

THE IMPACT OF FOOD INSECURITY ON THE WORLD'S POPULATION

GHERMAN EMANUELA DIANA¹, BĂLAN IOANA MIHAELA*¹

¹*Banat University of Agricultural Sciences and Veterinary Medicine, "King Michael I of Romania" from Timisoara, Faculty of Management and Rural Tourism, Timisoara, Romania*

*Corresponding author's e-mail: ioanambalan@yahoo.com

***Abstract:** The present paper inquires the relation between food security and the level of nutrition and health comparing two different regions- Europe and Africa- related to the world status of food security. Relating these issues to the Sustainable Development Goals (SDGs), this paper is an attempt at understanding the present evolution made in terms of achieving these goals and ensuring that "no one is left behind" regarding the levels of food security, healthy development and a sustainable way of living.*

***Key words:** food security, nutrition, health, undernourishment*

INTRODUCTION

The United Nation Organization (UNO) implemented the Sustainable development Goals (SDGs) in an attempt to achieve a better and more suitable future for every human being. The SDGs addresses a multitude of global challenges, but ten out of the total seventeen are connected to the state of food security and levels of poverty and hunger, the first two goals attacking the problem directly:

- Goal 1: No Poverty
- Goal 2: Zero Hunger

Goal 1: No Poverty aims to end poverty in all of its forms all around the Globe. More than 10% of the world population (over 700 million people) live in extreme poverty, struggling to survive and fulfill their basic needs: access to clean water and food, sanitation, health, education. Most of the people in poverty are in sub-Saharan Africa and live on less than \$1.90 (8.16 RON) on a day, the lower threshold, of extreme poverty being \$1.25 (5.37 RON)

Poverty has many dimensions, but the main causes are unemployment, social exclusion and vulnerability to natural conditions and disasters associated with certain regions. Unequal growth and implicit poverty in some areas is detrimental to economic growth, undermines social cohesion, increases social and political tensions and it can even result in conflicts.

As of today, the world is nowhere near reaching Goal 1: No poverty by the year 2030, the number of people living in austere condition being far away from zero.

Goal 2: Zero Hunger focuses on achieving food security and improved nutrition while simultaneously promoting and developing sustainable agricultural practices.

The number of hungry people exceeds 838 million and is expected that by 2050 an additional number of 2 billion people will be undernourished. In order to change that, we need to change the way we look at agriculture, as of right now, the Earth's soil, freshwater, oceans, forests and biodiversity are being constantly degraded. In addition, climate change is increasing the pressure on the resources that we depend on, and the risks associated with: floods, droughts, forest fires and other natural disasters. This proves that investments in agriculture are of extreme importance in the fight against the perils of hunger and increase the capacity for productivity and sustainability in the food sector.

Hunger and malnutrition are obstacles in the way of sustainable development, hungry individuals being less productive, more prone to disease and thus unable to increase their income and improve their livelihood.

It can therefore be said the food security is a matter of utmost importance in the present times, being interconnected with all aspects of human life and development: health

status, economical status, population growth and even technological and cultural development.

Food security is a multidimensional concept, dealing with the availability and accessibility of food, but also with the nutritional status and the permanence of it. It is not enough for food to be available and accessible, it must also be nutritious in order to sustain normal and healthy growth rates in children and to provide the fuel for adults to sustain their daily life.

MATERIALS AND METHODS

The method used to represent the connection between food security or insecurity and the influence they have on the human health is comparative analysis of data with external source.

Being a multidimensional matter, food security can be threaten by a vast array of factors. Some of them are directly connected to the micro-level, of the household, such as economical and social inability to access the available food, due to unemployment, health issues, gender inequality, and other social reasons. Other factors influence the mezzo-level, of a region, country, where food is not available in sufficient quantity for all the inhabitants, as a result of geographical location (arid lands, infertile soil, drought, flood) or economical and political turmoil that interfere with the well being of inhabitants. At macro-level, food security is threatened world wide by climate change, unsustainable agricultural practices, political unrest, conflicts, high rates of population growth, to name just a few.

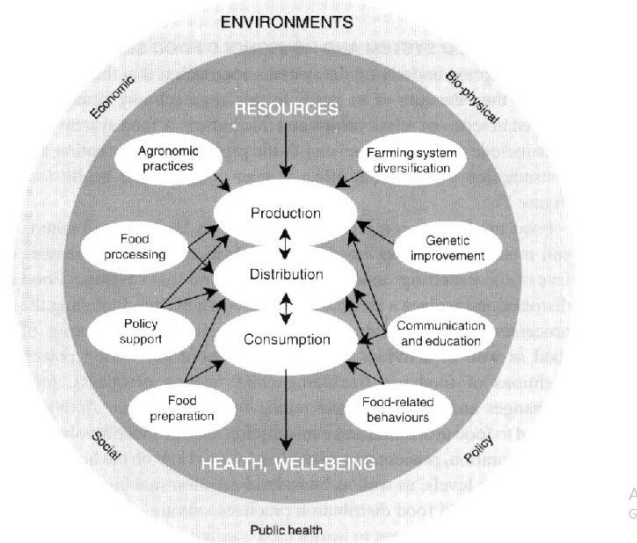


Figure 1. The influence of environment on food security and individual well-being

Source: <http://www.fao.org>

For a region, country or household (macro- mezzo- micro- level) to be food secure, there needs to be achieved four basic conditions:

- food needs to be available in sufficient and adequate quantity for every individual
- food needs to be accessible, both physically and economically
- food needs to be nutritious (utilization) and to meet the dietary needs of individuals
- all the conditions above need to be fulfilled “at all times” to achieve stability.

These four basic conditions are named “The four pillars of food security” and any disruption or problems in any of these causes consequences to all the other three, being fatal to the state of security regarding food. The first, almost unnoticed step from security to insecurity is worrying about the ability to obtain food.



Figure 2. The transition from food security to food insecurity

Source: *The State of Food Security and Nutrition in the World 2018. Building climate resilience for food security and nutrition. Rome, FAO, page 8, box 2*

In addition to the physical sensation of discomfort created by hunger- the last and certain indicator of food insecurity, all the previous stages take an unwanted toll on the health of individuals:

-uncertainty leads to worrying, which leads to stress, which further leads to stress induced diseases: diabetes, hearth conditions, obesity

-compromising quality and reducing quantities can lead to deficiencies in the macro- and micro- nutrients the human body needs, therefore leading to anemia, stillbirths, inability to breastfeed, stunted children growth, wasting of children, to name just a few.

We will examine further the link between food security and insecurity, general level of undernourishment, stunted children growth, wasted children and how food insecurity affects the health of individuals (anemia in women) in selected areas.

	2014		2015		2016		2017		2018	
	Severe	Moderate	Severe	Moderate	Severe	Moderate	Severe	Moderate	Severe	Moderate
World	8	23,2	7,7	23,2	8	23,2	8,7	25,6	9,2	26,4
Africa	18,1	47,6	19	48,3	21,9	52,6	22,9	54,3	21,5	52,5
Europe	1,5	9,6	1,5	9,6	1,2	8,7	1,2	8,5	1	8

Figure 3. Prevalence of severe and moderate food insecurity in selected areas (% of population affected)

Source: *Author's interpretation of data from <http://www.fao.org>*

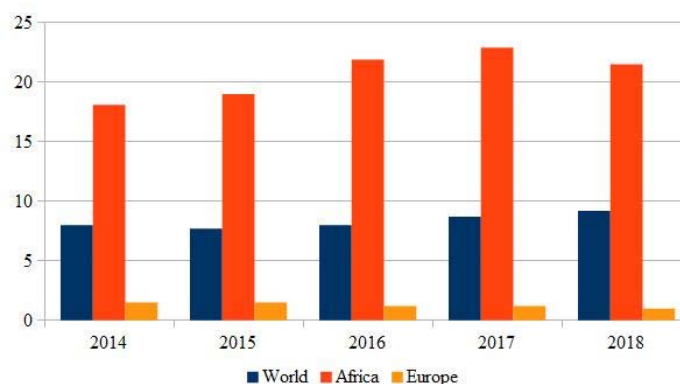


Figure 4. Prevalence of severe food insecurity in selected areas

Source: *Author's interpretation of data from <http://www.fao.org>*

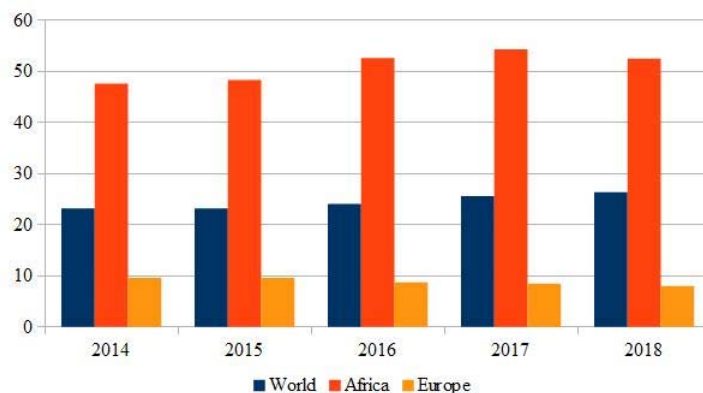


Figure 5. Prevalence of mild food insecurity in selected areas

Source: Author's interpretation of data from <http://www.fao.org>

RESEARCH RESULTS

As it is shown above, the state of food insecurity in Africa is reaching alarming levels and- despite all efforts conducted to decrease it- was growing in the 4 year interval between 2014-2017. Regarding the population, this can be translated as an increasing number of undernourished people, with health problems related to the phenomenon of food insecurity.

	2005	2010	2015	2016	2017	2018
World	14,5	11,8	10,6	10,7	10,8	10,8
Africa	21,2	19,1	18,3	19,2	19,8	19,9
Europe	2,5	2,5	2,5	2,5	2,5	2,5

Figure 6. Prevalence of undernourished people in % of population of selected areas

Source: Author's interpretation of data from <http://www.fao.org>

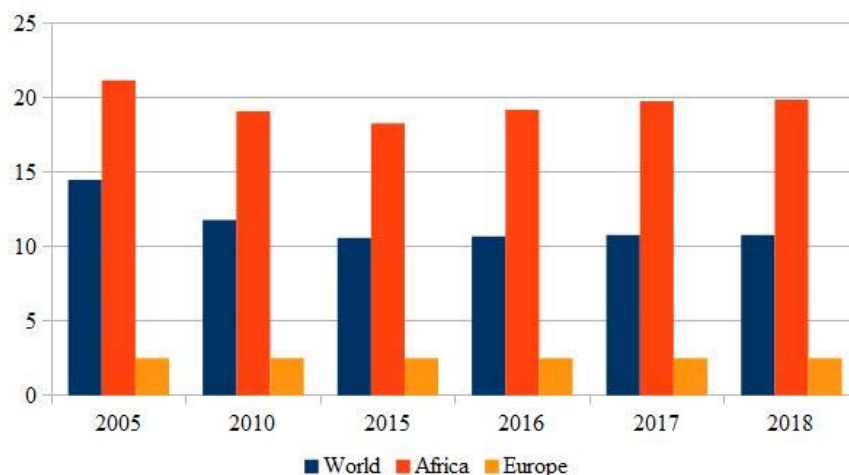


Figure 7. Prevalence of undernourished people in total population

Source: Author's interpretation of data from <http://www.fao.org>

Undernourishment is a serious issue, leading to food related diseases, due to the inability obtain from food the nutrients required for the human organism to function in an optimal manner. One of the negative outcome of undernourishment is anemia, mainly affecting women and children, due to expansion of red blood cells and rapid body growth. Anemia can be associated with multiple factors: nutritional, biological, environmental and

socioeconomic, influencing their development through the negative effects on the population.

	Anaemia			Stunted	Wasted
	Non-pregnant	Pregnant	Children		
World	30,2	41,8	47,4	22,2	7,3
Africa	47,5	57,1	67,6	30,3	7,6
Europe	19	25	20	9	2

Figure 8. Prevalence of stunting, wasting and anaemia in women and children in % of population of selected areas

Source: Author's interpretation of data from <http://www.fao.org>

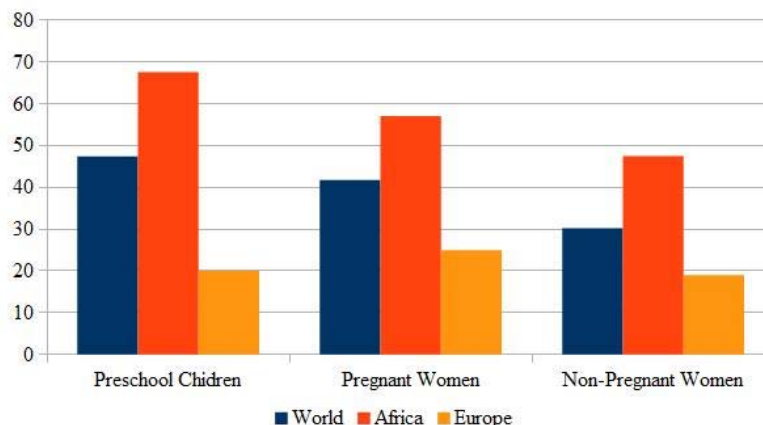


Figure 9. Anemia in children under the age of five and women in 2018

Source: Author's interpretation of data from <http://www.fao.org>

Anemia is caused in most cases by a decrease in quantity or quality of red blood cells and hemoglobin. This results in a decrease in the levels of oxygen in the blood and further in the main organs of the body.

In adults anemia can cause severe fatigue (hindering the ability to complete daily tasks), heart problems (due to low oxygenation of the blood the heart needs to pump more blood to fulfill the requirements, resulting in arrhythmia, enlarged heart, even heart failure), pregnancy problems (resulting in premature births).

In early childhood (0- 3 years) the problem is exacerbated by bad feeding habits, mostly when breast milk is replaced with foods poor in iron and other nutrients, as vitamin B12 and B9. This results in low oxygenation of the brain tissue and can cause impaired cognitive function, growth and psychomotor delays.

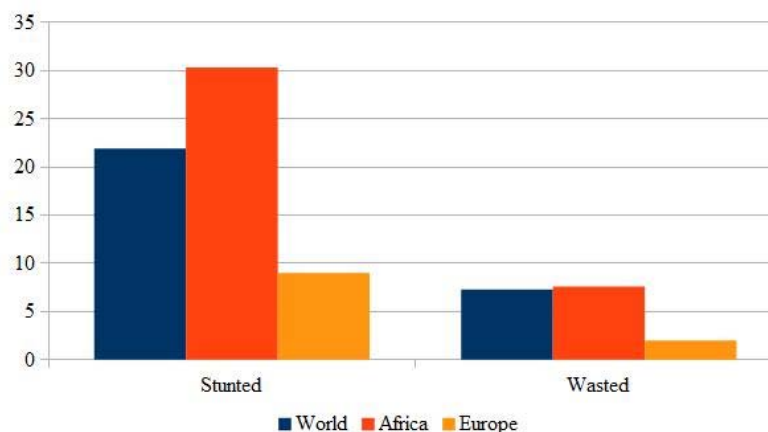


Figure 10. Stunted and wasted children under the age of five in total population in 2018

Source: Author's interpretation of data from <http://www.fao.org>

Other unwanted effects of undernourishment are stunted growth and wasting in children, especially under 5 years old.

Stunted growth is caused by chronic malnutrition and can be defined as reduced growth rate, or a lower height than normal for age. It is a primary manifestation of malnutrition in children and can ever occur before birth, due to malnutrition during fetal development brought on by an undernourished mother. Stunting represent a threat to the health, as it can negatively influence mental development, resulting in poor school performance and later in reduced productivity in the workforce. It can also be passed to the next generation (the inter-generational cycle of malnutrition) by a mother with stunted growth- smaller statue means smaller pelvis, influencing the ability to grow as a fetus, resulting in babies with low birth weight and stunted growth later.

Wasting is the result of acute malnutrition, and represents the “waste” of muscle and fat tissue, resulting in rapid weight loss and failure to gain weight. It is determined by an extremely low energy intake and is a powerful indicator of mortality in children under 5 years old.

CONCLUSIONS

Undernourishment is not an independent problem that can be solved by merely feeding the hungry, but is deeply interconnected with other global issues, related to industry, climate, socioeconomic and political environment among many others.

Multiple organizations across the globe- UNO, FAO, WHO- are investing resources in the effort to tackle these issues before they reach alarming levels. Together they created the Sustainable Development Goals, a blueprint for a better future, on the principle of “leaving no one behind”, emphasizing a holistic approach to achieving sustainable development in the world, by 2030.

Although the SDGs Summit 2019 demonstrated that the commitment to the 2030 Agenda remains steadfast, it became clear that the world in not on track to meet the SDGs for 2030.

Regarding undernourishment and the related health problems that were discussed in this paper, the following graphic shows that, even if the goals are reachable, we are still a little off track.

	2018	2030	Target
Low birthweight	14,6	10,5	10
Stunted children	21,9	12,2	10
Wasted children	7,3	3	5
Anemia	32,8	15,2	10

Figure 11. Progress made and prediction in achieving the target of SDGs (% of population in the world)

Source: Author's interpretation of data from <https://www.un.org>

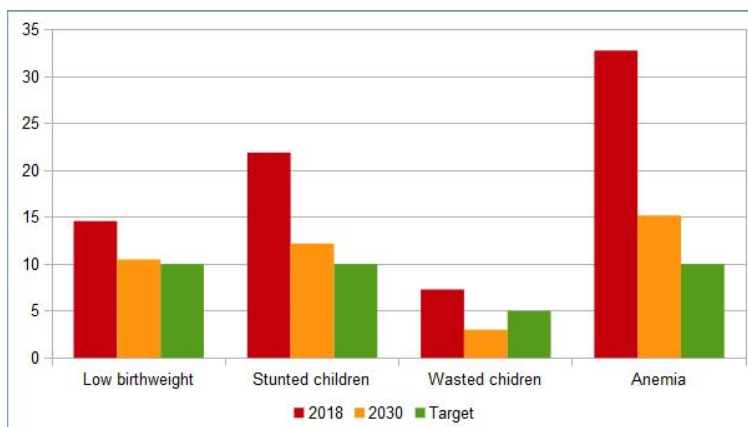


Figure 12. Progress made and prediction in achieving the target of SDGs

Source: Author's interpretation of data from <https://www.un.org>

The 2019 SDGs Progress Report indicates that although great progress has been made in the last 4 years, there still are factors that undermine the efforts to achieve the SDGs:

- political conflicts
- climate crisis
- irregular migrations
- rapid urbanization
- gender based violence, and may others.

In order to put the world back on the track of reaching the projected targets, more ambitious and fast paced implementation practices are needed. Understanding the interconnections among the SDGs is essential in order to adopt the solution with the greatest impact across multiple sectors.

Achieving the 2030 Agenda for Sustainable Development remains a challenge that will only be overcome if we work together at all levels, from micro (local) to macro (global).

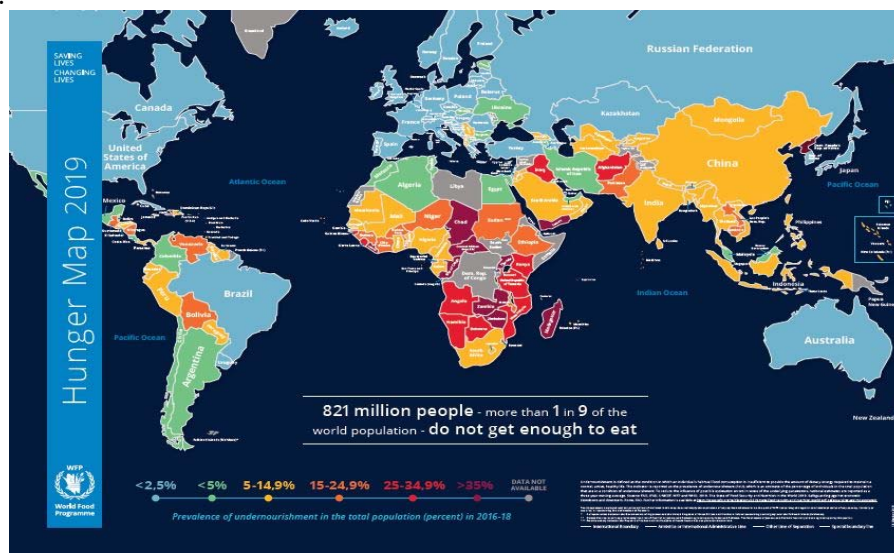


Figure 13. World Hunger Map 2019

Source: <http://www.fao.org>

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