports and continued reliance on a small number of unreliable partners puts local food systems under pressure. Diversification in terms of markets and products is highly recommended for a sustainable food supply.
11. *Invest in local people.* Education, training and all forms of knowledge sharing will benefit both farmers and consumers to ensure healthy and nutritious diets. Empowering vulnerable groups, such as women, children and the young generation, is an investment in the future.
12. *Create and maintain a solid institutional framework.* One of the main problems that most countries in the Western Balkans region suffer from is weak and corrupt institutions; developing these, together with human development and capacity building, will provide a framework based on which food security can be built in the long term. Inclusive and transparent governance structures contribute greatly to food security.

Our results are in line with Matkovski et al. [21] stating that Western Balkan countries are highly vulnerable to external shocks. The main characteristics of food security in Western Balkans as defined by Brankov and Matkovski [6] were also reinforced by our results, as well as arguments of Erjavec et al. [11] and Simonović et al. [25] on the lack of harmonisation with EU standards also holds. Our results also support the arguments of ACIT [2] that COVID-19 and the war in Ukraine have posed new challenges which the Western Balkans need to address systematically by modernisation of their policies. It seems that the pandemic have made the economies of the region more vulnerable and the war exposed this vulnerability.

All our results and suggestions regarding alignment of standards, vertical coordination of supply chains and competitiveness enhancement are in line with ACIT [2]. Western Balkans countries have already adopted the “Economic and Investment Plan”, under which they aim to implement their Green Agenda together with the European Union, in line with the Green Deal and Farm to Fork approaches to move towards a sustainable food systems.

Moreover, the concentration on higher value-added local food production, as also suggested by our panel of experts, is in line with Matusiak et al. [23] and Radovanovic et al. [24]. Our interviews also reflect views

of [4] (p. 5) suggesting “investing in trade and transport infrastructure, creating incentives for youth in rural areas, and increasing yields through technological innovation, education, and cultivation of unused lands, while maintaining a balance between efficiency improvements and sustainability” is the road ahead for the region to follow in the future.

## Conclusions

This paper analysed the food security situation in the Western Balkans in the light of recent crises. Although the region has made good progress in reducing poverty and inequality in recent decades, the COVID-19 pandemic and the war in Ukraine appear to have stalled or, in some cases, even reversed this progress.

Our combined methodology has led to several conclusions. First, malnutrition is not a serious problem in the region, unlike obesity, which is on the rise. Second, our quantitative section identified numerous factors responsible for the changing patterns of food security, with population growth, economic development, investment in agriculture and trade in agricultural and food commodities emerging as the most important.

Third, the conclusions drawn from the interviews are numerous and complement the picture from the data analysis. The stability of domestic food supply seems to be a problem for most Western Balkan countries, with fragmented land structures and rural depopulation. The lack of cooperation and organisation of the food chain is also at odds with the challenges of food security and climate change. The lack of harmonisation of food safety systems and standards remains an ongoing challenge for the Western Balkans. The impact of recent crises on food security has been categorised as diverse and sometimes contradictory. At the same time, most experts believe that local food security policies and strategies play only a limited role in ensuring a high and stable level of food security. Finally, various policy recommendations were made for the future.

In terms of the limitations, apart from obvious data problems, we see two main points: (1) the conclusions of the study cannot be generalised to other regions, and (2) the validity of the results depends on the relatively small number of available and committed local experts. Regarding future research opportunities, it would be nice to replicate the study in other regions to compare the impact of crises on food security, at least at the European level, or analyse the applicability of existing solutions implemented in other countries [3].

## Appendix: Interview questions

1. How would you describe the food security situation in your country? Do you find your country food secure in general or not and why?
2. In terms of the four dimensions of food security (availability, access, utilisation, stability), which dimensions do you find the most relevant for your country? Which dimensions are important and why?
3. If your country would be categorised as “vulnerable” in terms of food security, what would be the reason for that?
4. What do you think the main country-specific determinants are for your food security position?
5. We now live in a world of triple crisis – food, energy and finance. How these affect your food security situation?
6. How COVID-19 affected food security in your country?
7. What about the effects of the Russia–Ukraine war?
8. Do you have a food security policy/strategy in your country? Any policy measures aimed at securing food?
9. Do you have any lessons learned from previous food security related policies? Any good–bad practices you can highlight?
10. What would you do if a similar crisis would come in the future? How would you recommend preparing for that?
11. If you would have a magic wand, what would be your top priorities in improving the food security situation in your country?

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### Author contributions

Jámbor, A: substantial contributions to the conception; design of the work; the acquisition, analysis, interpretation of data; have drafted the work; substantively revised it. Varga, Á: the acquisition, analysis, interpretation of data; have drafted the work.

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### Availability of data and materials

The data sets used and/or analysed during the current study are available from the corresponding author on reasonable request.

### Declarations

#### Ethics approval and consent to participate

Not applicable.

#### Consent for publication

Not applicable.

### Competing interests

The authors declare that they have no competing interests.

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