

# Food security and sustainable development

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## **ABSTRACT**

The article clarifies issues of food security and its relationship to health security, undernourishment, malnutrition, and food insecurity. Afterwards, it examines the influence of the energy crisis and environmental crisis on the food crisis, continuing with issues linked to hunger on our planet and ending with human anti-natural facts that increase the gap between food security and sustainable development.

***Keywords:** food security, food insecurity, health security, undernourishment, malnutrition, family subsistence, agricultural protectionism, agricultural crisis, ecological crisis, chronic hunger*

## **FOOD SECURITY - A COMPLEX NOTION**

Food crisis is a world challenge. This crisis is intrinsically linked to two other major challenges which people have to face at the beginning of the 21st century: energy issue and global warming. Nutrition is at the core of environmental, social and financial crises and offers eloquent illustration of how all these influence each other.

Food security is the component of national security concerning organizational policies and instruments used for prevention of risks, threats and vulnerabilities and counter any crisis occurred in the secure access to food for individuals and human communities; therefore it is considered by some experts as being linked to human security along with economic security, health security, environmental security, personal security, community security and political security.

To fully define the concept of food security, it is necessary to look through the prism of at least two components:

- firstly, it is about availability, meaning that food must be physically, must be constantly produced in sufficient quantities and in a convenient structure. Otherwise, it is impossible to feed on a long-term a population that grows continuously, given that natural resources grow in arithmetic progression and population growth is exponential. Even if the amount of food produced globally is sufficient for all mankind, strong variations are recorded at regional, continental or local level;
- secondly, it is about accessibility, meaning that there is the possibility of buying it, in terms of purchasing power; e.g there may be famine with windows full of food.

At the two aspects, we can add shortages created for speculative purposes, which can create serious anomalies on agricultural and food markets. Also, we should not forget the link with health security, meaning that a large number of existing disease on earth today are related to food, either in terms of quantity, such as undernourishment, either in qualitative terms, such as malnutrition.

Food security must achieve three specific goals: ensuring adequate food production; maximizing stability of agricultural products' supply flow; providing access to available

agricultural resources of those who need them, ensuring basic foods necessary for human health. The overall objective of global food security would be: "ensuring that all people, at all times, have physical and economic access to basic food they need". (Abdelmalki, 2010, p.52)

Achieving food security is a matter of interest for Romania too, a fact emphasised by the decay of Romanian agriculture, at the same time with the transition to massive imports of food products.

We must not forget that the problems should be viewed differently in the North part in comparison to the South part. Whether, in North, we can speak of food security, in South we speak of food insecurity. Therefore, for the South part, the degree of agriculture dependence is very high, because about 91% of agricultural land is owned by small family farms, occupying 86% of the rural population that act to ensure the family subsistence.

We may also mention the degree of dependence on agriculture is that, in these regions, "seven out of ten workers are in agriculture, the agricultural production provides about one third of the national wealth, supplying about 40% of export earnings". (Arnaud, 2008, p.63) All of them require a revival of the agriculture program, in parallel with northern countries accountability, should ensure the planet security in terms of food.

Such an agriculture recovery program should provide the subsistence exit, which requires access to OMC related technology (formerly GATT) and increase the state's role in supporting research and public financial support for training, innovation and investment in rural areas. At the same time, it is necessary to encourage micro-credit in rural areas, opening to the outside but also protect their agriculture through market integration in some form of agricultural protectionism and the need for a new code of conduct.

In the medium and long term, food security requires putting in practice commercial arrangements that should impose to exporting countries discipline on international markets, in order to prevent collective food security, i.e speculative phenomena.

### **SUSTAINABLE DEVELOPMENT – A GOAL OF THE 21<sup>ST</sup> CENTURY**

Sustainable development was defined in the early 80s and "synthesizes the system of programs and actions through which the current generation of the planet manages to satisfy needs without jeopardizing the needs of future generations". (Masu, 2011, p. 21) Assen S. is one of the authors that attributes to this concept, the function to correct imbalances in current development, aiming to achieve "harmony between economic, social and environmental dimensions, so that to ensure global, long-term sustainability of the entire system". (Assen, 2007, p.98)

Based on the classic triangle of sustainable development - economic, environmental, social - we get the idea that, to be sustainable over time, the development of a society involves three-dimensional reproduction of capital: economic classic capital, environmental composed capital of all natural resources inherited from one generation and social equity capital, assimilable to integrative capacity of the community and that depends on access to wealth and its distribution mode.

Moreover, sustainable development is "the result of an integrated approach of political and decision factors where the environment protection and long-term economic growth are seen as complementary and mutually dependent". (Bacescu, 2010, p.69) The current global economic situation is the failure of an inadequate economic development that depletes natural resources and sentences to poverty the majority of the world population. Although, in the last 50 years of the twentieth century, world production increased six times and twice the world's population,

inequalities between nations and inside nations widened, becoming a source of concern and potential conflict. 20 % of the world population consumes 80 % of the planet's natural resources, “2.4 billion people lacking access to basic sanitation and about 1 billion struggling to survive for less than a dollar a day”. (Chauveau, 2009, p.43)

While development is perceived as synonymous with economic growth, considered indispensable for the essential needs of the population, sustainable development introduces, therefore, a new vision, an environmentalist one which emphasizes the necessity of considering the limited and non-renewable resources of the planet.

Sustainable development underlines the economic growth and its limits. It is the most comprehensive concept that economic thinking offered to collective reflection; a sustainable development can be conceived only through the impact of the global population. Food crisis and the energy crisis were triggers of this new way of thinking. Sustainable development is a complex combination of the social, ecological and economic, with a projection for the future, to secure both the current generation and future generation, through irrational consumption and lack of perspective, but not preserving the future by condemning the present generation to stagnate and sacrifice.

### **INFLUENCE OF THE ENERGY CRISIS AND ENVIRONMENTAL CRISIS ON FOOD CRISIS**

For emerging countries and the poor ones, economic development involves producing as much energy, provided a sustainable management of climate change, which in fact is really the meaning of sustainable development.

The question that arises here is that the sun and wind are inexhaustible public goods, while petroleum, gas and coal are depleting private goods which threaten the climate. Modern agriculture is a huge energy consumer because it is heavily mechanized and fertilized. Also, as Nicholas Georgescu Roegen said, “resource depletion occurs as a proportional reduction in the level of future life”. (Bogdan, 2009, p.78)

Not to forget the growing share of the production of bio fuels, which deviate from the consumer a range of cereals and oil producing plants. Let's think that only 20% of ethanol production is done by the U.S. and China follows it. Of course some consider the production of bio fuels as a "crime against humanity", while others consider it a necessity for sustainable development. The truth is that the focus towards agro fuels diminish the supply of food products and determines the rise in agro food products' prices, both aspects leading to the deepening of food crisis.

Everyone supports the idea that we cannot speak of a sustainable economy without fully manage each of the two crises, and the interdependence between them. There are a number of international organizations' studies that conclude that if current gas emissions are not diminished, we will see an increase in planet temperature by two-three degrees in the next four-five decades. This increase will lead to serious climate change repercussions on food production, environment and health. Hence, we can conclude that in order to feed the 21<sup>st</sup> century world's population, a correlation between the two crises must be assured.

All of these studies have shown that about “25% of the emission of greenhouse gases is due to agricultural practices such as deforestation, fertilizer, animal fattening”. (Masu, 2009, p.15) This means that the more we have more farming, the more we will have a more pronounced warming climate, more emissions of greenhouse gases and more harmful effects.

Not to mention the high frequency of droughts, storms and flooding caused by climate change that threatens the viability of agro systems.

Of course that agriculture can contribute to climate change mitigation, creating agricultural systems able to absorb external climate phenomena to conserve, change and replace carbon. We must not forget that agriculture consumes 70% of the Earth's water, and in some parts even 90-95%, the great consumer being irrigation, where water also dispels. The trend towards waste is created because water is not paid, and the farmers had the impression that water is a free and inexhaustible good; only 4/5 of the surface is covered by water, mostly salt water and only 3% of water reserves is fresh water. Furthermore, from this freshwater only 0.01% is used water, namely rainwater and shallow groundwater. This means that, at present, "1.2 billion people live in arid regions and they will reach 3 billion by 2025". (Brunel, 2009, p.92)

Obtaining drinking water was found to be more expensive, which makes us wonder whether it is a commodity or a global public good. Climate changes are causing global catastrophes if we think that in 2010 there were about 440 natural disasters, which have resulted in about 230.000 deaths in just 6 months. Only extreme heat and fire in Russia led to a decrease in production of wheat by 25%, which led to a rise in price up to 75%. Price per ton of rice reached \$1000, increasing by 50%, the highest level since 1970. Let's think about the fact that only 10 grams of rice per day for each inhabitant of India means an additional production of 3.6 million tons annually. Climate changes will cause malnutrition for 25 million children, "they will reduce wheat production by 30% and will double by 2050 prices for wheat, rice and corn". (Carfantan, 2009, p.84)

We must also not forget that in 2050 Asia's population will increase from 3.9 to 5.2 billion inhabitants, and in "Africa will increase from 906 million to 2 billion people" (Masu, 2011, p.36); regions where already reigns chronic hunger and feeding these populations will raise serious issues.

Increasing agricultural production records a decreased rate. Thus, if in 1961-2000 the rate was + 2.3% per year, in the next period it was + 1.5%, which will require the production of 200 million additional tons by 2015, an unrealizable task.

### **HUNGER ON OUR PLANET**

We must recognize that food provides eloquent illustration of how social, financial and ecological crisis worsens. Therefore, the concept of food security cannot be confined to the issue of proper food. Thus, food crisis is intrinsically linked to the two major challenges at the beginning of XXI century, i.e the issues of climate warming and energy, the world going toward famine. Let's think about the fact that each year the world's population is multiplied by 70-75 million people (about 4 Romanians), meaning an extra 3 billion people by 2050 that require a doubling of current food production. Decreased production in major exporting countries such as USA, Russia, Australia affects each time supply and cause a sharp rise in prices.

Given that approximately 100 million tons of U.S. corn leaves food markets towards increasing vehicle fuel production with soy, palm, sugar cane, beets, wheat, etc., we find a shift of agricultural production to energy demand and saving fossil, non-renewable resource (gas, coal, oil). We must not forget that even the European Union in "2020 expects to incorporate green fuel into gasoline at a rate of 20%". (Masu, 2011, p.99)

Also, due to the desire to keep production for their own market and for fear of a possible shortage, a number of countries suspend or restrain their exports, which have inherent effects on those markets of goods. This has an effect on rising oil prices, which affect the world price of

food. In tropical areas droughts will multiply and intensify and conflicts for reasons of shortage will be more frequent and more violent. We can say that world is moving quickly to hunger, as evidenced by the fact that hunger riots multiply due to the explosion of food prices by 50% and our planet becomes a hungry planet due to resource shortage, both in energy and in food field. This is demonstrated by the existence of more than “one billion malnourished in 2012, compared to 800.000 in 1995, the percentage of malnourished population increased from 16% to 20%”. (D’humieres, 2010, p.53)

There are situations when hunger is caused by some armed movements that strive for power and resources, and destroy crops. Not to mention a series of deliberate speculative business such as stocks designed to allow price increases. In such situations the economic response becomes insufficient, imposing solving the armed conflict; hunger causes are therefore both technical and geopolitical.

## CONCLUSION

Man has turned Earth into a planet that threatens to become a space that cannot sustain life with fewer resources and disrupted flows and circuits, going into a drift of no return. We already have a sick planet since the natural order was overturned by abuse and aggression, things that spring, on one hand, from the dark chaos of ignorance or the immeasurable desire for enrichment, the inclination towards violence and criminal acts of others, on the other hand. To justify this statement, we remind the wild waste of natural resources by man, the destruction of balanced natural ecosystems, abusive consumption, blowing all kinds of toxic gases, starvation and disease, disturbance by humans through violence, organized crime. These are anti-natural facts that increase the gap between food security and sustainable development. In this way, people tend to remain without a leader, divided into a network of international bodies and organizations, that would lead to terrorism and mafia. Our alarm signal is targeting those people who oppose to the natural order and push humanity towards suicide. We just have to think globally and follow a "universal good", with order and rigor for all people.

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