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Food safety in Albania: Industry insights, regulations and public health implications

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Abstract

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This paper presents a comprehensive overview of food safety in Albania, aiming to give a clear and complete picture of the country's current situation, challenges and opportunities for improvement. It discusses the role of food safety in protecting public health, supporting economic growth and ensuring the well-being of the population. The paper also reviews the national legal framework, the responsibilities of key institutions and government programs designed to strengthen food safety and bring national standards closer to those of the European Union.

The study relies on a combination of literature review and secondary data analysis, drawing on scientific publications, government documents and reports from national and international organizations. Through this approach, it identifies major issues such as foodborne illnesses, contamination and food fraud, which continue to pose risks to consumers and affect the reputation of the food industry. The results show that some progress has been made, but stronger enforcement, better data management and greater public awareness are still needed for a safer and more reliable food system in Albania.

Keywords: agriculture; food industry; food safety; public health

1. Introduction

Access to safe food is as much a human right as the right to live. While the Universal Declaration of Human Rights recognizes the right to life, it does not explicitly mention the right to safe food. However, the right to an adequate standard of living, which includes access to food, is recognized in Article 25(1) of this declaration, which states that '' *Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, medical care, and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age, or other lack of livelihood in circumstances beyond his control*''.

Food that is not fit for consumption violates these rights because it can cause mild, severe and fatal health consequences such as diarrhea, vomiting, abdominal pain, debilitating infections, long-term diseases, including cancer and death. Therefore, food safety is essential to providing safe, nutritious and delicious food to everyone.

Consumption of unsafe food can result in the onset of over 200 different diseases (World Health Organization, 2015). The World Health Organization (WHO) (2015) estimates that around 600 million people get sick from eating contaminated food, leading to about 420,000 deaths, impacting especially vulnerable groups like infants, young children, the elderly and the sick. As a result, there is a loss of 33 million healthy years of life.

A series of factors contribute to potential hazards in food, including improper agricultural practices, poor hygiene throughout the food chain, the lack of preventive controls in food processing and preparation, the misuse of chemicals, contamination of raw materials, ingredients and water, as well as inadequate or improper storage. In fact, this means

that the majority of these illnesses are preventable and can be avoided through the rigorous adoption of safe production and handling practices.

Health is undoubtedly the most crucial aspect of food safety, but it's not the only factor to consider. Food safety has a wide range of social, economic and environmental consequences (Aung and Chang, 2014). The foodborne illnesses strain healthcare systems and hurt economies, tourism and trade, affecting the overall development of society. The economic impact is estimated to be US$110 billion annually in low- and middle-income countries (Jaffee et al., 2019). The impact of foodborne diseases on public health and economies is often underestimated due to underreporting and challenges in establishing direct causal links between food contamination and resulting illness or death (WHO, 2015).

Urbanization, globalization and climate change have significantly impacted food safety. The interconnectedness of the modern world can easily cause local outbreaks to escalate into international emergencies due to the rapid distribution of goods and services across borders. As highlighted by Fung et al. (2018), the speed and reach of product distribution make it challenging to prevent outbreaks and mitigate their effects.

Developing countries face more challenges within the food industry, as they are more prone to fraudulent food products. These challenges are also linked to other issues, including corruption, ineffective law enforcement, outdated technologies, inadequate employee training and limited access to education and information. Therefore, addressing and eliminating food safety challenges should involve considering other factors by examining the broader context and underlying causes of these challenges.

The purpose of this paper is to integrate several topics related to food safety in Albania into a single, comprehensive review. The primary objectives are threefold. First, the study aims to provide insights into the food industry and its economic significance. Second, it aims to assess the existing legislative framework and ongoing initiatives aimed at enhancing food safety. Third, the study aims to identify instances of food fraud and food scandals, as well as their economic, social and public health implications.

The methodology of this study employs a combination of literature review and secondary data analysis. The literature review provides a detailed examination of relevant academic articles published in scientific databases, such as Google Scholar and Scopus, government reports and organizational publications, primarily during the period 2010–2024. Additionally, secondary data analysis is utilized to assess statistical data and reports from various sources, including governmental and non-governmental organizations, such as the Institute of Statistics (INSTAT), the National Food Authority (NFA) and the Ministry of Agriculture and Rural Development (MARD). A review of the key legislation related to food safety was also conducted.

2. The food industry in Albania and its significance for economic development

The food industry is a large and complex network of inputs, including farmers, wholesalers, retailers, distributors, processors and manufacturers, which supply the food consumed by the global population. This industry is highly profitable, with the most lucrative areas including meat processing, vegetable and fruit processing, confectionery, dairy, sausage production, wine production and baking (Sadiku et al., 2019). However, its profitability within sectors varies from one country to another. It depends on specific factors related to the characteristics of each country or region, such as the availability of natural resources, infrastructure, government policies and economic stability.

Albania is an industrialized upper-middle-income country and its economy is based on the service, agriculture and industrial sectors. The total land area of Albania is 28,748 km². Forests are considered one of the significant natural resources, covering 41.6% of the total area. Additionally, 24% is agricultural land and 16% is permanent grassland and meadows. The significant amount of land dedicated to agriculture, which is a favorable condition for agrarian production, enables the country to produce a diverse range of crops and raise livestock. This helps improve food security for the government and also provides exports.

The agriculture sector is the primary contributor to the food industry in Albania. According to INSTAT (2020), the total utilized agricultural area (UAA) in Albania, including grasslands and meadows, is 986,000 hectares, while the non-utilized area, estimated at around 100,000 hectares, is mainly represented by undivided land under municipal administration. Rural development, including the agriculture and fisheries sectors, has undergone significant transformation over the last few years in terms of production indicators, income and employment of rural families, as well as improvements in food safety standards.

Economic development in rural areas is characterized by high dependence on agriculture. Agricultural production is dominated by smallholders and family farms, accounting for 85%. The agrarian sector experiences stable growth, with annual gross fixed capital formation (GFCF) of around EUR 53.7 million and an increasing yearly productivity value (GVA per labour unit in agriculture) of EUR 5,680 (as

of 2020). Agriculture's contribution to the total economy's gross value added (GVA) is approximately 22% of the national GVA.

The diverse range of agricultural products includes tobacco, figs, olives, wheat, maize, potatoes, vegetables, fruits, sugar beets, grapes, meat, honey, dairy products, as well as medicinal and aromatic plants. Albania's agricultural sector produces a significant quantity of fruits, nuts, and vegetables, with production continually on the rise. The production of vegetables in greenhouses and plastic tunnels increased by approximately 18.14% from 2018 to 2022, reaching a total of 170,980 tons in 2022. Most of these products are destined for export. Table 1 shows the production volume of plant-based products by category during 2018–2022.

The main products of animal origin include milk and by-products, meat, eggs, wool and honey (Table 2). These items are fundamental to the country's agricultural sector, providing essential nutrition and economic value. However, due to factors such as inflation, a lack of subsidies, an aging farmer population with a decline in younger generations entering the sector and labor shortages, the number of livestock and total production have declined in recent years. Milk needs are almost entirely met by domestic production. The poultry, egg and meat production sectors are represented by modern facilities with good performance. Albania is rich in water resources with a coastline of 476 km; therefore, fishing is an essential activity in the country as well.

Statistical data for the period of 2018-2022 shows that agriculture is oriented towards products with competitive and comparative advantages, which also provide greater income per unit area and have export potential. The most significant changes in the planting structure have occurred mainly in the sectors of vegetables, fruits, olives, citrus fruits, medicinal and aromatic plants, and strawberries. While domestic needs are being met, the export volume is also growing, resulting in an increase in the export-to-import ratio. Data from the Statistical Yearbook 2017–2020 show that total exports from agriculture, livestock, fisheries and agro-industry in 2020 increased by 27.5% compared to 2017, while they increased by 168.7% compared to 2013.

Albania's imports and exports of the category' food, beverages and tobacco' have been increasing over time. Still, it has consistently maintained a trade deficit in this category, implying a reliance on imported products. As shown in Figure 1, exports increased by approximately 57.38% from 2019 to 2023.

According to INSTAT, the most significant number of processing enterprises in Albania in 2022 is in the sector of bread production (56.4%), milk and dairy production (12.2%) and vegetable oil production (7.8%). Agro-food enterprises are primarily concentrated in Tirana (31.4%), Fier (11.7%) and Durrës (10.2%). There is a rise in production volume, primarily attributed to specific categories of goods, such as frozen meat and by-products, as well as flour, bread and pasta. The

Table 1. Plant-based agricultural production by category 2018–2022 (in tons)

Category	2018	2019	2020	2021	2022
Grains	678.196	666.064	684.022	691.353	690.854
Vegetables	1.166.283	1.258.012	1.295.725	1.337.198	1.357.825
Potatoes	254.543	260.661	254.886	258.862	262.673
Beans	24.542	24.782	25.762	22.418	21.770
Tobacco	1.693	1.403	1.438	1.620	1.792
Sunflower	846	1.013	1.259	926	789
Soya	744	605	441	373	686
Fodder	7.050.105	7.115.234	7.170.585	7.054.033	7.138.798
Medicinal herbs	12.531	12.922	14.412	15.969	16.430
Sugar beet	27.485	30.705	26.964	24.422	21.253
Strawberries	4.393	5.273	5.446	5.723	6.290
Tomatoes	288.626	299.669	313.109	314.470	315.057
Cucumber	120.351	126.632	113.685	118.171	129.896
Pepper	81.317	85.061	103.056	99.335	97.018
Cucurbit	281.297	300.410	298.887	321.613	313.219
Citrus fruits	45.499	46.882	49.201	50.485	55.118
Grapes	184.832	189.904	199.070	212.011	211.178
Olives	117.573	98.313	131.971	110.164	157.710
Fruits	274.343	274.423	273.749	287.210	295.428

Source: INSTAT, 2023

Table 2. Animal-based agricultural production by category 2018–2022 (in tons)

Category	2018	2019	2020	2021	2022
Milk	1.144.353	1.112.196	1.052.192	1.013.020	970.168
Meat	161.373	156.643	150.354	148.169	139.856
Fish	8.629	8.706	7.805	9.842	8.891
Eggs	827.508	864.510	861.018	898.855	776.474
Wool	3.331	3.182	2.831	2.632	2.529
Honey	3.937	4.116	4.599	4.835	5.391

Source: INSTAT, 2023

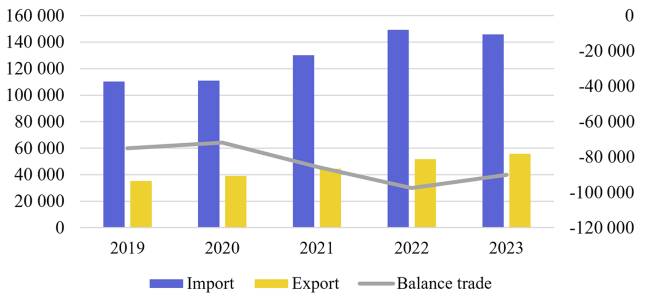

Fig. 1. Balance trade of food, beverages, and tobacco
Source: INSTAT, 2023

value of production has also surged in sectors such as canned fish, as well as in the bottled water and soft drinks sector.

There is an increasing number of collection points for agricultural products, with approximately 224 collection points operating nationwide (172 fruit and vegetable collection points, 42 collection points for medicinal and aromatic plants and 10 other points for various products). This improvement in the system for gathering and potentially processing agricultural products benefits farmers by providing easier access to markets and potentially better prices for their goods.

The country has also seen a notable rise in organic farming, which accounts for approximately 1.3% of the agricultural area. The number of organic farms was 81 and 113 in 2019 and 2020, respectively, with the latter producing around 2,118 tons (INSTAT, 2020). The number is continuously on the rise due to growing consumer interest in sustainable agricultural practices.

3. Regulatory framework and compliance with food safety

Albania's regulatory framework for food safety is designed to protect public health, ensure the quality and safety of food products, and facilitate trade both domestically and internationally. Law № 9863/2008, titled 'Law on Food' aims to "set the bases for ensuring a high level of protection of people's health and the interests of the consumer". This law fulfills the legal, economic and social requirements of businesses and guarantees the right of Albanian consumers to consume safe products.

The regulatory framework for food safety in Albania includes the following key components:

a) **Food Safety Authority**: The National Food Authority of Albania (NFA) (known in Albanian as AKU) operates under the Ministry of Agriculture and Rural Development. It is the primary regulatory agency responsible for overseeing food safety in the country. Its duties include tasks such as enforcing food safety regulations, conducting inspections and ensuring compliance with national and international standards.

b) **Legislation and Regulations**: In addition to the main law on food (Law № 9863/2008), Albania has approved various statutes and regulations governing food safety. The most important laws include: Law on Veterinary Services (Law № 10465/2011); Law on Plant Protection (Law № 105/2016); and Law on Producing, Collecting, and Processing. and selling milk and milk by products (Law № 9441/2005); Law on quality schemes for agricultural and food products (Law № 8/2019) etc. These laws outline the general principles and requirements for ensuring food safety, hygiene and quality.

c) **Food Safety Standards**: Albania aligns its food safety regulations with EU standards, adopting relevant EU directives and regulations to harmonize its regulatory framework with that of the EU and international food safety standards, including those established by the Codex Alimentarius Commission. These standards cover various aspects of food safety, including hygiene practices, food additives, contaminants, labeling and packaging.

d) **Inspection and Monitoring**: NFA conducts regular inspections of food establishments, including food production and processing facilities, restaurants and retail outlets, to ensure compliance with food safety regulations. Inspections cover hygiene practices, food handling and storage, sanitation procedures and product labeling.

e) **Import and Export Controls**: Albania implements import and export controls to regulate the movement of food products across its borders. Imported food products must meet Albanian food safety standards and appropriate documentation and certifications is required for customs clearance. Similarly, Albanian food products intended for export must comply with the food safety requirements of the importing countries.

According to the 'Law on Food', administrative offenses are punishable by a fine or, if necessary, the revocation of the respective license of the food business operator. While NFA has increased enforcement activities, such as the number of checks and measures taken to punish violations and non-compliance, there is still a need to improve the quality of inspections and data management of statistics. If breaches of food safety exceed the provisions of Law № 9863, the Criminal Code of the Republic of Albania outlines specific criminal offenses related to food safety.

4. Foodborne illnesses and outbreaks in Albania

Food safety in developing countries, such as Albania, presents unique challenges compared to more developed nations. Some of the emergencies the country has faced over the years include water and foodborne disease outbreaks, food fraud and adulteration, chemical contamination and other non-compliances with food safety regulations.

WHO defines an outbreak as the occurrence of two or more cases of the same unexpected illness among persons who have consumed the same food. According to a study by Bego et al. (2015), twenty-seven epidemic outbreaks have occurred over the period 2005–2014, of which 21 (78%) had a bacterial etiology, whereas 6 (22%) had a viral etiology. Salmonella and Shigella were the etiologic causes in 77.8% of the outbreaks, predominating during the hot season. Outbreaks have occurred in different parts of the country without any distinct spatio-temporal distribution pattern. The primary sources of foodborne illness encompass several key food categories, notably tap water, confectionery and meat (Bego and Bino, 2015). The same study was later extended until 2016, according to which, during 2005–2016, 43 outbreaks were reported.

In a year, around 56 000 people (or 2000 cases per every 100 000) report gastrointestinal illnesses, which could be a sign of foodborne disease. This number is much higher than the reported cases of food poisoning (roughly 2 800 people or 100 cases per 100 000). These food poisoning cases are reported by doctors in primary care and documented in hospitalizations (Lake et al., 2015).

Food- and waterborne outbreaks are more common during the summer months, and too often, outbreaks of food- and waterborne diseases go unrecognized or unreported, or are not thoroughly investigated. Salmonella is the most common cause of food-borne illness and is the most persistent.

Pollution from cities and industries is harming water sources, especially due to significant societal changes in the 1990s following the fall of communism. Untreated sewage dumped directly into water bodies is an essential contributor to past outbreaks (Divizia et al., 1999; Çullaj et al., 2005; Fabiana et al., 2007). Noroviruses (NoVs) are considered the leading cause of outbreaks and sporadic cases of acute non-bacterial gastroenteritis worldwide (Patel et al., 2009). Nosocomial infections can be spread through contaminated water or food, as well as person-to-person contact. In 2010, a total of 232 out of 815 affected patients were hospitalized due to the outbreak of NoV in Ballsh city (Donia et al., 2011), which caused symptoms such as fever, nausea, abdominal cramps, vomiting and diarrhea.

Other occurrences of waterborne diseases include the outbreak of Shigella Sonnei in the Vlora region in September 2014 (Bego et al., 2015) and the contamination of tap water in Kruja (Ulqinaku et al., 2022), which affected around 690 patients.

One of the biggest concerns is the quality and safety of the food products that are sold in supermarkets. A series of studies were conducted on the quality of the different food categories, such as vegetables (Çoku et al., 2011), eggs (Shehu et al., 2018), cheese (Allaraj et al., 2014), seafood (Lufo et al., 2023), wild animals (Korro and Mema, 2023), ground beef (Cocoli et al., 2023), chicken (Daçi et al., 2016), fresh milk (Sulaj et al., 2013), water (Bakalli and Selamaj, 2022), meat (Nexhipi and Beli, 2014), infant formula (Maçi et al., 2015) etc. The processing plants of milk (Postoli and Shehu, 2018) and meat (Daçi et al., 2016) also pose a significant risk to consumers because a large number of them do not comply with food safety practices.

Detecting and confirming outbreaks of food and waterborne illnesses is a challenge in Albania. Data on these outbreaks is often incomplete or unavailable, making it difficult to track their spread. To improve public health responses, a centralized system is needed. This system would combine data collection, outbreak reporting, response measures and communication efforts. By centralizing information, officials cannot only measure how quickly they respond to outbreaks but also assess the effectiveness of their response and communication strategies, particularly in relation to implementing the International Health Regulations (Daja et al., 2019).

4.1. Food fraud in Albania

Unfortunately, the food sector is constantly subject to illegal activities, such as food adulteration or labor exploita-

tion, occurring at the global level (Rizzuti, 2022). The lack of a universal fraud definition poses an initial challenge to the economic analysis of 'fraud' (Ehmke et al., 2019). However, it is commonly accepted that the term 'food fraud' encompasses any intentional and deceptive misrepresentation of food for financial gain that violates food law (van Ruth et al., 2017). Other authors have expanded upon this explanation and outlined seven categories of food fraud: adulteration, tampering, overrunning, theft, diversion, simulation and counterfeiting (Spink and Moyer, 2011).

Foods of animal origin can be more vulnerable to specific food safety issues compared to other food categories (Ergönül, 2013; Piochi et al., 2022). Economically motivated, milk is the most fraudulent food product in the world after olive oil (Moore et al., 2012).

In recent years, Albania has experienced several incidents involving food contamination, sparking public concerns about the overall safety and quality of the food supply chain. Consumers are uncertain about the safety or origin of what they purchase. To increase public trust, the NFA provides some partly information on reported cases of food scandals, including the type of scandal, affected food products, and the actions taken by the agency to address the issue.

After analyzing the collected data, several vulnerable food categories and instances of food fraud have been identified. Olive oil, a significant agricultural product, faces concerns regarding adulteration with lower-quality oils or additives, raising doubts about authenticity and quality. Milk and by-products suffer from inadequate quality control measures at various stages of production, processing and distribution. Reported cases involve mixing or diluting genuine milk with water or other substances to increase volume and profitability; contaminated dairy due to the presence of harmful microorganisms (e.g., bacteria, viruses), chemical residues (e.g., pesticides, antibiotics) or foreign materials (e.g., feces); and the sale of expired products (Troka and Kapaj, 2023).

Meat quality and safety issues stem from the illegal use of substances in animal husbandry and hygiene concerns in slaughterhouses, which affect consumer safety and export prospects. Additionally, challenges with food labeling and traceability persist with reported cases of inaccurate labeling and expiration date manipulation, highlighting the need for improved enforcement of regulations to ensure food safety and authenticity in Albania's food industry (Avdulaj and Troka, 2023).

4.2. The burden of foodborne illnesses

The global burden of foodborne diseases is a significant public health concern, with a substantial impact on morbidity and mortality. Parasitic diseases transmitted through food are a particularly important contributor to this burden (Torgerson, 2014). World Health organization has been working to estimate this burden, considering both acute illness and premature deaths by establishing the Foodborne Diseases Burden Epidemiology Reference Group (FERG) in 2007.

However, accurate data on the full extent of this burden is lacking, particularly in developing countries (Devleesschauwer et al., 2018). To address this, there is a need for national burden of disease studies to inform food safety priorities, as well as initiatives to improve data collection in low-resource settings (Pires et al., 2021). A key challenge in tackling foodborne diseases is the lack of data, particularly regarding disease causes and the extent to which foodborne transmission contributes to the overall burden (Lake et al., 2015).

Launched in 2007 by the WHO, a global initiative aimed to assess the burden of foodborne diseases worldwide. This initiative, known as the Foodborne Diseases Burden Epidemiology Reference Group (FERG), not only produced global and regional estimates but also, crucially, encouraged individual countries to take action at the national level.

To address this, the WHO's FERG initiative launched pilot studies in Albania, Japan, Thailand (2011) and Uganda (2012). These studies aimed to gather crucial data and expertise for practical situation analysis, knowledge translation and risk communication. Ultimately, the FERG's global and regional estimates empower individual countries to bridge their data gaps and develop their own national forecast. This will be instrumental in guiding policies and efforts aimed at reducing the burden of foodborne diseases (Lake et al., 2015).

Food scandals have significant consequences, including health, economic and social impacts. However, there are no data available to measure such consequences in Albania. While food safety is a critical concern, it's notable that NFA has not publicly disclosed or provided a list of the most problematic food categories in the country. Such lists are important for consumers to make informed decisions and for the government to take practical regulatory actions. On the other hand, the Ministry of Health does not possess official data on the number of individuals who have fallen ill due to food-related issues or the specific types of illnesses associated with food consumption. These data are crucial for public health monitoring, identifying trends and implementing targeted interventions to prevent foodborne illnesses.

5. Government initiatives and programs

Improving food security and safety requires inputs and new technologies, which poor farmers in low- and middle-income countries cannot afford on their own (Wiggins

and Brooks 2010). Therefore, governmental support is crucial in promoting efficient agricultural practices. According to the Organization for Economic Co-operation and Development (OECD), government support for agriculture has increased in recent years in response to global crises, with only a small portion directed at longer-term goals, such as climate change and other food system challenges. The total support to agriculture reached USD 851 billion per year from 2020 to 2022 in the 54 countries monitored, representing nearly a 2.5-fold increase compared to two decades ago.

The quality of food produced on farms is related to various factors, including technology, production practices, government support, limited resources and awareness of food safety standards and regulations. Most farmers prioritize yield and productivity over food safety, as agriculture is the primary source of income for their families. Additionally, the lack of incentives to invest in food safety measures, inadequate infrastructure such as storage facilities and transportation networks, and environmental contamination from sources like polluted water and soil pose significant challenges. Addressing these factors requires education and training programs, access to resources and technologies, supportive policies and regulations, market incentives for safe food production and investments in infrastructure to improve food safety practices among farmers and ensure the production of safer food for consumers.

Financial support for farmers through different schemes can significantly aid in producing safer food. Agricultural subsidies can have a significant impact on food safety and security. Hoffmann and Jones (2021) found that subsidies for technologies that improve food safety, such as post-harvest practices, can be effective in reducing health risks associated with foodborne illnesses. However, the effectiveness of these subsidies can vary depending on the context, as highlighted by Walls et al. (2018), who emphasized the need for a more comprehensive understanding of the impact of agricultural input subsidies on nutrition and health. The evidence suggests that different subsidy programs have had, in some contexts, profoundly positive and, in other contexts, profoundly negative impacts on food security and on the livelihoods of poor people and societies (Doward and Morrison, 2015). While subsidies can play a crucial role in ensuring food safety and security, their design and implementation must be carefully considered to maximize their benefits.

5.1. Ongoing supporting programs in Albania

Farmers in Albania are facing high prices of food, feed and fuel from global crises (driven mainly by the war in Ukraine); therefore, there is an immediate need for support. Despite efforts to stimulate improvement and growth in agriculture, the sector is facing numerous challenges, including a lack of financial support. Additionally, access to banking services remains low in rural areas, with agricultural credit accounting for only about 1.7-1.9% of total lending. Farmers must benefit from payments per utilised area and per livestock, as a supplement to their income.

In recent years, due to responsive policies tailored to the needs of farmers, agro-processors and entrepreneurs in rural areas, the Ministry of Agriculture and Rural Development has increased investments in agriculture, rural development and fisheries. The funding sources include state budget allocations, financial support from the European Union and various donors, as well as contributions from financial institutions such as the European Bank for Reconstruction and Development (EBRD) and Kreditanstalt für Wiederaufbau (KfW), along with bilateral project funding.

Between 2017 and 2020, the national farmers' support scheme allocated approximately 3.8 billion ALL (37 million euros) from the state budget to support agriculture, rural development and fisheries. These figures witnessed substantial growth in 2021/2022 and in the coming years. Concurrently, there was a significant increase in the number of farmers benefiting from these programs. These initiatives aimed to enhance agricultural and livestock production, as well as honey production, by providing subsidies per head for cattle, small ruminants and beehives. In 2021, the implementation of a support scheme for farmers began, providing diesel without excise duty, carbon tax and circulation tax for mechanized agricultural activities. Approximately twenty thousand farmers benefited from this scheme in 2021.

In 2019, the European Union launched a new €5 million program to support food safety in Albania. Over four years, this initiative aims to align the candidate country's standards for food safety, veterinary practices and plant health with those of the EU. Led by the Irish Food Safety Authority, the 'Support to food safety, veterinary and phytosanitary standards' program will also involve collaboration with the Finnish Food Safety Authority, the Irish Department of Agriculture, Food and the Marine, and Creative Business Solutions. The initiative will deploy experts in food safety, veterinary practices and phytosanitary systems to help Albania align its legislation with EU norms, enhance safety measures across the food chain and raise awareness about food safety issues. This collaboration provides Albanian authorities with invaluable access to counterparts in Ireland and Finland, renowned for their expertise in food safety policies and management systems. The project has the potential to bring Albania closer to EU standards and open up the EU market to Albanian products by harmonizing regulations and creating a food safety system that matches global standards. This program

has extended support to both large farms and agribusinesses, commencing disbursements in 2019 with a total funding of € 94 million, including € 71 million from the European Union and € 23 million from the Albanian Government.

Under the Instrument of Pre-accession for Rural Development II (IPARD II) program, investments have been channeled into three main measures: *Investments on farms*, aimed at modernizing production processes, enhancing productivity and attaining EU standards; *Investments in Agri-processing* and the marketing of agricultural and fisheries products; *Investments in diversifying economic activities* in rural regions, capitalizing on their appeal for rural and Agri-tourism, as well as craft ventures.

Since 2021, MARD has been working intensively through its institutions, such as the Albanian Rural Development Agency and the Monitoring Authority of IPARD, to design and facilitate the accreditation and implementation of the IPARD III 2022–2027 program. This program will enable investments totaling € 145 million.

Apart from financial assistance provided via national schemes and IPARD measures, the Ministry of Agriculture and Rural Development (MARD) has further strengthened the agricultural sector by facilitating access to banking financing for farmers and agribusinesses. This support is extended through the National Credit Guarantee Fund for Agriculture, which the EBRD offers in collaboration with the Albanian Government in a co-financing arrangement.

Significant strides have been made in enhancing the supporting infrastructure for agriculture, rural development and fisheries, marked by positive developments in irrigation, drainage, and flood protection systems, with a total financing of nearly 13.6 billion ALL (approximately 132 million euros). Significant improvements in production standards, control measures and traceability throughout the food chain have bolstered food safety standards, aligning closely with EU regulations. This includes the expansion of the food safety laboratory network and an increase in both the number of tests conducted and the number of accredited laboratories, ensuring the delivery of safer food to the market. The objective of these programs is to promote sustainable food production and enhance quality by encouraging a competitive and innovative agri-food sector in Albania.

6. Conclusion

This comprehensive review provides an analysis of food safety-related issues in Albania, presenting evidence on the criticality of food safety to the health, economic development and social well-being of the Albanian population. Some insights were provided about the food industry and agricultural production, which offer great export potential. The identification of the most vulnerable products highlights the need for targeted attention on specific sectors, particularly the milk and meat sectors.

Preliminary analysis of the existing legal framework and ongoing initiatives clearly shows that food safety is becoming a priority for the government; however, there is still much room for improvement. It would be beneficial if the regulatory environment were strengthened, effective enforcement mechanisms were established and public awareness were raised to a higher level.

The results of this review will help guide policymakers, key stakeholders in the food industry and health officials in their efforts to achieve improved food safety standards and economic opportunities in Albania. Moreover, it will contribute to the literature by consolidating existing knowledge, identifying gaps in current studies and suggesting areas for future investigation to improve food safety.

List of abbreviations

Abbreviation	*Explanation*
FERG	Foodborne Diseases Burden Epidemiology Reference Group
GVA	Gross Added Value
INSTAT	The Institute of Statistics of Albania
IPARD	Instrument of Pre-accession for Rural Development
MARD	Ministry of Agriculture and Rural Development
NFA	National Food Authority

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