

# Addressing food and nutrition insecurity in European countries: a scoping review of strategies and policies

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## ABSTRACT

**Background.** Food and nutrition insecurity (FNI) is a major public health concern, due to its association with a variety of adverse health outcomes.

**Objective.** The aim of this article is to provide a description of the strategies and policies to mitigate FNI in European countries, with a particular focus on economic, agriculture and social macro-areas.

**Methods.** A scoping review, following the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA) guidelines, was performed to map any study design, reporting policies and strategies that tackle FNI through food and nutrition security (FNS), access, utilization, or stability.

**Results.** The review identified 13 documents from institutional websites and 6 scientific articles, published from 2005 to 2022. The included papers highlight a multifaceted approach to addressing food insecurity, with policies covering several dimensions. The policies identified can be categorized into several key themes: agriculture and fisheries, nutrition, environment, sustainability, economy, stakeholder's views, COVID-19 pandemic and other crisis, vulnerable populations (women, children, migrants) and information campaigns. The review describes in detail several policies, examining their effectiveness and the challenges faced in ensuring that these initiatives result in tangible improvements in food access, affordability, and nutritional quality, particularly for vulnerable populations.

**Conclusions.** The results show a current lack of a specific and coherent policy framework on FNI at a European level. Policy fragmentation is mainly due to the multidimensional nature of FNI, which has interconnections with many different areas of the food system. The findings suggest a comprehensive approach, incorporating several policy measures and involving multiple stakeholders to ensure sustainable and equitable access to nutritious food.

## Key words

- food insecurity
- nutrition insecurity
- policy strategies
- sustainability

## BACKGROUND

Food and nutrition insecurity (FNI) can be defined as the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire foods in socially acceptable ways [1]. Conversely, food security (FS) exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life [2]. Nutrition security has long been defined by the Food and

Agriculture Organization (FAO) as “a situation that exists when secure access to an appropriately nutritious diet is coupled with a sanitary environment, adequate health services and care, in order to ensure a healthy and active life for all household members”.

The traditional four pillars of food security – availability, access, utilization, and stability – as well as two additional dimensions – agency and sustainability – are included in the six-dimensions framework for food security [3, 4].

Food security can be considered at different levels: individual, household, national, regional (continental) and global [5].

Definitions of food security and nutrition security reflect the contexts to which they are applied. If we consider the Sustainable Development Goal 2 (SDG 2: Zero Hunger) that aims to end all forms of hunger and malnutrition by 2030, it refers primarily to the availability of food in the world's poorest countries. As we move up the rankings of countries' wealth (or average income), the meaning of food and nutrition security shifts to the accessibility and quality of food for the most vulnerable segments of the population. In addition to the lower class, middle-income earners are similarly struck by impoverishment, particularly throughout times of crisis. This puts them in a vulnerable economic situation, which affects their access to food and places them at risk for a decline in their general health.

Food security is a major social determinant of health. Food security significantly impacts individual well-being and places a heavy burden on society, posing a serious public health challenge and straining healthcare systems. According to the FAO, food insecurity has been steadily rising since 2014. In 2019, around 2 billion people globally lacked regular access to safe and nutritious food, and by 2022, this number grew by 400 million (SDG Indicator 2.1.2) [2, 6]. The COVID-19 pandemic worsened global hunger, with 9.2% of the world population affected in 2022, up from 7.9% before the pandemic. The FAO also projects that nearly 600 million people will face hunger by 2030 – 119 million more than if the pandemic and the war in Ukraine had not occurred [7].

We have concentrated our research on the European region's countries since the topic of food security is not as well investigated in middle- and high-income countries as it is in low-income countries. Furthermore, the international crises, including the pandemic and the conflicts, have led to segments of the population sliding into poverty. In Europe, those most vulnerable to food insecurity include people with low incomes, women, the elderly, renters, single-person and lone-parent households, individuals with lower educational levels, people with disabilities, and those outside the labor market.

Food insecurity is linked to a range of health issues, including a higher risk of infectious diseases, poor oral health, injuries, and chronic conditions like diabetes, obesity, heart disease, mental health disorders, and other long-term illnesses [8, 9].

Addressing food insecurity requires comprehensive strategies that cover food production, distribution, affordability, nutrition education, social protection, and healthcare interventions. A holistic approach ensures that everyone has access to safe and nutritious food, as well as the information and resources needed to make healthy choices [10].

Within the European Union, a macro-regional strategy allows neighboring countries to collaborate on shared challenges and better utilize regional potential [11].

In public health, a strategy refers to an organized plan for addressing health issues at local, regional, or national levels, while a policy is a broader action plan, often less formalized than a strategy [12]. To tackle food and nu-

trition insecurity and improve public health, it is essential to design and implement policies and strategies that focus on vulnerable groups. This study aims to identify the strategies and policies European countries have adopted to address food and nutritional insecurity, with an emphasis on economic, agricultural, and social sectors.

## METHODS

This scoping review was carried out and reported following the "Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews" (PRISMA-ScR) Checklist [13]. The review protocol was submitted and registered on the Open Science Framework (OSF) portal [14] and is available at <https://doi.org/10.17605/OSF.IO/3254P>.

### Aim and research question

The research question for this scoping review was formulated following the PICOS framework as follows:

Population: all demographic groups residing in countries within the World Health Organization (WHO) European region;

- Intervention/exposure: food and nutrition insecurity;
- Comparison: not applicable;
- Outcome: policies and strategies implemented to address food and nutrition insecurity;
- Study design: any study design, report, or document providing insights into the review question.

### Scientific literature search

#### Search strings

Applying the "Humans", "English", filters, the search string employed for the PubMed database was:

((*"Food Supply"*[Mesh] OR *"food security"* OR *"food insecurity"* OR *"food access"* OR *"food availability"* OR *"household food insecurity"* OR *"household food security"* OR *"nutrition security"* OR *"nutrition insecurity"*) AND (*policy* OR *mitigation* OR *strategy* OR *measures* OR *management* OR *guideline* OR *regulation* OR *law* OR *legislation* OR *framework*) AND *Europe*).

The search string employed for the Scopus database was:

((*{food security}* OR *{food insecurity}* OR *{food access}* OR *{food availability}* OR *{nutrition security}* OR *{nutrition insecurity}*) AND (*{policy}* OR *{strategy}* OR *{regulation}* OR *{legislation}* OR *{law}* OR *{guideline}* OR *{framework}*) AND *Europe*)

The search string employed for the Web of Science (WoS) database was:

ALL=(*"Food Supply"* OR *"food security"* OR *"food insecurity"* OR *"food access"* OR *"food availability"* OR *"household food insecurity"* OR *"household food security"* OR *"nutrition security"* OR *"nutrition insecurity"* ) AND ALL=(*policy* OR *mitigation* OR *strategy* OR *measures* OR *management* OR *guideline* OR *regulation* OR *law* OR *legislation* OR *framework*) AND ALL=(*Europe*)

#### Eligibility criteria

All articles retrieved from the search strategy were imported to the Rayyan software [15] and duplicates were removed. The initial screening, based on title and abstract, was conducted independently by two research-

ers. At each stage, researchers worked in a double-blind manner, and any discrepancies were resolved through re-examination of the study or document followed by discussion. If necessary, another member of the review team was consulted to reach a consensus.

#### *Inclusion and exclusion criteria*

Studies of any design that reported on policies or strategies aimed at addressing food and nutrition security, implemented in countries within the WHO European region, were included. Articles that did not meet these inclusion criteria were excluded.

#### **Desk research**

Desk research was carried out on a curated selection of websites from international agencies and government or non-government organizations. These entities were chosen for their prominence in addressing food and nutrition insecurity, making them highly likely to publish relevant material. The organizations were identified as key sources of information pertinent to the topics under review. The documents published by these entities ranged from guidelines and consultative reports to mandatory laws and regulations. For example, documents from the FAO and WHO, as United Nations bodies, primarily serve policy-related functions, while those from the European Commission typically represent legally binding laws and regulations.

The agencies and organizations included in the search were Community Research and Development Information Service (CORDIS), European Union (EU) Publications, United Nations iLibrary, FAO, European Commission, WHO, WHO Regional Office for Europe, United Nations Children's Fund (UNICEF), World Food Programme (WFP), and the US Department of Agriculture. A complete list of the websites used for the desk research is provided in the *Supplementary Material available online*. When institutional websites referenced secondary sources, those sources were also reviewed.

The search was conducted using keywords such as food security, nutrition security, food insecurity, nutrition insecurity, strategy, policy, and Europe. No temporal limitations were applied, ensuring a thorough exploration of available resources.

#### **Data extraction**

Data coming from both the literature search and desk research were reported into a dedicated Excel data extraction form.

The following information was retrieved for each document: first author/official organizations/agency/institution, title, publication year, country, study design, target population, sample size, policy/strategy characteristics (type, duration, setting), measure of effectiveness/impact of the policy/strategy.

A qualitative synthesis of the identified data was performed; the results were summarized through an analysis of the included studies and documents.

## **RESULTS**

### **Characteristics of included studies and documents**

The scientific literature search and desk research

yielded a total of 2,921 articles and 29 documents, respectively. Among these, 6 articles [16-21] and 13 [22-34] documents met the inclusion criteria and were ultimately included in the review (see *Figure 1, Table 1* and *Table 2*).

#### *Scientific literature search*

The six included papers from the scientific literature spanned a timeframe from 2016 to 2022 and encompassed a variety of study types, including one review, case study, dynamic panel analysis, econometric analysis, qualitative study, and quasi-experimental study, respectively. Regarding the primary macro areas addressed, two papers focused on “*agriculture initiatives*”, another two papers examined “*school meals*”, one paper explored “*social, environmental, economic, and ethical dimensions*” of food insecurity, and one paper delved into “*legislation*” implications. In terms of food insecurity dimensions, three papers addressed the issue of “*food availability*”, while the remaining three papers discussed issues related to “*access to food*”. Additionally, one paper also discussed the “*utilization of resources*” in addressing food insecurity (*Table 1*).

#### *Desk research*

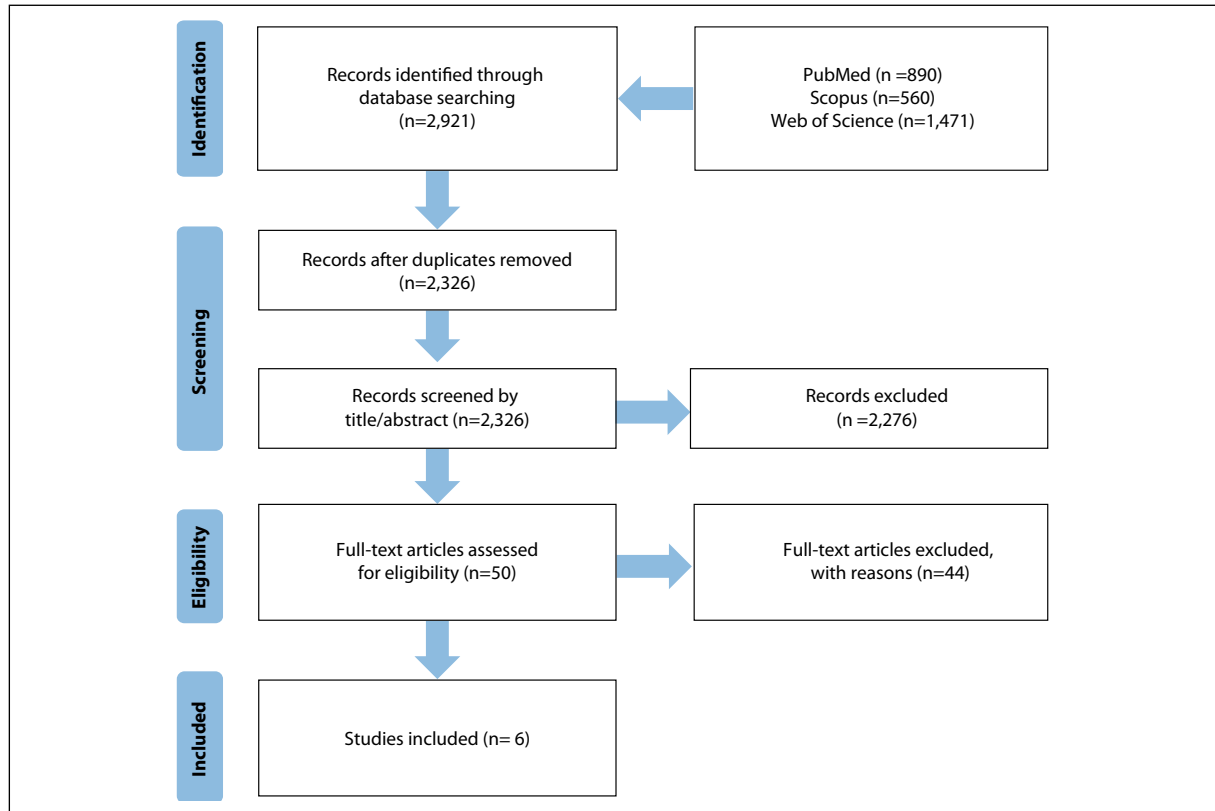
The thirteen included documents were published in a timeframe from 2005 to 2022 (*Table 2*). The origin/source of the documents included FAO, International Fund for Agricultural Development (IFAD), UNICEF, WFP, WHO; European Commission; United States Mission to the European Union (USEU); Department for Environment, Food and Rural Affairs of the UK; Russian Federation. Eight documents focused on availability of food, six addressed issues related to agency in food access, four documents also discussed the utilization of resources, three addressed concerns about food sustainability, and two addressed access to food. The primary settings of policy application were as follows: for five documents, “*agriculture initiatives*”; for four documents, “*legislation*”; for four documents, “*education*”; for three documents, the topic was “*trade*”; for two documents, the topic was “*marketing law*”; for two documents, “*health promotion*”; for one document, “*school meals*”; for one document, “*crisis response*”; and for one document, “*innovation*.”

#### **The policies' themes**

Considering the vast types of documents that were included in the review and the different themes that the policies discussed, we report the results based on these categories: agriculture and fisheries, nutrition, environment, sustainability, economy, stakeholder's views, COVID-19 pandemic and other crisis, vulnerable populations (women, children, migrants), information campaigns. However, it is important to highlight that many documents concerned more than one theme, since the various aspects and dimensions of food and nutrition insecurity are correlated between them.

#### *Agriculture and fisheries policies*

The analyses of the effects of agricultural production, land use, farms, and trade on Food and Nutrition Se-



**Figure 1**  
Flowchart of the selection process based on the scientific literature research.

**Table 1**  
Characteristics of studies identified by the scientific literature search

Authors [reference]	Country	Target population	Study design	Strategy or policy description (intervention)	Macro-area (economic, agriculture, nutrition...)	Food security dimensions	Results (strategy or policy outcome or impact)
Rutten <i>et al.</i> , 2018 [16]	Several European countries	European consumer	Review	This paper presents the vision of the <i>Sustainable EU Food and Nutrition Security (SUSFANS)</i> project on how to advance research in support of policy and practice on Sustainable <i>Food and Nutrition Security (FNS)</i> in the European Union, as developed by its partners from academia, public and private sectors.	Social, environmental, economic, ethical	Availability	The conceptual framework and modelling of sustainable FNS in the European Union can be used to provide foresight on future pathways for food production and consumption.
Toma <i>et al.</i> , 2021 [17]	Poland, Romania, Latvia	Small farms in Latvia, Poland, and Romania	Case study (SWAT based data synthesis and interpretation)	<i>Common Agricultural Policy (CAP)</i>	Agriculture initiatives, legislation	Availability	Issues for small farms to contribute to food and nutrition security: (1) market integration through short supply chains, hygiene regulation and training, and quality regulations (2) agricultural knowledge and innovation systems for small farms, including the farm advisory systems, (3) rural infrastructure and services, innovative digital services, synergies and alignment with cohesion funds and (4) simplification of agri-environment and climate measures.

Continues

**Table 1**  
Continued

Authors [reference]	Country	Target population	Study design	Strategy or policy description (intervention)	Macro-area (economic, agriculture, nutrition...)	Food security dimensions	Results (strategy or policy outcome or impact)
Fusco <i>et al.</i> , 2020 [18]	Italy	European countries	Dynamic panel analysis	The <i>Common Agricultural Policy</i> (CAP, 2014-2020) provides economic aid to farmers to improve agricultural productivity and ensure stable and inexpensive food supply. In order to achieve adequate levels of food security, many countries have recognized the importance of trade policies (trade openness), developing reforms to reduce taxes on incoming goods and contributing to the growth of the international market aimed at eradicating poverty and improving the availability of food.	Agriculture initiatives	Availability	From the results of the dynamic panel analysis emerged that commercial opening has, on average, a statistically significant net positive impact on the food security of European countries, both from an energy and nutritional point of view. Based on the results obtained, in order to ensure quantity and quality of food supplies, it would be desirable for the European Union to adopt a liberal trade policy, which should represent a complement and not a substitute for domestic development policies.
Jensen <i>et al.</i> , 2016 [19]	Denmark	Citizens	Econometric analysis	In Denmark, a tax on saturated fat in food products was introduced on the 1st of October 2011, as a supplement to existing taxation on sugar, chocolate, candy, ice cream and soft drinks.	Nutrition	Access	Minimising access to non-nutritional food could play a crucial role in nutrition and food security.
Long <i>et al.</i> , 2017 [20]	United Kingdom	Parents of children who attend holiday clubs	Qualitative study	Holiday clubs, which provide free meals (usually breakfasts, lunches, and snacks) for children, and sometimes parents, when children are not in school. Food may be provided in a variety of settings, including schools and community groups. These programmes also provide a space for parents and children to socialise, learn and participate in a variety of healthy activities. Many holiday clubs offer time for exercise, play and nutrition skills training for children and their families, as well as opportunities for other members of the child's household (e.g., parents and siblings) to visit at least once per week.	Nutrition	Access	The holiday clubs are largely focused on households that face food insecurity: a large percentage of children attending holiday clubs (42%, 16 out of 38 respondents) came from households that could be defined as suffering from food insecurity, and a significant number of children in these programmes (24%, 9 out of 38 respondents) came from households that were not only food insecure, but also faced frequent episodes of hunger. The results of this study also suggested that children who came from food insecure households disproportionately benefited from the holidays clubs, when compared with children who came from food secure households.
Crilley <i>et al.</i> , 2022 [21]	United Kingdom	Children aged 7-16	Quasi-experimental study	Holiday clubs have the intention of providing children with nutritious food to replace their free school meal, alongside activities, during the school holidays. In government-funded schools in England, the <i>School Food Standards</i> define minimal nutritional standards to ensure children are provided with nutritious meals. To meet these standards, school caterers are provided with advice on the types of foods to serve and how much to serve. These standards aim to help children to develop healthy eating habits.	School meals	Access, utilization	The results of the current study show that children have a better diet quality score on an attending club day compared to a non-attending club day, highlighting that children are more likely to adhere to the United Kingdom <i>Eatwell Guidelines</i> when they attend the club compared to days they do not attend. Greater adherence would be expected to bring numerous health benefits at a population level, including reduced prevalence to type 2 diabetes, lower rates of cardiovascular disease, and colorectal cancer and increased life expectancy.

SUSFANS: Sustainable EU Food and Nutrition Security; FNS: Food and Nutrition Security; CAP: Common Agricultural Policy; SWAT: Soil and Water Assessment Tool.

**Table 2**  
Characteristics of documents retrieved from the desk research

Title [reference]	Source (institution)	Publication year	Country	Food security dimensions	Setting	Strategy or policy description (intervention)	Target population	Results (strategy or policy outcome or impact)
World Health Organization (WHO) European Action Plan for Food and Nutrition Policy 2007-2012 [22]	WHO Regional Office for Europe	2008	European countries	Availability, access, utilization, agency	Health promotion, school meals, legislation	The document encompasses 6 action areas including one targeted on mothers and children with the following aims: promoting optimal foetal nutrition by ensuring maternal nutrition from pre-conception, providing advice on diet and food safety to pregnant women, providing micronutrient supplementation as required; promoting and supporting breastfeeding; promoting appropriate and safe complementary feeding of infants and young children; taking community-based initiatives to ensure adequate provision of complementary foods, sufficient micronutrient intake and proper nutritional care of infants and young children; promoting development of pre-school and school nutrition and food safety policies and programs, guidelines for healthy school meals, healthy food provision in canteens. Other aims from other areas include policy actions on trading, economy and legislation.	Mothers, children, general population	The sixth action area includes the creations of surveillance systems for nutritional status, food availability and consumption, physical activity, and food safety. The <i>Health Impact Assessment</i> method is used to evaluate the impact of programs and policies.
Protecting children from the harmful impact of food marketing: policy brief [23]	WHO	2022	Global	Agency	Marketing law	Governments are urged to implement comprehensive policy approaches to limit the marketing of foods that contribute to an unhealthy diet. In Turkey and Ireland restrictions are applied for unhealthy food marketing to children aged under 18 years. In Ireland, commercial communications for unhealthy food products and/or services are not permitted in children's programs. In Turkey, the <i>Regulations on Principles and Procedures of Broadcasting Services</i> restricts advertising of unhealthy food and beverages before, during or after children's television programs: if such food is advertised during non-children's programs, health promotion messages must be displayed.	Children	Reduce children's exposure to such marketing in order to provide the best protection for all children.

*Continues*

curity (FNS) were thoroughly considered by the papers included in the review. The *Sustainable EU Food and Nutrition Security* (SUSFANS) project provided an illustrative example through the EU-focused agricultural sector model called *Common Agricultural Policy Regionalised Impact* (CAPRI). CAPRI could provide detailed agricultural input and responses to climate change, water availability and demand, and also offered insights into agricultural prices and the environmental impacts of agriculture [16].

The policy measures integrated within the *Common Agricultural Policy* (CAP) of the EU held potential for fostering the contribution of small farms to FNS in Central and Eastern Europe (CEE). In a review of European rural and agricultural policies in CEE, the authors proposed eight "themes" that should be incor-

porated into these policies: people and communities; better infrastructure and connectivity; access to land; access to affordable credit; agricultural knowledge and innovation systems; availability and quality of farm labor; natural resources and climate; products, markets and marketing [17].

At EU level, the *Farm to Fork Strategy*, published by the European Commission on May 2020, delineated 27 actions aimed at transforming the way EU food was produced, processed, transported, presented, and sold, comprehensively addressing the challenges of sustainable food systems. Specifically, the strategy sought to reward and strengthen farmers, fishers, and other operators in the food chain who had already transitioned to sustainable practices, while also facilitating the transition for others and creating additional opportunities

**Table 2**  
Continued

Title [reference]	Source (institution)	Publication year	Country	Food security dimensions	Setting	Strategy or policy description (intervention)	Target population	Results (strategy or policy outcome or impact)
European strategy for child and adolescent health and development – Action tool [24]	WHO Regional Office for Europe	2005	European countries	Access, utilization, agency	Education, work legislation, marketing law	The tool is composed of 8 tables. The first regards maternal and newborn health and the second is about nutrition. Each table is divided in several priorities, and for each priority are presented three levels of action: cross sector, health system and health services actions. Some of those actions are aimed to fight malnutrition of pregnant women and mothers, promote quality improvement, continuous education and equitable access to antenatal care staff and services; promotion and support to exclusive breastfeeding, through the legislation improvement to protect working mothers, the stimulation of media to represent it as the norm, the health professionals training; malnutrition and micronutrient deficiencies prevention in at risk infants, also in kindergartens, schools and day care centers; regulations to avoid distribution of unhealthy snacks and soft drinks in school cafeterias, to incorporate nutritional education in school curricula and to regulate food advertising for children and adolescents in the media.	Mothers and neonates, children, and adolescents	Monitoring and evaluation of maternal and newborn health services and of nutritional status.
European Food and Nutrition Action Plan 2015-2020 [25]	WHO Regional Office for Europe	2015	European countries	Agency, utilization	Health promotion, education	Promote policies aimed at influencing food production, marketing, availability, affordability, public awareness, health-care professionals' knowledge. Specific aims are: addressing food consumption habits; promoting correct nutrients intake; reducing food and nutrition insecurity for certain vulnerable populations; investing in nutrition at the earliest possible stage, before and during pregnancy; improving the citizens ability to make healthy choices; encouraging the use of social media and new techniques to promote healthier food choices and lifestyles.	Mothers and neonates, children, and general population	Create healthy food and drink environments. Promote the gains of a healthy diet throughout life, especially for the most vulnerable groups. Reinforce health systems to promote healthy diets. Support surveillance, monitoring, evaluation, and research. Strengthen governance, alliances, and networks to ensure a health-in-all-policies approach.

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for their businesses. Moreover, it underscored the importance of establishing a conducive food environment to promote the adoption of healthy and sustainable diets, which could enhance consumers' health and quality of life while reducing society's health-related costs [28, 29, 31].

The European Commission monitored the implementation of the *Unfair Trading Practices Directive* by member states, collaborating with co-legislators to enhance agricultural rules that strengthened the position of farmers (e.g., producers of products with geographical indications), their cooperatives, and producer organizations in the food supply chain. The marketing standards were revised to “support the adoption and distribution of sustainable products in agriculture, fisheries, and aquaculture, while strengthening the integration of sus-

tainability criteria and considering their potential impact on reducing food loss and waste” [29].

#### Nutrition policies

Based on individual-level data from five member states (Denmark, Netherlands, Czech Republic, Italy, France), the SUSFANS project modelled the nutritional adequacy of diets using EU dietary guidelines and nutrient reference values developed by the European Food Safety Authority. A range of sustainability metrics was added to these individual food intake patterns to model current and future diets that were environmentally “Sustainable, Healthy, Affordable, Reliable, and Palatable” (SHARP) [16].

As for nutrition quality, the Commission highlighted that harmonized mandatory front-of-pack nutrition

**Table 2**  
Continued

Title [reference]	Source (institution)	Publication year	Country	Food security dimensions	Setting	Strategy or policy description (intervention)	Target population	Results (strategy or policy outcome or impact)
Better food and nutrition in Europe: a progress report monitoring policy implementation in the WHO European Region [26]	WHO	2018	European countries	Agency, utilization	Legislation, education	Promoting healthy diets in school settings, through the limitation of <i>High in saturated Fat Salt and Sugar</i> (HFSS) products and the inclusion of free or subsidized fruits and vegetables, of food or nutrient based standards for the foods and meals available in schools, of nutrition education and skills to increase nutrition literacy; acting on taxes and subsidies to influence purchasing behaviors; promoting and supporting breastfeeding with several measures, including full implementation of the <i>International Code of Marketing of Breast-milk Substitutes</i> , effective training of health workers and peer counsellors to provide support to all mothers.	General population	Questionnaire results: WHO European region countries have adopted measures to promote healthy diets in schools (96%). 58% of countries have a school fruit and vegetable scheme, 23% countries reported a ban on vending machines on school premises, 25% reported salt covered under the mandatory standards in schools and 58% of countries reported standards for foods and beverages served for lunch in school canteens and cafeterias. A growing number of countries in the European Region have introduced health-related taxes on specific foods or nutrients with the objective of influencing what people buy and eat. 98% of countries reported that they provided counselling on breastfeeding, mainly in hospitals (65%) and care clinics (49%); 73% of countries were implementing the <i>Baby-friendly Hospital Initiative</i> .
The state of food security and nutrition in the world 2022 [27]	International Fund for Agricultural Development (IFAD), United Nations Children's Fund (UNICEF), Food and Agriculture Organization (FAO), and WHO	2022	European countries	Availability, sustainability	Agriculture initiatives	The European cities of Copenhagen and Vienna implemented procurement policies requiring a given percentage of food to be organic. Recent discussions of agricultural policy reform in the European Union (EU) ( <i>Farm to Fork Strategy</i> ) and the United Kingdom (UK) ( <i>New Agriculture Bill</i> ) have stressed the importance of considering the health and environmental sustainability of food production as desirable public goods that are to be supported. A "public money for public goods" approach could render subsidies to nutritious foods that are important for public health and environmental sustainability politically more feasible than past production-centred approaches. For example, the <i>European Union's Common Agricultural Policy</i> took up around 35% of the European Union's budget in 2020. In Tajikistan, the <i>Livestock and Pasture Development Project II</i> aimed at enhancing livestock productivity and rural livelihoods while reducing the ecological footprint of livestock herds on pastures. The project established rotational pasture plans, water points, veterinary services, breeding techniques and fodder production, alongside capacity building and strengthening of social capital implemented through <i>Pasture Users' Unions</i> .	General population	The policies adopted by Copenhagen and Vienna stimulated an increased supply of organic fruits, vegetables, and other products. <i>The Livestock and Pasture Development Project II</i> in Tajikistan increased livestock weight by 30%, milk production by 99%, and generated higher income from livestock by 110%.

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**Table 2**  
Continued

Title [reference]	Source (institution)	Publication year	Country	Food security dimensions	Setting	Strategy or policy description (intervention)	Target population	Results (strategy or policy outcome or impact)
EU food supply and food security – contingency plan [28]	European Commission	2021	European countries	Availability	Agriculture initiatives	The <i>Farm to Fork Strategy</i> includes the development of a contingency plan to ensure the EU's food supply and food security in the event of future crises. Building on the lessons learned from the COVID-19 pandemic and other recent events, the Commission plans to develop a set of procedures to be followed in times of crisis. This includes establishing an EU crisis response mechanism to effectively prepare and respond to critical events that could threaten the EU's food security.	Vulnerable to food security population	Enhance the knowledge of and mitigate to the extent possible the vulnerabilities and risks and to create and maintain the procedural capability to respond in a swift, coordinated, and cooperative way relying on a mix of EU policies that support the resilience of the system and provide crisis management tools.
A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system [29]	European Commission	2020	European countries	Availability, sustainability	Agriculture initiatives, crisis response	The Commission will step up its coordination of a common European response to crises affecting food systems in order to ensure food security and safety, reinforce public health and mitigate their socio-economic impact in the EU. The plan will set up a food crisis response mechanism coordinated by the Commission and involving Member States. It will be comprised of various sectors (agriculture, fisheries, food safety, workforce, health and transport issues) depending on the nature of the crisis.	General population	The Commission invites all citizens and stakeholders to engage in a broad debate to formulate a sustainable food policy including in national, regional, and local assemblies.
Food Security Doctrine of the Russian Federation [30]	President of the Russian Federation	2020	Russian Federation	Availability	Trade	The new <i>Doctrine</i> lists achievement of a positive balance of trade in agricultural products and raw materials and food, as well as fulfilment of the export potential taking into account the priority of self-sufficiency in such goods domestically and within the Eurasian Economic Union among the key tasks for ensuring food security.	General population	The strategic goal of ensuring food security is to provide the country's population with safe, quality, and affordable farm products, raw materials and food in the quantities that satisfy the balanced food consumption rates.
EU Green Deal [31]	United States Department of Agriculture – Foreign Agricultural Service	2021	European countries	Availability, sustainability	Agriculture initiatives	This quarterly report covers January through March 2021 and provides details on the status of the <i>EU Green Deal</i> objectives and strategies including the <i>Farm to Fork Strategy</i> , <i>Biodiversity Strategy</i> , <i>the Climate Target Plan</i> , <i>the EU Methane Strategy</i> , and <i>the Circular Economy Action Plan</i> .	General population	Not disclosed

Continues

labelling at the EU-level could inform consumer decisions and should be integrated on FNS policies. Additionally, the *EU Action Plan for Organic Production* suggests that national organic action plans – focused on boosting consumption, increasing production, and enhancing sustainability – could promote organic farming and consumption [31].

The WHO (2018) report “*Better food and nutrition in Europe: a progress report monitoring policy implementation in the WHO European Region*” emphasized that promoting healthier food availability and limiting “*High Fat, Salt, and Sugar*” (HFSS) products could be achieved

through strategies like subsidizing fruits and vegetables, modifying food presentation at purchase points, enhancing nutrition education, and implementing food standards in schools. Schools played a vital role in fostering healthy eating habits, with evidence showing that nutrition education is most effective when it includes practical skills like cooking and food literacy rather than just providing information. In this report particular attention is paid to malnutrition, considering its double burden referring to the coexistence of undernutrition with overweight and obesity or diet-related Non-Communicable Diseases (NCDs). Pregnant and

**Table 2**  
Continued

Title [reference]	Source (institution)	Publication year	Country	Food security dimensions	Setting	Strategy or policy description (intervention)	Target population	Results (strategy or policy outcome or impact)
Food Security Strategy of the Republic of Moldova for the period of 2023-2030 [32]	FAO	2022	Republic of Moldova	Availability	Agriculture initiatives, trade	Strategic vision and priorities of the Government regarding ensuring the country's food security, the development of sustainable food and management systems of risks in the context of international crisis situations.	General population	The specific objectives of the <i>Strategy</i> are: improving the governance of the field of food security in order to prevent and more effectively manage potential food insecurity crises; facilitation of international trade with agro-food products and means of production necessary for the agricultural sector; development of an efficient and safe local market; increasing production and productivity in the agrifood sector; development of mechanisms to reduce security risks food for vulnerable groups.
Seasonal migration in Europe and Central Asia in the context of the COVID-19 pandemic [33]	FAO	2021	Europe and European Central Asia	Availability	Social legislation	In the Republic of Moldova, was set a minimum unemployment benefit per month mostly to the benefit of returned migrant workers. The National Fund for the Development of Agriculture and Rural Environment has included returning migrant workers in the list of applicants for advance start-up grants. United Nations agencies, jointly with state agencies, have developed a socio-economic roadmap to respond to the consequences of COVID-19.	Migrant workers engaged in seasonal employment	Immediately formulate measures to support the socio-economic reintegration of returnees and improve the living conditions of their families. Develop policies and programs to help the socio-economic impact of COVID-19 on returnees interested in engaging in agricultural work. Assess how to make better use of remittance flows to generate new employment opportunities in the rural and agricultural sectors. Engage in short-term recovery actions to address the food insecurity problems of repatriates and remittance-receiving households.
A plan for public procurement: enabling a healthy future for our people, farmers and food producers [34]	Department for environment, food, and rural affairs of UK	2014	UK	Agency	Trade, innovation, education	An online portal or 'marketplace' has been established to allow supply chains, caterers, and customers to trade. It is particularly focused on providing a place where small and medium enterprises are better able to supply the public sector. Established a new <i>Action Group</i> which brings together the farming and food supply industries with <i>Research Technology Organizations</i> and government funders to identify and advance the innovation required to improve competitiveness. A <i>Food Procurement Information Service</i> will provide a helpline service, including a website with information, and details of workshops to support catering managers and food procurers in the public sector, and food producers and processors wishing to supply it.	Farmers, providers, chain supply in UK	A balanced scorecard and toolkit for procurers: an enabling approach that is consistently applied for catering and food procurement across government. A strong partnership: across the public, private sectors and beyond. Enduring action: for the longer term.

lactating women, along with young children, were particularly vulnerable to micronutrient deficiencies. Efforts to combat acute malnutrition included maternal and antenatal care improvements, support for exclusive breastfeeding, appropriate complementary feeding, and nutrient-rich dietary interventions [26].

The European Commission prioritized reversing rising overweight and obesity rates in the EU by 2030. The aim of the *Farm to Fork Strategy* was to transition to a more plant-based diet with less red and processed meat and more fruits and vegetables, reducing health risks and environmental impact. This strategy aimed

to reduce food system's climate footprint, strengthen its resilience, and ensure food security, nutrition, and public health [26].

#### *Environmental policies*

Toma *et al.* illustrated the importance of incorporating environmental considerations into policies concerning FNS through a case study of Romania. The Romanian authorities had introduced a pilot agri-environment-climate measure in 2014-2020 designed to “promote farm-level adaptation to water scarcity in areas facing the most extreme effects due to climate change advocating for the simplification of agri-environment and climate measures” [17].

Climate changes are likely to have impacted agriculture and food; hence, FNS policies should have encompassed climate aspects such as the EU *Climate Law*, which aimed for climate neutrality by 2050 while achieving net-zero greenhouse gas emissions and reducing net greenhouse gas emissions by at least 55% compared to 1990 levels by 2030 [31].

Furthermore, the *European Green Deal* is a policy that aims to make Europe the first climate-neutral continent by 2050, greening and transforming the EU economy to become carbon neutral. It maps a new, sustainable, and inclusive growth strategy to “boost the economy, improve people's health and quality of life, care for nature, and leave no one behind” [29, 31].

#### *Economic policies*

Regarding food demand and supply, the SUSFANS report on the AgriPrice4Cast project, which provided seasonal prices based on short-term yield forecasts, was noteworthy. The seasonal price forecasts for the EU allowed for the planning of emergency measures in cases of harvest outages in the rest of the world and/or the design of storage and other stabilization measures [16].

Trade openness should be a key element in policy-making. This is supported by a study conducted by Fusco *et al.*, which found that increasing trade had a positive effect on food security in European countries – improving both the reliability of food supply and the quality of nutrition [18].

The WHO (2018) report highlighted the significant role of price in food choices, with taxes and subsidies influencing purchasing behavior and encouraging healthier eating. This approach has gained interest as a tool to improve diets and prevent NCDs. Common strategies include taxing sugar-sweetened beverages and trans-fat-rich foods. Denmark led the way in 2003 by setting a national limit on industrial trans fats, and by 2018, 15 countries had similar regulations [26].

The analysis of the *Food Security Strategy* of the Republic of Moldova showed that low-income levels among the population, inadequate pension and social benefits, and the continual unchecked rise in food prices did not ensure food security in its most critical dimension - the affordability of food. This underscored the imperative to bolster the country's economy [32].

In 2020, the President of the Russian Federation signed the *Food Security Doctrine* for Russia, replacing the *Doctrine* adopted in 2010. The document served as a strategic plan outlining goals, objectives, and key di-

rections of the government's socioeconomic policy to guarantee the food security of the Russian Federation. It provided a framework for developing regulatory legal acts concerning food security, agricultural, and fishery sectors, taking into account the recommendations of the FAO regarding the marginal propensity of imports and food stocks [30].

#### *Sustainability of food and nutrition security*

Rutten *et al.* focused on the sustainability of FNS, dissecting it into three dimensions: economic/business sustainability, social/cultural/health sustainability, and environmental/climate sustainability. Factors influencing FNS sustainability encompassed primary producers, food chain actors, and consumers. Metrics for evaluating the contribution of the European agricultural and fisheries sectors to FNS included production quantities, prices, and nutrient availability and supply, as well as the income of entrepreneurs (economic sustainability), resource use, environmental externalities (environmental sustainability), and trade in food and nutrients. Notably, food loss and waste at various stages of the food chain significantly contributed to the environmental pressure exerted by the food system [16].

Assessing the status and sustainability of FNS in the EU, requires models that project food and nutrition supply and demand while accounting for market dynamics, policy impacts, and sustainability factors. The SUSFANS toolbox addresses these requirements by integrating advanced micro-level models of consumer nutrition behaviour with macro-level models of food demand and supply [16].

The British Department for Environment, Food, and Rural Affairs emphasized the importance of supply chains in food security by launching an online marketplace to facilitate trade among suppliers, caterers, and customers. They also established a new action group to drive innovation by connecting the farming and food supply industries with research organizations and government funders to identify. Additionally, a *Food Procurement Information Service* was launched providing a helpline service, a resource website, and workshops to support public sector catering managers, food procurers, producers, and processors [34].

The WHO Regional Office for Europe launched the *First Action Plan for Food and Nutrition Policy* (2000-2005) to help EU member states reduce food-related illnesses and foster a sustainable environment [35]. This was followed by two additional action plans: the *2007-2012 Action Plan* which outlined six priority areas to tackle primary public health challenges concerning nutrition, and the *2015-2020 Action Plan*, a comprehensive strategy aimed at reducing food-related diseases, strengthening food system governance, and improving population nutrition [25, 35].

#### *Stakeholders' views*

Policy guidance concerning sustainable FNS in the EU was recommended to incorporate stakeholders' perspectives across its diverse dimensions in defining objectives and indicators, as well as in determining the relative importance weights for each indicator [16].

Furthermore, fostering cooperation and partnerships among various stakeholders was considered crucial. This included collaboration between central and local public administration authorities, non-governmental organizations, and international development partners. Such partnerships facilitated holistic and coordinated efforts towards achieving sustainable FNS goals [32].

#### *Food security and COVID-19 pandemic and other crises*

During the early stages of the COVID-19 pandemic, several challenges arose that disrupted the normal functioning of the food supply chain and posed risks to food security. These challenges included border controls, which restricted the free movement of people and goods, hampering the operation of the single market and affecting consumers. Additionally, market disruptions occurred as demand for certain products significantly declined.

In response to these challenges, the European Commission recognized the need for a coordinated approach to ensure food security, safety, and public health while mitigating the socio-economic impacts within the EU. To address this, the *Farm to Fork Strategy* incorporated a *Contingency Plan* to safeguard food supply and security across the EU during crises. The plan established an EU-wide food crisis response mechanism coordinated by the European Commission and involving member states. It aimed to address sectoral vulnerabilities in agriculture, fisheries, aquaculture, food safety, labor, health, and transport. Functioning as a permanent forum, this mechanism would facilitate coordination at the EU level, with participation from member states and potentially stakeholders from the food supply chain. In a crisis, the forum would serve as the primary operational body to coordinate the response [28, 29].

#### **Focus on particularly vulnerable categories**

##### *Children*

Food-related policies prioritized addressing children's needs, recognizing them as a vulnerable group affected by food insecurity. In 2005, the WHO Regional Committee for Europe adopted the *European Strategy for Child and Adolescent Health and Development*, which identified seven priority areas, including maternal and newborn health and nutrition, and recommended actions across three levels: cross-sectoral policies, health systems, and health services. A toolkit accompanied the strategy, offering guidance for policy development. In terms of nutrition, the strategy outlined six key objectives: ensuring adequate nutrition for pregnant women and mothers, promoting and supporting exclusive breastfeeding, preventing malnutrition and micronutrient deficiencies, addressing overweight and obesity, promoting oral and dental health, and ensuring appropriate monitoring and evaluation of nutritional status [24].

Additionally, research by Long *et al.* emphasized the potential of holiday clubs in England to reduce food insecurity, highlighting their importance for food-insecure households and advocating for equal access to such services [20].

The 2018 WHO report *Better food and nutrition in Europe* highlighted the critical importance of early-life

nutrition for establishing growth patterns, feeding practices, taste preferences, and dietary habits. It emphasized that children who had been breastfed were less likely to become overweight or obese or to develop type-2 diabetes in adulthood. The report recommended exclusive breastfeeding for the first six months and continued breastfeeding up to two years. However, the European Region had the lowest breastfeeding rate among all WHO regions. To promote breastfeeding the report called for the full implementation of the *International Code of Marketing of Breast-milk Substitutes*, alongside legislation, monitoring, and health workers training. The *Baby-Friendly Hospital Initiative* also played a key role in supporting breastfeeding [26]. Another key focus of food policies was protecting children from the harmful effects of marketing unhealthy foods high in fat, sugar, or salt. In 2022, WHO, in collaboration with UNICEF, published *Protecting children from the harmful impact of food marketing: policy brief*. This document aimed to guide policymakers on how to protect children from unhealthy food marketing, particularly by enforcing specific regulations on food advertising [23].

##### *Women*

The *Better food and nutrition in Europe* (WHO, 2018) report, highlighted the growing focus on maternal nutrition before and during pregnancy, particularly its impact on the later risk of NCDs and obesity in children. It emphasized that both undernourishment and overnutrition during pregnancy required urgent attention.

The report also noted the coexistence of overnutrition (due to excessive energy intake) and undernutrition (stemming from micronutrient deficiencies) in pregnant women, particularly in Eastern Europe. Pregnancy was considered an opportune time to monitor nutritional status and promote healthy behaviours. Vitamin and supplementation programs were highlighted as an essential component of care for pregnant women and women of reproductive age across many countries in the region [26].

##### *Migrants*

Migration status is closely linked to poverty, which can limit social networks and impact access to food security programs. These programs often benefit those with stronger social connections rather than those from truly food-insecure households [20]. Also, periods of crisis often disproportionately affect migrant populations. In response to the socio-economic challenges posed by COVID-19, several countries in Europe and Central Asia implemented measures to mitigate the pandemic's impact on migrants, recognizing migration as a critical factor influencing food security. For instance, the Republic of Moldova, set the minimum unemployment benefit at MDL 2,775 per month (USD 157), and developed a socio-economic response plan in collaboration with UN agencies. Similarly, Tajikistan introduced a strategy to support migrants, women, and youth, while digital platforms were created to connect these groups for advocacy and learning. In Kyrgyzstan, the government provided food and shelter to those in extreme need and establishing a migrant support fund [33].

### Information campaigns

The *Better food and nutrition in Europe* report (WHO, 2018) emphasized the importance of dietary guidelines from reliable sources which provide accessible advice on healthy eating, portion sizes, and commonly consumed foods [26].

Front-of-package labelling was highlighted as a key tool for conveying nutritional information, particularly for complex processed foods, and influencing consumer choices. The European Commission proposed harmonizing mandatory front-of-pack nutrition labelling and extending mandatory origin labels to certain products [26, 29]. The *French Nutri-Score* labelling system has emerged as a frontrunner, with several countries, including France, Belgium, Spain, the Netherlands, and Germany, already adopting it domestically. As a means to reduce food waste and loss in the EU, the Commission also announced that it would propose revisions to EU rules relating to date marking (“use by” and “best before” dates) [31].

### DISCUSSION

This scoping review aimed to identify the strategies and policies European countries have adopted to address food and nutritional insecurity, with an emphasis on economic, agricultural, and social sectors. The results highlight the complexity of policy approaches addressing food insecurity in the European region. The integration of policies across agriculture, nutrition, environment, economy, and sustainability underscores the multidimensional nature of FNS. However, challenges remain in ensuring that these policies translate into tangible improvements in food access, affordability, and nutritional quality, particularly for vulnerable populations.

The European Union’s CAP and initiatives such as the *Farm to Fork Strategy* have demonstrated potential in shaping sustainable food production and supporting small farms, particularly in CEE. However, the sectoral nature of agricultural interventions suggests that while these policies contribute to food availability, they do not fully address socioeconomic disparities and income inequalities that influence food access [16, 17, 28, 29, 31].

Moreover, food availability and stability can be severely disrupted by animal health crises, as the control of infectious livestock diseases frequently involves large-scale culling measures with direct consequences for food supply, prices, and market stability. Outbreaks such as bovine spongiform encephalopathy, highly pathogenic avian influenza, and African swine fever have demonstrated how disease-control policies, while essential for public and animal health, can generate unintended food security risks by reducing the availability of key animal-source foods.

These impacts are amplified in highly concentrated production systems and can disproportionately affect populations that rely on animal products as primary protein sources, a dynamic widely recognized in international assessments of food system shocks, including FAO analyses of crises affecting agriculture and food security [36].

Nutrition-focused policies have made strides in promoting healthier food environments, with front-of-pack labelling and school-based interventions proving effective influencing dietary choices [31]. However, the persistent issue of malnutrition – both undernutrition and overnutrition – indicates the need for stronger regulatory frameworks and enforcement mechanisms. The review underscores the role of targeted fiscal policies, such as taxation of unhealthy foods and subsidies for healthier options, in modifying consumer behaviour. The challenge remains in ensuring that these policies are implemented equitably across member states to address disparities in diet-related health outcomes [26].

Climate change is an increasingly critical factor affecting food security, and policies such as the EU *Climate Law* and the *European Green Deal* aim to mitigate its impact by promoting sustainable agricultural practices [29, 31]. The case study from Romania highlights how national-level environmental policies can integrate water scarcity adaptation measures, yet broader EU-wide strategies are necessary to ensure consistency and effectiveness across diverse geographic and climatic conditions [17]. These policies should concern activities that substantially contribute to climate change mitigation or climate change adaptation, including agriculture and bioenergy.

The role of economic policies in food security is evident in the use of price forecasting tools and trade policies that influence food affordability [16]. Trade openness, as highlighted in the reviewed studies, has generally had a positive impact on food security in European countries. However, issues such as rising food prices, low-income levels, and inadequate social benefits in countries like Moldova underscore the need for more comprehensive economic strategies to improve food affordability [32].

Fiscal policies, including taxes on unhealthy foods and subsidies for nutritious options, have shown promise, but their effectiveness depends on their design and enforcement at the national level [26].

Sustainability remains a central theme in food security policies, with research emphasizing economic, social, and environmental dimensions. The SUSFANS toolbox provides valuable modelling capabilities to predict the sustainability of food systems, but its practical application in policymaking requires further refinement. Reducing food loss and waste is a key strategy in improving food system sustainability, yet implementation across the food supply chain varies significantly among EU member states. Strengthening collaboration between policymakers, industry stakeholders, and researchers is crucial in advancing a more sustainable food system. Partnerships between government agencies, non-governmental organizations, and international bodies have facilitated more holistic approaches to food security, yet disparities in stakeholder influence may lead to imbalances in policy outcomes. Future efforts should focus on inclusive governance structures that promote equitable participation [16].

The COVID-19 pandemic served as a stress test for European FNS policies, revealing both strengths and vulnerabilities in the food supply chain. While the EU’s

contingency planning helped maintain food availability, initial disruptions in logistics and market dynamics highlighted areas requiring improvement. The establishment of a coordinated EU food crisis response mechanism represents a step forward in crisis preparedness, yet further refinements are necessary to enhance resilience against future shocks, including economic downturns and climate-related crises [28, 29].

The findings underscore the significance of targeted food policies and interventions addressing the needs of particularly vulnerable groups, including children, women, and migrants. Children are among the most susceptible to food insecurity due to their developmental needs and dependence on caregivers. Policies such as the *European Strategy for Child and Adolescent Health and Development* (WHO, 2005) have provided comprehensive frameworks for addressing nutritional deficiencies, promoting breastfeeding, and reducing obesity risks [24]. However, despite these efforts, challenges such as low breastfeeding rates in the WHO European Region persist, necessitating more aggressive implementation of supportive measures, including the *Baby-Friendly Hospital Initiative* and stricter regulation of breast-milk substitute marketing [26]. Additionally, the role of holiday clubs in England as an intervention for food-insecure households demonstrates a promising approach to mitigating childhood food insecurity, yet broader access and sustainability remain key concerns [20]. Maternal nutrition plays a crucial role in both maternal and child health outcomes, influencing the long-term risk of non-communicable diseases and obesity in offspring. The dual burden of malnutrition – both undernutrition and overnutrition – among pregnant women highlights the need for a nuanced approach that includes both dietary interventions and micronutrient supplementation [24]. The prevalence of malnutrition in Eastern Europe underscores persistent inequalities in maternal healthcare access and nutritional resources, necessitating more robust and equitable food policy measures. Ensuring that maternal nutrition programs reach all pregnant women, particularly those in disadvantaged socio-economic conditions, remains an ongoing challenge that must be addressed through strengthened healthcare services and social support networks [26].

The food security challenges faced by migrants are further complicated by economic instability, social exclusion, and limited access to support services. The COVID-19 pandemic exacerbated these vulnerabilities, prompting various European and Central Asian governments to implement emergency measures, including financial assistance and food provision programs. However, the effectiveness of these interventions varies, and structural inequalities persist in many regions. Programs targeting migrants often benefit those with better social networks, rather than reaching the most vulnerable individuals. Thus, future policies should prioritize inclusive strategies that ensure equitable food distribution, targeted financial support, and increased access to nutritional education [20, 26].

## CONCLUSIONS

The analysis of diverse scholarly papers and institutional documents highlights the complex and multifaceted nature of food and nutrition security, encompassing key dimensions such as food availability, access, utilization, and sustainability. These aspects can be effectively addressed through a broad range of policy measures and interventions across various sectors, including agriculture, nutrition, environment, economics, and stakeholder engagement. Special attention must be given to vulnerable populations, such as children, women, and migrants, recognizing their unique needs and challenges in accessing nutritious and affordable food. The COVID-19 pandemic has further exposed vulnerabilities within the food supply chain, underscoring the urgent need for coordinated responses to crises affecting food systems. In response, there is an increasing focus on sustainability in food policies, with efforts to incorporate environmental considerations, reduce food waste, and promote sustainable agricultural practices. In summary, the findings call for a comprehensive approach to food and nutrition security in Europe, involving a wide array of policy measures, stakeholder engagement, and international collaboration. However, significant challenges remain, particularly in addressing the root causes of food insecurity, ensuring equitable access to nutritious food, and building resilience against future crises. Continuous research, monitoring, and evaluation of policy effectiveness are essential for advancing sustainable and inclusive food systems in Europe.

### Conflicts of interest statement

The Authors declare no conflict of interest.

### Ethical approval

Ethical approval for this type of study is not required by our institute.

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### Authors' contributions

The study was conceived and designed by MLdP and MLS, with input from all the Authors. Data collection was conducted by ELG, LP, MGC, MRM. Data analysis was conducted by ELG, LP, MGC, MRM, AC and interpretation was conducted by DZ, ELG. The draft was written in all the parts with the contribution of DZ, MGC, ELG, LP, MRM, FB, AC. Critical revision of the article was made by MLS, MLdP and GT.

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