

# SUSTAINABILITY OF FOOD SAFETY AND SECURITY IN ROMANIA. CHALLENGES FOR THE FUTURE NATIONAL STRATEGIC PLAN

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## Abstract

*In the context of the preparations for the design of the National Strategic Plan (NSP), we appreciate that a realistic knowledge of the state of food security is likely to contribute to the design of some of the reforms to increase the sustainability of the agricultural sector.*

*Among the main objectives of the NSP will be: fostering the development of an intelligent and adaptive agricultural sector; ensuring environmental protection and climate change mitigation; strengthening socio-economic cohesion of rural areas.*

*The knowledge of Romania's place in the world through the use of the Food Security Indicator - on total and on components - highlighted the need: increasing the concerns of decision makers to ensure a sufficient and accessible agricultural offer, from an economic point of view, to the population; Romania's more active involvement in building sustainable food systems.*

**Keywords:** *food security, natural resources, sustainable development*

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## Introduction

The purpose of this study is to analyze the current state of food security in the context of preparations for a future adoption of the reforms of the new Common Agricultural Policy, respectively the design of the National Strategy for the Development of Agriculture and Rural Area (SNDASR) for the period 2012-2027.

Among the main objectives of the SNDASR should be: fostering the development of an intelligent and adaptive agricultural sector; ensuring environmental protection and climate change mitigation; strengthening socio-economic cohesion of rural areas.

The analysis of the level of the Food Security Indicator in total and components reflects the need to ensure a sufficient agricultural supply, the need to ensure the economic access of the population to food in the context of Romania's involvement in the construction of sustainable food systems.

### 1. Sustainable development policy in the field of food safety

The main objectives of European food safety policy are: to protect human health and consumers' interests; to promote the smooth functioning of the European Single Market; to develop sustainable agri-food systems. Thus, both in the European Union and in Romania are strictly established and observed control rules regarding: food and feed hygiene, animal health, plant health and prevention of food contamination by external substances; food, as well as feed.

The legal basis for the establishment of the European food safety policy is the Treaty on the Functioning of the European Union Articles 43, 114, 168 – paragraphs 4 and 169.

The various food and feed crises (for example, the bovine spongiform encephalopathy epidemic and the dioxin crisis) led to a series of reforms of EU food safety policy in the early 2000s. In this context, in the EU, integrated approaches to the agri-food sector - synthetically expressed 'farm to consumer' – have been required to guarantee a high level of safety at all stages of the production and distribution process for all food products marketed (domestic and/or export).

The legislative measures initiated included the complex and integrated system of rules relating to the entire food chain — from food and animal health, plant protection and food production to processing, storage, transport, import and/ or export and retail sales. Thus, the implementation of the sustainable food security policy in the EU and therefore in Romania has materialized in various actions, namely:

- Ensure effective control systems and assessment of compliance with EU standards in terms of food safety and quality, animal health, animal welfare, animal nutrition and plant health both in the EU and in Romania and from third countries in relation to exports to the EU/ Romania to manage international relations with third countries and international organizations on food safety, animal health, animal welfare, animal nutrition and plant health;
- Ensure communication management and relations with the European Food Safety Authority (EFSA), respectively with the National Health Veterinary and Food Safety Authority (ANSVSA) to manage the risks arising.

- The integrated approach to food safety can be found in the following directions:

1. **Processed foods** – Every citizen has the right to know how the foods he (the citizen) consumes are obtained, processed, packaged, labeled and sold. The central objective of the European Commission's food safety policy is to ensure a high level of human health protection for food industry products – the largest sector of production and employment in Europe.

This Commission principle — also provided in the White Paper on Food Safety — consists in an integrated approach to the principle of food safety throughout agri-food products according to the “farm to fork” logo; it also manages to cover all sectors the agri-food chain.

2. **Animal husbandry** – The objective of the European animal health policy is to: increase the health status and improve the maintenance conditions of EU MS animals, in particular production animals; trade in animals and animal products Intra and extras – Community in accordance with health standards and international obligations assumed. The general purpose of animal welfare policy is to ensure that animals must not endure avoidable pain and/ or suffering and obliges the owner and/ or keeper of the animals to comply with the minimum welfare requirements of the animals. EU legislation on animal husbandry aims to promote free trade of reproductive animals and their genetic material, in accordance with programs for breeding and conservation of genetic resources.

- Plants and plant products – The European Commission is actively participating in the formulation and compliance with international phytosanitary and quality standards for plant products. Problems – such as pesticides, intellectual property rights of plant varieties and/ or genetically modified organisms – are only a few of the objectives of interest.

With regard to the creation of sustainable agri-food systems, it should be noted that environmental priorities have been included in the CAP reform process, as follows: the MacSharry reform in 1992; Agenda 2000 — the one that established the Rural Development Program; Health Check, 2008, which strengthened the environmental

objectives through the second axis of the Rural Development Program; “greening” is the watchword of European agricultural policy in the next programming period.

## 2. Food Security Indicator of Romania

The Food Security indicator tries to capture, in a multidimensional manner, the complexity of the domain. It reflects both the need to ensure sufficient agricultural supply and the need to ensure the economic access of the population to food in order to build sustainable food systems.

It is the responsibility for food availability that lies mainly with agriculture that must ensure sufficient food supply to meet the food needs of the population, and access to food for the population is a problem that depends on the socio-economic situation which, by the level of income of the population — i.e. of the GDP per inhabitant (at CFP), reflects the feeding capacity achieved by each household.

In October 2018 The Economist Intelligence Unit determined the Global Food Security Index (GFSI) for 113 countries. The components of the GFSI indicator were: (i) exposure/vulnerability; (ii) availability; (iii) food quality and safety; (iv) natural resources and adaptability.

The following is presented the status of the Food Security Indicator – at general level and by components – for Romania.

**Table 1. Food Security Indicator in Romania, in 2018 compared to 2017**

Category	Score	Change in 2018 versus 2017 score	RO place worldwide	World level score
Overall score	<b>68,9</b>	<b>+1,0</b>	<b>38</b>	<b>58,4</b>
1) Exposition/ vulnerability	<b>67,5</b>	<b>+0,2</b>	<b>43</b>	<b>56,3</b>
1.1) Food consumption as a share in household expenses	43,2	-0,1	73	55,6
	99,1	0,0	36	80,9
1.2) The proportion of the population below the poverty line	19,6	+1,9	38	16,7
global	81,9	-1,9	33	75,4
1.3) GDP per place. (at PPC, US dollars)	100,0	0,0	1	65,5
1.4) Tariffs on agricultural imports	100,0	0,0	1	62,6
1.5) Presence of food safety programs	<b>68,8</b>	<b>+2,8</b>	<b>=35</b>	<b>60,3</b>
1.6) Farmers' access to funding	85,6	0,0	20	56,8
2) Availability	25,0	0,0	19	15,6
2.1) Satisfaction of the offer	51,9	0,0	=60	58,7
2.2) Public expenditure on R&D in agriculture	69,2	+0,9	103	86,4
2.3) Agricultural infrastructure	64,7	+5,9	24	46,8

Category	Score	Change in 2018 versus 2017 score	RO place worldwide	World level score
2.4) Volatility of agricultural production	25,0	0,0	49	37,6
2.5) Political stability risk	100,0	+20,7	1	76,9
2.6) Corruption	95,3	0,0	15	84,9
2.7) Urban absorption capacity	<b>72,6</b>	<b>-1,8</b>	<b>32</b>	<b>58,2</b>
2.8) Food loss	60,3	-2,2	55	56,0
3) Quality and safety	100,0	0,0	=1	80,1
3.1) Diversification of the diet	55,9	0,0	37	43,9
3.2) Nutritional standards	65,7	-5,7	32	47,2
3.3) Availability of micronutrients	100,0	0,0	=1	80,3
3.4) Protein Quality	<b>74,7</b>	<b>...</b>	<b>=13</b>	<b>36,0</b>

*Source: The Economist Intelligence Unit, October 2018*

In 2018, the Food Security Indicator for Romania ranked 38th in the 113 countries taken in comparisons and reached a score of 68.9 points, 11.4 points above the world average. Comparing the level of the Food Security Indicator for Romania in 2018 with the one in 2017, there is only a slight increase (by + one point).

## 2.1. Exposition / vulnerability

From the point of view of the exposure/ vulnerabilities of countries in Europe that could affect the Food Security Indicator, in 2018 the highest level was recorded by Ireland (88.0 points out of 100 possible) and Ukraine's lowest (54.0 points). Romania holds 24th place in Europe with a score of 68.0 points; this level is close to Belarus (67 points) and Serbia (with 63.0 points).

This indicator is influenced by the following sub-indicators: consumption of food products as a share of household expenditure; proportion of population below the global poverty threshold; GDP per LOC. (at PPP, US dollars); tariffs on agricultural imports; presence — at level national — food safety programs; farmers' access to various categories of funding.

At two of these sub-indicators, in 2018, Romania recorded a maximum score of 100 points, respectively at (i) the presence — at national level — of food safety programs and (ii) farmers' access to various categories of funding.

At a very close level was the sub-indicator “the proportion of the population below the global poverty threshold” (with 99.1 points).

In 2018, the sub-indicator “tariffs on imports of agricultural products” scored 81.9 points, 0.1 points below the level of 2017.

The lowest levels were recorded by the sub-indicators: “GDP per LOC. (for PPP, US dollars)”, respectively 19.6 points, with the mention that compared to 2017 its level increased by 1.9 points; the sub-indicator “consumption of food products as a share in household expenses” recorded, in 2018, a level of 43.2 points, 0.1 points below the 2017 level.

Serbia's exposure score in 2018 was 63.0 points, 5.0 points below that of Romania.

## **2.2. Availability**

In terms of availability/accessibility of countries in Europe, in 2018, the highest level was recorded by the UK (89.0 points out of 100 possible) and Ukraine's lowest (54.0 points). Romania holds 20th place in Europe with a score of 69.0 points; this level is similar to that of Greece. Serbia scores 57.0 points and, according to EIU calculations, is below Romania by 11.0 points, ranking the penultimate (24th place) in Europe.

In turn, this indicator is influenced by the following eight sub-indicators: supply satisfaction; public expenditure on R&D in agriculture; agricultural infrastructure; volatility of agricultural production; risk of political stability; corruption; urban absorption capacity of agricultural supply; loss of food.

Romania, at two of these sub-indicators, in 2018, recorded maximum scores, respectively at (i) urban absorption capacity of agricultural supply (100 points) and (ii) food losses (95.3 points).

The sub-indicator “tariffs on imports of agricultural products” had a score of 81.9 points – 0.1 points below the level of 2017. In the latter sub-indicators, in 2018 compared to 2017, there were no changes in the score.

At scores above 50.0 points were the sub-indicators: “supply satisfaction” (85.6 points); “volatility of agricultural production” by 69.2 points; “political stability risk” by 64.7 points; “agricultural infrastructure” with a score of 51.9 points. The lowest scores in terms of availability/accessibility were recorded by the sub-indicators: “public spending on R&D in agriculture” and “corruption” each with a score of 25.0 points.

## **2.3. Quality and safety**

From the point of view of quality and safety, the Food Security Indicator, in 2018, in the countries of Europe recorded the highest score of 87.0 points in Portugal and the lowest (58.0 points) of Serbia. Romania holds 19th place in Europe with a score of 73.0 points; this level is close to the Czech Republic (74 points) and Hungary (72.0 points).

This indicator is based on the following sub-indicators: diversification of the diet; nutritional standards; availability of micronutrients; protein quality; food safety.

In 2018, Romania, with two of these sub-indicators, recorded a maximum score of 100 points, respectively at (i) nutritional standards and (ii) food safety. In the other three sub-indicators, the scores were over 50.0 points, as follows: protein quality (65.7 points), at which, in 2018 compared to 2017, there was a decrease in the score of 5.7 points; diversification of the diet with a score of 60.3 points — unfortunately also at this sub-indicator our country had a setback (by 2.2 points); the availability of micronutrients with a score of 55.9 points.

Serbia scores 58.0 points and, according to EIU calculations, is below Romania's level by 15.0 points, ranking the penultimate (25th place) in Europe.

## **2.4. Natural resources and adaptability**

In terms of “natural resources and adaptation capacity” European countries recorded in 2018 between 81.7 points out of 100 possible (Slovakia) and 57.5 points (Ukraine). Romania holds the place in the EU with a score of 74.7 points; this level is close, on the one hand, to Germany and Portugal (each with 75.7 points) and Bulgaria (with 74.7 points) and, on the other hand, to Greece (with 74.6 points).

In 2018, Serbia recorded 69.0 points at the indicator “Natural Resources and Adaptation Capacity”, which is 5.7 points below Romania.

In turn, natural resources and their adaptability are influenced by sub-indicators related to: the state of natural resources; water; land; vulnerabilities; oceans; adaptive capacity.

**Table 2. Scores recorded under the sub-indicator Natural Resources and Resilience/ Adaptation Capacity in Romania, in 2018 compared to 2017**

	2017	2018	2018/2017
4) Natural resources and resilience/adaptive capacity	<b>75</b>	<b>75</b>	0
4.1) Exposition/ Vulnerability	<b>71</b>	<b>71</b>	<b>0</b>
4.1.1) Increase in temperature	85	85	0
4.1.2) Drought	60	60	0
4.1.3) Flood	36	36	0
4.1.4) Storm Gravity	67	67	0
4.1.5) Sea level rise	95	95	0
4.1.6) Exposure/Vulnerability Management Commitment	77	77	0
4.2) Water	<b>58</b>	<b>58</b>	<b>0</b>
4.2.1) Water risk in agriculture – quantity	57	57	0
4.2.2) Water risk in agriculture – quality	63	63	0
4.3) Land	<b>91</b>	<b>91</b>	<b>0</b>
4.3.1) Soil erosion/organic matter	95	95	0
4.3.2) Grasslands	100	100	0
4.3.3) Changing forests	69	69	0
4.4) Oceans	<b>80</b>	<b>71</b>	<b>-9</b>
4.4.1) Eutrophication and hypoxia	100	100	0
4.4.2) Marine biodiversity	67	51	-17
4.4.3) Marine protected areas	57	47	-10
4.5) Sensibility/Vulnerability	<b>71</b>	<b>71</b>	<b>1</b>
4.5.1) Dependence on food imports	50	53	2
4.5.2) Dependence on natural capital	99	99	0
4.5.3) Disaster Risk Management	71	71	0
4.6) Adaptation capacity	75	75	0
4.6.1) Early warning measures/intelligent climate	100	100	0
4.6.2) National agricultural risk management system	50	50	0
4.7) Demographic stress	84	97	14
4.7.1) Population growth (2016-21)	81	96	16
4.7.2) Urbanization (2016-21)	93	100	8

*Note: Score 0-100, where 100 = best. For Romania, the sub-indicator “Natural Resources and Resilience/ Adaptation Capacity” is monitored starting in 2017.*

*Source: The Economist Intelligence Unit, October 2018*

#### **2.4.1. Status of natural resources**

In 2018, in terms of the state of natural resources, the 26 European countries analyzed registered between 79.4 points out of 100 possible (Portugal) and 49.2 points (The Netherlands). Romania holds 9th place in the EU with a score of 70.9 points; this level is close, on the one hand, to Slovakia (with 71.5 points) and Bulgaria (with 71.4 points) and, on the other hand, to Poland (with 70.4 points) and Germany (with 70.2 points). Serbia scores 61.8 points at this indicator, which is 9.1 points below Romania.

#### **2.4.2. Water**

In 2018, water in the 26 European countries surveyed were between 92.1 points out of 100 possible (Denmark) and 37.7 points (Belgium). Romania holds 11th place in the EU with a score of 58.4 points; this level is close to Poland (with 59.3 points) and the Czech Republic (with 57.4 points). At this indicator Serbia scores 61.0 points, which is 2.6 points above Romania.

#### **2.4.3. Land**

In 2018, in terms of land in the 26 European countries analyzed, there were between 94.4 points out of 100 possible (Bulgaria) and 69.6 points (Finland). Romania holds 5th place in the EU with a score of 90.6 points; this level is close, on the one hand, to Spain (91.4 points) and Greece (91.0 points) and, on the other hand, to France (90.2 points). Serbia scores 89.3 points at this indicator, which is 1.3 points below Romania.

#### **2.4.4. Oceans**

In 2018, from the point of view of the oceans in the 26 European countries analyzed, there were between 100 points out of 100 possible (Austria, Belarus, Czech Republic, Hungary, Serbia, Slovakia and Switzerland – each of these countries with 100 points each) and 6.4 points (Norway). Romania holds 12th place in the EU with a score of 71.2 points; this level is close, on the one hand, to Denmark (by 71.3 points) and, on the other hand, to Greece (by 69.9 points) and Bulgaria (by 66.9 points). At this indicator Serbia scores 100 points, which is 28.8 points above the level in Romania.

#### **2.4.5. Vulnerabilities**

From the point of view of the vulnerabilities of natural resources, in 2018, in the 26 European countries analyzed, there were between 84.6 points (Czech Republic) and 40.3 points (Ukraine). Romania holds 9th place in the EU with a score of 71.3 points; this level is close, on the one hand, to the UK (with 72.3 points) and Austria (with 70.7 points) and Hungary (with 70.5 points). Serbia scores 46.5 points at this indicator, which is 24.8 points below Romania.

#### **2.4.6. Adaptation capacity**

In 2018, in terms of adaptation capacity in the EU, 16 countries scored 100 points out of 100 possible points, and the lowest points (16.7 points) registered Belarus. In the EU, Romania holds 22nd place with a score of 75.0 points on the adaptation capacity sub-indicator; this level is similar to that of Bulgaria. At this indicator, in 2018, Serbia registered 50.0 points, which is 25.0 points below Romania.

#### 2.4.7. Demographic stress

In 2018, from the point of view of “demographic stress” for Romania registered 97 points — level very close to the maximum, 14 points above the level of this sub-indicator in 2017. Thus, Romania holds the 2nd place in the EU, level similar to Ukraine and close to Bulgaria (99.6 points). At this indicator Serbia scores 93.4 points, which is only 3.7 points below the level in Romania.

In 2018, the components of the sub-indicator “demographic stress”, namely population growth and urbanization have as level 96 points and 100 points respectively. Estimates show that these components are 16 and 8 points above the 2016 level, so there has been a worsening of the situation.

#### Conclusions

The analysis of the state of food supply for the population in Romania using the Food Security Indicator highlighted some vulnerabilities among which we mention:

- In terms of agricultural sector exposure, the lowest scores were recorded in the sub-indicators of GDP per inhabitant (PPC) and the share in household expenditure of food consumption;
- Upon availability in future national programs, sub-indicators of public expenditure for R&D in agriculture, as well as corruption will be of interest to decision-makers; they are added to the sub-indicators related to the degree of supply satisfaction, the volatility of agricultural production, the risk to political stability as well as the state of agricultural infrastructure;
- On quality and safety – will be of interest to decision makers sub-indicators: quality of protein, diversification of diet, as well as availability of micronutrients;
- On natural resources and adaptive capacity – sub-indicators will be of interest: the state of natural resources; water; land; adaptation capacity.
- It should be noted that an instrument worthy of consideration in designing the sustainability of food safety and security in Romania is represented by the platforms created which include recommendations on best practices, results, as well as policy presentations on safety and security food. Among the specialized platforms, on the one hand, for recommendations on best practice, results and, on the other hand, for policy presentations on food safety and security are to mention:
- Climate Change (governed by the United Nations Framework Convention on Climate Change – UNFCCC and the 2015 Paris Agreement);
- Disaster Risk Reduction (Sendai Framework for Disaster Risk Reduction);
- Response for humanitarian emergencies (2016/ World Humanitarian Summit and the Grand Bargain);
- Improving Nutrition and Healthy Diets (Second International Conference on Nutrition [ICN2], as well as UN Decade of Action on Nutrition 2016-2025/ The UN Decade of Action on Nutrition 2016—2025);
- 2030 Agenda for Sustainable Development, etc.

With all these achievements, however, today many of the platforms dedicated to global food safety and security policies contain a series of information that is still segmented, redundant and sometimes even not well structured enough. It will therefore be necessary to produce a more thorough structuring of the content of these platforms in future so that if action is initiated in certain areas (environment, food, agriculture, health, etc.), integrated and coherent objectives can be pursued to address both the influences and threats, which produce climate variability and, in turn, threaten human food security, access to healthy food.

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