

THE PREVALENCE OF UNDERNOURISHMENT IN ROMANIA COMPARATIVE WITH THE NEIGHBOURING COUNTRIES

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Abstract: *This article presents the situation of food insecurity in Romania comparative with the neighbouring countries. One of the main signs of food insecurity is hunger, which is determined by the prevalence of undernutrition. The incidence of undernourishment and severe food insecurity therefore represent the burden of severe food deprivation in the population, regardless of the differences in assessment techniques and data sources.*

Key words: *food security, food insecurity, undernourishment, food waste*

INTRODUCTION

In Romania, 4,6% of the population is food insecure, even though each romanian additionally wastes 173 kg of food annually, respectively almost 500 g per day, in both direct and indirect ways. [8,9] People suffer of food insecurity when they do not have regular acces to sufficient safe and nutritious food in order to live a healthy life and to develop normally. [7]

While the population of developed and developing countries is in the positive segment of food security and generates enormous quantity of food waste, at the same time, the population of underdeveloped countries, but also a part of developing countries, suffer from undernourishment, malnutrition and even die from lack of food. [2,4]

Hunger and undernourishment are the biggest threats to public health, killing more people than HIV/AIDS, malaria and tuberculosis together. [3] The UN estimates that 25,000 people die every day from hunger and related causes, including 10,000 children. [33]

Undernourishment is a concept related to food insecurity, directly and specifically. It refers to weight loss due to insufficient quantity and quality of the human body's needs. This is caused by the lack of proper caloric intake, which will subsequently trigger a considerable deficiency of nutritional reserves, anemia and rickets. Prevalence of Undernourishment is FAO's traditional indicator and shows the level of hunger all around the world, therefore hunger may also be named as undernourishment. The Prevalence of Undernourishment (PoU), uses information based on the availability of food, food consumption and energy requirements. [20, 29]

The percentage of the population whose daily food intake is insufficient to provide, on average, the quantity of dietary energy required to support an active and healthy life is used to determine the prevalence of undernourishment. We need to know two things in order to determine whether someone is undernourished: how many calories they consume and how many calories they require to live a healthy life. [30]

Food security researchers have created many "scales" or "phases" to "grade" or "classify" food security using various indicators and "benchmarks" or cut-off points. [1]

Measuring the Severity of Undernourishment

The percentage of the population whose dietary energy intake is below a certain threshold is referred to as undernourishment in the FAO's measure of hunger. This limit is determined by the amount of kilocalories needed to do inactive or mild activity, and it

varies by nation. The term "food deprivation" is also used to describe those who are undernourished. [21]

For those who are food insecure, the level of undernourishment reflects how far their dietary energy intake is below the established cutoff. [19]

The Integrated Food Security Phase Classification (IPC)

The IPC is a method for identifying food security issues based on various demands for livelihood necessities. [6]

Table 1.

Integrated Food Security Phase Classification

IPC Phase Classification	Indicators
Generally food secure	Crude Mortality Rate
Chronically food insecure	Malnutrition prevalence
Acute food and livelihood crisis	Food access/ Availability Dietary Diversity
Humanitarian emergency	Water Access/ Availability
Famine / humanitarian catastrophe	Coping strategies Livelihood Assets

Source: *Integrated Food Security Phase Classification - Evidence and Standards for Better Food Security and Nutrition Decisions* <https://www.ipcinfo.org>

The countries analyzed in this paper are Romania and the countries with which it is neighboring, precisely Hungary, Serbia, Bulgaria, Ukraine and Republic of Moldova.

Romania has been a Member of the European Union since January 1, 2007 and ranks 7 in terms of population. The country's economy is mainly constituted by services, industry, agriculture and production. [16]

Hungary borders Romania to the east and has a population of about 10 millions. It has been part of the European Union since 2004. The country has high economic incomes and is valued as a developed country. The IMF has examined Hungary's economy as the world's 57th largest of 188 countries measured. [17]

Serbia, specifically the Republic of Serbia, borders Romania to the north-east and has about 7 million inhabitants. It is in the process of negotiating its accession to the European Union, to be achieved by 2025. The three dominant sectors of the country are services, industry and agriculture. [26]

Bulgaria borders Romania to the north and is the 14 largest country in Europe, with a population of 7,36 million. She expressed her desire to be part of the European Union in 1995, but for 12 years she had to meet several requirements. On 1 January 2007, Bulgaria joined the EU. The most developed sectors of the country are heavy industry, energy engineering, agriculture and tourism. [35]

Ukraine borders Romania to the west. The country extends over a surface of 600.000 square kilometers, excluding Republic of Crimea and Sevastopol and has a population of 47 millions people. The three most important sectors of industry are electricity, fuel industry and metallurgy industry. [24]

Republic of Moldova borders Romania to the west. In 1991, it became an independent country and gained the name Moldova. The country is not a member of the European Union but from the summer of 2022 it is an official candidate. It has a population of 4 million people. [15]

MATERIALS AND METHODS

The study presents a research based on external data, related to the prevalence of undernourishment in Romania and its neighbouring states from 2001 to 2020, provided by Our World in Data. Those secondary and tertiary external data were analyzed and interpreted by the authors, using established methods of analysis and interpretation.

The purpose of the study is to analyze how the condition of food insecurity in every mentioned country caused undernourishment and how it developed year by year, mentioning the most important historical events that took place and considering if they affected or not the condition of the countries.

RESEARCH RESULTS

Due to the fact that if the prevalence of undernourishment reaches odds below 2,5% the data is no reported. Romania and Hungary are in this situation, which from 2001 to 2020 remained at the percentage of less than 2,5%. Moldova has not reported the prevalence of undernourishment in any of these years.

Table 2.

Prevalence of undernourishment (% of population)

Year	Country				
	Romania	Hungary	Serbia	Bulgaria	Ukraine
2001	2,5	2,5	3,1	4	3
2002	2,5	2,5	3	4,2	2,5
2003	2,5	2,5	2,7	4,5	2,5
2004	2,5	2,5	2,5	4,9	2,5
2005	2,5	2,5	2,5	4,9	2,5
2006	2,5	2,5	2,5	5,1	2,5
2007	2,5	2,5	2,5	4,6	2,5
2008	2,5	2,5	2,5	4,5	2,5
2009	2,5	2,5	2,5	4,1	2,5
2010	2,5	2,5	2,5	4	2,5
2011	2,5	2,5	2,6	4	2,5
2012	2,5	2,5	2,6	3,7	2,5
2013	2,5	2,5	3,2	3,2	2,5
2014	2,5	2,5	3,7	3,3	2,5
2015	2,5	2,5	4,1	3,4	2,5
2016	2,5	2,5	4,2	3,5	2,5
2017	2,5	2,5	4	3	2,5
2018	2,5	2,5	3,8	2,8	2,5
2019	2,5	2,5	3,7	3	2,6
2020	2,5	2,5	3,3	3	2,8

Source: The World Bank

In Romania, from 2001 to 2020 the prevalence of undernourishment measured constanly 2,5%, which means that the percentage was under 2,5%. There were some important historical events that took place these years and have to be mentioned. In March 2004, Romania has become a member country of North Atlantic Treaty Organization (NATO) and from January 2007 it became a member of European Union. In 2008, there was a financial crisis that evaporated almost 30 billion euros from the Romania' economy. [18]

In Hungary, despite of the fact that the prevalence of undernourishment was 2,5% in all these years, which again means that the percentage was under 2,5%, there were some important events in the history of the country. In 2004, the country officially became

a member of EU and in the summer of 2006, a new parliament and government were formed, but these two events did not create any changes. [28]

In Serbia, Bulgaria and Ukraine there have been changes concerning the percentage of undernourishment.

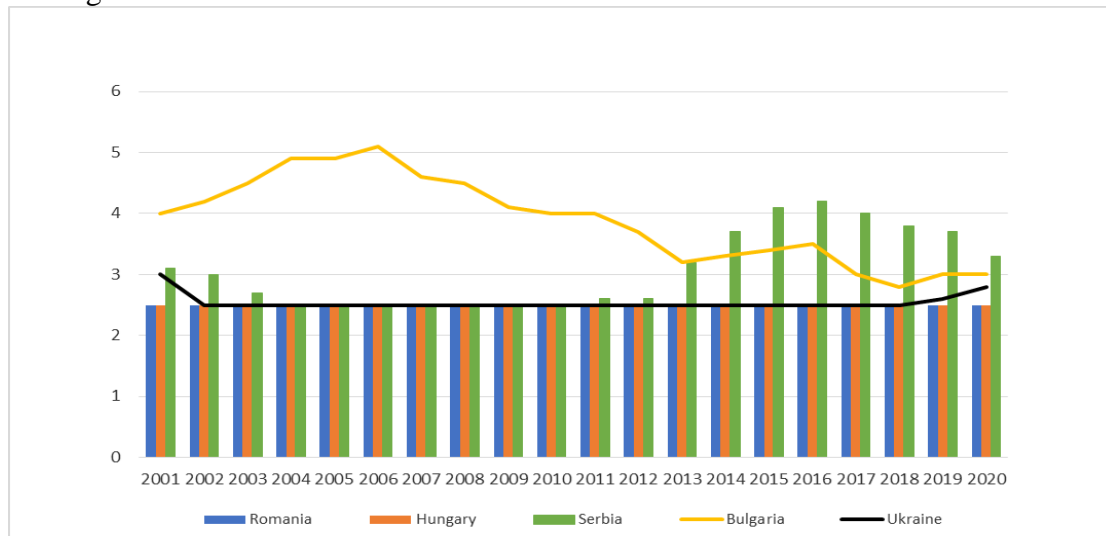


Figure 1. The prevalence of undernourishment in Romania comparative with the neighbouring countries

Source: The World Bank

Regarding Serbia and its economy, from 2000 to 2005 there are not many available World Bank data. The sectors that suffered a decrease were industry and agriculture but that period was a favourable one for services' share. Despite of these facts, from 2001 to 2003 the prevalence of undernourishment decreased. The difference of the prevalence of undernourishment in 2002 comparative with 2001 is 0,1%. In 2003 comparative with 2002 it is 0,3% and following, in 2004 comparative with 2003, it is 0,2%. However, the World Bank reported that between 2000 to 2007, the annual GDP was 5,4 %. [32] Between 2004 to 2010 the percentage of undernourishment is 2,5%. In 2006, The State Union of Serbia and Montenegro ended its existence when Montenegro voted to leave the State Union but despite of this, the data showed the percentage 2,5%. [27] In 2009, International Monetary Fund (IMF) helped Serbia with 3bn euros and also Russia, with 1bn euro. They agreed to help Serbia cover its budget deficit. [12] In 2011 and 2012 the data shows 2,5%. From 2012 to 2016, the prevalence of undernourishment was in a continuous grow. In 2013 comparative with 2012 it is -0,6% and in 2014 comparative with 2013 it is -0,5%. The difference of the prevalence of undernourishment in 2015 comparative with 2014 is -0,4% but then, in 2016 comparative with 2015 it is -0,1%. In 2015, in the country there was a problem with the number of migrants and asylum seekers, which was rising at a fast pace. The migration lasted till the second month of 2016 and the approximate number is 700 000 people. [22] From 2017, the prevalence of undernourishment started to decrease. The difference of the prevalence of undernourishment in 2017 comparative with 2016 Is 0,2% and succeeding in 2018 comparative with 2017 it is 0,2%. The difference of the prevalence of undernourishment in 2019 comparative with 2018 is 0,1%. In the end, the difference of the prevalence of undernourishment in 2020 comparative with 2019 is 0,4%.

Regarding Bulgaria, from 2001 to 2006 the percentage of the prevalence of undernourishment was in a continuous increase. The difference of the prevalence of undernourishment in 2002 comparative with 2001 is -0,2%. Following, in 2003 comparative with 2002 it is -0,3%. In the next years, 2004 comparative with 2003 it is -

0,4%. The difference of the prevalence of undernourishment in 2005 comparative with 2004 is 0%. In 2006 comparative with 2005 the percentage is -0,2%. In 2006, the prevalence of undernourishment had the highest percentage, more precisely 5,1 %. 2007 was a significant year for Bulgaria, because during 12 years the country had to perform several tasks for the union. [5] From the beginning of that year, Bulgaria is an EU member country. [11] By analyzing the data, positive changes can be observed. The difference of the prevalence of undernourishment in 2007 comparative with 2006 is 0,5%. In 2008, the effects of the global crisis began to feel in the country. Bulgaria's economic and financial growth were sinking. [10] However, the difference of the prevalence of undernourishment in 2008 comparative with 2007 is 0,1%. According to World Bank, the 2009/2010 economic crisis affected the bulgarians through the job market, by increasing unemployment and decreasing working hours. [31] The least affected city by the economic crisis was Sofia and the most affected ones were Smolyan, Targovishte, Montana and Shumen. From 2008 to 2020 the prevalence of undernourishment was not affected in a negative way and despite of the events, it decreased even to the percentage of 2,8% in 2018. Therefore, the difference of the prevalence of undernourishment in 2009 comparative with 2008 is 0,4%. Next, in 2010 comparative with 2009 it is 0,1%. 2011 had the same prevalence of undernourishment with 2010. The difference of the prevalence of undernourishment in 2012 comparative with 2011 is 0,3% and in 2013 comparative with 2012 it is 0,5%. The difference of the prevalence of undernourishment in 2014 comparative with 2013 is -0,1%. In 2015 comparative with 2014 the percentage is -0,1%. The difference of the prevalence of undernourishment in 2016 comparative with 2015 is -0,1%. Following, in 2017 comparative with 2016 it is 0,5%. The difference of the prevalence of undernourishment in 2018 comparative with 2017 is 0,2%. At the end, in 2019 comparative with 2018 it is -0,2% and 2020 had the same percentage with 2019.

Regarding Ukraine, the prevalence of undernourishment in the first year, 2001, is 3%. The difference of the prevalence of undernourishment in 2002 comparative with 2001 is 0,5% and from 2002 to 2018, the percentage was constantly 2,5%. During these years, some semnificant events took place in the country, ukrainian economy was growing fast. The average real GDP grew of 7.8% per year from 2003 to 2008. [34] Business activities were making high profits and the unemployment rate decreased to 6,35% in 2007. [25] In 2009, real GDP decreased by 15,1%, unemployment rate increased and the quality of life deteriorated. [23] In 2014, the Russian Federation invadated and annexed Crimea. This event created tensions between the two largest nuclear powers in the world—the Russian Federation and the United States. [13] The loss of this part of Ukraine came with consequences regarding the economy because it affected important sectors like energy, mining and infrastructure. [14] Despite of all these important historical events, the percentage of undernourishment was kept under control. In the end, in 2019 and 2020 the prevalence of undernourishment majored. In 2019, the prevalence of undernourishment is 2,6%, so the difference of the percentage in 2019 comparative with 2018 is -0,1%. The difference of the prevalence of undernourishment in 2020 comparative with 2019 is -0,2%.

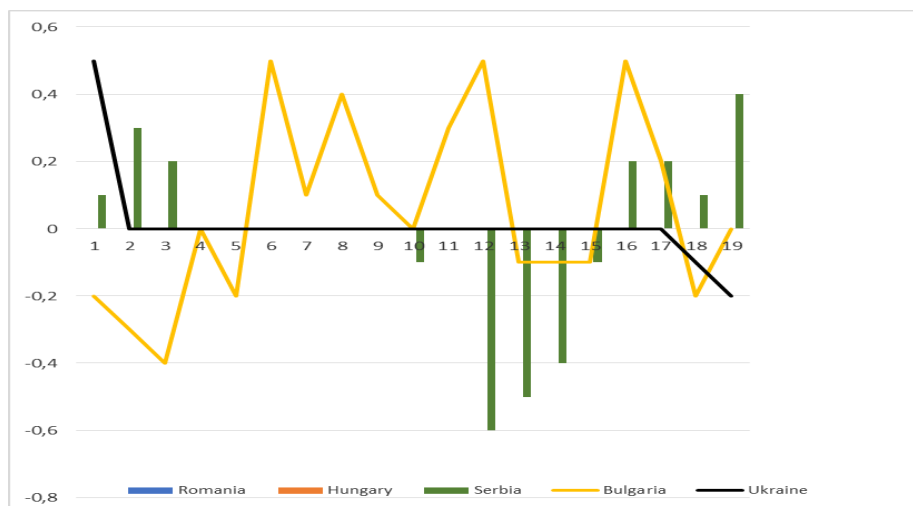


Figure 2. The dynamics of the evolution of undernourishment weights

Source: The World Bank

CONCLUSIONS

The phenomenon of undernourishment during these 20 years has not been constant in all the presented countries and as pointed out previously, the major changes regarding the prevalence of undernourishment occurred in Serbia and Bulgaria. Of all the 5 countries, Bulgaria had the highest value of the prevalence of undernourishment, meaningly 5,1%.

In the second half of the analysed years, Serbia's rate of undernourishment increased from 2.5% to even 4.2% in 2016 and in the last mentioned year, it measured 3,3%. Therefore, there have been unfavourable impacts to the prevalence of undernourishment in this country.

In Bulgaria, the prevalence of undernourishment reached the highest level in 2006, namely 5,1%, but afterwards it recovered in a favourable way, to 3% in the last indicated year.

Since the prevalence of undernourishment was not 0% in these analysed years, it is improper to state that Romania, Hungary and Ukraine were in a good position but comparative with Serbia and Bulgaria, their situation was less detrimental.

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