

## Global Food Crisis – effects, causes, remedies

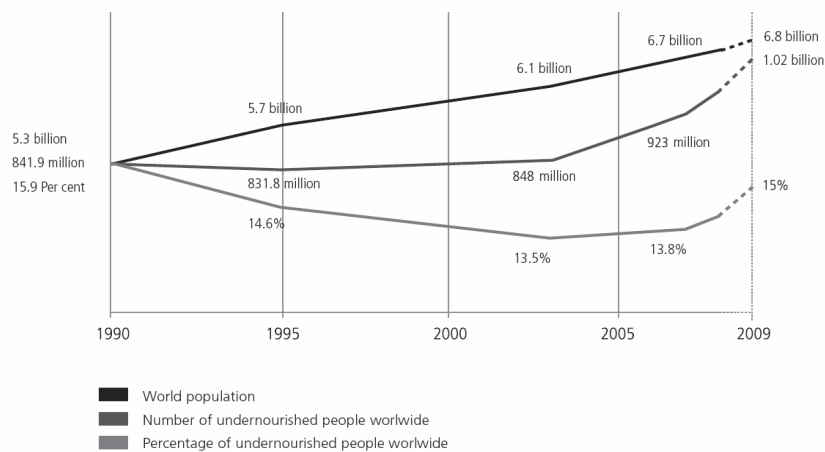
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**Abstract:**The present paper makes a brief examination of the actual global food crisis which the humanity has to face. The work focuses on the some of the causes as well as factors which lead to the decline in growth of agricultural production with results in the increase of the prices for agricultural and food products. Nevertheless the food crisis is a very complex phenomenon and has its roots some decades ago when people would rather ignore it without thinking to the present serious consequences. Given the present circumstances, it is essential that besides effects to examine the structural causes of the growing food insecurity in order to understand what really lies behind the food price crisis. The paper explores the impact of some factors including the systemic decline in agricultural productivity due to less land improvements, less investment in irrigation systems and in water management, in fertilizers along with states' reduced regulatory role in agricultural policy. In the end the paper presents some measures which can help reduce the adverse effects of the actual food global crisis

### 1. OVERVIEW ON THE GLOBAL FOOD SECURITY THROUGH THE PERSPECTIVE OF THE FOOD PRICE CRISIS

For the first time in the history of humanity the number of hungry people worldwide has exceeded 1 billion. According to the most recent estimates of the Food and Agriculture Organization (FAO), 1.02 billion people in the world suffer of malnutrition which means that every one of six people is chronically undernourished.

In the last couple of years the number of undernourished has increased dramatically and the world is further than never from fulfilling the 1<sup>st</sup> Millennium's Development Goal which is to reduce to half the percent of hungry people until 2015. In fact, worldwide is well-known and recognized that the individual right to food and nourishment has been permanently violated



Source: FAO Report /2008-2017

For this reason an immediate intervention of the international community and national governments is required to counter the actual crisis and take long term measures in order to sustainably ensure the food security. This serious problem of the humanity was put high on the public attention in 2008 and since then several international conferences have been held on the way to eradicate the hunger and finding solutions on solving the food crisis.

The United Nations General Secretary, Ban Ki-Moon, set up a High Level Task Force aimed at finding a common strategy to fight the food crisis considering that the number of the undernourished

people is in continuous growing. Within this action the national governments and the intergovernmental organizations took the commitment to ensure the right to food of the 1.02 billion people suffering from hunger. Therefore, a common action is necessary under the direct coordination of United Nations (UN), the only democratic organization under which all the 192 developing and developed states are equally represented and can act commonly and in close cooperation with the Civil Society and NGOs. However, the food crisis in the last three years is only the tip of the iceberg. The alarming increase of the prices has after all awoken the world. Within a few

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months of 2009 the prices for corn, rice and wheat have exploded so that for many people these goods became difficult to purchase or even unaffordable. First who became victims of the price explosion of the food basic products were poor people in the developing countries as they spend a much larger percentage of their income on the staple food. Thus, according to an FAO Report in 2008, whereas average spending on basic food accounts for 10 to 20% of overall income in developed countries, it lies between 60 and 80% in the less developed countries – and much above this level for the poorest states. Therefore they have a very narrow margin of tolerance and no money as a buffer against the rapid price increase. After years of preaching the ever same paean of praise to globalization and liberalization by the International Monetary Fund (IMF), the World Bank (WB) and governments, the developing countries had to learn finally that the export orientation of their agriculture and the consequent dependence on cheap imports may not be the means to achieve the food security after all. The import costs for the net food importing states have quadrupled since 2000, according to a 2008 FAO Report, making impossible for many of these countries to import the most basic staple foods.

The reasons for the price explosion are various but the effects on the poor states in Africa, Asia and Latin America were devastating. The consequences of food price increase were that people could not afford to buy basic food products such as wheat and corn and riots erupted in the streets of Mexico City, Haiti and in other 40 countries in Africa and Asia affected by poverty. The riots resulted in overthrow of some governments and grocery stores plundered. Even though food prices have little declined again on the world market in 2008 the situation is far from being improved. The prices remained not only highly volatile but also high on local markets. The WB Managing Director, Okonjo – Iwela, explained in a WB Report in 2009 that “the decline in global prices has not fully translated into a matching decline in poor countries, especially in Africa where the cost of import for cereals continued to increase in 2008 with 74% slowing down the implementation of the Millennium Development Goal (MDG).

As a result the export-oriented sectors – the largest in many developing countries and often hailed as the universal remedy for economic growth and poverty reduction – were hit hardest and reduced imports by developed countries resulted in large scale job losses with serious social consequences. The latest global trends show food prices finally stabilizing and declining after months of sharp increases. The crisis is, however, far from over. While the prices of major cereals have fallen from their peaks earlier in 2008, they still remain high compared to previous years, making it difficult for many people in developing countries to afford purchasing them. Forecasts of FAO, Organization for Economic Cooperation and Development (OECD) and the United States Department of Agriculture (USDA) project that the recent increases in food prices were not a temporary phenomenon, and suggest that prices for most food crops are likely to remain well above 2004 levels

through 2015 (World Bank, 2008). The FAO Food Price Index was still 28% higher in October 2008 compared to October 2006. Also a FAO Report in 2008 estimated that with prices for seeds and fertilizers (and other inputs) doubling since 2006, poor farmers were not able to increase production. Richer farmers, particularly those in developed countries who could afford these higher input costs, have been able to expand planting. As a result, cereal production in developed countries may have risen by at least 10% in 2008, whereas the increase in developing countries may not even exceed one per cent.

*Chart 1 – World food commodity prices, 1971 – 2017  
(US dollars per ton)*

*Source: OCED – FAO Agricultural Outlook 2008 - 2017*

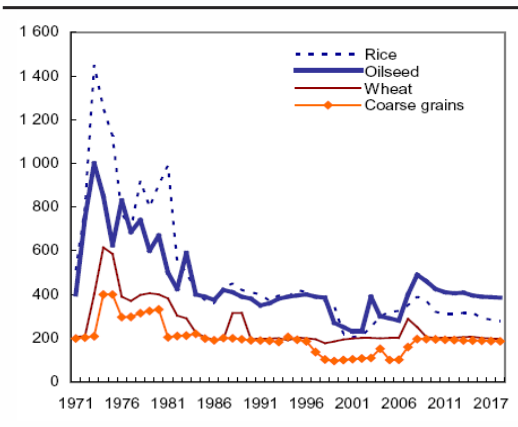
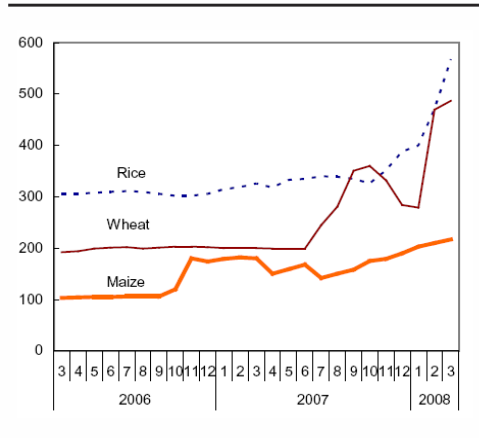


Chart 1 above shows clearly how volatile the food products price was over the last few decades. The diagram shows that in 1980, 1983, 1988 and 1996, prices rose over the previous year, as prices trended slightly downward between 1980 and 2002. Prices began to increase steadily after 2001, and by 2004, reached their mid-80s' level. In early 2006, commodity food prices began to increase rapidly. It is very interesting to see that the actual price increase, which is much more profound and long lasting than the specialists estimated, contrasts noticeably with the 1980s and 1990s when most of the commodity prices were rather on a downward trend. In real terms, however, the prices of many commodities, recorded at the end of 2007, were more decreased than the ones between 1960 -1970. Consequently, the actual food crisis is rather the result, among other reasons, of a rapid price increase over a short period of time. The actual situation emphasizes once more, if necessary, the increased vulnerability of the poor farmers in front of the abrupt changes of the market as the small farmers in the developing countries increasingly rely on the market to sustain and develop their own farms.

Chart 2, below, shows how sharply increased with over 60%, between 2006 and 2008, the basic agricultural products price. This price volatility seriously disturbed the agricultural production as well as the agri-food products market in the poor and developing countries. Under these circumstances the agriculture mostly relied on imports rather than on domestic production.

**Chart 2 – Trends in international food prices on basic cereals 2006 – 2008 (US dollars per ton)**

Source: *FAO - Crop Prospects and Food Situation, 2008-2017*



## 2. OVERVIEW ON THE CAUSES OF THE FOOD CRISIS

Several causes are to be considered responsible for the actual food crisis. Increase of the energy and fuel price with direct consequences on the price of the fertilizers, the agriculture and food products. Thus, according to some estimates of the World Bank in 2008 the growth of the fuel price worldwide lead to an increase with about 18% of the agri-food products price. Using of bio-fuels in agriculture sector is another cause of the food price increase. The exact extent to which the increased usage of cereals and edible oils for bio-fuel production has led to an increase in food prices is disputed, but most international organizations including the WB, the International Food Policy Research Institute consider it one of the main reasons for the food price increase.

The decrease of the national food reserve also represents a source of exacerbation of the global food crisis. Due to continuous pressure by the International Monetary Fund, World Bank and World Trade Organization (WTO) for market deregulation, developing countries' governments have neglected or privatized local or national food reserves and increasingly relied on international trade and increased imports to replace the food shortages. According to the FAO estimates reserves reached in 2007/08 a (25 year-) low of 18.7% of utilization.

The extreme meteorological conditions of flood and drought also represent an important factor of growth the food product price as the agriculture production in the poor and the developing countries strongly relies on the meteorological conditions.

The decrease in production growth has also been impacted by resource scarcity issues such as climate change, water depletion and massif deforestation. Droughts, floods and freezing water due to climate change have also reduced and are expected to continue adversely impact on agricultural production and food security in developing country unless appropriate measures are soon considered to be

taken. Thus, several factors contributed to the gradual slowing of agriculture production growth. These include the reduced state intervention in the agricultural sectors of developing countries; reduced public support and overall investment in agriculture sector along with a decline in research and development by governmental and international institutions.

Besides the above mentioned factors other issues should be considered such as land degradation and constant reducing of the agricultural land along with a poor management of the worldwide and regional water resources with visible medium and long term results on the agricultural production and consequently on the food price and security.

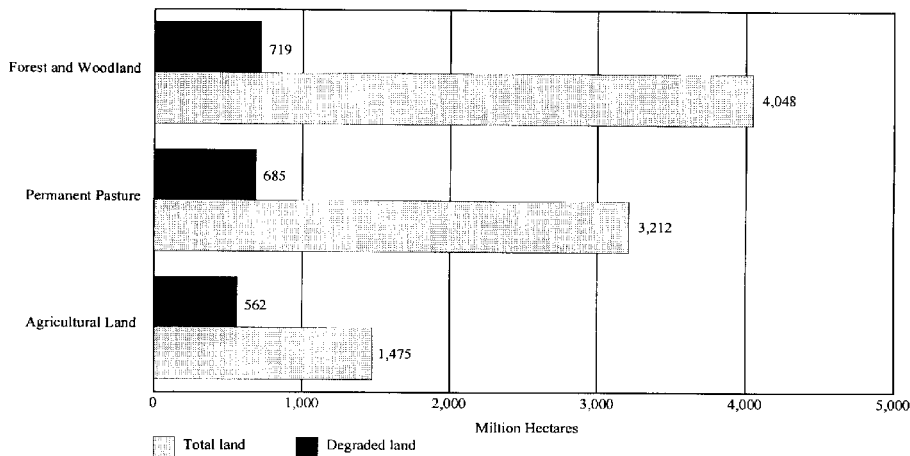
In terms of land management the International Food Policy Research Institute (IFPRI) started in 1994 an initiative for "A 2020 Vision for Food, Agriculture and the Environment" aimed to make an evaluation regarding the actual conditions and trends in food production, consumption and distribution and to facilitate an international consensus on the directions that policy should take over the next 25 years. Thus, following causes of land degradation as well as land management techniques were identified and included in the Table 1.

The scale of land degradation is continuously growing. In the past decade scientists initiated systematic attempts to assess the nature and extent of the agricultural land degradation at regional and global scale and to explore its effects on food supply. The most important studies on land degradation have been done through the Global Land Assessment of Degradation (GLASOD). Thus it was estimates that of 8.7 billion hectares of agricultural land, pasture and forest, nearly 2 billion hectares (22.5%) have been degraded since mid-century. About 3.5% of the total has been degraded so severely that it is irreversible except through costly engineering measures, if at all. If this trend continues 1.4% to 2.8% of the total agricultural, pasture and forestland will have been globally lost until 2020. The most important on-farm degradation effects of land degradation are the declining potential yields. The threat of degradation may also be reflected in the necessity to use a higher level of inputs in order to maintain the yields. Serious degradation sometimes results in temporary or permanent abandonment of some plots. In other cases degradation determines farmers to convert the land to lower value uses for example cropland converted to grazing land or grazing lands permanently converted to shrubs or forests. The chart below shows a global evolution of the land degradation estimated since 1990 until 2020. Considering the above mentioned forecast increased research and technology development for land improvements are needed. A solution for this issue would be the growth of soil productivity and increase of the cultivated area at global level combined with a better distribution of the food resource among the states. Unfortunately some food overproduction situations were recorded when food products were simply dumped for high price keeping rather than being distributed to poor countries.

Table 1

Component	Degradation	Soil improvement methods
Physical land management	Crusting Compaction Sealing Wind erosion Water erosion Deforestation	Soil conservation barriers (live, inert) Re-vegetation of the denuded lands Soil de-compaction Breaking up of rivers' basins Cover-crops Soil deposition Improved furrow methods
Soil water management	Impended drainage Water logging Reduced water holding capacity Reduced infiltration Soil salinization	Irrigation Water harvesting Field drainage Drainage of water logged areas Filter strips
Soil nutrient and organic matter management	Soil alkalization Acidification Nutrient leaching Removal of organic matter Burning of vegetative residues  Nutrient depletion	Fertilization Composting Green manuring Animal manuring Drainage of saline alkaline soils Liming of acid soils
Soil biology management	Over application of chemical fertilizers Industrial contamination	Introducing of natural fertilizers Treatment with nitrogen-fixing microorganisms
Vegetation management	Decline of vegetation cover Decline of biodiversity Decline in species composition Decline in availability of valued species	Improve of vegetative cover Increase of species biodiversity Improve of species composition Improve of availability of valued species

Chart 3 – A global perspective of land degradation by type of land use 1990 – 2020.



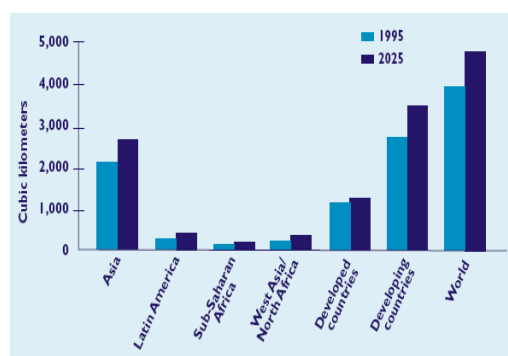
Source: GLASOD land use perspective study over 1990 – 2020

Priority areas in terms of technical research include among other methods soil fertility improvement through the use of technologies such as green manuring; control of soil erosion and biological degradation by land forestation; improved irrigation techniques or rehabilitation of the existing irrigation systems and implementation of improved agro-forestry systems. Promotion of such land improvements, particularly in the “hot spots”, should represent a regional and local development policy priority. Governments, NGOs and farmer associations can promote land investments through several mechanisms. Thus extension policy and farmer organizations can play an important role as well as development of regional specific government/EU supported programs for agriculture and rural development which include land arrangement and soil treatment works.

Besides land improvement issues another main factor limiting the food production is the water.

Will there be enough water to grow food for the almost 8 billion people expected to populate the Earth by 2025, is the question of the specialists? About, 250 million hectares are irrigated worldwide today which is nearly five times more than at the beginning of the 20<sup>th</sup> century. It's a fact that irrigation has helped boost agricultural production and stabilize the food production and prices. However, growth of population and income will increase the demand for irrigation water in order to meet food production requirements. Water development is a key element for the food security, people's existence, industrial development and environmental sustainability in the entire world. According to an IMPACT-WATER study, drawn up in 2002, in 1995 the world withdrew 3,906 cubic kilometers (km<sup>3</sup>) of water for these purposes. Also excessive diversion of water flows and overdraft of groundwater have already caused environmental problems in many regions around the world. By 2025 it is estimated that water withdrawal for most uses (domestic, industrial and living) will increase by at least 50%. This will significantly limit the irrigation water resource which will result in food production constraining. Nevertheless, where the benefits worth the costs many governments will construct dams and water reservoirs to sustain the irrigation demands.

**Chart 3 – Total water withdrawal by region, 1995 and 2025**



Source: International Food Policy Research Institute - Global Water Outlook to 2025

Water scarcity will get much worse in the future if policy and investment commitments from national

governments and international organizations and development banks fail to act. Failure to adopt water saving strategies, improvement technologies and policy reforms could increase the water demand globally faster than estimated. However, some broad strategies were identified which can address to present and future water crisis:

1. Investments in infrastructure to increase the supply water for irrigation, domestic and industrial purposes
2. Conserve water and improve the efficiency of water use in the existing systems through sustainable reforms in water management and policy sectors;
3. Improve crop productivity per unit of water and land through integrated water management and agricultural research and common efforts of the national governments, including crop breeding and water management for rain fed agriculture

Also, large scale improvements in river basins can lead to better management of water sources for domestic, industrial, living and agriculture sectors. River basin efficiency depends on improvements both in water saving technologies and in the international and regional institutions. Industrial water recycling such as recycling of cooling water, can be a major source of water saving in many countries. Also, improvement in the irrigation sector can be made at the technical, managerial and institutional levels. Managerial improvements should include, among others, the adoption of demand-based irrigation systems and improved equipment maintenance. Special care must be taken in designing a water pricing system for agriculture as direct price increase is a pressure factor to the farmers as water plays such an important role in the production costs. However, international community plays an essential role in promoting, planning and supporting research measures aimed to help states which are vulnerable in front of the actual and future food crisis. Moreover public investment, co-financing and training programs along with supportive policy strategies and policy instruments can help agriculture sector to provide enough food in the future necessary to go through this serious impending food crisis

#### REFERENCE WORKS:

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