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# Local Implications of Higher Global Food Prices

– A Study of Poverty and Possibilities in Zambia

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# Abstract

The purpose of this study is to examine how the global food price crisis 2007-2008 affected poor people in Zambia. The study is supposed to find out how the high world market prices of food were transmitted to Zambia and what impacts the high prices had on the poor people in rural and urban parts of Zambia.

The theories that are used in the paper are Amartya Sen's theory of food entitlement, Henry Bernstein's writings of poverty and farming and a microeconomic theory of supply and demand. The method that is used is a literature study.

The result of the study indicated that poverty increased and poor people suffered welfare losses in Zambia due to the high prices 2007-2008. This very much as a result of that a majority of the poor people are net consumers of food, although ca 70 % of the poor people works in the agricultural sector. Higher prices did not turn out to be an incitement and a possibility for the poor farmers to raise the production. The study shows that small-scale farmers first of all need help to handle other supply-side constraints such as lack of land, information, inputs and credits, before they can increase production according to economic laws.

Keywords: Hunger, Farming, Food Price Crises, Development

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# Central concepts

## **Hunger**

Hunger has the same meaning as undernourishment. If a person is in hunger this means that the person not has got enough food to fill up the daily need of calories.

## **Starvation**

Starvation is near connected to the meaning of famine. These words mean that the hunger is so acute that it is life-threatening.

## **Food security**

If a person is food secure this means that the person has access to food and the person has got secured food supply.

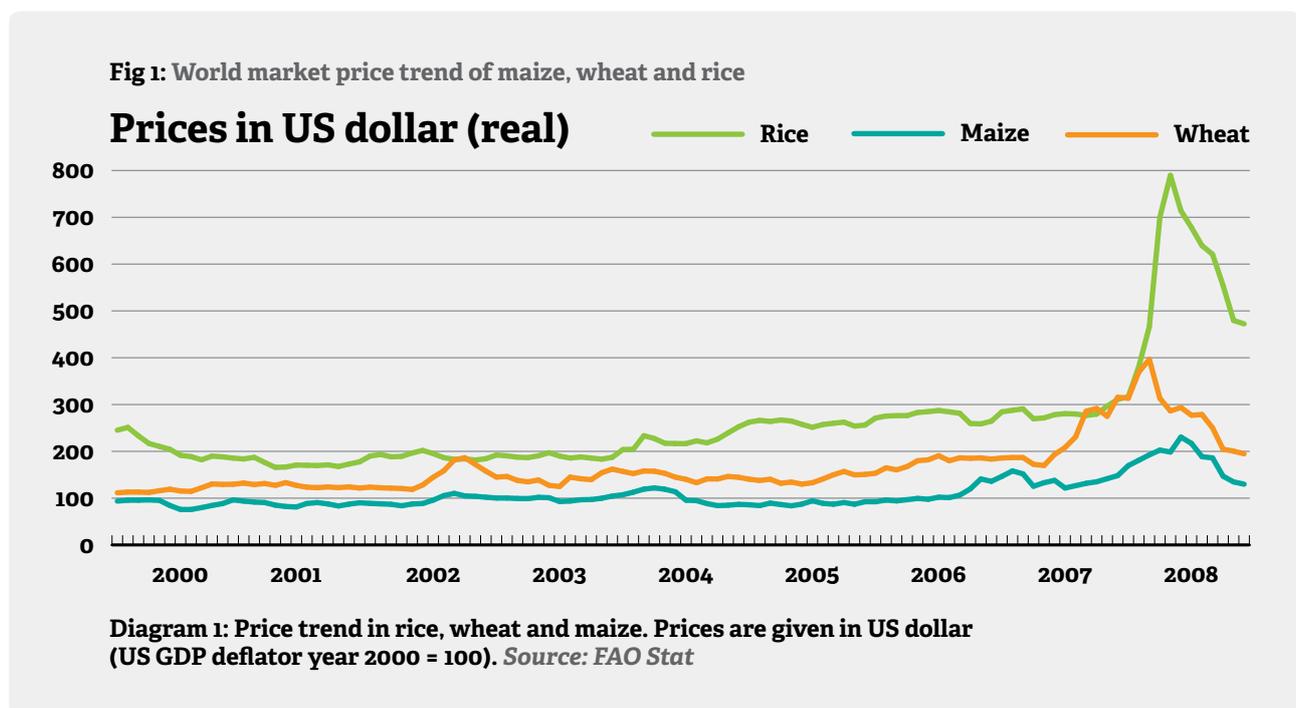
## **Poverty**

Poverty refers to a standard of living which is intolerable low. According to the World Banks way of measuring poverty is a person that lives on less than 1.25 dollar a day poor.

# 1. Introduction

## 1.1 Background

In 2006 the world market prices of basic food began to rise sharply. When prices reached their top in 2008 food prices were at their highest levels in 30 years. Price levels were as much as 40 % over 2007:s prices and 76 % over the prices of 2006. Most expansive were the increases in basic food such as cereals, dairy products and oil seeds, and less in tropical products like raw materials, coffee, and cocoa.<sup>[1]</sup> Figure 1 shows the increases in prices of maize, wheat and rice, which were some of the products that had the most expansive increases in 2006-2008.



The situation threatened the global food security and especially the livelihood for the 1.4 billion people living in poverty and spending a great part, up to 80 %, of their income on food. During the crisis, the people living in poverty increased with about 100 million, and the people in hunger increased with 115 million making the number of people living in hunger over one billion.<sup>[2]</sup>

[1] FAO (2009) p.1 ff

[2] FAO (2009) p.1 ff, Simler (2010) p.2 f

The high prices quickly turned into a global issue that challenged the political and social stability. Hunger riots broke out in several places over the world and the case got a lot of attention in international media, and has been known as the “food price spike” or “global food crisis”.<sup>[3]</sup>

The causes of the price spike have been analyzed and debated by a great number of researchers and many different factors have been pinpointed as central to the price spike. Some of the factors that most researchers have agreed upon as explanations to the spike are; the unusually high oil price, the increased demand and production of biofuels, the increased amount of speculations on the food market, the record low cereal stocks, the depreciation of the US dollar and the policy responses against the high prices.<sup>[4]</sup>

During the second half of 2008 prices began to fall again, but according to FAO this was mainly a result of the global financial crisis and downturn in world economy, and not because of a global solution to the crisis or response with increased global supply of food. Because of this, many of the market conditions that created the price shock still remains<sup>[5]</sup>. During 2010 the world market prices of staple food began to rise again to reach new record levels in 2011.<sup>[6]</sup>

For years, world market prices of food were a global issue because they were declining, creating no opportunities for farmers in developing countries and the poor population of the world, which primarily is found in the agricultural sector. However, when the prices finally increased in 2007-2008, this created huge problems for many of the developing countries threatening the food security and the livelihood for millions of poor people. The crisis became especially problematic in Africa, where a lot of the countries depend upon cereal imports.<sup>[7]</sup> Therefore this study will focus on a country in Africa, namely; Zambia, a low income country in sub-Saharan Africa and try to find out how the price crisis affected the poor people there.

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[3] Janvry and Sadoulet (2009) p.2

[4] FAO (2009) p.19 f, Einarsson (2010) p.22 f

[5] FAO (2009) p.23

[6] [www.svd.se](http://www.svd.se) ”Matpriserna slår nya rekord” Retrieved:11-05-30

[7] FAO (2009) p.6

## **1.2 Problem formulation**

In 2007-2008 the world market prices on staple food reached their highest levels for thirty years. The consequences of the high prices were devastating for many of the world's developing countries, threatening the food security and the livelihood for the people living around the poverty line. Another 115 million people were put in a state of hunger during the food price increases 2007-2008. The crisis also challenged the overall development, as food is one of the most basic needs for human beings that have to be met for further development.<sup>[8]</sup>

The complex consequences of the food price variations make the situation important to study. If we can find out how different actors in developing countries are affected by the high prices, what problems and opportunities it creates for them, it may be easier to deal with crisis like this in the future. Hopefully even possible to turn higher prices into an opportunity for some of the world's poorest people.

Today it is four years until the millennium goals are supposed to be reached, the first of UN:s millennium goals is to half the hunger until 2015. In 1996 when the UN had their world food summit in Rome and adopted this goal there were 815 million people living in hunger. Since then the number of undernourished in the world has increased and when the UN met for their world food summit in 2009 the number of people in hunger were 200 million more than in 1996. These numbers show clearly that we have to study the function of the world's food production and consumption.<sup>[9]</sup>

## **1.3 Purpose and question formulation**

The purpose of this study is to examine how high world market prices in food affect poverty and the poor people in less developed countries, with benchmark in the recent global food price spike, 2007-2008. To shed light on the complexity of the issue this research will go deeper into one specific country: Zambia, a low-income country in sub-Saharan Africa.

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[8] FAO (2009) s.1 ff

[9] Einarsson(2010) p.9

**The main research question is:**

- » How did the food price crisis 2007-2008 affect poor households in Zambia in rural and urban areas?

**Additional questions are:**

- » What countries are most affected of higher food prices?
- » In general, who within a country will lose from high food prices and who will win?
- » What is needed to help developing countries to deal with higher food prices?

## 2. Theory

The theoretical framework for this paper has been drawn from Henry Bernstein and Amartya Sen and their writings of poverty, hunger and farming. An economic theory of supply and demand by Jeffery M. Perloff has also been used in the study.

### **2.1 Bernstein – The simple reproduction squeeze**

When Bernstein is analyzing the problems of poverty and farming he focuses on the production chain and the poor household's position in relation to other households. He states that farmers and land in Africa are exploited through the chain of commodity production and purchases which lock them in the international capitalistic economy, a situation which have very much been formed by the colonial powers.

Bernstein criticizes the researches and theories which analyze the peasant as a separate unit and look at the internal relations of the households, instead of analyzing the relations between different units of the production chain. According to Bernstein analyzes have to see the relations between classes as they are constructed through the social relations in production.

The reason colonial powers wanted to create this development was because of three main reasons according to Bernstein: (1) They wanted to increase incomes from taxation (2) They wanted to secure their own supply of raw material (3) They wanted to turn the people in Africa to “economic men” as a part of their civilizing project. The colonial powers withdrew labor from use-value production and monetized some materials, which forced people into commodity production either through production of cash-crops or labor work. This was the end of what Bernstein called the “natural economy”. For the peasantries consumption of commodities got necessary for reproduction, and old skills got lost. The process is called commoditization. When the natural economy vanished, this gave place for a new social reproduction where reproduction

of a household took place via the production and exchange of commodities.<sup>[10]</sup> Bernstein writes “Commodity production becomes an economic necessity for the peasantry, in order to meet its need for cash, the household produces commodities which become, through the process or circulation, material elements of constant capital and variable capital”<sup>[11]</sup>

The general farmer would continue to produce use-values for the direct consumption at the same time as the household also produces commodities. Trading companies and the colonial state became involved in the production to regulate what was grown and how.

Bernstein introduces the concept “The simple reproduction squeeze” which refer to the consequences of the commodity relations on peasants economy, namely that cost of production will increase with no surety that return to labor will do so. The peasantries are suppose to use more expansive inputs in farming such as improved seeds, fertilizers, insecticides and pesticides, but this will give no guarantee for increased returns of labor due to the higher costs. This situation is pushed by the commodity relations. Bernstein writes that the labor and land will be exhausted, as the production has to be intensified, and old methods to combat soil degradation like crop rotation get phased out through the commoditization. More labor has to be used on poorer and more distant soils to keep up the amount of production, which will give higher costs of production and lower returns of labor.

Different development programs aim to push farmers further into commodity relations and try to structure and rationalize the use of labor and technique, often to increased use of labor time.

Furthermore prices of the commodities which the farmers produce decline, relatively to the commodities they consume, in other words; the terms of trade fail for these farmers. This means that farmers will have to lower their level of consumption or create an intensification of their production, or both. The squeeze makes the situation of the farmers in development countries very fragile.<sup>[12]</sup>

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[10] Bernstein (1979 )p.1 ff

[11] Ibid p.8-9 ff

[12] Ibid p1 ff

## 2.2 Amartya Sen - Food entitlement theory

In his approach to famine and hunger Amartya Sen challenges the common view that starvation is a consequence of shortage of food. Sen claims that there is no simple formula between the size of the population and the supply of food, which gives a certain amount of hungry people in the world. The hunger is a function of the whole economy and society. Sen writes that a person can be out of food even though there is plenty of food in the market, and even if there is a shortage of food it is not sure that people will have to starve. Food shortages could be helped simply through a better distribution of the food supply and hunger prevented through the right policies and actions.

Sen believes that food in the society today is not a right, it is something that has to be earned. Because of this, he wants to change the focus in the discussion of hunger from food supply to the entitlement of food. According to Sen the entitlement of a household depends on various aspects such as (1) Endowments; the owning of reproductive resources such as land, labor, wealth etc. (2) Production possibilities due to the level of technology and knowledge. (3) The exchange conditions; the price level of the products that a person consumes in relation to the prices of the products that the person produces.

Sen writes that a famine could emerge as a result of high food prices, but the higher prices must not be a result from lower production. Higher prices could be caused by increased demand and purchasing power of food, which will make the people with the lowest purchasing power lose their entitlement of food. Sen exemplifies this by the famine in Bengal 1943 where rice prices started to increase sharply as a result of the “war boom”. The defense expenditures were high in Bengal and the urban dwellers gained a lot from this which increased their purchasing power and food prices increased sharply and got pushed further by speculations. The prices rose to levels out of reach for the rural Bengal, which did not gain from the war. They lost their entitlement to food and the famine was a fact.

Sen’s conclusion regarding the problem of hunger in the world is that increased food production is not enough to help out the situation, it is a rather simplified solution. To stop the prob-

lem of hunger in the world there is also need to distribute the available food. Sen writes that those who lose purchasing power must be supported to regenerate it.

Sen writes that if a country is a well functioning democracy there is a smaller chance that people will starve. In a democratic country leaders have high incitements to distribute food to avoid hunger. However, if the country is a dictatorship the leaders don't have to suffer from unsuccessful politics, as there are no channels to show dissatisfaction.<sup>[13]</sup>

## **2.3 Economic theory of supply and demand**

The classical microeconomic theory of supply and demand, explains how supply and demand coordinates at the market and decides the price and quantity of a product.

The supply curve in the model shows how big the supply of a product is at different prices assumed that all other factors are being held constant, such as costs of inputs. If the price of the product changes, this will give a movement along the supply-curve, and if another factor that affects the supply changes, this will lead to a shift of the supply-curve.<sup>[14]</sup> Talking about farming these factors could for example be; the access to technique and land or weather circumstances.<sup>[15]</sup>

The demand curve shows how big the demand of product is at different prices holding other factors such as income constant. If the price changes, this leads to a movement along the demand curve. If other factors change, this creates a shift of the curve.<sup>[16]</sup> These factors can for example be: the size of the population, the incomes of the consumers or if new areas for using the farming products are created such as ethanol production.<sup>[17]</sup>

According to the classical theory the demand and the supply will interact in the market and decide the equilibrium supply and the equilibrium price of the product. If there is a surplus of

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[13] Sen (2001) p.160 ff

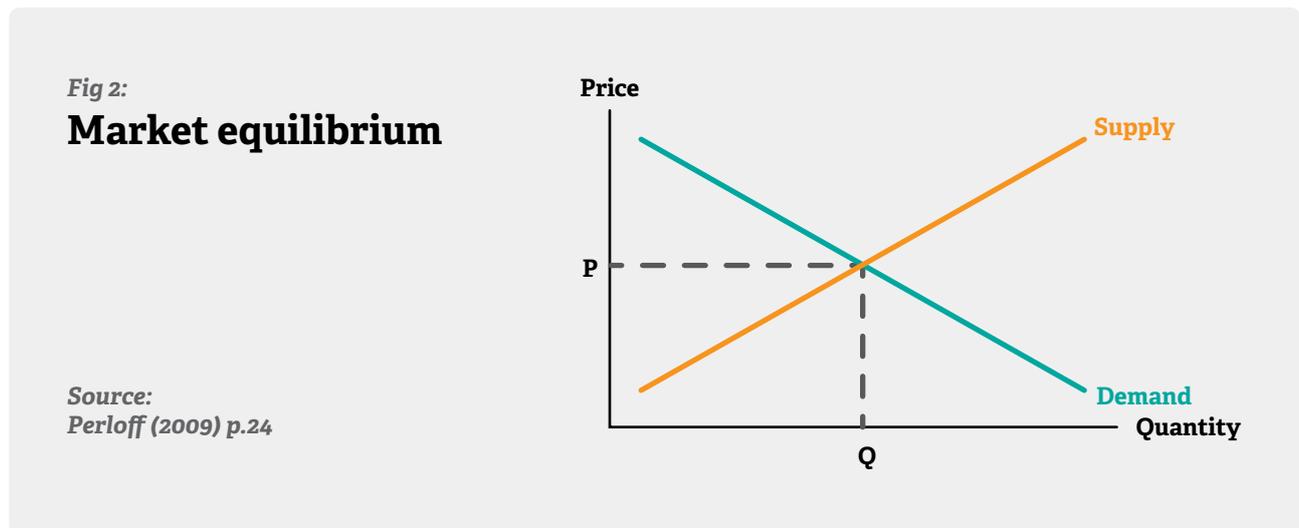
[14] Perloff (2008) p.19

[15] FAO (2009) p.16 ff

[16] Perloff (2008) p.14

[17] FAO (2009) p.16 ff

supply or demand the market forces adjust will the price so the demand is again equal to supply. A general assumption of the model is that the supply curve has a positive slope and that a higher price will lead to a higher supply and the demand curve has a negative slope and a higher price will lead to a lower demand of the product, which makes the model looking like figure 2.<sup>[18]</sup>



To what extent a price change will affect the supply and demand of a product depends on the curves slope, their elasticity. If the supply of product has a low elasticity it means that the supply is relatively stiff and does not react immediately to price changes. One could assume that the agricultural market has a relatively inelastic supply curve in the short run as farming is a long-term project where seed and harvest take place at different times,<sup>[19]</sup> hence making the supply curve would look more like figure 3.

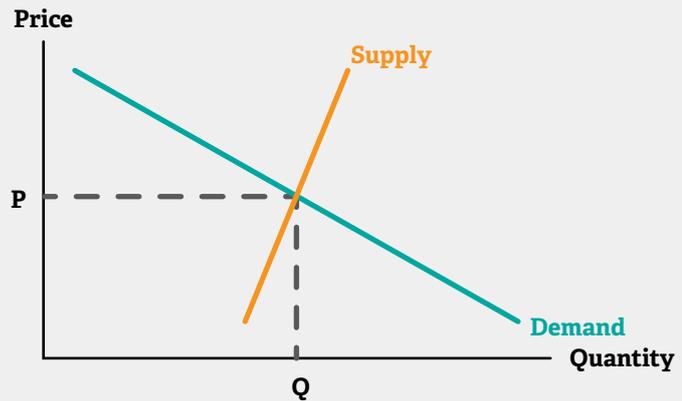
[18] Perloff (2008) p.24

[19] Perloff (2008) p.53 ff

Fig 3:

### Inelastic supply

Source:  
Perloff (2009) p.53 ff



An important point to this theory is that it is illustrating a simplified reality as it is based on assumptions of perfect competition which is not the reality for the agricultural market, <sup>[20]</sup> which is affected of for example state interventions such subsidies, tariffs and price controls. <sup>[21]</sup> However may simplifications of the reality be necessary as the reality is very complicated and according to the literature is the agricultural market actually one market where this model could be useful. <sup>[22]</sup>

[20] Perloff (2008) p.39 ff

[21] Einarsson (2010) p.70 ff

[22] Perloff (2008) p.40

# 3. Method

## 3.1 Choice of method

A literature and statistical study has been used in this paper as method to answer the main research question: How did the food price crisis 2006-2008 affect poor households in Zambia in rural and urban areas? The analysis have been made from secondary data and statistics; namely data and statistics that have been collected by others; researchers, organizations and authorities.<sup>[23]</sup>

## 3.2 Selection of sources

The data that has been used in the paper is primarily articles, which have been collected through scientific databases such as EconLit at Södertörns library. To sort out relevant articles for the study was the summaries of a large amount of articles read. Words that were used in the database searching were: food prices, price chock, hunger, Sub Saharan Africa and farming, and these words were used in different combinations. Further literature was also located by the references of the already found articles. The study is also based on reports produced by the Food and agriculture organization, the World Bank and Forum Syd, and from statistics from the World Bank and the Central Statistical Office of Zambia.

There was no available scientific report or article, which from empirical studies could tell how poor people in Zambia were affected by the food crisis. However, one report that examined the fluctuations of the prices in Zambia was found, the name of that report is “Staple food prices in Zambia”. Another report that was found and used was a scientific report that via mathematical calculations, from the household survey in 1998, analyses the price crisis effect on poverty in Zambia. That report is called “Implications of higher global food prices for pov-

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[23] Bryman (2011) p.300 f

erty in low income countries”. Nevertheless these reports did not give enough knowledge to answer the research question in a scientific way and therefore also other reports concerning the food price crisis were used.

Special attention was put on rappers that concerned countries in sub-Saharan Africa and the effects on poverty from the food price crisis in 2007-2008. However, some articles with more general research of farming, poverty and hunger in developing countries were also used. The questions, which I was looking for an answer for in these rappers, were:

- » What countries are most affected of higher food prices?
- » Who within a country will lose from high food prices and who will win?
- » What is needed to help developing countries to deal with higher food prices?

The answers for these questions were then used to analyze the specific situation of Zambia. To apply the knowledge from other studies on Zambia, I had to find out more about Zambia. I needed information such as: the background, the pattern of poverty, production and consumption, trade, farming etc. This information was found mainly through the report “Agriculture analytical report” produced by the Statistical Office of Zambia, the country database Land-guiden, and the report “Patterns and Trends in food staples markets in eastern and southern Africa”.

### **3.3 Problems with the performance of the study**

During the research for this paper, a large-scale field study in Zambia would have been useful to find new information and fill up the gaps of knowledge that was found in this research area. However, through circumstances for this work, which is a student paper, a field study was not possible to perform. Therefore the best option for the study to was analyze secondary data. According to Bryman an advantage of using secondary data is that the researcher spends less time in collecting primary data and hence will have more time to spend on analysis of the information.<sup>[24]</sup>

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[24] Bryman (2011) p.301

The plan in the very beginning of the work of this study was to do a longitudinal study through the use of statistics from before the price crisis and afterwards. Statistics should have been used to analyze how the high world market prices of food had affected poor people in different areas, and with different occupations in Zambia. However, what I did find out during the work was that the statistics from Zambia were very deficient and specific data on poverty, consumption and production among different groups in Zambia was not possible to find. The latest Household survey that contains such broad information was made in 1998 and the statistics from the big organizations FAO and the World Bank do only give macroeconomic information. The statistics from the larger organization can tell how much food is produced in a country and what the trading patterns look like, but their statistics of social development is relatively old concerning Zambia. There was not possible to find any recent numbers from FAO or the World Bank on hunger or poverty, which could tell how these changed during food price crisis.

So from this I had to change my original plan a bit. To answer my question I did instead as described in the opening of this text; put my focus on literature already produced on the area.

### **3.4 Criticism of the sources**

Among the scientific articles, which were used as sources for this paper did some have a similar aim as this paper; to find out how high food prices affected poor people in a specific country. The major part of these studies did their research by using different methods of calculations. One method which was very common among the researchers was called NBR (net benefit ratio) this method was presented by Deaton in 1989 and has been widely used since then. The approach is used to investigate how price changes affect the household's well-being in the short run. NBR is the value of the net food sale divided by the value of total consumption of the household. The calculation will tell if there is a positive or negative effect on households through the measurement of the change in real income due to changes in food prices as a proportion of the total income. To perform the calculation researchers use the latest household survey, which gives information of household's income, consumption and production, and from the price statistics

is then the welfare changes calculated of this specific price changes calculated.

However, there are some problems with this method, for example It does not take into account that consumers could change their consumption and buy other food items which prices increased less in, the model take for granted that the prices which the producers get is as high as the price the consumer pay and there is no concern of middle men which may take a part of the gain. Another issue is that the calculation is made from the latest survey which might be quite old, for example in the case of Zambia which was made 1998, and there is a possibility that things have changed since then.<sup>[25]</sup>

That many of the scientific articles are made by this or a similar method reduces their reliability and usefulness a bit, as they only produce estimations and no empirically secured material from real observations. However, as the food price crisis are very recent and still actual issue and the statistics from the world's development countries not very well developed, this method might be the best way to find a relatively good answer for questions concerning the poverty and food prices. The results should though be treated with the insight that they are estimations and not facts, which makes this study less secure than a study that deals with an historical and well-documented episode.

Also other statistics concerning these complex questions are often estimations, for example FAO:s statistics of food insecurity. The measure of Food security is based on a calculation of production and distribution of income within a country. It is a rather good measure as food shortages often is linked to poverty, but the measure does not take into account for example that people could get food outside the monetary economy.<sup>[26]</sup>

The margin of error is something that the writer has to keep in mind when she or he is working with statistics. However, although the estimations might be problematic they can anyway be useful if used with caution, for example they can show changes over time if the same way to

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[25] Simler (2010) p. 5 f

[26] Einarsson (2010) p. 13

calculate food insecurity has been used for several years. <sup>[27]</sup>

The literature in this study also had to be used with the insight that some of the documents might be subjective, which could affect the research in a negative way if the writer was not aware of this. As the subject is rather political, especially when talking about future solutions for food markets and food insecurity, statements, might in one way or another based on an ideological view of the writer or organization. Also the reader to this report should be concerned of the problems of objectivity regarding this subject, even if the aim of this study is scientificity and objectivity.

### **3.5 Reliability and validity**

If a study should be accepted as trustworthy and credible it is of great importance that a study has high reliability and validity. In other words; that the same result would come up if the study was repeated and that the study examines what is suppose to. <sup>[28]</sup>

The reliability of this study should hold as high as the writer has focused on the use of scientific articles and material from different organization and authorities. The writer has worked with a spread of organizations that could be cited as representative for the aggregate writings on the research area. The reliability is also strived after through the researcher's aim to be objective and use the material in a way which does not change or misread the aims of the sources.

However, a problem when using secondary data is that the reader can't fully control that collection of material was correct. This is though something that the reader in this paper has handled by using reports from larger and accepted organization and scientific research from trustful databases. The writer has also been keeping the reliability high by the aim to display contrasts between different sources to the reader.

The validity of the study was secured by starting the literature study with a rather large amount of research and reports which then were inspected to find a useful amount of literature

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[27] Einarsson (2010) p.13

[28] Bryman (2011) p.49 f

to the study.

### **3.6 Delimitations**

This paper will not examine the reasons behind the food price crisis and the paper will not try to make future diagnosis for food prices.

# 4. Result

## 4.1 What kind of countries is most affected of higher food prices?

The countries, which achieved the most negative impact from food price crisis 2007-2008 were the developing countries. Those who are home for the major part of the world's poor population, people that spend a great part of their income in food, and already before the crisis were facing food insecurity.<sup>[29]</sup> Conclusions from most of the literature says that poverty increases due to the food price crisis 2007-2008 were much more frequent than the poverty reductions, the positive impact on producers was outweigh but the negative impact on consumers. Researchers estimate that increased food prices must likely have raised poverty in all low-income countries.<sup>[30]</sup>

### How a country is affected of higher world market prices of food is a matter of:

- » If the country is an importer or exporter of food.
- » What products the country export or import.
- » The country's trade policy and the extent to which world market prices pass through to domestic markets.
- » The country's exchange rate policy.
- » The number of people living around the poverty line before the crisis.
- » How many net buyers and net sellers the country has of the food commodity which is concerned.<sup>[31]</sup>

### The developing countries that are particularly vulnerable for price changes are those who:

1. Have high import of cereals: A great part of the poorest countries are food importers

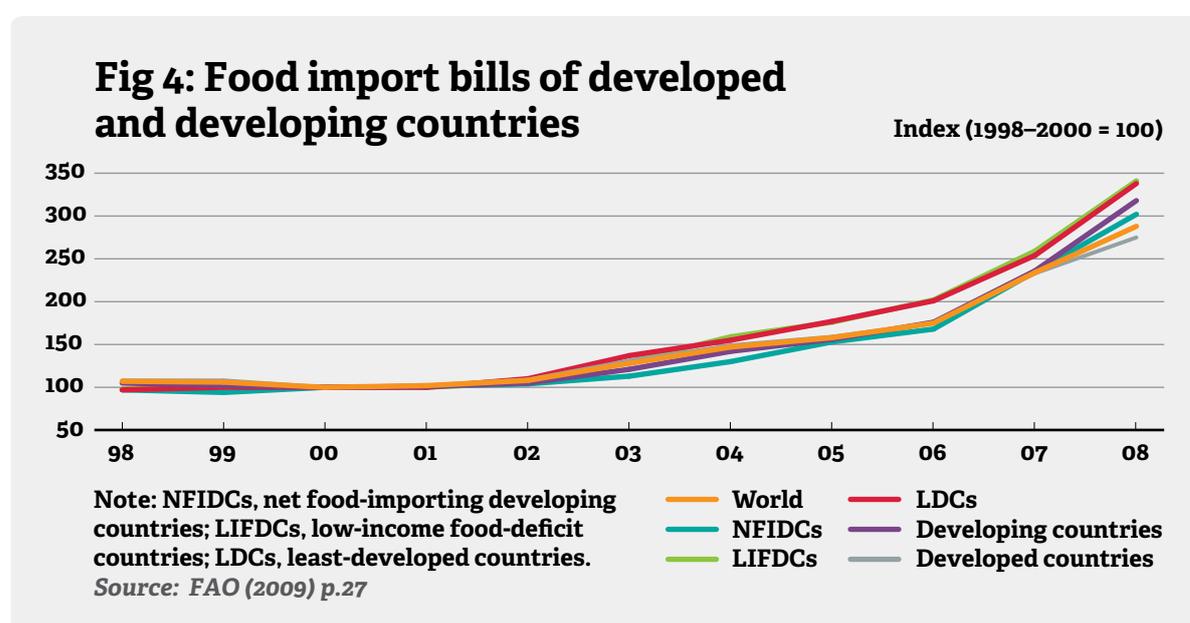
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[29] FAO (2009) p.1 ff

[30] Ivanic and Martin (2008) (abstract), FAO (2009) p.1 f, Wodon and Zaman (abstract), Simler (2010) p.2 f

[31] FAO (2009) p.28. Simler (2010) p.2 ff

and dependent of import of cereals even though they have a large group of people working in the agricultural sector. If a country have a large import of basic foods, there is a much higher risk that they were heavily affected in the food price crisis 2007-2008 as the import makes the world market prices spread to the country. To an importing country higher prices will mean higher food import bill and problems with the balance of payment.<sup>[32]</sup> Figure 4 shows how import bills increased during the price crises.



During the last 30 years developing countries have expanded their cereal import. In 1960, countries in sub-Saharan Africa were self-sufficient of cereals. Now they import 48 million metric tons of cereals every year, countries in sub-Saharan Africa import 42 % of their rice and 69 % of the wheat. <sup>[33]</sup>

- Are exporters of tropical products or raw material: As the prices of tropical products and raw material increased less than basic food such as wheat, maize and rice, countries that are great exporters of those commodities became vulnerable in the price crisis. The countries, which were big exporters of raw material and tropical products, saw their

[32] FAO (2009) p.28

[33] Falcon and Naylor (2010) p.709

income from export increase less than the cost of import of food, which created a hard balance of payment problem for the countries.<sup>[34]</sup>

3. Have their currency linked to or depreciating against the US dollar: A part of the increases of the world market prices could be explained by the depreciation of the dollar, which occurred at the same time as the prices increased. As the world market prices are mentioned in dollars is the exchange rate of the dollars influential for the level of the world market prices. This also makes it possible that prices could be lower expressed in other currencies. Currencies that are stronger than the dollar could expect less increase, while currencies, which were linked to or weaker than the dollar could expect higher increases. More than 30 developing countries have their currency linked to the dollar.<sup>[35]</sup>
4. Already is food insecure: Countries that have a large number of food insecure people do obviously not have any margins for higher food prices, there is no room to reduce food bills for people that already face hunger.<sup>[36]</sup>
5. Are net fuel importers: The world market prices of oil increased at the same time as food prices increased. This made countries that are net fuel importers particularly vulnerable as this would raise the import bill for the country, not only for food but also fuels. This would also affect the agricultural production negatively as oil is a major input in agriculture.<sup>[37]</sup>
6. Has a great amount of poor net consumers: The poor net consumers are clearly more vulnerable for the price increases than those who produce food by themselves. If a country has a large amount of poor people that are net consumers this will increase the country's sensitivity for high world market prices.<sup>[38]</sup>

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[34] FAO (2009) p.10

[35] Ibid p.29

[36] Ibid p.6

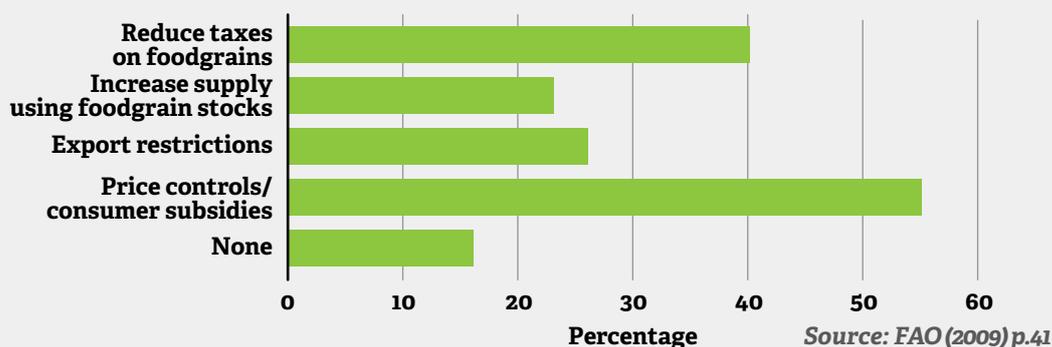
[37] Ibid p.29

[38] Ibid p.29 ff

The trade and agricultural policies that countries used during the crises are also of importance in the analysis of how different countries were affected by the price crisis. Policies can be used to control prices and reduce the transmission of price volatility on the world market to domestic markets. Policies that were used during the food crisis were for example; price controls, export bans, reduced taxes, reduced, import tariffs and production subsidies. The most commonly used policy in 2007-2008 from a sample of 77 countries can be seen in figure 5.

The interventions that were used generally lead to lower prices for the consumers, less returns and incentives for producers and larger expenditures for the government. On a global level may the policy's used to stabilize domestic prices contribute to larger instability among world market prices, especially if the policy take place in a larger country. <sup>[39]</sup>

**Fig 5: Policy actions to address high food prices (sample of 77 countries by type of action)**



#### 4.2 Who within a country will lose from high food prices and who will win?

To see exactly who will win and who will lose from higher prices one have to consider; where they live, the level of poverty, what a person produces, consumes and what they sell. However, it is possible to find an overall pattern for who will win and lose from higher food-prices in developing countries.

[39] Falcon and Naylor (2010) p.706 ff

#### 4.2.1 Net consumers

According to FAO and other researchers the consequences of the high food prices in 2007-2008 were most severe for the poor people that are net consumers of food. The poor consumers can spend up to 70-80 percent of their budget on food which naturally makes them extremely vulnerable for price changes like the food price crisis in 2007-2008.<sup>[40]</sup>

If the most vulnerable people mainly will be found in rural or urban areas has been analyzed by a number of researchers, with various approaches. Several of the articles say that poor people in urban areas are naturally more vulnerable as they to a greater extent are net consumers, dependent on imported food, more directly exposed to world market prices and because the urban wage rates are not likely to adjust to higher food prices in short run. The report “Higher fuel and food prices: impact and responses for Mozambique” support this position. Their research showed that for rural households purchased food made up 25 % of the total food consumption, in contrast to the urban households that on an average had a share of 81 % purchased food. The numbers pictured that urban households clearly are more vulnerable for higher prices.<sup>[41]</sup>

However, some other reports say that rural households are just as much affected of price increases as urban households, because generally most of the poor households are net consumers even if they are rural and engaged in the agricultural sector.<sup>[42]</sup> One report which especially calls attention to the rural poor is the “Food insecurity in an era of Economic Volatility”. The report states that the rural poor have been the largest group that suffered from the food price crisis in 2007-2008. This is motivated by the fact that 75 % of the poor people in the world, 2,5 billion people, that lives on less than two dollars a day, stay in rural areas. Something which according to the report was very much forgotten in the debate of the crisis in 2007-2008 were the urban consumers were in focus. In the report the writer notes that the poor people in rural areas, which are a majority of the world’s poor often, are producers of food, but also consumers

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[40] FAO (2009) p.26, Simler(2010) p.1, Ivanic and Martin (2008) p.1 f, The World Bank (2008) p.112

[41] Wodon and Zaman (2009) p.162, Arndt et al. (2008) p.497, Cudjoe et al. (2010) p.294

[42] FAO (2009) p.26 , Simler (2010) abstract

of food. Their production is not big enough and these people in general spend a very big part of their income on food and have very few savings, which make large food price increases devastating. The writers to this report notes that the problem of food insecurity is a problem first of all related to poverty and not geography.<sup>[43]</sup>

The researchers to the report “The short term impact of higher food prices in Uganda” do similar conclusions from their research. They find that most poor households tend to be net buyers of food also in rural areas and therefore suffer from price increases. They find that 63 % of the households in rural areas are net sellers of at least one food item, but 87 % of the households in rural areas are net buyers of at least one food item. <sup>[44]</sup>

The conclusion in the report “The state of food insecurity in the world” from FAO is a middle way between the two discussed. They find that a majority of rural and urban poor in the world do rely on food purchases and are net consumers and hence suffer from higher food prices. Higher prices reduce real incomes and increase food insecurity. Worst off are the poorest of the poorest, those who (1) Spend the largest part of their income on food and (2) Don't have access to assets such as land. According to the rapport households which meet both those criteria's and belong to the poorest of the poorest are to a great extent female headed households, which gives the impact of high food prices a gender aspect.<sup>[45]</sup>

#### **4.2.2 Net producers**

That high prices are problematic for those who are net consumers is logical, but what about the net producers?

The report “The short-term impact of higher food prices on poverty in Uganda” among other researchers say that people in rural households that produce most of their basic food were less negatively affected by the price increases. The rural households that produced a surplus in 2006-2008 could benefit from the increases, as higher prices raise their real incomes.<sup>[46]</sup> This

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[43] Falcon and Naylor (2010) p.693 f

[44] Simler (2010) p.11

[45] FAO (2008) p.2

[46] Simler (2010) p.2 ff, Ivanic and Martin (2008) abstract

approach was supported by the report “Higher fuel and food prices: impacts and responses for Mozambique”, where writers found indications from their net benefit ratio analysis that rural household in net seller position often benefitted from higher prices in Mozambique. [47]

This view is contrasted by the report “Food security in an era of economic volatility” that claims from their study that poor net producers rarely benefit from their farming. This because the rural poor producers often are extremely poor, if they would benefit from higher prices the win is often very small and lost because of other costs such as repaying loans which they had to take for buying seeds or fertilizers for the farming. From their research writers also found out that many of the poor people that are “net producers” actually are food insecure and calorie deficient, and not able to feed themselves sufficiently. [48]

According to FAO are those who benefit most from higher prices big landholders, specialized in agriculture production with access to capital and land. This group is a rather small part of the populations in developing countries, [49] in Sub-Saharan Africa only about 1-4 % of the farm population. [50]

In the report “The state of food insecurity in the world” from FAO writers claim that the high prices in staple food should, according to economic theory, have been an opportunity for poor farmers in developing countries. The high prices should have created incitements for the farmers to invest in their farming and increase production, which would increase rural income, lower prices and thereby make the food available for the poor, but it did not end up so. Statistics show that the major part of producers was not able to use this situation as an opportunity. The developing countries raised their production with less than one percent in 2008. The report from FAO says that possible reasons for that farmers couldn't use the situation are: (1) The prices did not filter through to producers, (2) Farmers did not have enough inputs to increase production, (3) They lacked irrigation and access to modern technology, (4) They lacked transports, in-

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[47] Arndt et al.(2008) p.497

[48] Falcon and Naylor (2010) p.713 f

[49] FAO (2009) p.29

[50] Falcon and Naylor (2010) p.713 f

frastructure and institutions, (5) They had limited access to credits, (6) They had limited access to markets, (7) Governmental policy responses such as tariffs lowered the incitements.<sup>[51]</sup>

Further likely reasons why farmers in developing countries did not gain from higher prices is that the prices did increase most in basic food; cereals, dairy products and oil seeds, and less in tropical products such as raw materials, coffee, and cocoa. Something that affects many developing countries as they to a large extent export these so called cash crops and import cereals.<sup>[52]</sup> This is also a development that can be seen in a longer run. Products from developing countries have become relatively cheaper in forward to products, which mainly the developed countries produce. If a developing country wants to pay for food import with tropical products, the country will today only get 70 % of the food that it got 30 years ago.<sup>[53]</sup>

Another aspect which may have been important for farmers is that the prices of key inputs especially oil which are needed for fertilizer and transports in the farming did rise at the same time as the food prices. The price of some fertilizers rose with over 160 percent in US dollars the first months of 2008 in contrast to 2007.<sup>[54]</sup>

### **4.3 What is needed to help developing countries to deal with higher food prices?**

FAO conclude via their research that higher prices not always are enough to get producers in developing counties to increase productivity. The market of agriculture is complex and not simply controlled by the basic economic laws. Something that FAO proves in a review with 150 cases of price and production changes, where 66 % responded to prices changes as expected but 34 % of the cases reacted to the changes in an unexpected way; with increased production as a response to lower prices and reduced production as a response to higher prices.<sup>[55]</sup>

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[51] FAO (2009) p.1 ff

[52] Ibid (2009) s.10

[53] Einarsson (2010) p.31

[54] FAO (2009) p.35

[55] Ibid p.35-37

According to FAO and the World Bank the structural solution to the crisis is increased production and productivity in less developed countries and among small farmer, and to create that there is a need to overcome supply-side constraints. The supply-side constraints which have to be handled are among others: lack of rural infrastructure; land and water, weak access to irrigation and modern inputs, bad roads, limited access to storage, insecure property rights, weak knowledge of and access to modern techniques of farming, limited access to credits and safety nets, lack of market information and bad health. <sup>[56]</sup> If these blockers are removed a supply response to higher prices is more likely to occur. According to FAO there is also a need of policy interventions so to release developing countries from their dependence of imported food and therefore their sensibility of price crisis. To deal with both the acute part of the crisis and a longer-term solution FAO asks for a “twin-track approach” to the crisis. Both help out the immediate need for action to protect people in urgent hunger, and in medium to longer term there is a need for actions that can help farmers in developing countries to increase production and productivity. Via higher production and productivity could the increased demand of food be met, the price spike reduced, food insecurity lowered and farmers could lift themselves out of poverty.<sup>[57]</sup>

Another reason for putting effort in the agricultural sector is that if a country can gain agricultural growth, they are more likely to reduce poverty. The world development report states that if GDP grow takes place in the agricultural sector poverty reduce will be at least twice as big as if the growth takes place in another sector.<sup>[58]</sup> Additional, Most of the developing countries do have comparative advantage in the production of primary activities; like mining and agriculture, and should therefore try to make these sectors growth. Agricultural growth is a stadium that almost all of today’s industrialized countries been through, before they got growth in other sectors and therefore probably a necessary step towards further development.<sup>[59]</sup>

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[56] The World Bank (2008) p.9 ff, FAO (2009) s.6-7

[57] FAO (2009) p.6-7

[58] The World Bank (2008) p.6, Jayne et al. (2010) p. v

[59] The World Bank (2008) p.34

FAO writes that that the big organizations and forums; FAO, G8, HLC all have agreed on the need of a stronger global governance for world food security and system to prevent crisis like this. They all ask for policies which can contribute to both free and fair trade, and a decent livelihood for farmers around the world. They have put up a goal to be able to exterminate hunger; to double the world food production to 2050. <sup>[60]</sup>

Einarsson is rather critical to the larger organizations in his report, as they for decades have spoken for the free market and large scale production and have been cutting the aid for small scale farming. It is only with experience from the latest food crisis they changed their mind, and UN, the World Bank and G8 today want to focus on the small-scale farmers in low-income countries and agricultural aid for development of food security. The huge organizations and forums are now of the same opinion as almost only NGO: s has been of for ages. There seems to be a consensus regarding which way to go. However when coming to details of how small-scale farmers are supposed to be supported there are two rather clear ways: (1) One which gets inspiration from the green revolution in Asia and is based on the use of fertilizers, irrigation and commercial seed and (2) Another that believe in ecological solutions.

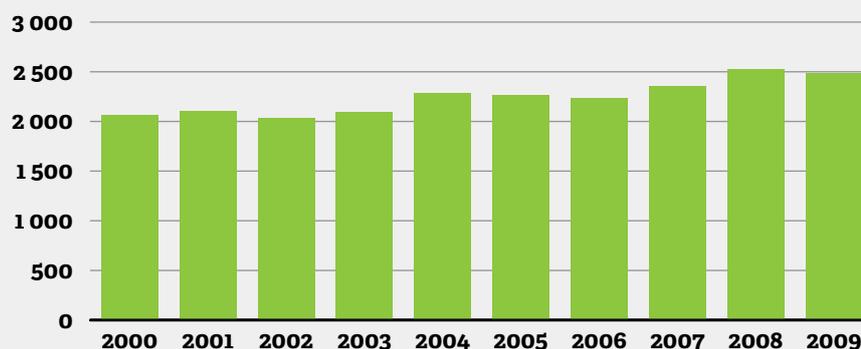
Einarsson gives another view of the problem of high food insecurity and food prices. He claims that food insecurity in the world is not first of all a problem of weak production or high prices. He writes that; since 1970 the number of food insecure people in the world has declined, but around year 2000 they started to increase. This was a year when the world market prices were at their lowest level ever, production was high and the growth in population lower than recent years. According to Einarsson the major issue of food insecurity in the world is inequality. The increases in food insecurity 2007-2008 could not be explained by weak food production as figure 6 shows. In 2007-2008 was the world production rather normal; the production of cereals did continue to increase with 1-2 % per year, which is the same rate as for the last 15 years. <sup>[61]</sup>

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[60] FAO (2009) p.6-7

[61] Einarsson (2010) p.10 ff

**Fig 6: Cereals production – World (million tonnes)**



Source: FAO Stat

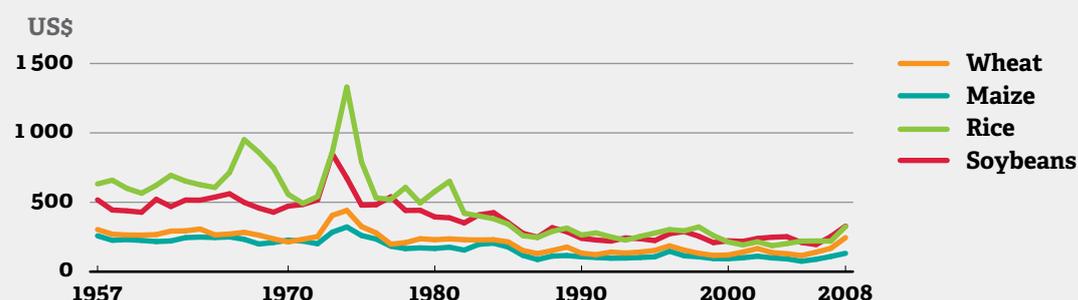
Another aspect of high food prices that several of the scientific articles behind this paper mention is that; in real terms prices have had a downward trend since 1970. Looking historically, over a longer period of time the prices 2007-2008 are not very high any more. It is relative to the recent year's levels that the prices appear high, historically they are low. This can be seen in figure 7.<sup>[62]</sup> FAO writes that in the previous 30 years up to 2006 the real cost of a food basket had fallen by approximately one-half, and prices have fallen with about 2-3 % per year in real terms. The fallen prices have been a result of more efficient productivity with advanced technology, and from countries in the OECD supporting their production with subsidies. Something that has contributed to a situation where a few big exporters supply the international food markets.<sup>[63]</sup> Several articles argue that even though high prices seems like problem for the poor people lower prices are not simply the solution to the problem of food insecurity in the world. Lower prices are good news for consumers, but not for the producers. Low prices and low valuation of agriculture will not solve the problems of the developing countries food production and lower prices will not increase the incitements.<sup>[64]</sup>

[62] FAO (2009) p.9 f, Falcon and Naylor (2010) p.693

[63] FAO (2009) p.12

[64] FAO (2009) p.23f, Simler (2010) p.16, Einarsson (2010) p.33

**Fig 7: Annual food prices in real US dollar, 1957–2008**



Real prices refer to nominal prices adjusted for changes in US Producer Price Index (2000 = 100).

Source: FAO (2009) p.13

## 4.4 Zambia and the food price crisis 2007-2008

### 4.4.1 Background

Zambia is located in sub-Saharan Africa, it is a landlocked country situated next to eight other countries; Botswana, Angola, Congo-Kinshasa, Tanzania, Mozambique, Zimbabwe, Malawi and Namibia.<sup>[65]</sup> Zambia has 13 300 000 inhabitants<sup>[66]</sup> and the country is a relatively urbanized, 36 % of the population live in urban areas.<sup>[67]</sup>

Zambia is a former British colony and got independence in 1964. During the first ten years as a free country Zambia's economy grew fast mainly as a result of the incomes from export of copper. Zambia is one of the greatest producers of copper in the world, and copper is the biggest export of the country.<sup>[68]</sup> The copper makes up about 80 % of Zambia's export earnings. The incomes from the export of copper have been very important for Zambia, but the dependence of the copper industry has also been problematic since copper prices have had a declining trend since 1970.<sup>[69]</sup>

[65] Central Statistical Office Zambia (2003) p.1

[66] www.landguiden.se "Zambia" Retrieved: 11-05-30

[67] Central Statistical Office Zambia (2003) p.1

[68] www.landguiden.se "Zambia" Retrieved: 11-05-30

[69] Central Statistical Office Zambia (2003) p.1-2

To sum up the last 40 years of Zambia's economy; low prices of copper in combination with a weak governance and bad economic management characterized of corruption has put Zambia in huge economic trouble. Zambia is today in heavy debt and almost a third of the government's budget is financed by foreign aid.<sup>[70]</sup>

According to the literature review earlier in this paper, export of raw material is a factor that contributes to make a country more vulnerable for price changes. The very high export of copper in Zambia is therefore a signal that Zambia was hard-hit in the high food price 2007-2008. This is also supported by statistics that show that Zambia's balance of current payments was negatively affected during the period of the crisis. table 1. <sup>[71]</sup>

**TAB 1: Balance of current payments (Million US dollar)**

2005	2006	2007	2008	2009
-597	127	-698	-1039	-406

*Source: Landguiden*

#### 4.4.2 Poverty

The living conditions monitoring survey in 1998 says that 72.9 % of the population in Zambia lives in poverty, and 57.9 % lives in extreme poverty. <sup>[72]</sup> The number of hungry in Zambia was estimated to 43 % of the population in 2005-2007 by FAO.<sup>[73]</sup>

The concentration of poverty is larger in rural areas than in urban. In the rural areas 83.1 % the people live in poverty and 70.9 % in extreme poverty compared to urban areas where the poverty rate is 56 % and the people living in extreme poverty is 36.2 % in urban areas. <sup>[74]</sup>

[70] [www.landguiden.se](http://www.landguiden.se) "Zambia" Retrieved: 11-05-30

[71] Ibid

[72] Central Statistical Office Zambia (2003) p.2 (The Central statistical office in Zambia sets the poverty line from the income per month needed to purchase basic food so to fulfill the minimum calorie need for a family of six persons. The extreme poverty were set to 32,861 K and moderate poverty to 47,188 per adult equivalent unit per month.)

[73] [www.fao.org](http://www.fao.org) "Country Profile: Food Security indicators" Retrieved: 11-05-30

[74] Central Statistical Office Zambia (2003) p.2

This is the distribution of poor in % in Zambia, (1998):

**TAB 2: Distribution of poor**

Urban (buyers)	Rural landless (buyers)	Smallholders (net buyers)	Smallholders (self sufficient)	Smallholders (net sellers)
30%	7.4 %	28.8%	20.8%	13%

*Source: World Bank, World development report (2008) p.109*

That Zambia had a great amount of people living in poverty already before the crisis, 72.9 %, makes the country and the people vulnerable for increased world market prices for food according to the literature review. As the statistics above say a majority of the poor people are net buyers in Zambia, 66 %, and therefore particularly vulnerable for higher prices. The majority of these people live in rural areas, 36 %, which point that in actual numbers, the negative effect were greatest in rural areas.

70 % of the poor people live in rural areas and could theoretically be winners from higher food prices, but their food production is obviously not big enough to gain from their farming. Only a small amount of the poor people are net sellers and have a good chance to gain from higher prices, 13 % of the poor are net producers, and still there is no guarantee that they will gain from rising prices. The prices of inputs also raised at the same time as the food prices, which might stop people from increase their production. Furthermore the previous studies also say that poor people might lack access to for example markets and information, which will stop them from gain from the prices. The 20.8 % that are self-sufficient have probably been less negatively affected than the net buyers, but the high input prices may have affected these negatively and they may also have been hurt during the crisis.

Of the households in Zambia 19.2 % are female headed. The living conditions monitoring survey shows that the female-headed households are more likely to be poor and to be in a state of

hunger, 61 %, compared to the male headed households where 52 % were in food poverty.<sup>[75]</sup> This indicates that women tend to suffer more from higher food prices than the men in Zambia, as those to larger extent were food insecure already before the crisis. This aspect was supported in the literature review which came up with the thesis that the food crisis had a gender difference where women tend to suffer more than men from the higher prices.

There are no new statistics on the poverty ratio in Zambia, which can tell how these numbers have changed due to the crisis.

#### **4.4.3 Food consumption in Zambia**

Maize is the most important food crop in Zambia and it counts for half the calories consumed in the country. The second most important food crop in Zambia is cassava and in some regions it is even more preferred than the maize. There are wide differences between regions concerning their consumption in Zambia. The country could be divided into three food staple zones, where people hold either maize or cassava as their main crop, or a mix of the two crops. The regions are called “the maize belt”, “the cassava belt” and the “dual staple”.

Wheat is the third most important food crop in Zambia, and the use of wheat as a staple crop has grown the last decades, the wheat is mostly used in urban areas.<sup>[76]</sup>

As maize and wheat are crops that are internationally traded and may be influenced by the world market prices one may suppose that the price increases had a lighter effect in the cassava belt than in the other regions, and that poor consumers there was less negatively affected. Overall could the relatively high consumption of cassava be seen as a factor, which reduced the negative effect of the world market prices for the poor consumers.

#### **4.4.4 The prices of staple foods**

The prices of the staples also vary a lot between these regions, and the maize prices are lower in the maize belt and cassava prices lower in the cassava belt. The prices of cassava and maize are

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[75] Central Statistical Office Zambia (2003) p.1 ff

[76] Chapoto et al. (2010) p.3 ff

higher in the urban areas than the rural. Which indicates that the poor urban consumers was more negative affected by high prices than the rural.

Table 3 shows the prices of maize in different areas: Spatial differences in white maize wholesale prices (Price \$US per tonne) <sup>[77]</sup>

**TAB 3: Geographic differences in maize prices**

	<b>Choma</b>	<b>Lusaka</b>	<b>Kabwe</b>	<b>Ndola</b>	<b>Chipata</b>
<b>2005</b>	158	162	146	155	148
<b>2006</b>	148	175	148	189	167
<b>2007</b>	132	169	157	173	115
<b>2008</b>	226	255	204	247	297

*Source: Chapoto et al (2010 ) p. 8*

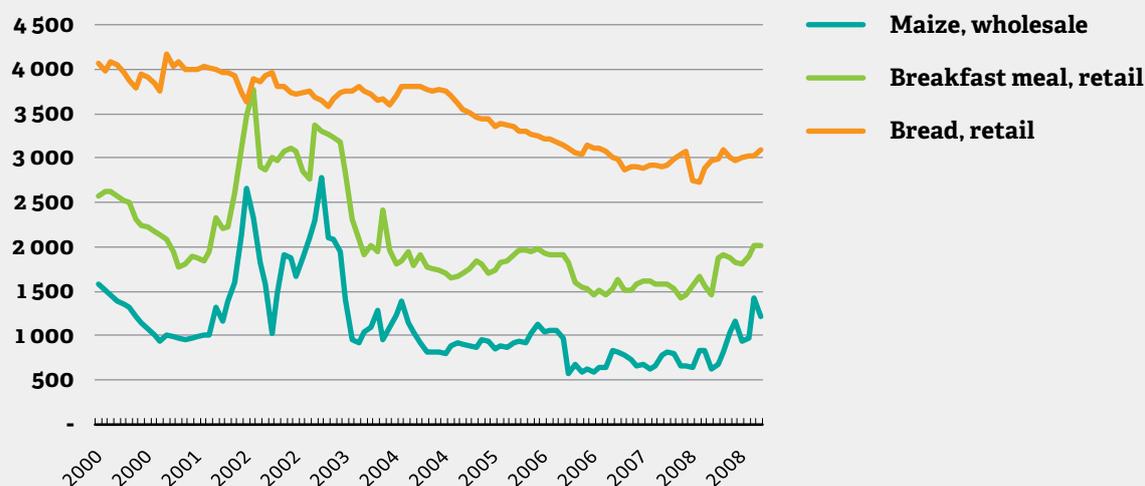
In 2008 the maize prices in Zambia rose with about 10 % over the price levels of 2007, valued in real kwacha. If the prices are denominated in dollars the price increases are substantially larger. In dollar prices were 40 % over the levels of 2007 in 2008, as can be seen in figure 8. However, the Kwacha was strengthen against the dollar with about 30 %, this made price increases less significant, for most Zambians who are paid in Kwacha. This is an important factor which shows that price increases in Zambia actually was much smaller than in other low-income countries. According to literature review was the most vulnerable countries those who had their currency pegged or depreciating against the dollar, but Zambia's currency was strengthen. Figure 8 show how prices in Zambia increased in real Kwacha and nominal Dollar.

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[77] Chapoto et al. (2010) p.3 ff

**Fig 8: Staple food prices**

**a. Real Kwacha per kilogram (January 2008 = 100)**



**b. Nominal US dollar per kilogram**



Source: Chapoto et al (2010) p.10

Jayne et al write that the real retail maize meal prices have had a down going trend in Zambia since the market liberalization reforms in the 1990. The trend-line maize prices fell roughly 30 % from 1994-2005 due to the reforms. The declining prices do also concern bread prices, which were about the half in 2009 than in 1990. This development was favorable for the consumers of Zambia, but not for producers. [78]

[78] Jayne et al. (2010) p.64 ff

#### 4.4.5 Imports in Zambia

The size of the maize production in Zambia is very fluctuating, which also makes the prices varying a lot, and the need of imports intermittent.<sup>[79]</sup> The fluctuations are often a consequence of drought which is a returning problem in Zambia. Only the large farms have access to irrigation. In 2001-2002 Zambia suffered from a heavy drought. When the country suffers from drought, the shortfall in maize production has to be replaced by import.<sup>[80]</sup> In good years Zambia could produce a surplus and export maize while and in bad years they have to import. In the years 2005-2007, which is the latest observations by FAO. did Zambia import roughly 5 % of the maize consumption and 38 % of the wheat consumption.<sup>[81]</sup>

Production and trade of main staple foods in Zambia (2005-2007) averages.

**TAB 4: Production and trade of staple food**

	<b>Production (1000 tonnes)</b>	<b>Imports (1000 tonnes)</b>	<b>Imports (% of consumption)</b>
<b>Maize</b>	1,219	60	4.6 %
<b>Cassava</b>	982	0	0.0 %
<b>Wheat</b>	116	72	38.3 %
<b>Others</b>	3,323	215	6.7 %
<b>Total</b>	5,640	346	6.2 %

*Source: Chapoto et al (2010 ) p.5*

These numbers show that Zambia has a rather small import of staple food in contrast to other countries in sub-Saharan Africa. Maize which is the main crop has only an import of 5 % which indicates that Zambia is more protected from higher food prices than other countries. However

[79] Chapoto et al. (2010) p.3 ff

[80] [www.landguiden.se](http://www.landguiden.se) "Zambia" Retrieved: 11-05-30

[81] Chapoto et al. (2010) p.4 f

the import of wheat relatively high is, 38.3 %. This adds to the thesis that the urban poor did may have suffered more from the crisis than the rural inhabitants, as the use of wheat is larger in urban than in rural areas.

#### **4.4.6 The agriculture**

The main part of the population in Zambia, 75 %, is engaged in the agricultural sector. The report Agricultural analytical report from 2000 says that there are 1.305,783 agricultural households in Zambia. <sup>[82]</sup> The agricultural sector makes up 20.8 % of the GDP in Zambia<sup>[83]</sup> but the real growth in the sector has varied, much because of drought and reduced investments.<sup>[84]</sup>

Zambia has relatively good climate and landscape for farming, the country has a low population density and it has big areas of cultivable farmland with closeness to food markets; which gives the country good potential to be a food exporter. However, although the country has good conditions for farming Zambia has returning food deficit. <sup>[85]</sup>

The major part of the farming in Zambia comes from small scale farmers.<sup>[86]</sup> In Zambia over 50 % of the farms are less than one hectare, and one quarter of them are less than 0.5 hectares which makes it hard for farmers to develop and expand their production. The access to land has been reduced which can be seen in the table 5, this is according to Jayne et al. a problem for the small scale farmers in Zambia. As about 50 % of the households have less than one hectare of land, it is impossible for them to get their livelihood from maize commercialization unless there is a huge growth in productivity.<sup>[87]</sup> Farmers are not able to produce a surplus to sell and this could be hold as an important factor for why poor farmers are not able to win from higher food prices; as in 2007-2008.

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[82] Central Statistical Office Zambia (2003) p.3

[83] [www.landguiden.se](http://www.landguiden.se) "Zambia" Retrieved: 11-05-30

[84] Central Statistical Office Zambia (2003) p.3 f

[85] Cahpoto et al. (2010) P.1

[86] Central Statistical Office Zambia (2003) p.18

[87] Jayne et al. (2010) p.xi f

**TAB 5: Ratio of cultivated land to agricultural population**

1960-69	1970-79	1980-89	1990-99	2000-07
1.367	1.073	0.896	0.779	0.781

Source: Jayne et al (2010) p. 31

The numbers in table 6 are also presented by Jayne et al. and show the mean income by quintiles of the total household landholding in Zambia:

**TAB 6: Mean income by quintiles of total household landholding (mean '000 kwacha per adult equiv)**

Quantiles of total HH landholding	Total HH landholding size (ha)	Total income	Farm income	Non-farm income
1-low	.16	669	262	407
2	.70	623	280	342
3-mid	1.18	681	362	320
4	1.87	895	536	359
5-high	4.47	1,207	770	437
Total	1.7	955	446	508

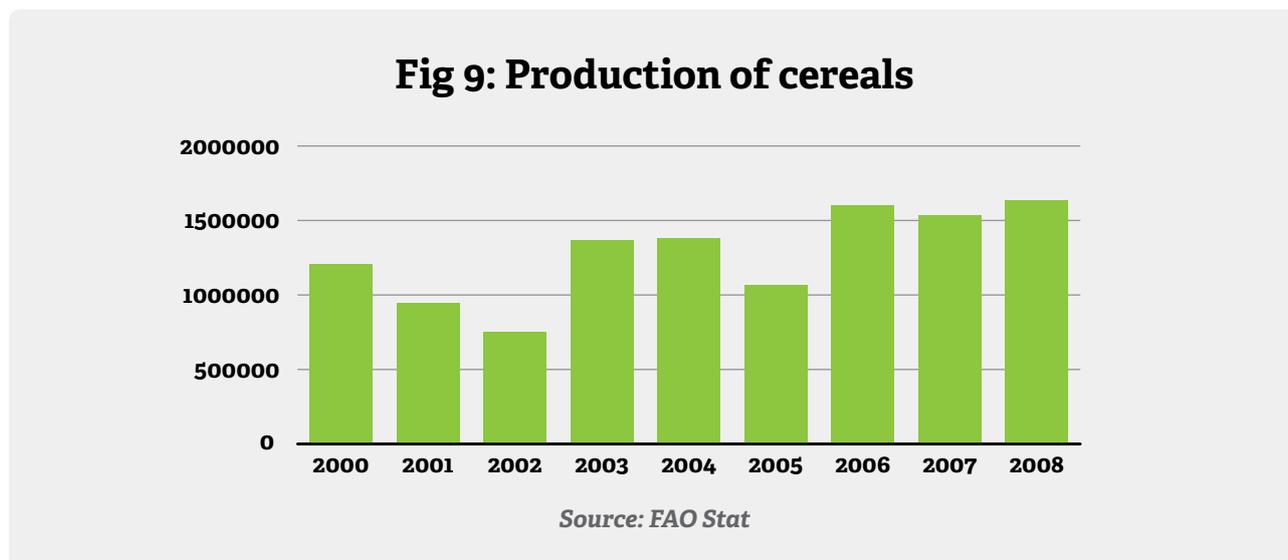
Source: Jayne et al (2010) p. 32

What these tables show is that there is an important connection between access to land, farm income and overall income. The farm incomes are as seen about three times higher in the top quintile than the bottom. The numbers which illustrate the poverty and the inequality in Zambia, show that there is rather small part of the population that gain from farming, probably the same part as could gain from higher food prices.<sup>[88]</sup> FAO writes: “In Zambia, about 80 % of farm households grow maize, but fewer than 30 % sell the product. Of the total sales, 40-45 % come

[88] Jayne et al. (2010) p.32

from 5 % of the households in the smallholder farmers. These households tend to have incomes that are significantly higher (8-9 times) and are located in areas more accessible to markets than those households that do not sell.”<sup>[89]</sup>

Figure 9 show that cereal production in Zambia has a growing trend, but that production is also very fluctuating. The production changes between 2006 and 2008 indicates that the production quantity is not mainly driven by prices. In 2007 when prices started to rise did the cereal production decrease, in 2008 the production increase but the quantity produced were only 2 % over the production level 2006, and the increases in for example 2005-2006 were much bigger. The huge dip in production 2002 was caused by drought in Zambia. This indicates that other circumstances that are hard to control decide the level of production in Zambia.



#### 4.4.7 Policies In Zambia during food price crisis

The policies which were used during food price crisis in Zambia to handle the situation were; input subsidies for maize, export ban on maize, export quota/control on maize and increased investment in agriculture.

The export ban and quotas must have had a repressive effect on prices, which was helpful for consumers. At the same time as the policies may have been lowering the incentives for produc-

[89] FAO (2009) p.33

ers to increase production. The input subsidies probably did help the producers to keep up production, and the investments in the farming may in a long run help the producers to win from a situation like this. However, it may be costly for the government.<sup>[90]</sup>

#### **4.4.8 Calculations on higher food prices in Zambia**

The calculations which Ivanic and Martin made from the latest household survey Zambia 1998, show that if price on maize increased with ten percent this would raise poverty with 0.8 percent in rural areas, 0.2 % in urban areas and 0.5 % nationwide. Further on, their calculations show that if prices on all staples increase with 10 % poverty would increased with 1.1 % in rural areas and 0.6 % in urban areas, and nationwide by 0.8 %. Ivanic and Martin also did calculations on Zambia for the global dollar food price increases between 2005-2007, where they found indications that the increases contribute to poverty with 7.4 % in rural areas, 2,5 % in urban areas and 5 % nationwide. However, the calculation from the price increases was made from the increases in the world market prices in dollar, assumed that the world market price are directly transferred to the domestic markets. <sup>[91]</sup>

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[90] FAO (2009) p.55

[91] Ivanic and Martin (2008) p.27 ff

## 5. Analysis

The result from the study indicates that the poverty increased and the poor people suffered welfare losses in Zambia due to the high food prices in 2006-2008. This is indicated both by the estimations done by calculations from Ivanic and Martin and by the examination of the vulnerability of Zambia and their poor population for high world market prices. Some of the factors which make Zambia and their population vulnerable are: The high level of poverty, the high export of raw material, the high number of net consumers and the high number of food insecurity already before the crises. However, it seems like Zambia may have been less affected by the high prices than the worst hit low-income countries. This is indicated by the find that Zambia's currency was strengthening towards the dollar during the crisis, an aspect which reduced the fluctuations of prices in Zambia. Other circumstances which must have relieved the impacts of price increases in Zambia are their fairly low level of cereal import, the relatively high use of food which is not internationally traded, for example cassava, and the policy's which were implemented by the government to limit the increases.

In real Kwacha the maize price increased with about 10 % from 2007 to 2008. Maize is the most important staple in Zambia, both the most consumed and the most produced. According to calculations from Ivanic and Martin should a 10 % increase in maize price raise poverty with 0.8 % in rural areas, 0.2 % in urban areas and 0.5 % nationwide. These estimations sounds fairly low but they don't say how much the already poor suffered from the higher prices. The share of the population which already is poor in Zambia is very high, about 70 %, and the majorities of these are net consumers and have to buy food. For a person living on less than two dollars a day and spend up to 80 % of their income of food, is a ten percent increase in food clearly a lot. One could assume that the suffer of hunger increased and intensified during the crisis among these poor people. Already before the crisis was 43 % of the population in Zambia living in hunger.

The situation is complex, because most of the people that suffer from high prices in Zambia are the same people who could gain from high prices, 70 % of the poor people in Zambia do work in the agricultural sector.

According to the estimations from Ivanic and Martin was the negative effect due to food crisis larger in rural areas. It seems likely that the number of people that were negatively affected was greater in rural areas than in the urban, as most of the poor people stay in rural areas. However, there is a chance that the actual effect on each person was worse on the 30 % poor staying in urban areas. The urban poor are more direct in contact with the global food prices, don't have any production on their own and therefore salaries which could be adjusted to the higher prices.

Nevertheless, what seems clear in Zambia, like in other low-income countries is that the majority of the poor people not gained from the high prices. Not even the people who worked with agriculture because also a majority of these are net consumers. The possible positive effect on the few poor that are net producers, 13 %, in Zambia, must likely was smaller than the negative effect on the remaining poor. The situation was obviously complicated for the government in Zambia, as the policy's that help the consumers often hurt the producers, which in this case seems to be the same person to a great extent.

The situation of the farmers in Zambia could be linked to the theory from Bernstein and the simple reproduction squeeze that is described in the theory part of this paper. Farmers in Zambia are looked in a position where they have to purchase goods for reproduction, but their own production clearly does not give enough money to change their situation of poverty. Before the crisis 2007-2008 had the price of maize had a long down going trend in Zambia and the world market prices on cereals had the same down going-trend. Looking in longer perspective world market prices 2007-2008 was actually not particularly high, but rather low. Other products that traditionally are sold by the poor countries such as cash crops and raw materials have also had declining prices in relation to the products that are produced by the richer countries. The terms of trade have worsened for the poor. This is clearly what Bernstein lift in his writings, the household can't be analyzed as a separate unit it has to be analyzed in relation to other units in

the production chain. In Zambia it seems clear that the poor people have lost in relation to the rich, and as a country they have lost against richer countries of the world. The circumstances for the farmers lead to what Bernstein called the squeeze, where farmers are pushed to either lower their consumption, or create an intensification of the commodity production or both, to survive.

When the prices on staples did rise in 2007-2008, this would still not gain the poor farmers, and some of the reasons for that could also be connected to Bernstein's reasoning. Bernstein wrote that farmers are pressed to increase their use of fertilizers, irrigation and pesticides in line with the green revolution in Asia, but that there is no guarantee for that the expansive inputs will raise the income for the farmers. At the same time as the prices increased in 2007-2008 the prices of these inputs increased and reduced the farmer's potential to gain from the higher prices. The farmers are dependent of the cost of inputs, which then decide their incomes; they have lost their natural production, the simple reproduction.

Another key factor that stopped poor people to gain from higher prices is the lack of land. In Zambia 50 % of the farms are less than one hectare, and one quarter of them are less than 0,5 hectares. Following Bernstein's thoughts, again these household's situation have to be analyzed in the relation to other households. Statistics in the paper showed that there is a clear difference between the access to land and the income from farming. The fifth which had the smallest share of land in Zambia had a landholding of 0.16 ha while the fifth with the largest share of land had 4.47 ha land, and the later had a farm income three times as big as the first. Clearly there is an uneven distribution of land which makes some farmers to winners and some to losers in Zambia.

As written, the prices of staples have had down going trend in Zambia and globally, and therefore creating no incitements for the majority of the poor which are working in the agricultural sector. From this aspect could the relatively lower increases in Zambia comparing to other low-income countries be something negative. Higher prices are according to much of the literature necessary to develop the farming and to lift the poor people out of poverty. Still it does not seem

like higher prices is enough for farmers in Zambia, or other low income countries to be able to increase productivity and raise production. According to the microeconomic theory and the basic economic model of supply and demand should higher prices lead to an increase in supply by the producers. However, it seems like the economic laws of the theory are far away from the reality of the poor people in Zambia. The production increased with about 2 % in Zambia during the food crisis and in general with 1% in low-income countries. The farmers do obviously need more than the economic incitements to be able to increase production and find a way out of poverty. What the farmers need is discussed and mentioned are for example; Land, credits, information, better health, fertilizers and technique.

The high prices were not caused of weak production as was illustrated in figure 6 and figure 9. The production in 2007-2008 was higher than ever before both in Zambia and globally, but anyway the situation caused increasing hunger around the world. This situation could be linked to Sen's theory about food entitlements. Sen wrote that food shortages are rarely a cause of weak production and hunger could often be helped out with the right interventions. In Sen's writings of higher food prices, he claims that higher prices often are a result from higher and competing demand of the food, make the poorest people lose their entitlement to food. In the food crisis 2007-2008 was one factor which increased the demand of cereals and pushed the prices the ethanol production. The demand and purchasing power for ethanol was obviously stronger than the purchasing power of many of the poor people which thereby lost their entitlement to food, and were put in a position of hunger. Sen, was in this case right in his statement that hunger is not first a cause of shortages of food but rather a result from unsuccessful distribution. During the food crisis was there either a missing will or capability to control the market so that food security was guaranteed. Sen also discusses to solution to world hunger and states that increased production is not enough to eliminate hunger. It could be one step in a solution, but will never be a guarantee the food security in the world. Food security is first of all problem of poverty and lack of empowerment and influences something that is again proved by the crisis 2007-2008, and has to be taken into consideration when seeking for solutions.

## 6. Discussion

Amartya Sen wrote that famines rarely take place in democracies, because in a democratic society the government has to make sure that everybody has got food. Otherwise it is likely that the government will lose their position. However, I would like to put this reasoning upon a global level. Food is rarely consumed in the country where it is produced in the world today. We have created a global allocation where countries are specialized in different products, and we trade products with each other. In the system do some few participants have a lot of influence in the global food production, and the allocation is very much controlled by purchasing power. There are global institutions that are working with questions concerning food security. These institutions however, are not elected by the world's population and they can't be suspended in regular elections.

I believe that the entitlements of food that Sen discusses could be put upon a global level. Some countries have entitlements to get a larger share of the world's food production than other countries. According to Sen's thoughts it could be assumed that one part of the problem with global food insecurity is that we don't have any global institution, which is chosen by global democracy. With help of an election where each person on the globe has one vote, and with the possibility to be suspended if people were dissatisfied.

However, the thought is complex. Because if an agency like that should be influential, it would be necessary that the agency was able to control and redistribute the world's collected food supply. First of all it would be very difficult to create and get legitimacy for the institution, and second, this would be an agency with enormous power, something which can be both very effective but also risky. If a world government is desirable or even possible is actually another discussion, but what has to be taken into consideration in this discussion right now is that the world gets more globalized every day and the politics and democracy has to follow these changes and globalize as well.

We have to make sure that everybody in the world is food-secure, as hunger creates suffering and threatens the overall development. One could assume that the millennium goal number one is a door to reach all the other millennium goals, first of all people need food, then they can reach further development.

The market forces in the world may be positive and useful in some situations, but my opinion is that people should control the market; the market should not control the people of the world. My belief is that for example some persons car driving never should make someone else starve, just because the person with the car has got higher purchasing power. In a situation like that must politics be used to value the purchasing powers and control the market to first of all fill up the human basic needs, such as food. Considering that production in 2007-2008 was higher than before, and anyway the number of people in hunger increased, makes the food price crisis 2007-2008 first of all to a political failure and a scandal.

## 7. Conclusion

The analysis indicates that poverty increased and poor people were negatively affected in Zambia during the food price crisis 2007-2008. This as a result of that the majority of the poor people in Zambia are net consumers, although 70 % of the poor are working in the agricultural sector. Higher prices were not an incitement enough to increase production among the small-scale farmers. The small-scale farmers have to overcome other constraints such as lack of land, credits, technique, inputs and information before they can respond to higher prices according to economic theory. Only 13 % of the poor people in Zambia are net producers and had a fair chance to gain from the high prices 2007-2008.

The largest share of the poor people in Zambia lives in rural areas. Therefore the crisis have had a negative effect on a larger number of people there, but possibly were the effect worse for each poor urban person, as they are more direct in contact with world market prices, they don't produce any food on their own and their salaries do not adjust to the higher prices as they don't work with agriculture. However, the conclusion is that the impact depends first on the level of poverty and not the geography.

The fluctuations of prices seem to have been less in Zambia than in other low-income countries, as a result of that the currency in Zambia was strengthening towards the dollar during the crisis. Statistics said that prices of maize rose with 40 % in dollar prices in Zambia, but only 10 % in real Kwacha. Other factors that may have lowered the fluctuations in Zambia are the relatively low import of staples and the policies, which the government implemented.

Even though the crisis put a large number of people in hunger do most researchers agree on that lower prices not are a long-term solution for the agriculture and the poor people in the world. Prices of staples and products produced by developing countries have had a long down going trend for about 30 years, and seen in a longer run were prices in 2007-2008 not particularly high, but rather low. Lower prices creates no opportunities for the developing countries,

it may help the consumer in the short run, but worth considering is that the consumer of food often also is the producer of food in the developing countries.

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