

High Commodity Prices – Who gets the Money?

A Case Study on the Impact of High Food and Factor Prices on Kenyan Farmers



Survey for Heinrich-Boell-Foundation Berlin, Germany

-final version - March 2009



Preface

This study follows a sequence of analytical work done in the area of agricultural production and trade under the auspice of the EcoFair Trade Dialogue¹, an EU supported programme carried out by HBF Berlin, Germany. The idea to commission this study was developed alongside a 4-Country Rapid Assessment that was undertaken by GTZ Headquarters in August 2008 (“*Increasing Food Prices on the World Market: What is the Impact on Farmers in Developing Countries. Rapid Assessment from Mexico, Burkina Faso, Kenya & Cambodia*”)². The main interest was to dig deeper into one of the countries in order to fully understand the dynamics and to let farmers and other stakeholders have their say in the debate (see also Annex IV).

Kenya was chosen as an in-depth case study. Two rounds of field interviews were undertaken: in early October 2008 (before the main grain harvest) and in mid November 2008 (during harvesting season). The results have been presented at various occasions in Kenya and Germany between October 2008 and January 2009 in order to verify the impressions we got, in order to get feedback and corrections where we misinterpreted facts and in order to discuss policy implications.

The incredibly supportive attitude of all interview partners contacted, who spent their valuable time with us and shared their knowledge, assessments and opinions, is hereby highly acknowledged.

Furthermore, we would like to sincerely thank the following institutions for availing to us data sets of agricultural prices in Kenya:

- Kenyan Institute of Public Policy Research and Analysis (KIPPRA),
- Ministry of Agriculture, Department of Agribusiness,
- ReSAKKS-ECA Initiative / ASARECA, and
- Tegemeo Institute of Agricultural Policy and Development, Egerton University.

Since the results of a study on a dynamic topic like volatile food markets can be by no means conclusive, the authors would like to invite further comments, additions or corrections by email to hhoeffler@web.de and bookerwas@gmail.com.

Right at the time we were working on this study, the full scale of national food shortage in Kenya came to public knowledge. The press started intensively covering alleged mismanagement of the strategic grain reserve. However, no conclusive evidence could hence be established and we decided to deal with that topic only for informative purposes in a separate section (Box 5) and under policy recommendations. We didn’t want to engage in rumour-mongering around alleged corruption and political implications (chapter 7). However, during our field survey, we had gained the impression that the current maize marketing system provides lucrative loopholes that are benefiting small groups of individuals. Current institutional governance seemed to be weak and prevailing intransparencies about quantities of maize stored or imported might exist on purpose, yet this study wasn’t meant to investigate what is since January 2009 called “the maize scam”. Other authors and journalists are working hard to shed light on the alleged corruption and involvement of even government officials. Their attempt to produce evidence and to inform the public deserves support.

Heike Hoeffler, February 2009

¹ see also www.ecofair-trade.org

² In case of interest in that study, kindly contact the authors of this study or Dr. Thomas Breuer via thomas.breuer@gtz.de.



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Summary of Main Findings

Findings on the general food situation in Kenya 2008/09:

1. The post-election crisis in Kenya has not only led to an estimated destruction of 3.5 Mio bags on-farm stored maize from the 2007 harvest but also to a 30% reduction of area under staple food production in the country's most productive areas (mainly Rift Valley Province).
2. Support and food provisions to internally displaced people (IDPs) in camps after post election clashes and subsequent evictions largely contributed to emptying of the strategic grain reserve and commercial grain stocks.
3. The reduced harvest of maize from the long-rain season in 2008 (estimated 35-45% less than in previous years) is the main reason for the scarcity of staple food in the country. The country-wide food supply gap is estimated to be about 11.5 Mio bags of maize which is one third of the national annual consumption. This is expected to continue until mid 2009 if not instantly more imports are ordered.
4. The failure of the short rains in Eastern parts of the country has exacerbated the food situation since more districts are fallen into food deficit status.
5. The Kenyan government declared its national food security a National Emergency in early January 2009. 10 million Kenyans (more than one third of the population) is classified as food insecure; one tenth is estimated to suffer already from serious starvation.
6. Government announced schemes of distribution of subsidised maize grains and flour has so far reached only minimal amounts of consumers. The lift of VAT and import duties on food is effective. However, prevailing high prices for imported white and yellow maize will not ease the situation for poor consumers if they have to buy at market prices. The export ban seemed to have been circumvented which might have added to the domestic supply gap.
7. Intransparencies along the value and supply chain of maize give indications of various irregularities in maize marketing during the last 12 months. The vague communication of the quantity of the Strategic Grain Reserve and imports sourced by government may lead to the conclusion that institutional governance is weak.
8. Without quick and sufficient maize imports, national food security will continue to be at threat; the already present maize shortage will worsen during the first half of the year 2009.

Findings on the Impact of high food prices on food producers in 2008/09:

1. During the first round of field interviews in early October, farmers were very concerned not to break even with maize production due to the overall extraordinarily high production cost – particularly due to a tripling of P-containing fertiliser and high costs of fuel at an expected farm gate price of around KSh 1,000 per bag.
2. Farmers had a strong perception of being exploited by traders and middlemen whom they thought would benefit from low bargaining power of farmers and sell at the generally high costs of all foods.
3. The second round of interviews at harvesting time in November 08 indicated that farm gate prices are at an all-time-high of KSh 2,000-2,500 per bag due to very strong market demand. Early fears of farmers not to break even seem to be counterweighted by the highly competitive prices paid along the entire supply chain.
4. Price transmission to farm gate takes place, but since small-scale producers sell most of their maize at harvesting time, they are becoming net-buyers during the forthcoming months and will suffer from high consumer prices.
5. Current high consumer prices for maize do impact heavily on substitutes such as traditional food crops like cassava, sorghum and potatoes. Anecdotal cross-price elasticity is observed; which does benefit farmers that are selling marketable produce. However, even in rural areas, net-consumers are suffering from the high prices of basically all food sources.



List of Abbreviations

ACCORD	Agency for Cooperation and research in Development
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
ASCU	Agricultural Sector Coordination Unit
CAN	Calcium-Ammonium-Nitrate
DAO	District Agricultural Officer
DAP	Diammonium Phosphate
DWHH	Deutsche Welthungerhilfe / German AgroAction
EAGC	East African Grain Council
FAO	Food and Agricultural Organisation of the United Nations
GTZ	Gesellschaft für Technische Zusammenarbeit / German Technical Cooperation
HBF	Heinrich Boell Foundation
IFPRI	International Food policy Research Institute
ILRI	International Livestock Research Institute
KARI	Kenyan Agricultural Research Institute
KENAPOFA	Kenyan National Association of Potato Farmers
KFSSG	Kenya Food Security Steering Group
KIPPRA	Kenyan Institute for Public Policy Research and Analysis
KSh / Kes	Kenyan Shilling
MDG	Millennium Development Goals
MoA	Ministry of Agriculture
mt	metric tonnes
NCGA	National Cereal Grower Association
NCPB	National Cereals and Produce Board
NPK	Ammonium-Phosphate-Potassium
ReSAKKS	Regional Strategic Analysis and Knowledge Support System
RINCOD	Revitalization of Indigenous Initiatives for Community Development
SEATINI	Southern and Eastern African Trade Information and Negotiations Institute
SGR	Strategic Grain Reserve
UN	United Nations
USAID	United States Agency for International Development
VAT	Value-added tax
WFP	World Food Programme

approximate exchange rates at the time of the study: 1 EURO = 105 KSH, 1 US\$ = 78 KSH

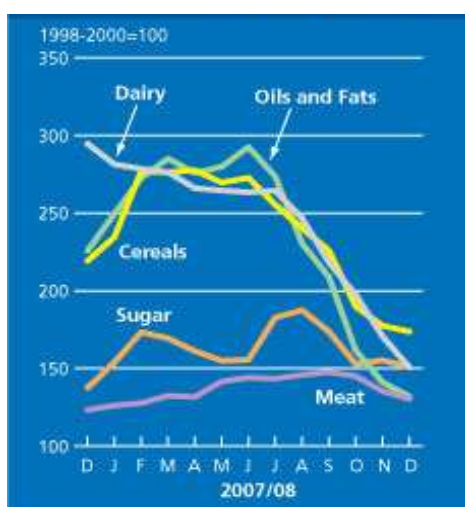
standard measures for food marketing: 1 bag of dry maize = 90 kg, 1 bag of Sorghum = 90 kg, 1 bag of sweet potatoes = 98 kg, 1 bag of Irish potatoes = 110 kg, 1 bag of Cassava flour = 100 kg

1 acre = 0.4 hectare

1. Introduction

International prices of basic food commodities have increased steadily since 2006, rising sharply throughout 2007 and during the first half of 2008 in particular. World food price jumped by 56 percent between 2006 and 2008 and affected negatively millions of people, particularly consumers in net food-importing countries in Sub-Saharan Africa. The effects of increasing food prices contributed to riots and violent protests that erupted in over 25 countries in Asia, Africa and Latin America and the Caribbean. High food prices threaten to reverse critical gains made toward reducing poverty and hunger as outlined in the Millennium Development Goals (MDGs), and risk pushing over 100 million more people below the US\$1 a day poverty line. The most recent estimates from FAO indicate that 75 million more people were thrown below the hunger threshold due to the impact of high prices in 2007 and another 40 million in 2008 bringing the total number of undernourished people to nearly 1 billion by the end of 2008.

Graph 1: Global Food Price Indices



Source: FAO (2009)

This alarming situation triggered a number of responses to the crisis in developed and developing countries. It re-emphasized the need to design consistent and coordinated strategies to deal with both the current crisis, as well as the underlying causes of chronic hunger, food insecurity, malnutrition and low food productivity, such as the establishment of the High-Level Task Force (HLTF) on the Global Food Security Crisis in April 2008 (under the leadership of the UN Secretary-General); the FAO High-Level Conference on *World Food Security: The Challenges of Climate Change and Bioenergy*, held in Rome in June 2008; or the G8 statement during their Hokkaido Summit in July 2008.

Since mid 2008, the world food situation has been affected by at least two interrelated trends: falling international commodity prices (see graph 1) and the global financial crisis. World prices of the major agricultural commodities fell during the second half of 2008. Nevertheless, prices remain high compared with the historical low point in 2002 and it is expected that they will remain above 2004 levels for most food crops until 2015, mostly as a result of rising demand from economic growth in emerging economies (see e.g. Mitchell 2008; Reichert & van de Sand 2008, World Bank 2008; The Economist 2008; OECD 2008; UN/FAO/Government of Spain 2009).

In terms of food production, FAO's latest estimates confirm that a new record high level of global cereal production was achieved in 2008, sufficient to cover the expected increase in utilization of cereals in 2008/09, and allow for a moderate replenishment of world reserves. Although the recent decline in world food prices partially reflects strong gains in production, other factors have contributed to this development, such as the halving of world crude oil prices. The alarming part of these recent analyses about the global 2008 harvests is that most of the increase in production has been in developed countries, while in the developing countries production increased only marginally. Furthermore, despite the recent decline in world food prices, domestic prices remain high in many developing countries and in several countries continue to increase, affecting the food security situation of large numbers of vulnerable populations. Even where commodities are available, food security can remain precarious as populations may not have the necessary purchasing power to afford the commodities (see FAO 2008d).

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Naturally, much of the international attention focussed on the impacts of such developments on poor consumers worldwide, who had to struggle in order to manage their day-to-day needs at time of ever increasing prices. Understandingly, impoverished and starving consumers were at the centrepiece of the debate. International action (i.e. Food Summits in Rome in June 2008 and Madrid January 2009) and a lot of development literature analysed the impacts and perspectives for food consumers.

However, for a long time higher food prices were somewhat argued for by development economists in order to give farmers in developing countries proper incentives to produce more food. An entire generation of agricultural experts in the North and in the South identified the low international food price level as a major cause for low food production and productivity, particularly in African countries. The objective of this study was to take the rise of international food and factor prices as a starting point to analyse the effects on the Kenyan agricultural markets (national level) and from a point of view of food producers (farm gate level). The analysis was designed to predominantly look at the perspectives of farmers as food producers: do they really benefit from higher food prices?

Therefore, this study doesn't analyse in-depth the situation of consumers, even though food insecurity is a very critical issue for the millions of food-poor in Kenya and elsewhere. But even without the global food crisis there existed chronic hunger in Kenya. Even though the hunger index in Kenya decreased slightly over the past 15 years, the situation is still classified as "serious" (DWHH/IPPRI/Concern Worldwide 2008, see also graph below). The country is unlikely to achieve MDG 1 (Halving poverty and hunger).

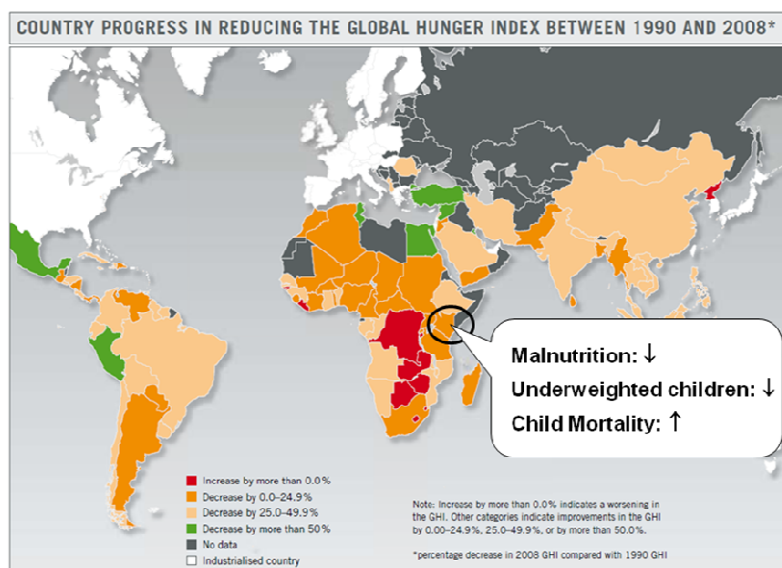
Kenya as a case study country pretty much mirrors all general global observations made during the 2008 global food crisis. Kenya is a Sub-Saharan African food importing country and during the last 18 months, the country has been experiencing the highest real food prices ever. This phenomenon was also witnessed in the neighbouring countries within the East African region (see ASARECA 2008; FAO 2008e, also Graph 6).

However, a number of specific domestic factors seem to play almost equally important roles than price trends on world markets. The 4-Country Rapid Assessment by Hoeffler (2008) found that each of the four countries analysed had very specific domestic factors impacting strongly on the national food pricing level – potentially stronger than the international trends. This led to the conclusion that even though global trends like high grain or oil prices affect all net-importing countries equally, each country should be treated as a unique case when analysing the impact of domestic factors such as trade balances, inflation, national security, food marketing policies and regulations and the level of government involvement in agricultural markets (besides a number of other possible factors).

Having chosen Kenya for an in-depth case study, this argument is strongly supported. Even before the impacts of the global food crisis were fully visible in Kenya, the country exacerbated the food security situation with the violent clashes in January 2008 following the disputed outcome of the general elections in late December 2007 (see Box 1).

Therefore, when trying to answer the question "Who gets the money?", this study contains a number of very country-specific results which result in country-specific problems in food production and marketing from 2007 until to date. These are presented in chapter 2 (Structure of the Kenyan Agricultural Sector) and analysed in the subsequent chapters 3-5 (Recent Food and Factor Price Developments, particularly along the Maize Marketing Chain). The conclusions on net price effects for producers are presented in chapter 6. The study ends with a set of policy recommendations (chapter 7) that were derived from our analysis of the food marketing situation and from the numerous interviews we conducted.

Graph 2: World Hunger Index





By the time this study was finalised, the Kenyan government had declared the national shortage of maize coupled with drought in vast parts of Northern and Eastern Kenya a *National Emergency*. 10 million Kenyans (almost one third of the population) were classified as food insecure; one tenth was estimated to suffer already from serious starvation³. Thus, the current situation leaves the government of Kenya with a deficit of over 11 mio bags of maize, 500 million shillings set aside to buy threatened livestock in the worse affected regions, relief food to be distributed in the acute regions and an inter-ministerial committee established to work out and over-see the food insecurity situation in the country. Urgent aid appeals have been made to the international donors; first responses for the delivery of relief aid have been made by USAID and WFP.

2. The Structure of the Kenyan Agricultural Sector

Kenya's economy still depends to slightly more than 50% on the agriculture and livestock sector. The sector accounts for 26% of direct contributions to the GDP and 27% of indirect contributions to the GDP. Agricultural exports contribute 60% to the country's overall export earnings. Thus, the performance of the entire economy is tied to that of the agricultural sector. The agricultural GDP declined from about 4.8% growth rates in 1995 to a low of -2.1% in 2001. However, after the election of the National Rainbow Coalition (NARC) government in 2002, the agricultural sector started to realize positive gains and grew by 3% in 2003, 1.6% in 2004, 6.9 in 2005 and 5.4% in 2006 (MoA 2008).

However, the sector does not only perform the majority of economic functions, but also crucial social functions. The sector provides livelihoods for 74% of the population. Since a large proportion of Kenyan people live in the rural areas depending on agriculture, livestock and agricultural activities are often the only means of employment. 80% of Kenya's agricultural production is in the hands of small-scale farming households and still, 52% of the rural population lives below the national poverty line. Therefore, the sector is the channel to reducing rural poverty and achieving food security in the country (World Bank 2008b).

Medium and large commercial farms are highly productive and maintain a vibrant private agricultural sector. They are mainly responsible for the observed sector growth over the past 5 years (largely in non-food items such as tea, coffee, flower exports). In contrast, the productivity of the predominantly small-scale agricultural sector has been stagnant. Subdivision of land due to population pressure, increasing pressure on natural resources and highly inequitable distribution of access to resources keep parts of the rural population trapped in poverty. The small-scale part of the sector suffers from a deep undercapitalisation and from wide-spread neglect of public investment in key services to rural areas. Social erosion has been identified as a hindering factor for sustainable poverty reduction in vast parts of rural Kenya where the face of rural poverty is predominantly female. The entire sector is confronted with massive challenges in resource degradation, soil erosion and conflicting interests in the use of natural resources (World Bank 2007c).

Since the early 1990ies, Kenya had substantially reformed its agricultural sector governance with wide-spread liberalisation of markets (which led to abolition of commodity and price and market control regimes) and export led trade policies. This kind-of policy environment contributed to the growth of the country's export agriculture, i.e. floriculture and horticulture. However, a number of commodities are still regulated under various government and parastatal institutions; e.g. maize and sugar. Even though the sector is formally liberalised, the level of government interference with markets, intransparent mechanisms, lack of regulatory functions and subsequent market failures still prevail a number of agricultural sub-sectors, including the maize sub-sector (see also Box 5 and Picture 4).

³ WFP (2009) gives a detailed overview of the humanitarian situation in Kenya.

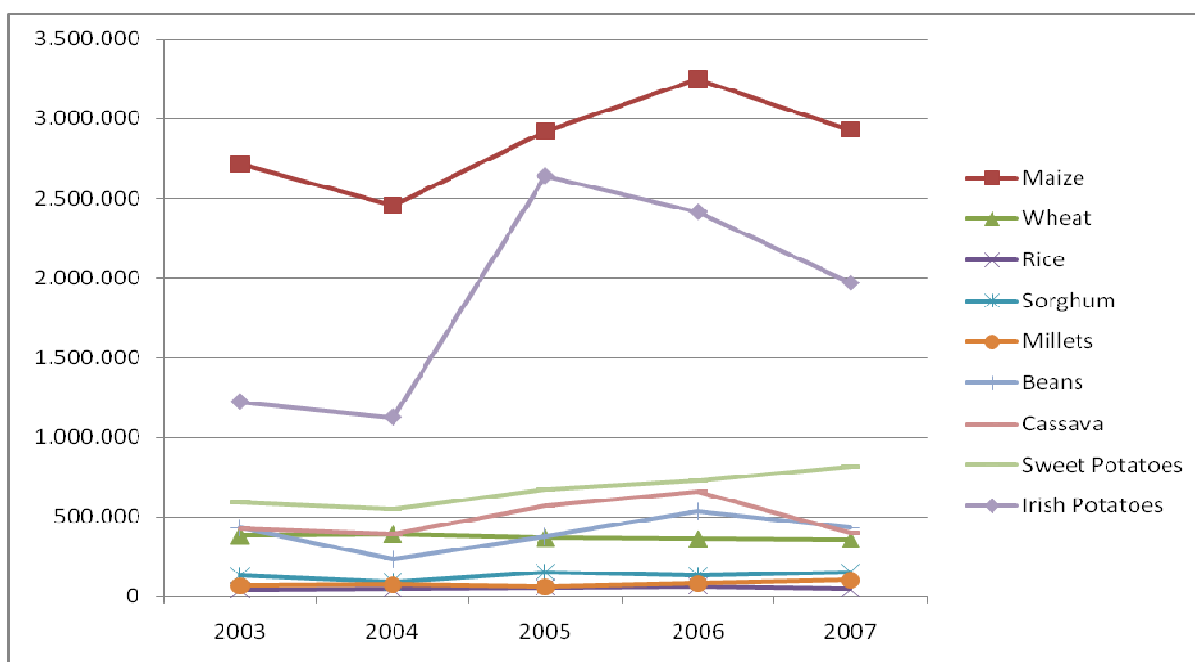


In Kenya only 16% of its surface is classified as High to Medium Potential Land (HMPL) while the remaining 84% are arid and semi arid. Almost all commercial agricultural activities, as well as the large proportion of small-scale farming is concentrated in these high potential areas of mainly Central and Rift Valley Province. They provide rich farming opportunities and cater for 2 cropping seasons (with regional variations): long rain season (Planting in Feb-March → Harvesting from Nov-Jan, major grain harvesting in bread basket area) and the short rain season (Planting from Aug – Oct → Harvesting from Feb-Jul, mainly in less productive areas).

Food Production

Kenyan food production is mainly characterised by white maize production. Maize is the main staple food for almost all ethnic groups in the country, even though it doesn't grow well in many parts of the country. Maize production by volume counterweights all other food crops by far (see graph 3 below) It is consumed as cooked flour ("ugali").

Graph 3: Food Crop Production in Kenya, 2003-2007 (in mt)⁴



Source: MoA (2008)

The production of maize in Kenya is largely rain-fed and therefore vulnerable to draught, at least in the non-high potential areas. Although there has been substantial increase in area allocated to most crops, crop productivity has either stagnated or even reduced all together. Maize yield has stagnated at about 1.7 mt per hectare, which is low by international standards (Nyoro & Jayne 2006). Despite the high adoption rates of inputs such as fertilizers and seeds, the quantities used per unit areas have remained below optimal levels thereby adversely affecting maize productivity. In spite of increasing adoption of technology enhancing inputs; the intensity of use has been low. However, according to the available statistics (see table 1), Kenya has been able to almost meet domestic maize demand in the recent years. Shortfalls were met by importation from the region by the private sector; excess supplies were absorbed by the NCPB for the Strategic grain reserve (see also Box 4).

⁴ In order to avoid biased impressions it is important to mention that the volumes for grains are given for dried grains with moisture contents below 14% , whereby roots and tubers are counted in full weight of produce. So even though Irish potatoes production seems to be catching up with maize, the caloric volume of maize is much higher.

**Table 1: Maize Production in Kenya (2003-2007)**

Year	2003	2004	2005	2006	2007
Area (ha)	1,670,914	1,819,817	1,760,618	1,888,185	1,615,304
Production (in mt)	2.7 Mio	2.5 Mio	2.9 Mio	3.3 Mio	2.9 Mio
Production (in 90 kg bags)	30.1 Mio	27.3 Mio	32.4 Mio	36 Mio	32.5 Mio
National Consumption (in 90 kg bags)	30.1 Mio	31.1 Mio	32.1 Mio	33.1 Mio	34 Mio

Source: MoA (2008)

The high dependency on maize as the major food crop has been identified as a long-standing problem in Kenya, however consumer preferences are strong towards maize instead of potential substitutes (also illustrated in graph 3). Yet, there are other food crops grown in Kenya, namely Irish potatoes, rice and wheat. Potatoes are mostly grown on small-medium scale family farms in the High potential highlands, whereby rice is mainly cultivated in localised irrigation schemes in the low lands. Wheat is mainly farmed on medium-large scale farms in the Northern Rift Valley and around Mt Kenya. The national demand for potatoes is on the increase for the last couple of years and production trends have been responding to the demand. However, production suffered setbacks due to soil borne diseases, lack of seed potatoes and poor crop management. Wheat and rice production decreased over the past years.

Traditional food crops still play an important role in rural Kenya and in particular for poorer small-scale farmers and female-headed households, with limited land resource. They include sorghum, finger millet, a variety of beans, peas and other pulses as well as roots and tubers like arrow roots, cassava or sweet potatoes. Production and consumption of traditional food crops is highly specific to culture, tradition and ethnic grouping within the country. However, in most cases, they are produced by women and mostly for subsistence and surplus marketing. Traditional food crops rarely receive a targeted promotion and thus suffer from low productivity. There is little applied research going on for traditional food crops (as compared to maize and cereal production) and where it is done, there is only little transmission of research results into the extension system that would reach female small-scale producers.

Rearing, keeping and breeding of livestock, such as chicken, cattle, goats, sheep and camels plays an important role in farming systems and for national food security. Particularly the increase in milk productivity during the last 20 years has contributed to rural poverty reduction (World Bank 2008b).



3. Recent Food Price Developments at National Level

During the last quarter of 2007, Kenya was hit unexpectedly by the sharp increase of international food and oil prices like many other countries worldwide. The high international prices were transmitted directly to consumers on the prices for imported food; mainly rice and wheat. Due to the international price peaks and the internal political crisis, overall inflation double in the first half of 2008 from 15 to 30% and led to substantial consumer losses. Selected consumer price changes between January 2007 and March 2008, are depicted in table 1 below.

Maize		Beans		Rice		Wheat	
Year 2007	Jan-Mar 2008	Year 2007	Jan-Mar 2008	Year 2007	Jan-Mar 2008	Year 2007	Jan-Mar 2008
+ 12%	+ 19%	+ 36%	+ 32%	+ 99%	+ 58%	+ 71%	+ 21%

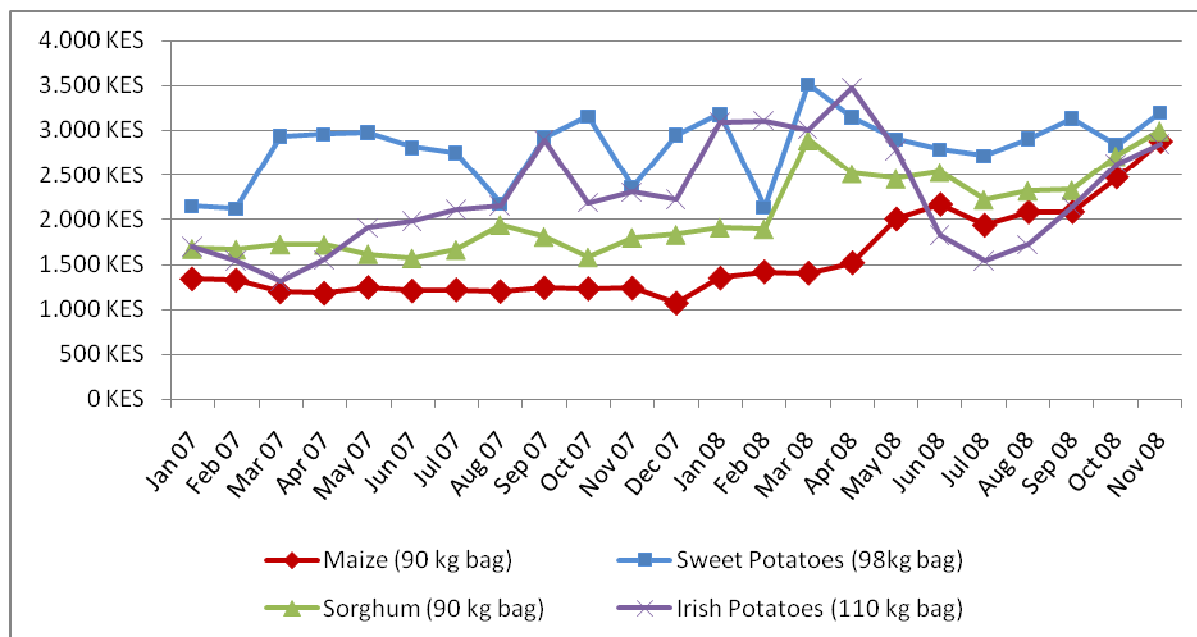
Source: ASARECA (2008)

It is evident that the highest price increases in 2007 and up to the first quarter of 2008 could be observed for those food products, that Kenya is not self-sufficient in and is importing around 30-50% of its consumption: rice and wheat. As mentioned in chapter 2, wheat and rice production decreased over the past years. Since Kenya is a considerable a net importer of either both products, the reduction of domestic area under cultivation alone increased the national import bill for these grains (MoA 2008).

The sharp price increase for rice and wheat of 99% and 71% in 2007 occurred largely during the last quarter of 2007. They show a clear price transmission from the high world food prices in late 2007 to the domestic market. Since rice prices stayed high in 2008, this indicates potential windfall gains for Kenyan rice farmers in 2008. The wheat harvest 2007 in Kenya was poor and low supplies resulted in a direct domestic price increase. Those wheat farmers that had a reasonable harvest might have benefited from that. However, the 21% increase of wheat prices in 2008 is suspected to be fully absorbed by millers since it occurred months after domestic harvest season (October/November).

The picture looks somewhat different for the development of domestic crop prices. Looking at maize and beans in the table, the larger price hike could be observed during the early months of 2008. Given that the main harvest of all cereals and staple food crops takes place between June and December, the following observations can be made: Maize was largely harvested by November 2007 and most maize farmers sold their produce at harvest for various reasons at relatively low prices. Most of the maize from the 2007 harvest (that was meant for markets and not kept on-farm for subsistence) had already been sold off by the time the prices started to increase. There is little evidence that farmers benefited from any price transmission from the 2007 harvest.

While looking at MoA data for various domestically produced food crops in 2007 and 2008, a generally increasing trend can be observed from the first quarter of 2008 onwards (see graph 4). It should be mentioned however, that most price trends 2008 are nominal prices. Given the overall inflation rate of around 30% during the years (according to estimates from World Bank 2008c and others), the high inflation rate was cause and effect of food price increases at the same time.

Graph 4: Kenyan Food Price Developments (2007-2008)

Sources: Monthly Commodity Prices in Various Kenyan Markets: data compiled by ReSAKSS-ECA. Source of the data is the Ministry of Agriculture in Kenya plus own data

As shown in the graph, the prices of maize and sorghum remained relatively steady, even during the post-election crisis until May 2008 when the unprecedented rise offset itself. The overarching event for all domestic production and consumption became the post-election crisis in January 2008, with which Kenya exacerbated the international trend of high food prices by severely interrupting its grain production cycle 2008 (see also box 1). The underlying explanation for the price rises in 2008 is the reduced domestic production of food crops and resulting scarcities for almost all staple food.

The main four reasons for reduced production in 2008 were the following:

1) Post-election violence

As is evidence in graph 4, the prices of food commodities went up after the height of post election violence. From Dec 07 when the election took place the graph shows a downward trend on maize prices from KSh 1250 in mid Nov to KSh 1000 for a bag of 90kgs. This trend was due to the harvesting which was already going on albeit at a very slow pace in the grain basket of the country. The harvesting (in Rift valley) which runs from November through to January could not take place at the required pace due to the following two reasons:

- i. Before the elections, the campaigns had reached its fever pitch and the politicians were dishing money easily and freely to the youths and the energetic persons of the community which would have otherwise been busy in the farms harvesting.
- ii. After the elections and announcement of the presidential winner, the country erupted in to violence denouncing the results. And again the youths and other groups of society were incited by politicians to cause mayhem and massive destruction of lives and property leaving the ready-for-harvest maize in the fields. Due to these political interferences, maize on the farms was not harvested and were eventually set on fire by the post election violence crusaders. This meant that all that maize was lost. This then explains the fact that prices stagnated during the crisis as people were still consuming the carry-over stocks and the little that had already been harvested. This could only last up to mid-end of April. And therefore in May, the prices took a hike that has kept the pace and direction thence-forth.

Box 1: The Impact of the Post-Election Crisis (Jan–March 2008) on Food Production in Kenya

KENFAP, the Kenya National Federation of Agricultural Producers, is the apex farmer organisation in Kenya, representing the interest of over 1.4 Mio Kenyan farm families. They found out that as a result of the post election violence livelihoods of farmers were disrupted and national interventions put in place over the past five years to revive the agricultural sector faced a major drawback. Poverty levels among the farming families escalated and lead to food insecurity. More than 1,000 people had been killed and over 400,000 people (more than 1.3 % of the entire population) displaced with over 200,000 farmers amongst them. Food security in the country had been badly affected. Over 40% of the farmers from the affected regions were disrupted in their production and land preparation for the season 2008. Consumer prices had consequently increased by 50-100%. Transportation along most markets lines were blocked due to impromptu illegal roadblocks resulting to delayed, reduced and unreliable supply of farm inputs which led to relatively higher prices and unreliable uptake of farm output at lower prices. This left approx. 25% of high potential farm land fallow and severely disrupted agricultural markets.

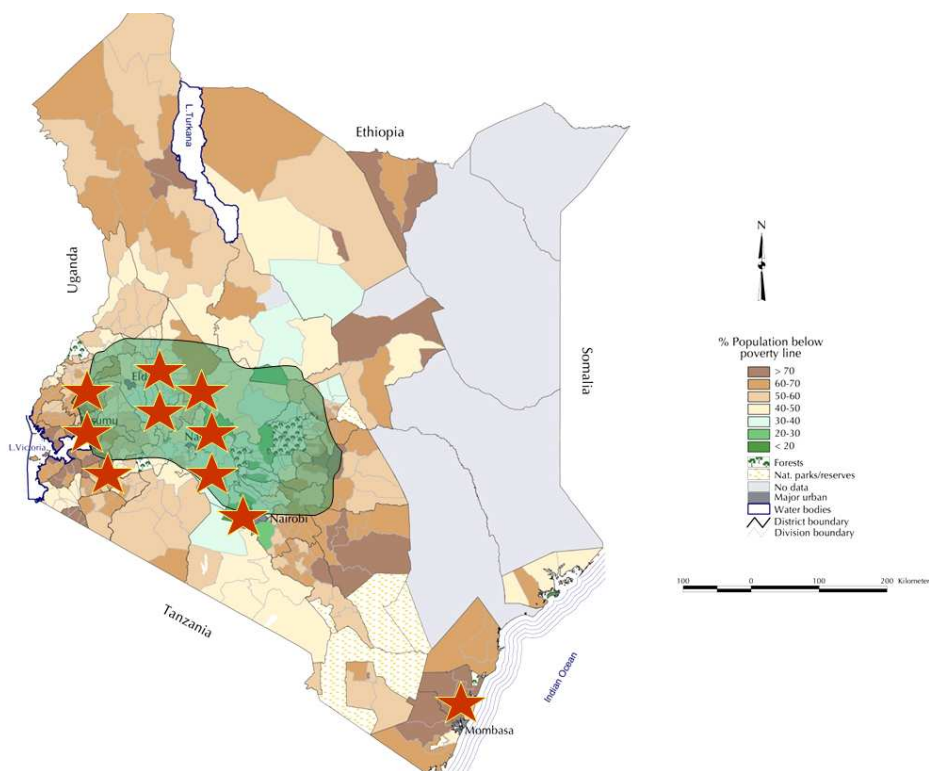
KENFAP conducted a “return to farming” initiative, which eventually led to successful restoration of peace and reconciliation among some farming communities and ensured farmers got back to the farming cycle. The Kenyan Government launched a programme for resettling IDPs (“Operation Rudi Nyumbani”). In the grain basket of the country, returning farmers often missed the planting time for maize and therefore opted for cultivating wheat, which can be planted slightly later in the year due to its shorter production cycle. And still, one year later in Februar 2009, still more than 50,000 people live in camps in the Northern Rift Valley.

Sourcs: KENFAP (2008), various newspapers

2) Interrupted mobility of people, goods and services

Closely related to post election violence were the road-blocks into and out-of the high potential grain producing regions of Rift-Valley province. The many roadblocks ensured that there were no easy mobility of farm inputs and outputs in and out of the region and this created serious food deficits in many other regions which eventually sparked the high food prices which has not come down hitherto.

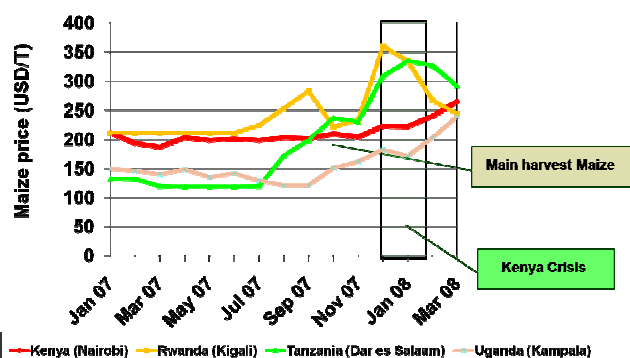
Graph 5: Poverty Incidence, High Potential Areas and Post-Election Violence



Source: Central Bureau of Statistics et al. (2003) plus own illustration

Graph 5 shows the poverty map of Kenya. The green shaded area is considered the grain basket of the country (mainly the area where we undertook the interviews for this study). The stars symbolise the locations of major post-election clashes and farm evictions. As illustrated, the main clash areas are concentrated in the productive regions of the country. But the Kenyan situation impacted also on the neighbouring countries. Rwanda and possibly also Uganda might have suffered from maize price peaks in the first quarter of 2008 (see graph 6), since their main route of transportation, the Kenyan “Mombasa-Highway” had been blocked or was unsafe to pass during the Kenya crisis for several weeks.

Graph 6: Trends in Maize Prices in Capital Cities in East Africa



Source: ASARECA (2008)

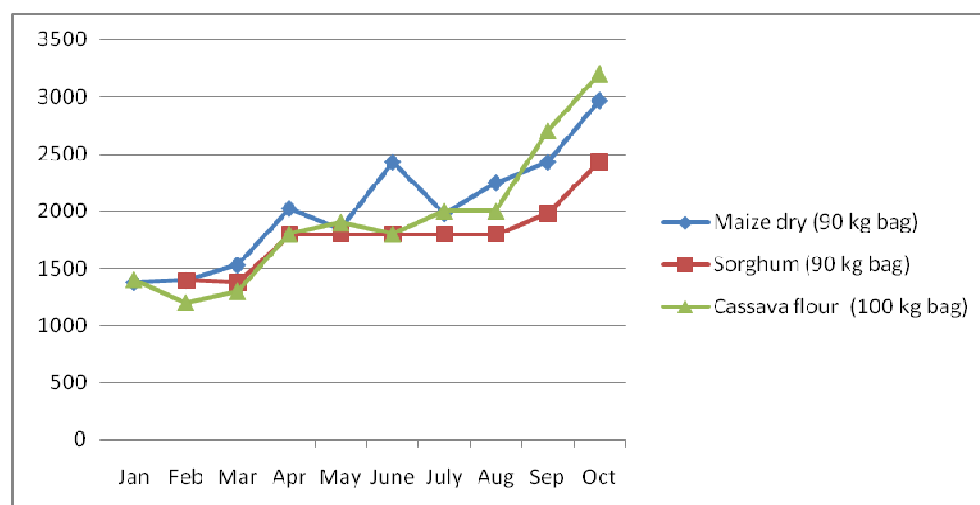
after the eastern crop failed due to very scarce rains. This also had a serious hand on the increase in prices being witnessed in the country because supply has been minimised yet demand is increasing.

4) High cost of production

The high cost of production was a major hindrance to expansion and involvement in farming activities in 2008. Many farmers found costs of fertilisers prohibitive to use. The cost of almost all farm inputs went up, as discussed in the following chapter 4.

Food prices within the country differ significantly and are naturally volatile during a year. However, to illustrate the severity of food price developments during the survey period, graph 7 depicts nominal food price trends in the markets of Busia, main border town on the Ugandan-Kenyan border.

Graph 7: Food Price Developments Busia Market (2008 in KSh)



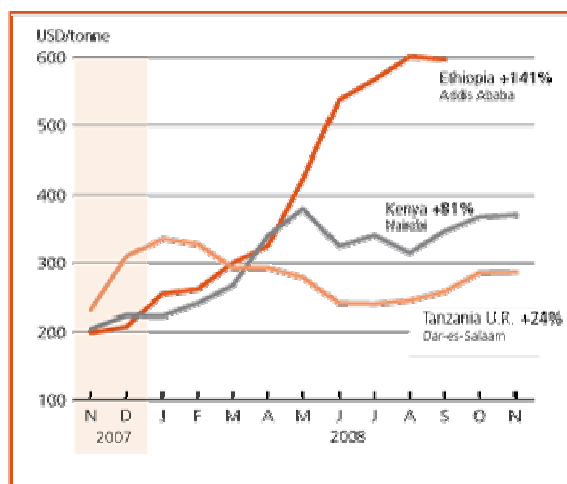
Source: MoA, DAO Busia office, var. District Agribusiness Reports

3) Crop failure

Most crop production in Kenya still remains rain-fed. This therefore means that whatever is produced and achieved comes through due to availability or in availability of rain. The just concluding cropping season had rain failure that meant that the production must have a serious fall. Earlier projections were that the country was going to produce 30 million bags this season but was later reviewed to 28 million bags

From June 2008 onwards, the prices for all main food items went up sharply and have not eased since then. In fact, when we visited the Busia market in November 2009, sorghum was not traded since it was not available for traders anymore. Maize grains as well as maize flour had escalated by more than 100% compared to the year before and became inaccessible for the majority of the income-poor population. It was evident that the ordinary population had started rationing their food intake by November to one-two meals a day only and diverted to less caloric and nutritious diets.

Graph 8: Maize Prices in selected Eastern African Markets



Source: FAO (2008e)

As FAO (2008e) points out, Kenya is second hardest hit by price increases in the East African region, after Ethiopia (see also graph⁸). Likely impacts of the current high food prices are mentioned as following:

- High food prices reverses the gains in poverty reduction
- Transfer expenditure from non-food to food, such as health, education, etc
- Increase of malnutrition and child mortality
- Demand for higher wages/or reduction of prices through riots.
- Urban poor adversely affected, leading to insecurity. Rural households who become net-buyers also suffer.

When the government lowered its figures for the outlook of the 2008/09 harvest from the unrealistically earlier expected 28 Mio bags to presumably less than 24 Mio bags, and when the WFP published its last quarterly report 2008, the president announced the food situation a national emergency.

Table 3: WFP Price Watch Bulletin, December 2008

Countries	Main staple food	Caloric contribution (%)	Current Quarter Over Previous Quarter (% Change)	Current Month Over Same Month Last Year (% Change)	Current Quarter Over Same Quarter of Last Year (% Change)	Current Quarter Over Same Quarter of Last 5 Years (% Change)	Contribution to the Cost of the Food Basket (%)		Price Trend of the Main Staples
							Individual Commodity	Cumulative	
Kenya	Maize	35	21	85	77	63	7	7	↑

WFP (2008)

With over 10 million Kenyans facing starvation, and food emergency already declared, the country is facing a very difficult year ahead. The prices of food and fuel have triggered for months the overall inflation so that also non-food items has continued going up. For staple food, the problem will not mainly be the national price development, but physical availability of food if not more imports are ordered.

4. Recent Factor Price Developments at National Level

Even though input intensity is comparably low in most food production systems in Kenya, typically maize production is a relatively high input production system, not only on medium and large scale farms. Even on smallholdings at least improved seeds and two different treatments of fertilisers are applied by most farmers. The cost of almost all production factors necessary for grain production experienced a sharp rise in the year 2008 for various reasons. Table 3 gives an overview of the production factors and their respective price developments that are discussed in the following sections.

Production Factor	Trend in 2008
• Land	↑ and ↓ (area-specific)
• Mechanisation (tractor services)	↑ (fuel)
• Seeds	=
• Labour	↑
• Fertiliser (mineral and organic)	↑↑
• Chemicals	= (but availability ↓)
• Transportation	↑↑

Source: own illustration based on interviews

Out of the list above, the high costs of transportation and for fertiliser (and partly for land) affected the production of traditional food crops. Potato production suffered from a specific lack of clean seed potatoes and a disruption of the supply of the same during the months of post-election violence.

Cost of maize production have been estimated to have risen at least by 27 % on average in 2008 (KFFSG 2008). Two different scenarios are calculated in chapter 6 (see table 6).

Land

Land is a major factor of production. The land market varies a lot within Kenya and is subject to a number of traditional laws and social management practices. However, looking at the grain producing areas of the Northern Rift valley, buying and selling, hiring out or leasing land is common for grain production. Here, the price of land has risen quite tremendously in recent years (see Box 2).

One explanation might be the growing pressure on arable land due to population pressure. On the other hand, there are a number of medium-size farmers who own pieces of land that either they lack the capital to invest in or find it unreasonable for them to till the whole piece of land. Instead of leasing out the land, some farmers prefer just to leave the land fallow or graze extensively some dairy cattle and to keep it for the next generation. There seems to be still quite some underutilised land potential. As a result of the post-election conflict and eviction, access to land in the conflict areas was relatively cheap but only accessible to certain groups of society⁶.

Box 2: Land Rate Developments in the Grain Basket

An extension officer for Kipkaren Division of Nandi North District, Rift valley Province, explained how the land rates have evolved the area of Nandi North:

“In the early 80ies one acre of land there costed KSh 15,000. In the mid 80ies, the same piece of land went at a double rate of KSh 30.000, the reason being that Kenya Cooperatives Creameries (KCC) was very vibrant and every farmer wanted extra land to engage in dairy cow production. Came the 90ies, an acre of land stood at 50,000. At the turn of the century (2000), it went up to KSh 80-85,000. Before the last general elections, the rates hit an all time high of between KSh 100,000 to 120,000. In late 90’s an acre of land was leasing at between KSh 1500 to 2000 for a cropping period. It later came to KSh 3.000 in 2003 and now it goes at KSh 4-5:000. These rates are said to change from place to place depending on the richness of soil and the rainfall pattern of the area”.

Source: own interview

⁵ Unfortunately, we couldn’t assess the costs of capital. This is an omission; however we assessed the impact of costs of capital to be of minor relevance to the cost structures in 2008. We would however be grateful for any further information and evidence gathered on this topic.

⁶ Allegedly, prices for land in clash areas had fallen due to the post-election violence. One acre of land could be bought for between 100,000 – 145,000 KSh. This might have to be put into the perspective of ethnic affiliation: it possibly says that Kalenjin farmers could access or buy land in the Rift Valley where formerly other communities had lived.

Mechanisation

The costs for mechanised land preparation in early 2008 had generally increased because of the high fuel prices. A tractor that could be hired for KSh 1500 to plough an acre, went for 2000 instead. Furthermore, in many parts of the Rift Valley, tractor services were not available due to the post-election mayhem. In a number of stations, MoA equipment was destroyed in the rage against the government – therefore, service provision were scarce and available only in scattered parts or on private farms.

Seeds

The seed industry kept their prices more or less stable and the farmers interviewed had no complaints about that. The issue with seeds was rather their availability. Considering that the post elections violence ran from late December 07 to March 08, it coincided with the onset of a new cropping season. Existing depots had stocked a lot of maize seed – yet a number of farmers started the planting season late and opted therefore for growing wheat instead which was then not ready available in the required quantities. Even with the signing of the peace deal in March 08, most transporters were still very sceptical of returning their lorries to the road for fear of attack, vandalism and looting. By the time business came to full norm, in May, some areas were undersupplied with seed and it was already too late to plant. However, the general availability and affordability of seed was considered to be sufficient.

Labour

Labour rates went up in 2008 and consequently had a recognisable effects on the high food prices witnessed in the markets. Interviewed farmers from Nandi North District indicated that everything done on the farm either manually or with the machines went up by at least 20%. It must be recalled that the year 2007 was an election year and was bound to see a lot of political campaigns through-out the country. The campaigning activities interfered with many farm activities in politically important Rift Valley. In fact, the high season of campaigning from October to the polling day in late December 2007 coincided with the harvesting of maize in the major grain producing regions where there is usually a labour shortage.

Table 5: Exemplary Costs of Labour involved in maize production

Activity/Acre	Charges before 2008, in KSh	Current rates, 2008, in KSh
Ploughing	1500	2000
Planter	1200	1500
Slashing	700	1000
Weeding	1600	2000
Shelling	30/bag	40/bag
Transport to store	1000	2000
Source: own interviews		

Casual rural labour was bought by politicians, and the labour rates paid were about 25% higher than the agricultural wage (around 150 KSh/day). This resulted not only in a lack of man-power on the farms but also led those who were willing to take up the harvesting jobs demand very high amounts of about KSh 200-250. The table below illustrates increases for various work stages.

Fertiliser

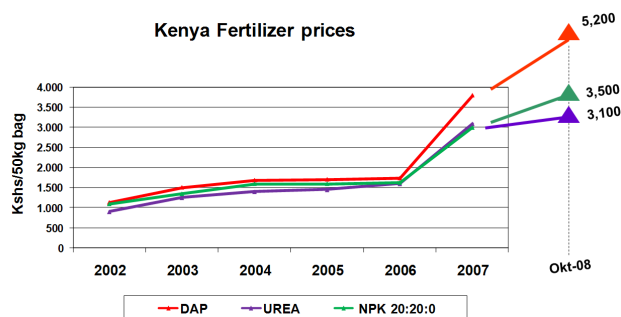
Relatively high fertiliser prices in Kenya have been debated for the last 10 years or so (see e.g. Jayne et al. 2005 or World Bank 2007b). Fertiliser prices were extremely high in 2008 and they were one of the main cost drivers of production. The main reason for the increase can be attributed to sharp increases in the global fertiliser market, which in turn were attributed largely to high energy costs (particularly relevant for N-containing fertilisers). However, the price hike was predominantly high (+300%) for phosphorus containing fertilisers, such as DAP and NPK used for grain production in Kenya⁷.

⁷ For more details on global fertiliser prices please see World Bank 2008a, FAO 2008b or Hoeffler 2008.

The World Bank (2008) emphasises that global fertiliser prices are likely to come down only in the medium term, since the capacity to mine and produce more fertiliser is limited and new capacity takes 3-7 years to build up. However, with the fall of oil prices in late 2008, fertiliser prices have started to ease.

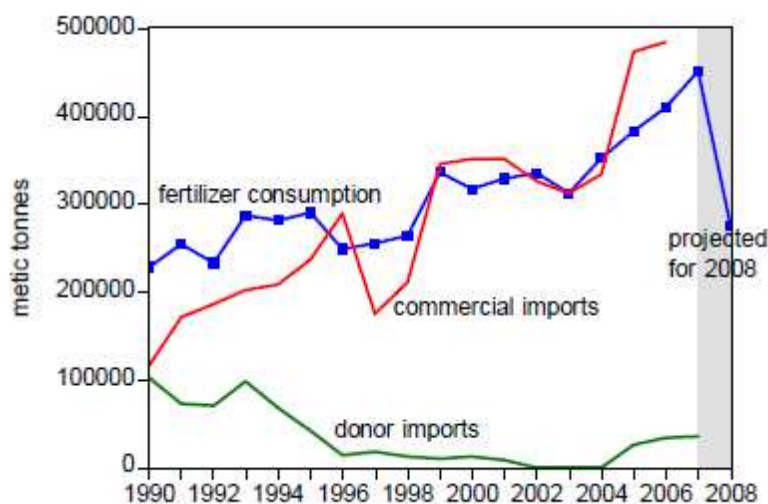
At domestic level, this is already transmitted to a certain degree since the all time highs of 2008 are relaxing in 2009. However, for the 2008 season, most farmers will start by pointing out the cost of this input and how it adversely affects their production.

Graph 9: Fertiliser Prices in Kenya (2002-2008)



Source: World Bank (2008) and own (for Oct 08)

Graph 10: Trends in Fertiliser Use (Kenya 1990-2008)



Source: Jayne et al. (2008)

The last cropping season witnessed the worst crop husbandry as the larger percentage of farmers could not afford it resorted to poor practices like applying only one bag of fertilizers where 2 are recommended or not applying at all. This had negative impacts in the field as most crops germinated poorly and consequently the production could only be below par.

Jayne et al. (2008) have estimated the overall fertiliser use in Kenya to have dropped by 40% in 2008 to less than 300,000 mt (see graph 10).

The pictures below illustrate two commonly observed results of the low fertiliser use:

Picture 1: Fallow land adjacent to Maize Field



Source: own photograph

Picture 2: Poorly Germinated Maize Field



Source: own photograph

Organic Fertiliser and Manure

Compared to mineral fertiliser, organic fertiliser, compost and manure are still rarely used to its potential in Kenya. This neglect is identified as a major reason for the loss of soil fertility, erosion and depletion of micronutrients. On the other hand, those farmers using organic fertiliser were to some extent autonomous in their production system and less vulnerable to the global price increase of mineral fertiliser (see also Box 6). However, it seems that due to the sharp increase in mineral fertiliser prices, a certain degree of substitution produced a cross-price elasticity for organic fertiliser and manure. As one farmer put it: *“Manure trade is nowadays more commercialised – a 3 t lorry of cattle manure from dairy farmers 10 km away costs 7.000 KSh, which is at least one third more than the years before.”* Farmers producing organic fertiliser (livestock breeders, etc) were benefitting from that – farmers routinely using organic fertiliser complained about the price increase.

Chemicals

Chemicals used in food production are mainly herbicides for the cereal growing and insecticides for pest control shortly before and post harvest (mainly against weevils). Chemicals didn't increase on international markets, therefore, also in Kenya, only marginal price increases were observed during 2008 and those that occurred can largely be attributed to increased fuel and transportation costs as well as insecurity due to post-election violence. The latter was also the main reason for erratic availability of chemicals at times they were needed – so fungus and insecticide control has not been systematically applied. In some areas this might account for post-harvest losses, even though we do not suspect this to have a major impact on food availability.

Transportation

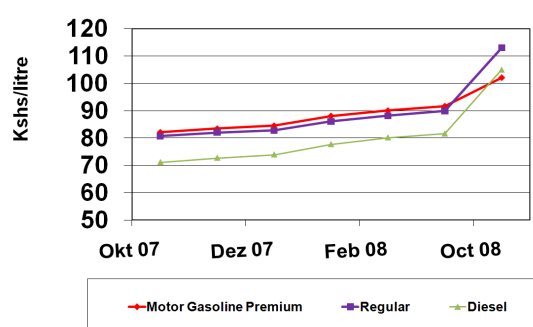
The agricultural sector is very closely related to that of the energy sector. At the onset of cropping season of 2008, fuel prices were much higher than the previous years and this trend kept the upward movement till the harvesting periods in the Rift Valley (see graph 11).

The petrol price per litre was KSh 79 and diesel was KSh 66 at the start of the year 2007. In Aug same year petrol moved to 81 and diesel stood at 69. Feb 08 petrol went to 87 and diesel to 78 and in July 08 they all went to all time high to 110 for petrol and 103 for diesel. Sep 08 petrol reduced to 104 and diesel to 99 and in Dec, petrol went at 76 and diesel and 72. With these fuel price increases, the year 2008 saw major price hikes in all commodities, transported goods and services. The cost of transportation went high and barred most farmers from assessing either inputs or better markets for their commodities. Since late 2008, approximately 3 months later than the general fall on world oil prices, some changes were noticed with widespread decrease of fuel prices by around 15% (currently, a litre of petrol goes at between 77 and 78 while diesel is at 75).

Agricultural Transaction Costs

Even though specific agricultural transaction costs were not part of our survey, it should be mentioned that during all interviews the importance of the post-election clashes for interruption of food production was emphasised. It appears significant to mention that mainly due to the impassibility of roads and general insecurity from January – March 2008, all relevant negotiation business transactions and extension activities were stalled. Trading partners and input suppliers were not available, shops looted, no transportation available and necessary services unreliable. Nothing could follow the routine and this fact should have been acknowledged earlier as a main reason for a drop in production in spite of all other cost increases.

Graph 11: Fuel Price Developments



Source: KIPPRA Data plus own

5. Recent Price Developments along the Marketing Chain of Maize

Even though Kenya grows various food crops, white maize is the main staple food in this country and when the government or private sector actors talk about food insecurity, what is meant is unavailability or unaffordability of maize (see also chapter 2). Therefore, this chapter presents a detailed analysis for production costs 2008 (in two different scenarios) and marketing channels of maize.

Table 6: Comparison of Production Costs for one Acre of Maize according to Farmers Interviewed⁸

	2007	Option 1: 2008 ^(a)	Difference '08 ^(a) to '07	Option 2: 2008 ^(b)	Difference '08 ^(b) to '07	Comment/Explanation
Land lease	1.800	4.000	+122%	4.000	+122%	(if not produced on land owned)
Land Preparation	3.000	4.000	+33%	4.000	+33%	Tractor hire for ploughing
Seed	1.200	1.200	0%	1.200	0%	Hybrid Maize Seed, 10kg
Labour	3.200	3.500	+9%	3.500	+9%	Planting and weeding (2 times)
Fertilisers						2007, 2008 ^(a) 2008 ^(b)
CAN	1.750	4.250	+143%	2.125	+21%	1 x 50kg 1 x25kg
DAP	5.000	13.400	+168%	3.350	-33%	2 x 50kg 1 x 25kg
Pest Control	3.200	4.100	+28%	4.100	+28%	Labour for spraying plus chemicals (mainly sulphates)
Labour	2.500	2.600	+4%	2.600	+4%	Harvesting, drying and shelling
Transporting	1.000	2.000	+100%	2.000	+100%	From field to store/assembler/wholesale
Σ Overall Production Costs	22.650	39.050	+72%	26.875	+19%	Per acre maize
Average yield	20	20	-10%	13	-35%	Number of 90 kg bags
Farm gate Prices	1.300	2.300	+77%	2.300	+77%	Observed price in December 08
Turnover	26.000	46.000	+77%	29.900	15%	per acre maize compared to 07
Farm Profit	3.350	6.950	+107%	3.025	-10%	per acre maize compared to 07

Source: own data from farmer interviews in Nandi North

⁸ This table is meant to serve as an example to illustrate changes in cost structures from 2007 to 2008 at production level for 2 different types of farming decisions (2008^(a) and 2008^(b)). 2008^(a) is assumed to have produced under the full bearing of increased costs of production; 2008^(b) is assumed to have produced with only minimal fertilisation and therefore bearing a drop in yields. Given the complexity of factors involved in maize production, this can be by no means be taken as representative for the country, only for a certain type of farming system in the high potential area. Information is based on interviews with small-medium size farmers in Nandi North District, Rift Valley Province. It was validated with MoA extension staff, NCPB staff, and staff Tegemeo Institute. Calculations are based on 1 acre maize production during long rain season 2007 and 2008. Capital costs could not be established – they are missing and might play a role in the equation for 2008^(a) type farmers if they had to take a loan for buying the fertiliser at high costs. Average costs for other farming systems are given by Tegemeo (2009), who also emphasise the difference between farming on own land versus farming on rented land.

Table 6 compares the costs of production for one acre of maize in the area we interviewed farmers in the year 2007 and 2008. Due to the enormous challenges farmers were facing in the availability and affordability of production factors (as described in chapter 4), maize farmers who still wanted to grow maize had basically two options: to source the capital needed to cover the increased production costs or to operate on much less intensive level of production. Farmers who could afford option 1 were rewarded with the highest farm-gate prices for maize ever paid in Kenya: between KSh 2100 – 2500 per 90kg bag – and without much quality concern or control of moisture content. None of the farmers anticipated such increases in farm-gate prices (see also Box 3).

By the time of the harvest, the physical shortage of maize in the country was already looming. Tanzania had by then banned all exports to Kenya and Uganda was selling all its maize to Southern Sudan, where even higher prices were paid for maize. Thus, the competition for sourcing the food commodity was almost fully transmitted to farmers.

During the interviews, we met both types of farmers and more than often it seems, farmers operated both options on different parts of their land. Since the implications of the decision making were quite significant in terms of farm profits, we tried to calculate the different costs structures for the two options. Option¹ (2008^a) assumes same use of inputs as in 2007 and full coverage of increased costs with same level of yields like 2007. Option 2 (2008^b) assumes limited use of fertiliser inputs due to lack of capital and consequently a drop in production of 35%. Both options were calculated together with farmers and reveal what most farmers told us: that the prices at harvest were very high, but that most of them could not benefit much from the prices since they didn't have a lot of produce to sell due to low productivity as a consequence of limited use of inputs (typical example of 2008^b scenario). These farmers might have made around the same profit (or slightly less or more depending on the yields) compared to 2007. For Option 2 farmers, the increase in production costs was higher than their farm profits. And one need to keep in mind that these farmers might turn into net-maize-consumers and will have to cover to high costs of the commodity from the consumer side.

The Option 1 farmers (2008^a) are likely to have made substantial profit provided they could loan the necessary capital for input use at an affordable interest rate⁹. The capacity to operate an input-intensive maize production system despite the sharply increased prices for

Box 3: What Farmers said Before and After Harvesting

Before maize harvest (early October 2008):

"In 2006/07, there was a lot of maize. The flooding of the market did not go well with the prices. The rates for maize went down, and most farmers did not realize much. This year, the maize produce has been very minimal and any farmer would tell you that under such circumstances, the prices would go up in line with scarce supply and heavy demand. Indeed the prices went up and still are quite high (60 KSh for a 2 kg tin). But we as farmers know that we are not getting anything. The high costs of our farm outputs are all absorbed with the high costs of inputs we incurred during production.

I had cost of production of about 33,800 KSh for one ha of maize. I haven't harvested yet but it will be between 15-20 bags on that acre. The National Cereals and Produce Board currently buys at 17,000 KSh a bag. For a harvest of 15 bags, I will make a loss of 8,300; in a good 20 bag scenario, I will make 200 KSh profit (=2€).

I am planning to get some other way of earning a life other than farming, unless something positive happens to fuel, fertilisers and leasing land rates. The brokers, middlemen and millers are eating from the farmers sweat."

At maize harvesting time (November 2008):

"The harvest was good, considering that we did not use a lot of fertilizers. The prices from the millers was good, but the government has now messed it up, to 1,950 ... subsidy should be at the start of the production, not at the end, we made profit, but we expected more. We shall not sell to the Gov't and NCPB, we have the right to sell anywhere we want in the republic!"

Another farmer complaining *"No one talks for the farmer, now our good prices are being sliced for the sake of consumers, while no one came to rescue us when costs of fertilizers went up."*

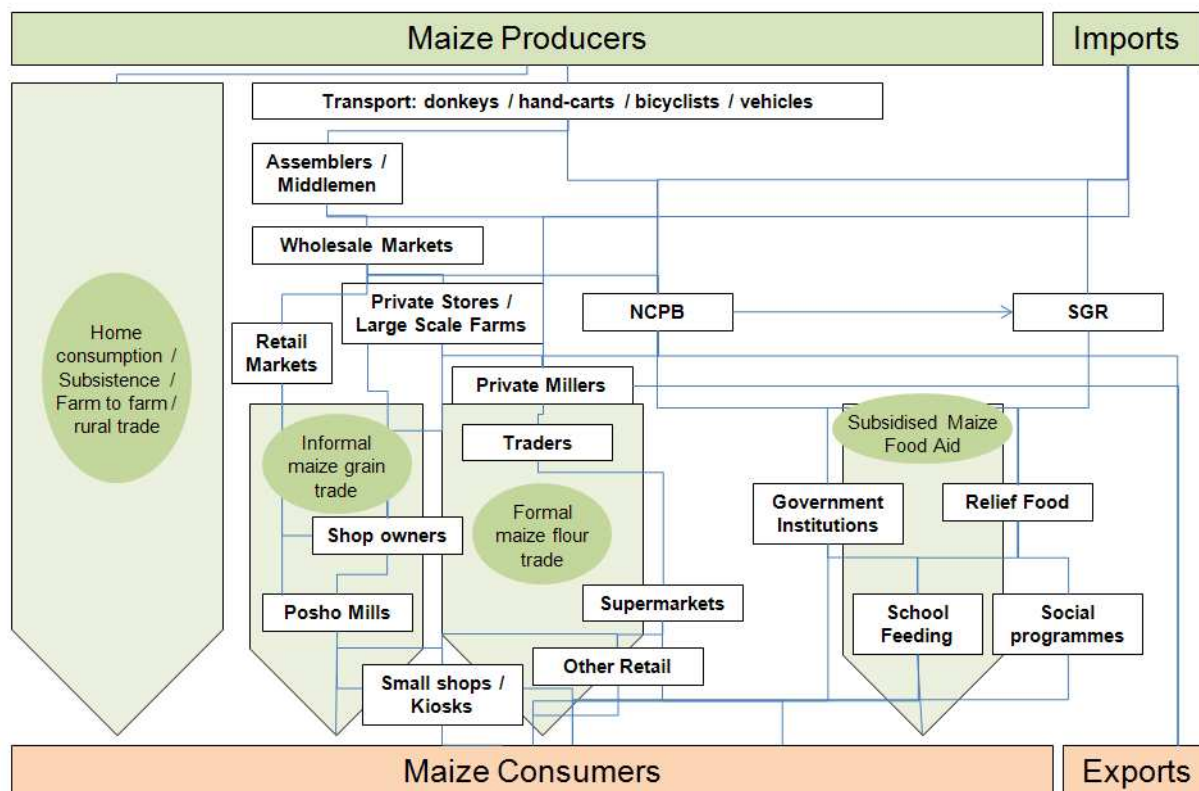
Source: own interviews

⁹ Again, the costs of capital remain unclear see also Footnote 3) and would still have to be deducted from the Option 1/2008^a and Option 2/2008^b Scenarios in table 6, particularly for those farmers who had to rent land. Tegemeo (2009) also emphasises the difference in profits made depending on whether maize production was undertaken on owned or loaned land.

land, fuel and fertiliser can be clearly attributed to medium-large scale farmers only. Non of the smaller farmers we talked to had access to a farm credit scheme that would have allowed them to cover the full increase of costs of inputs.

After we had established the highly competitive prices at farm gate, we were trying to follow the various marketing channels of maize in order to analyse price transmission to the different involved actors along the marketing chain (as illustrated in graph 12).

Graph 12: Various Maize Marketing Channels in Kenya



Source: own illustration

Maize consumers source their maize from mainly four marketing channels:

1. Subsistence production, on-farm consumption and inter-rural trade of maize
2. Informal maize grain trade in small shops and Kiosks; consumers take the grains to posho mills for grinding and milling
3. Formal trade of maize flour, typically available in 2kg paper packages in shops, kiosks and super-markets
4. Provision of maize via Social programmes (such as school feedings) or as relief food.

Once the maize is harvested, treated and ready for sale, our analysis revealed that the farmer sells to the highest bidder if he has options. The highest bidder differs according to time and season. In surplus season, the government’s NCPB offers better deals to farmers and in times of low harvest, private millers pay higher prices. But an average farmer who has no proper storage facilities to store his/her produce for sale later is forced to sell immediately after harvesting in order to settle cash-flow necessities within the household. So up farm gate, the maize is either sold to a transporter or directly to an assemblers who are usually fellow farmers or village mates. The village assembler collects larger volumes of

maize even by buying from bicyclists, donkeys and hand-carts. The assembler waits for the wholesaler who is usually located in the next urban setting. The assembler releases the merchandise to the wholesaler and the wholesaler transports these commodity mostly towards and in to the deficit areas and sells to either retailers or millers. The retailer eventually sells to the consumers in small quantity per 2 kg tin. The retailer is suspected to make a larger profit margin, depending on whether he/she has to bear costs of transportation and rent for the outlet.

When the wholesaler decides to sell to the miller, the millers mills these grains and packs them in to various quantities destined for the supermarkets markets. The supermarkets either sell in bulk or sometimes break them in to smaller quantities. If they sell in bulk, the flour changes hands to the retailer who sells in small shops/kiosk in small quantities. In all these movements of flour, there is the transporter all along.

The scenario changes when the farmer and or the wholesaler decides to sell the grain to NCPB. The NCPB keeps the maize in its stores and releases in times of scarcity to ease off high prices.

The wholesaler also supplies the informal grain markets. At the informal grain markets are the dis-assemblers who break down the quantities to manageable and easily afforded weights. The dis-assemblers retail the maize in various markets and also take the grains to hammer millers for milling and later sell to consumers per kg.

Maize producers

These are the principal producers and the origin of the chain. Farmers produce maize, largely under rain-fed conditions. 80% of the maize is grown on small-scale holdings and use part of the produce for subsistence purposes and others for commercial purposes. It is estimated that around 50% of the maize produced never enters the formal market but is either consumed on-farm or traded informally.

Assemblers

These are the first commercial handlers of the grain. They are usually farmers who graduate to the next stage. They usually get their capital from the sale of their produce and rent a small collec-

Box 4: Role and Mandate of the National Cereals and Produce Board (NCPB)

NCPB is a corporate body established under the NCPB Act CAP. 338 of the laws of Kenya. Under the current policy and regulatory framework the Board, which is categorized as a “Strategic Parastatal”, is mandated to carry out commercial grain trading and trade related services. NCPB follows four official business lines:

- Commercial grain trading in maize, wheat, beans, rice, sorghums, millets, green grams, pigeon peas etc.
- Provision of all grain related services such as warehousing, drying, pest control, weighing, quality testing, and clearing & forwarding of grain batches.
- Leasing out its facilities (stores, houses, offices, grain handling machinery)
- Agricultural Input Marketing of fertilizer, seed, and agro-chemicals

Under its commercial wing, NCPB acts like a private sector player with its own with brand names (*Nafaka foods* for flours, *Mkulima Bora* for fertilisers and *Huduma Poa* for pest control, warehousing, drying, cleaning, grading, weighing, clearing & forwarding of grain). NCPB manages 110 depots, silos and warehouses (see also graph 13) with a maximum storage capacity of 1.8 Mio metric tonnes (20.5 million x 90kg bags). Furthermore, NCPB pursues on behalf of the government three important social functions:

- (i) Procurement, storage and maintenance of Strategic Grain Reserves (SGR);
- (ii) Procurement, storage, maintenance and distribution of emergency relief grains; and
- (iii) Market intervention by fixed pricing of buying and selling prices for wholesale grains in case of either shortage or flooding of markets.

This analogous function of social and commercial activities provides challenges to the NCPB management and potential conflicts of interest. The permanent secretaries of the Ministry of Finance, the Ministry of Agriculture and the office of the President, special programmes are the trustees to the governing board of NCPB. The governance of the institution has been subject to various degrees of political influences, particularly in times of grain shortages or when used for administering subsidised fertiliser schemes or distributing relief food. On the other hand, NCPB holds crucial logistical facilities for social measures such as providing food to government institutions, hospitals, school feeding programmes, the Kenyan Army or prisons.

Sources: NCPB self-presentation, www.ncpb.co.ke, own interviews.



tion shop and acquire license from the country council. They sometimes use the services of bicyclists, donkey, hand-cart riders for collection of maize.

Wholesalers

Wholesalers usually buy the grains from the assemblers from the surplus regions and transport to the deficit regions. Most of them are vertically integrated into assembly as most of the volume they purchase in the post-harvest months are direct from farmers.

Traders

These are maize traders who buy from the wholesalers in the deficit regions and break down the volumes for re-sale to small scale retailers and final consumers. These actors also assemble maize during the short harvest period in the generally deficit areas, likewise assemblers in the surplus regions turn to dis-assemblers during the slack maize harvesting season when some farmers run out of maize and begin purchasing for home consumption.

NCPB

This is a government parastatal institution with dual functions (see Box 4).

Other Retailers

These are mostly small scale traders who sell in small quantities to consumers. They either buy grains or flour for resale.

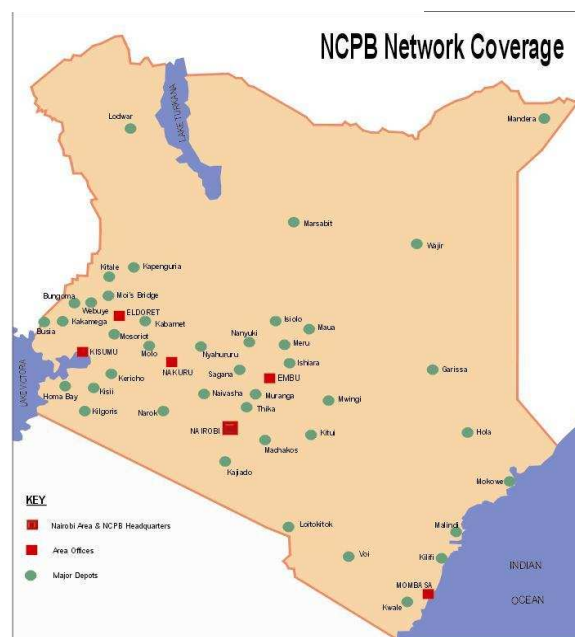
Posho Millers

This category is involved in processing of maize grain to maize flour. Posho mills exist in all rural areas and they employ simple hammer milling technology where the germ and the bran of the maize grain is milled together with the kernel in to flour. They specialise in custom whereby the grain is provided by the customer.

Private (large scale) millers

These are processors who deal with large volumes of maize and do their own packaging. These millers are characterized by large-scale, capital intensive roller milling technology.

Graph 13: NCPB Network Coverage



Source: NCPB

Table 7: Price Developments for Maize at different marketing levels (in KSh and Δ % to previous month)¹⁰

	Oct 08	Nov 08	Δ prev. month	Dec 08	Δ prev. month	Jan 09	Δ prev. month	Feb 09	Δ prev. month
Average farm gate price Northern Rift Valley	1.800	2.100	+16,6 %	2.300	+9,5%	2.400	+4,3%	2.550	+6,3%
NCPB intervention prices at depots	1.750	1.750	± 0	1.950	+11,4%	2.300	+17,9%	2.300	± 0
Price for a bag of maize grain in rural wholesale markets	2.000	2.150	+7,5%	2.300	+7%	2.450	+6,5%	2.600	+6,1%
Price for a 2 kg tin of maize grain in shops	60	65	8,3%	68	+5%	70	+2,9%	73	+4,3%
Price for a 2 kg package of maize flour in supermarkets	79	100	+26,5%	120	+20%	115	- 4,1%	115	± 0

Source: own data from interviews and spot checks

Table 7 analyses the price differentials at different levels of maize marketing chain during the past months. It illustrates that prices did not increase at the same pace in the beginning of the maize shortage. In November and December 08, retail prices increased faster than the farm gate and wholesale prices (indicating good profit margins for the retail segments and low level of competition). However, when the NCPB increased its intervention prices in December 08 and private millers ever increased their farm gate prices, transmission of price seemed to have shifted to the wholesale level, whereby at retail level margins increased at lower rates (indicating higher competition at retail stage and more concentration at wholesale level).

In general, we gained the impression that the maize marketing was competitive and that prices were transmitted at all levels - yet some time lags are observed as illustrated in the table (possibly due to imperfect market information, transportation and logistical impacts and localities entering the market with their new harvest). Retailers had a tendency to increase prices faster and earlier (possibly part of panic buys and sales). After public outcries and the announcement of the government to subsidise imported maize in January 2009, retail prices decreased slightly and currently stagnated - at a level of +100% compared to January 2008, which poses a huge burden to consumers. Farm gate prices stand at a once-in-time height with some areas reporting more than 2.500 KSH per bag. Any farmer selling at this price makes comfortable profit per bag (not necessarily per acre as discussed in table 6).

Since the scarcity of the commodity is the main price driver at the time of the study, another reason for continuous shortage of maize in the market could be that farmers are hoarding store maize with the aim of speculating on ever increasing prices for future sales. While in the field, we found quite some evidence for such behaviour, even at the level of small-scale farmers.

¹⁰ Prices here are not representative average prices for the country (except NCPB prices). The figures are derived from the people we interviewed and their immediate localities (see Annex II for more detailed information). It should also be mentioned again that all are nominal prices and inflation stood at an average of around 30% during the year 2008 (World Bank 2008c).



Picture 3: Stockpiling of Maize on a Small-Scale Farm



Source: own photograph

However, we suspect that to happen in a much bigger scale for medium-large scale farms who have adequate storage facilities. Also commercial storages and millers are suspected to hold back some maize (but it was not possible to establish any estimated or facts on this). However, small-scale farmers who are stockpiling maize like illustrated in picture 3 are risking significant post-harvest losses. We are expecting that due to the usual high time-preference for capital, that such small-scale maize depots will enter the market rather soon.

6. Conclusions on Price Effects

The question of this survey “*Who gets the money?*” can so far be answered by stating “Yes, but ...”. There has been a transmission of the high consumer prices upstream the marketing chains, yet with various degrees of equitable percentage increases with some indication that the retail end had higher increases than the producers (see table 7). From our interviews and market observations, nobody along the chain seemed to have “made a lot of money” but reasonable profits and farmers breaking even at good farm margins (provided they could afford the costs of inputs (see table 6). This is neither unexpected nor unusual and happened also in other countries (see e.g. Dawe 2008; Hoeffler 2008; Reichert & van de Sand 2008). However, many of our interview partners were deeply concerned about the general scarcity of the staple food and are expecting difficult months ahead (due to the fact that most small-scale farmers turn net-consumers of maize for several months per year (see also Jayne et al. 2000).

In the medium term, it seems that most agricultural producers seem not to have benefitted much from price increases with the exemption of medium and large-scale commercial grain farmers cum trading/storing/milling capacities.

The impact of high maize prices for small-scale producers is mixed for the following reasons:

1. Domestic producer prices didn’t increase at the same ratio than consumer prices;
2. price increase for inputs have reached prohibitive levels: particularly for phosphate containing fertilisers; but also fuel prices, general costs of energy and transport as well as in some places costs of pesticides and seed material might rather led to decreasing productivity;
3. Price increases from the first quarter 2007 on occurred weeks after harvesting season. Since most farmers lack either the cash-flow flexibility or the post-harvest handling to store part of the harvest, it’s not farmers but traders, store keepers and millers that are likely to have benefitted from the price increases for the 2007 harvest.
4. Most small-scale farmers are net-food consumers and will eventually suffer as consumers from high food prices themselves (see also World Bank 2008b, chapter 6).
5. Substitution of maize by carbohydrates from roots, tubers and other traditional crops seems to have benefitted producers of local crops through the cross-price elasticity.

For farmers, as for any other entrepreneur, not necessarily high prices but high margins and profits are the figures of interest. Farm profits of maize and other food production and subsequent farming family incomes of small-scale farmers might have increased by selling the 2008 harvest (depending on the intensity of inputs used). However, the fact that most small-scale farmers are net-food buyers, they prefer lower food prices as consumers (see also Jayne et al 2005).

Table 8: Comparison on Price Effects during the season 2007, 2008 and Outlook 2009

	2007	2008	2009 (assumption: normal and sufficient long rains)
Production Factors	Affordable and available	Not available in time, not affordable for majority of farmers	Available and more affordable than in 2008
Yields	High (34 Mio bags)	Drop of > 30% (21 Mio bags)	Normal (30-32 Mio bags)
Prices	Normal – Low	Very high	Likely to stay medium-high as long as imports are needed and until SGR stocks are replenished
Highest margins	Millers & retail	Stores, large scale farmers with storing and/or milling capacities	Not yet predictable
Price transmission	To stores and millers	To retailers, millers, stores and farmers	To importers and stores, possibly also to farmers
Farm profits	Normal - low	Low if low cash-flow → minimal fertiliser → low yield; High if fertiliser could be applied → high yields sold for high price	Potentially high – but small-scale farmers are net-consumers...

Source: own illustration

Table 8 compares the current with the previous season and tries an outlook to the forthcoming season.

Picture 4: Public Interest in Alleged Corruption in Maize Marketing



Sadly, a certain group of society seems to have benefitted tremendously from the maize shortage and subsequent high prices: individuals from the political and business elite. As mentioned in the preface, it was not our tasks to investigate further into alleged corruption in maize marketing. However, we felt it would be an unacceptable omission not to mention the high public interest since November 2008 in the matter. Picture 4 illustrates some of the newspaper headlines, whereby box 5 tries to summarise the main established facts about irregularities in maize marketing.

Source: various newspaper headings of online editions of East African Standard and Daily Nation

Box 5: “The multi-million Shilling Maize Scam” or “The Scandal that never was”? - Corruption Charges around NCPB, Members of Parliament and the Minister for Agriculture

During 2008, the SGR stocks were emptied mainly to feed the internally displaced Kenyans. When it became public knowledge that the 2008 harvest will be at least 30% less than the previous year and a shortage of maize was probable, a number of irregularities within maize marketing around the NCPB were sensed by the press and dubbed as “the maize scandal” – which is supposed to consist around the following issues:

1. In October 2008, a general export ban was imposed for maize. However in August 2008, the World Food Programme in Southern Sudan had advertised for white maize deliveries at regional purchase conditions. The tender was won by a Ugandan company, which bought maize in Uganda and transported it to Southern Sudan, where it was sold at a fixed price of 50-60 US\$ per bag. There has been a strong indication that as early as September and October, remaining stocks from Kenyan NCPB depots had been sold to Uganda, to be declared as Ugandan maize and sold to Southern Sudan - effectively circumventing the export ban. Kenyan politicians around the MoA and the NCPB are accused of having covered up these operations and of having benefitted heavily from the price differential (around 1.500 KSH per bag).
2. When the notion about a shortage of maize reserves trickled down in November 2008, the MoA directed the NCPB to sell maize from their depots to millers at a fixed lower than market price in order to increase the quantities of milled maize in the country (with the hope of increasing supplies and thus lowering retail prices). When this directive came into effect in December, the discrepancy between the government fixed selling price for maize grain and retail prices for milled maize meal provided for extremely lucrative business deals for traders and millers. Allegedly, political allies of Agriculture Minister William Ruto and other members of parliament had sourced maize from NCPB. Government directives allegedly allocated them thousands of bags of maize. They purportedly bought the maize from NCPB at 1.750 KSh a 90kg bag then resold the produce at 2.600 KSh to millers for the same quantity. The millers collected the maize from NCPB depots; hence the sellers did not incur transport costs.
3. When the shortage of maize was undisputable, the government ordered maize imports in the range of 1,5 Mio bags from Tanzania and South Africa. The imports were cleared at the Mombasa port authority and stored in NCPB stores and distributed for milling to the private millers in December. NCPB was to take back the maize flour and to pack it in 5 kg bags for subsidised distribution. However, when millers congregated in January 2009, they added up the amount each one of them had been milling for NCPB and concluded that it was about 0.5 Mio bags. Allegedly 1 Mio bags of maize from these imports henceforth went “missing” – and might have left the country (see point 1 above) or be sold to the domestic retail at the January prices).

Meanwhile, the Government has launched criminal and anti-corruption investigations into the various claims*. The Minister for Agriculture politically survived a censure motion (vote of no confidence) in parliament by a large number of votes on February 18th. Criminal investigations by the Kenyan Anti-Corruption Commission on February 19th 2009 did so far not find proof of any involvement of the minister into the scam.

Sources: var. newspaper articles, e.g. “We got maize through clean deal, Ruto associates say” (The Standard Online Edition Saturday, 7th February 2009) or “Maize scandal: The lies and the facts” (Daily Nation Friday, 6th February 2009).

7. Policy Recommendations

The Kenyan government has tried to react to the increasing food prices from August 2008 on with so far mixed results (if any). A number of government interventions have been publicly announced, planned for but not yet implemented (such as large schemes of subsidised maize distribution); other interventions have just failed to take place (intended ceiling of maximum price for a bag of maize at KSh 1950 for millers). A list of interventions is given in table 9 below.

Table 9: Proposed, Planned or already Implemented Government Interventions

at production and trading level	at consumer level
Indefinite export ban on Maize (from October 2008)	Lift V.A.T. on food items and official approval for importation of maize duty-free from May 2008 onwards
Increase in fixed prices at NCPB depots from 1750 (sept 08) → 1950 (Dec 08) → 2300 (Jan 09) KSh per bag maize; attempt to ceil a maximum price of KSh 1950 per bag (failed)	Government Imports from Tanzania and South Africa for replenishment of SGR
Massive subsidy schemes promised for fertiliser for 2008/09 and 2009/2010 budget – first sales of subsidised CAN, NPK and DAP from NCPB depots started – untargeted	Introduction of subsidised maize flour in 5kg bags without clear targeting from NCPB depots (planned/unclear status)
Confusing interventions in licensing millers for milling subsidised maize; → alleged corrupt allocation of maize to “briefcase millers” and political allies	Subsidised sales of 10 and 20 kg bags of maize grain at fixed prices (KSh 200 and KSh°400 respectively) from NCPB depots without targeting (unclear status)
Ceiling of maximum quantities of grain imports allowed per private sector company → leading to very slow responses by private sector imports so far	Requested increase in donor support for Safety Net Cash transfers and school feeding programmes (UNICEF)
Distribution of traditional food crop seed in marginal areas via MoA extension service → to boost alternative crops to maize, in particular Cassava and sweet potatoes	Official launch o food aid appeal to the international community in January 2009
Subsidy of maize hybrid seeds by 5 KSh per 5 kg bag of any maize seeds (planned)	

Source: own compilation and FAO (2008c)¹¹

It is evident that the government started to respond first to consumer needs in order to prevent hunger and starvation for the vulnerable (such as distributing food from SGR to IDPs in camps, lifting VAT. on food items, etc.). However, looking at policy measures that were taken in order to support agricultural producers, the government clearly focussed on the availability and affordability of inputs, in particular of fertiliser. The governmental answer seems to be clear: subsidising fertiliser. This might be a very understandable and among input-using farmers a very popular answer, yet the costs and logistics involved weren't very clear at the time of this survey. Even though fertiliser prices have relaxed a little, significant public expenditure will be needed to procure the necessary quantities of fertiliser on the world market and to continue untargeted distribution via NCPB outlets. Cheaper fertiliser is likely to support maize production back to normal levels. However, the format of an untargeted distribution via the National Cereal and Produce Board is not likely to benefit all small-scale farmers, but to serve larger producers in certain areas only. The planned massive intervention by-passing the existing input stockist and retailer network needs to be carefully observed for its coverage and potential biases.

¹¹ The annex tables in FAO (2008c) provide a conclusive list of all possible measures and country reactions worldwide. A comprehensive evaluation of possible policy measures amidst the food crises is provided by IFPRI researchers; see Benson et al. (2008).

Concerning costs of inputs, farmers need to get support to get organised in order to raise their voice in economic and political terms. Efficient farmer organisations could partly mitigate the cost pressure by e.g. purchasing inputs in bulk. However, the risk of being ever more dependent on fertiliser imports could also be looked at by more sustainable production methods such as conservation agriculture and the substitution of chemical fertilisers by organic fertilisers. A number of doable solutions on more sustainable and low-cost production methods has been recently researched worldwide (IAASTD 2008) and should be propagated as alternative production systems.

From an agricultural producer's perspective, it can by no means be satisfactory to see these (to a certain extent uninspired) policy reactions for food producers. The wide-spread focus on "subsidised fertiliser only" is prone to overlook much bigger stumbling blocks to increasing domestic supplies of food, such as access to land and water as well as to markets. Concerning the high time value for money by the time of harvesting, only measure on increasing cash-flow flexibility can help. Farmers need to demand agricultural financial systems with adequate seasonal loans; or need to join grain banks; or need to organise cooperative storage facilities; or need to lobby for government subsidies for production.

As long as the prevailing staple food marketing systems suffer from significant inefficiencies and market failures, input-oriented measures might be popular, but are not helpful if real bottlenecks lie in the marketing chain. The management of the SGR should be reformed, taking into account experiences from other countries¹². Trade, particularly cross-border trade with neighbouring countries, might be an important and interesting area to look at for temporary balancing of food markets in future - instead of all countries in the region imposing export bans (see also ASARECA 2008).

The so far announced and implemented government interventions are unlikely to solve neither the current crisis nor the underlying structural problems in the food system. Table 10 lists a number of questions that need to be addressed in order to ease the situation:

Table 10: Remaining Questions for Kenya:

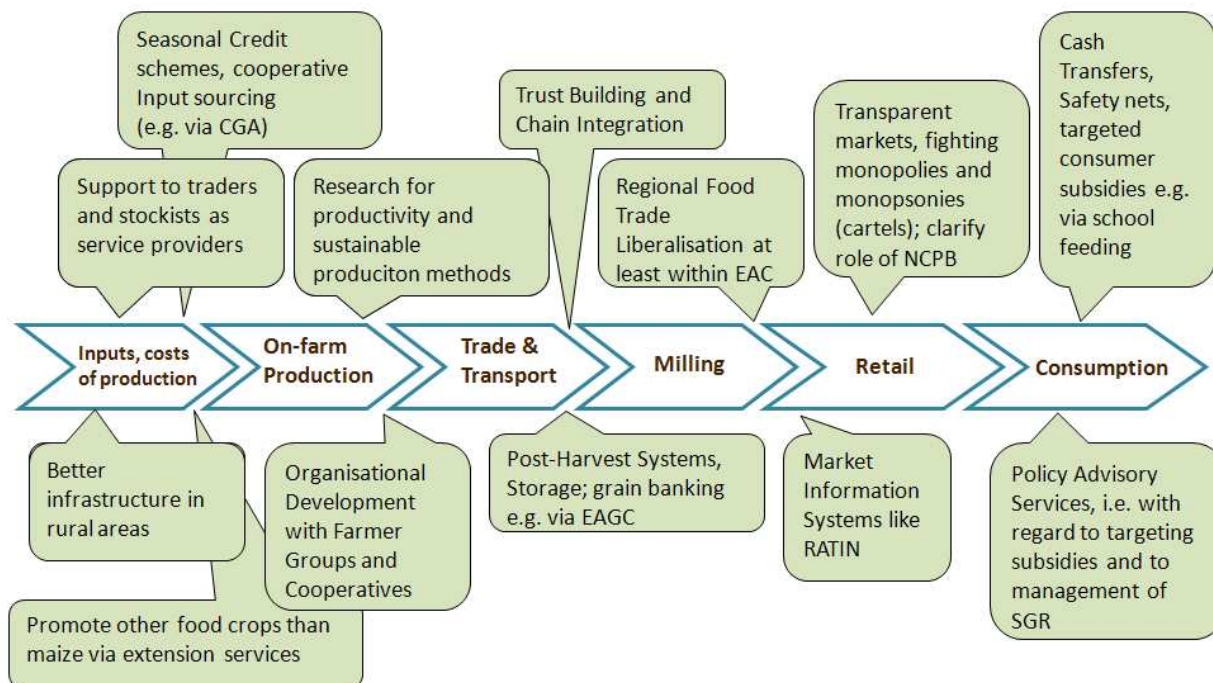
In the short term	In the medium-long term
Will the country manage to import enough maize in time to bridge the current shortage of 11.5 Mio bags?	What role will the NCPB play in future – market player or government manager of subsidised fertilizer and seed?
Does the government have enough resources to pay for current international maize prices?	How to reform institutions and governance in the grain market?
How to manage the strategic grain reserve?	Why are farmers so little horizontally organised and vertically integrated in the supply chain?
How to target subsidies for maize in order to avoid starvation and civil uprising?	How to strengthen the potential of small scale farmers to contribute to food security?
How to avoid corruption in the system?	Why fixation on Maize instead of other domestic food crops such as Cassava, Irish and sweet potatoes, sorghum, millets?
	How to design regional trade regimes on food?
	How to deal with increasing pressure on arable land and the impact of climate change on future food production?

Source: own compilation based on interviews and expert discussions

¹² Burkina Faso was praised by consumers and producers for its timely and efficient management of strategic grain reserves and seems to be a leading example for public and private managed warehouses (see also Hoeffler 2008). The country also took the strategic decision to increase its domestic rice production in order to prevent the heavy import-dependence for rice. The planned financial support for inputs will not only be a subsidised fertiliser programme, but is supposed to include mechanisation, pest management and extension services as well. FAO (2008c) also mentions Mali and Senegal as very efficiently responding countries. Further international comparison is provided by Benson et al. (2008).

From the interviews and various expert discussions and the literature, we derived at the following ten recommendations to minimise the negative impacts of high food and factor prices for Kenyan producers and consumers. The interventions can be grouped according to the level of the supply chain as illustrated in graph 14.

Graph 14: Recommended Interventions along the Maize Supply Chain



Source: own illustration based on interviews and expert discussions

1. Provide Political Stability

Kenya escaped a civil war scenario only by a margin and massive international intervention by the team of eminent African persons that eventually led leaders from the different parties to sign the peace agreement and the so-called Agenda Four on 28th February 2008. One year later, the country seems stable, yet the very subject of this study, the increase in staple food prices, might have the potential to trigger the frustration of many Kenyan citizens into further unrest. The government has to show its willingness and ability to cut down corruption and to serve its people. Quick and decisive action to mitigate the impacts of high food prices on consumers is absolutely critical for political stability which in turn is needed for the production of food in 2009. The impacts of food riots on political stability could be observed in more than 35 countries in 2008 and given the still fragile stability of Kenya after the post-election food riots provide a real threat to stability.

2. Source Maize Imports urgently

Kenya needs to import maize urgently – either white maize from South Africa or yellow maize from the USA/world market. As a result of good harvests witnessed in South Africa in 2008, the country has maize stocks available for exports. Without the 50% duty that is usually imposed on maize imported from outside the COMESA region, maize from SA currently reaches Mombasa at KSh 2.176 per bag while maize from the USA reaches Mombasa at a price of KSh 1.615 (Freight and insurance charges being 60 US\$/mt). With port handling charges of 35 USD/mt and inland transport of 50USD/mt, maize from South Africa reaches Nairobi at a price of KSh 2,773. To avoid maize shortages, the government has no option but to import as early as it can, even though prices are high. Furthermore, the ceiling on

importation rights for private millers should be scrapped instantly to allow private sector players to import at large scale in order to reduce handling costs (see recommendation 6 below).

3. Develop targeted Food Subsidy Schemes

Once imported maize is in the country, the government should rethink its ideas on food subsidy schemes. Neither the 5kg maize flour nor the 10 and 20kg maize grain sales via the NCPB were targeted. The scale of this distribution is unknown but can be assumed to be absolutely minimal. Food Subsidies not only depend on NCPB depots only but should be coordinated and implemented with local level institutions, NGOs and other institutions (schools, etc.). Additional food aid is urgently needed for the most vulnerable parts of the population who suffer from structural hunger (Arid areas, Coast and Eastern Province).

4. Develop targeted Farm Input Support Schemes further

The government should rethink its support structures to farm inputs. Good experiences made with the National Accelerated Access to Inputs Support Programme should be scaled up and budgeted for in the forthcoming budget 2009/2010. Like food subsidies, instrument of targeting beneficiary farmers is absolutely vital to make input support efficient. Subsidies of fertiliser imports might be supporting farmers, however if done exclusively via NCPB, the scheme sidelines private input stockists and with that, they eliminate important private sector actors and service provision in rural areas. Support to agricultural seasonal credits is absolutely necessary if farmers were to be prevented from price shocks on the inputs side. As our analysis shows (see table 6) farmers who could afford input costs produced normally and gained higher profits. However, the fixation on fertiliser is short-sighted and overlooks a number of other important input services; such as irrigation, extension, etc..

Box 6: Organic farming as a solution? Visiting the Naisambu Community Development Group, Kitale

While touring the Rift Valley during our field survey, we came across the Naisambu Community Development Group, close to Kitale. The group consists of four sub-groups, each of them has about 15-20 members; three women groups and one youth group. In contrast to wide spread complaints by small-medium maize farmers we had spoken to, the group members from Naisambu had no complaints to tell – rather a huge success story. After having been trained by KARI in organic farming techniques, one group leader set up a demonstration field on her own mixed small-scale dairy farm of 6 acres. Instead of maize, she started growing Rod grass for hay making for the cows, soy beans, bananas, beans, pumpkin, cassava, and various vegetables such as onions, tomatoes and cabbages while intercropping most of the crops and combining with herbs that work as biological pest controllers. All her group members followed her example and grow crops that have a much higher market value and a much shorter cropping season than maize. Since they use only organic fertiliser from cattle dung and crop residues, they were independent from commercial fertilisers. On plot sizes as small as one quarter of an acre, member women were feeding one cow and producing marketable surplus on their vegetables. A young farming woman explained how the organic farming training had changed her life: *“As most other youth here, I thought all I would need in life would be a real employment on a big farm – but it is not like that. I learned that all you need is a small plot of land and the right technology”*.

Given the success of the group, the change from maize production to a much more diversified yet more profitable, more intensified and more sustainable production method could well serve as a role model to other groups in similar localities close to small and middle towns that provide a market, particularly for milk and vegetables.

5. Promote Diversification of Food Production and Innovations

There is an urgent need for the government and private sector to join hands in an effort to make the country food secure in terms of diversification. Kenyan soils can produce a wider range of food crops. Farmers also need capacity building to ensure that all know the importance of diversification and measures to be put in place to ensure that they incorporate the diversification ideas. (as recommended e.g by IAASTD (2008) or as implemented already in Kenya, see Box 6). In the light of a growing population and of climate change, the pressure on land and water resources will intensify – and so will the pressure on farming households to innovate in order to stay productive. As long as in the most produc-



tive region small-medium size holdings of 5-15 acres “*don’t know anything else than maize or wheat farming*¹³” there is still high potential in diversifying food production with more crop rotation on farm with roots and tubers as well as for intercropping grains with pulses and vegetables. First attempts by the Ministry of Agriculture and KARI seem to go in this direction and should be strengthened. A number of good practices is collected by various NGOs (see e.g. GTZ Sustainet 2006). Further collaboration and coordination with NGOs, donor programmes and private initiatives is highly recommended.

6. Fully Liberalise the Grain Market, Reform NCPB and Management of the Strategic Grain Reserve

The government is still heavily involved in grain marketing, mainly via the NCPB (see box 4) and this comes with intransparent marketing channels and potential loopholes (see box 5). In Kenya, there are a number of vibrant and competent private sector players acting at all stages of the supply chain. However, the market is yet not fully liberalised. For example, the government has instituted a maximum amount of import quantities per private trader, so-called “rights”. The rights’ guarantee each importer to bring in 25,000 metric tonnes of maize in to the country. Each importer is only allowed a maximum of 2 rights. The licensed importers’ argument is that for these amounts, the handling costs can hardly be covered because of economies of scale. Furthermore, licensing of grain traders is allegedly a point of bribery. For efficient marketing channels, grain market players should not be treated differently from other businesses.

NCPB should undergo a parastatal reform, separating commercial from non-commercial; public from non-public functions. The non-market functions should be reformed according to best practices elsewhere in Africa (possibly Burkina, Senegal, Mali, or Tanzania). Commercial functions should be phased out and taken over by private sector players.

7. Revisit the Regional food trade Strategy in the East African Region

Kenya is member of the East African Community (EAC), which had already reduced tariffs for food trade in the recent past. However, learning from the year 2008 should eventually lead to a policy that encourages open border trading within the region. ASARECA (2008) clearly showed that due to different points of harvesting, sequencing of grain trade can contribute effectively to reducing price volatility and prevent shortages. Encouraging investments in the maize sector could see Kenyan farmers and traders benefit from producing a surplus to meet the regional maize market demand. A joint list of export bans to food should be agreed upon at EAC level.

8. Support Collective Farmer Action, Grain Banks and Warehouse Receipting Systems

The government extension service has already reacted towards the food shortage with the dissemination of non-traditional food seeds to farmer groups. During the previous years, government programmes like “Nja Marufuku Kenya” and alike were promoting farmer groups and supporting them with grant schemes. The good experienced should be continued and up-scaled and funds made available for the support of collective action. Previous ideas of face-to-face contacts for farmers with extension workers are not feasible anymore. More training centres and stronger encouragement of group formation is vital in order to integrate farmers and their organisations horizontally and vertically into the supply chain. The Kenyan Grain Growers Association is a good representative for its member groups and engages into the discussion on behalf of the maize farmers, however its membership base is still weak and geographically concentrated in the high potential areas only. However, if food growing farmers were organised stronger, a number of collective activities could be undertaken to ease market volatilities and to prevent shortages of food; such as storing in collective stores, sourcing inputs in bulk or setting up grain banks. First trials with farmer-owned warehouse receipting systems seem to be promising (under auspices of the EAGC and the USAID Maize Development Programme). Such innovative arrangements would enable farmers or their representatives to take up more functions along the supply chain and to

¹³ This opinion was stated more than twice during our interviews. It seemed that small-scale farmers with land sizes below 5 acres had already felt pressure to innovate and have diversified more than slightly larger grain farmers who seemed to be hit unexpectedly when asked about option of diversification (other than intensifying dairy production).



increase their bargaining power (instead of being reduced to poorly informed price-takers at farm gate level).

9. Support Market Information Systems

The ministry of agriculture has made notable progress in improving the communication of market prices in different regions of the country. However, the capacities to collect data as well as processing, analysing and communicating it for business purposes remains a challenge for many public staff. In Kenya, a number of private sector attempts have been made to overcome the absence, low quality or poor timing of agricultural market information, e.g. by Kenya Agricultural Commodity Exchange (KACE). However, in many other countries, market information is seen as a necessary public good for the sector to operate efficiently. The government should explore more linkages to support existing market information systems with their country-wide network of officers and make the provision of quality market information a priority.

10. Invest in Rural Infrastructure

There is need for concerted efforts from the government and private sector to invest in rural infrastructure – such as irrigation, rural roads and marketing facilities. Leaving farmers to the mercy of volatile rain patterns means gambling with the food security of the citizens. It will all go to waste all the government subsidies on inputs if and when the rain fails and so the need for diverting from rain-fed agriculture to irrigated agriculture. Most of Kenyan rural roads are dilapidated and a larger percentage of feeder (murrum) roads are impassable during rainy seasons. A revival of the Kenyan railway from the grain growing areas to Mombasa could also ease road transport and reduce costs of bulk transportation (i.e. for fertiliser). Rural open market places are functioning under less than ideal conditions - for traders as well as for the goods. Several rural towns who upgraded agricultural markets see an increase in economic activities and better functioning markets. These examples should be copied and up-scaled. These poses serious hurdles in transporting produce, especially perishable ones from one region to the other and in the end yields to inflated consumer prices. Efforts should be made to ensure that roads are not only easily accessible but also secure (see recommendation 1 before).

8. Do farmers benefit from high food prices? – General Conclusions

Global price trends are transmitted where commodities are imported and countries that are net-importers of their main staple commodities need to carefully revisit their trade and national market regime. Countries like Kenya, who in normal years are almost self-sufficient in domestic food production, are highly influenced by their domestic market structures or prevailing market or government failures. Many of the possible policy as well as agricultural production reactions might still depend on the future stability or volatility of global commodity markets, in particular fertiliser markets and oil prices. Yet, besides the global trends, country-specific factors seem to limit the possibilities for farmers to benefit from higher food prices much more. As long as staple food marketing is to a certain degree controlled by cartels or monopolies with high market power, weak institutional governance and corruption, economic activities of farmers might depend much more on domestic agricultural policy reforms than on global food price developments.

Meanwhile, farming households are already diversifying their incomes and in Kenya as elsewhere, a clear trend to more off-farm and more non-farm income for rural households can be observed (see Jayne et al. (2000) and Jayne et al. (2008)). Furthermore, household investments are not directed towards farm improvement or “farming as a business”. This might be a result of general structural change, but it also shows that rural households with opportunities divert away from agricultural activities, because they are not seen as promising avenues for the future. The stagnating productivity of African small-scale farms might be a cause and a reason for this phenomenon. Yet, the need for food pro-



duction increases. We can only expect a reaction towards investment in agricultural production or productivity, where price transmission took place; if it mainly takes place at the level of traders and millers, little production impetus can be expected. Moreover, further evidence is needed on future food price projections. So far, it is not clear whether the trends on commodity world markets were “just” unusually volatile during the past 18 due to unusual domestic and international circumstances or whether they were indicating a longer-term increase in real food prices. On the other hand, decreasing food prices might ease partly the situation for poor consumers but might put producers in a situation of “agricultural treadmill”.

But even if prices stabilise, agricultural production remains an economic activity with a number of other risks, including weather which might gain more importance in the forthcoming years due to climate change. The argument of price incentives for producers doesn’t seem to materialise soon for small-scale farmers in Kenya or elsewhere in Sub-Saharan Africa. The hypothesis that *“As product prices climb higher, so too will the producers’ incentive to invest in higher agri-inputs”* as formulated by the Rabo-Bank (2008) and many others has in the short term not proven right. Higher prices can theoretically be an incentive to producers, however it is not prices but profits that count. The challenges will be to translate higher food prices into triggers for lasting investment in rural areas and sustainable agricultural production in order to achieve food security for all – producers are also consumers.

This study couldn’t find evidence that high food prices alone will provide incentives for smallholders to intensify their production in the medium term. From the Kenyan experience it is much more likely that farmers would respond to more reliable, affordable and available services for input and to improved rural infrastructure. Secure access rights to productive resources such as land and water and a reduced volatility in input and output markets seems to be much more important for rural incomes than temporarily high prices.

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- The Regional Agricultural Trade Intelligence Network (RATIN) www.ratin.net
- Famine Early Warning System Network (FEWSNET) www.fews.net

Annex II: List of Contact Persons and Experts Interviewed

No	Name	Occupation	Contact
1	John Mutunga	CEO KENFAP	producers@kenfap.org
2	William Kimosong	KENFAP Area Branch Chairman Trans Nzoia	producers@kenfap.org
3	Mr. Rugut	KENFAP Coordinator Trans Nzoia	producers@kenfap.org
4	David Nyameino	CGA	david@cga.co.ke
5	Gem Argwings-Kodhek	ASCU	gemak@gamil.com
6	Edward Mwamba	KENAPOFA Secretary	Mwamba58@yahoo.com 0722-356432
7	George Bett	Chairman of Potatoe Value Chain Committee	Geobett1@yahoo.com 0722-686570
8	Dr. Andrew Karanja	World Bank Kenya	akaranja@worldbank.org
9	Abna Ingosi	MoA, Head of Food Security and Early Warning	Via MoA
10	Zakayo M. Magara	MoA, Dep Director, Market Development and Information Division	zmagara@yahoo.com
11	Kenneth Ayuko	MoA Department of Ag Policy	jakagumba@gmail.com
12	James Boit	NCPB Sales & Marketing Manager Nairobi	jboit@ncpb.co.ke
13	Jonah K. Marindich	NCPB Area Manager North Rift	0722-639526
14	Rafael Lokotwani	Pest Control Manager NCPB Eldoret	
15	Daniel Kodonyo	NCPB Silo Manager Moi's Bridge	
16	Teresah Wafullah	MEA Fertilisers Ltd.	tnwafullah@mea.co.ke
17	Dr. Joseph Karugia	ECA-ReSAKSS and ASARECA	j.karugia@cgiar.org
18	Sika Gbègbèlègbè	ECA-ReSAKSS at International Livestock Research Institute	g.sika@cgiar.org
19	Steve Collins	USAID- Maize Development Project	scollins@acdivoca-kenya.or.ke
20	Sophie Walker	KenAgri company	sophie@kenagri.com
21	Stanley Karugia	Market Economies Development Consultancy Firm, Nairobi	skaruga@med.co.ke
22	Alex Wasari	MD KACE Chwele Market Resource Center, Bungoma, Western	0721-573874, 0733-533092, chwelemrc@yahoo.com
23	Patrick Ngugi	Bayer EA	pngugi@bayerea.com
24	Daniel Kirimi Ndungu	Twiga Chemical Industries Ltd, Product Development Specialist	dkirimi@twiga-chem.com
25	Fostina Mani	UKAMBA School of Business, Member of East African Grain Council	md@ukamba.co.ke , 0722-780799
26	Castro Camarada	FAO Country Representative	Castro.Camarada@fao.org
27	Dr. John Omiti	KIPPRA, Head of Productive Sector	jomiti@kippra.or.ke
28	Dr. James Nyoro	Tegemeo Institute of Agricultural Policy and Development	jnyoro@rockfound.org
29	Betty Kibaara	Tegemeo Institute of Agricultural Policy and Development	bkibaara@tegemeo.org
31	Bridget Okumu	Market Information Analyst Regional Agricultural Trade Expansion Support Programme, (RATES)	bokumu@eagc.org
32	Mr. Simon	Grain Trader at Nyamakina Market Nairobi	0721 302 256
33	Ruben Kosgei	Farmer, Eldoret, Rift Valley	-----
34	Philip Barno	Chairman NGOMA farmer association Eldoret	pk35barno@yahoo.com , 0724-849989
35	Mama Luhya	Farmer, Eldoret, Rift Valley	-----
36	Samson Khazina	MoA, DAO Busia, Western	daobusia@yahoo.co.ke
37	Samuel Mogeni	MoA, Agribusiness Officer Busia, Western	Via MoA
38	Everlyne C. Andieme	MoA, DAO Eldoret East, Rift Valley	Via MoA

No	Name	Occupation	Contact
39	Grace Kinjui	MoA, DAO Uasin Gishu North, Rift Valley	Via MoA
40	Theres Orokoo	MoA, DAO Wareng, Rift Valley, Rift Valley	daowareng@yahoo.com
41	James Osore	Pannar Seed Sales Agent, North Rift Area	james.osore@pannar.co.ke
42	Sarah Massamu Jeminah A. Masaya Gillian Kageha Enock Kopkemboi Maiyo	Farmers from Naisambu Community Development Group, Kitale, Rift Valley	0722-501803 0720-737187 0728-263292 0728-322178
43	Micah Toweett	Farmer Kabiyet Division, Rift-Valley	0733-474753
44	Ken Kibet	Farmer Mutwot Division, Rift valley	0722-829697
45	Ronald Korir	Farmer Uasin Gishu	0721-223720
46	Benson Masinde	Trader, Chwele market, Bungoma District	0713-617925
47	Lorna Masinde	Trader, Chwele market, Bungoma District	0714-363713
48	Pastor James Hisa	Trader, Chwele market, Bungoma District	0712 778 080
49	Mary Naliaka Simiyu	Trader, Chwele market, Bungoma District	0710 593 320
50	Christine Chesoni	Trader, Chwele market, Bungoma District	0710 873 435
51	Rebecca Bineya	Trader, Chwele market, Bungoma District	0737-379923
52	Jane Wafulah	County Council CESS collector, Chwele Market	0727-354047
53	Timothy Otindo	Farmer Nambale, Western	0713-523973; 0714-438682
54	George Omondi	Farmer Siaya District, Nyanza	0733-721280
55	Mr. Kabii	Farmer/ Trader, Busia Division, Western	0722-625899
56	Lydia Makori	Trader, Kisumu Municipal Market Nyanza	0723-358011
57	Mama Nyaugenya	Trader Busia municipal market Western	0723-959768
58	Fredrick Otieno	Trader Kibuye Market, Kisumu	0733-853192
59	Mama Lei	Trader Kibuye Mkt, Kisumu	0721-745273
60	Mr. Fabian	Trader Wakulima Market, Nairobi	---0722575564
61	Mr. Zakayo	Trader Wakulima Market, Nairobi	---
62	Mr. Wainaina	Trader, Gikomba Market, Nairobi	---0725422572
63	Mr. Mosses	Trader, Gikomba Market, Nairobi	----
64	Mr. Collins	Miller United Millers, Kisumu	0723-838131
65	Mr. Edmond	Input Stockist Township Division, Western	0725-965809
66	Mr. Maina	Input stockist Township area, Western	0722-430890
67	Mr. Muhoro	Input stockist, Ugunja, Nyanza	-----
68	Mr. Dan	Input stockist, Eldoret, Rift Valley	-----
69	Joshua Ngeny	KENAPOFA chairman, Bomet district and National Vice chair	0724-501778
70	Mr Kioko	DAO, Bomet District	Via MoA
71	Esther Chelimo	DADO, Bomet District	0728-549256
72	Mr Yator	KFA, Bomet	052 22064 / 0722-692411
73	Mr Olesaoli	KENAPOFA Chairman, Narok District	0728-175203
74	Linah Chebii	Trader, Nakuru market	0725-789221
75	Nduta Wangari	Trader, Nakuru market	----
76	Carl Tundu	MD, Lesiolo Grain Handlers, Nakuru	0729-229999



Annex III: List of Participants (Expert Meeting Dec 2008)

The preliminary findings of this study were presented to and discussed with the participants named below at a round table discussion. The meeting was organised by the East & Horn of Africa Office of Heinrich-Boell-Foundation Nairobi on December 9th 2008 at Laico Regency Hotel, Nairobi.

No	Name	Function	Contact
1	Zakayo M. Magara	MoA, Dep Director, Market Development and Information Division	zmagara@yahoo.com
2	Samwuel Rutto	Eastern Africa Grain council	srutto@eagc.org
3	Robert Ndubi	Econews Africa	rndubi@yahoo.com
4	Angela Taiyana	Kenya Debt relief Network	ataiyana@hotmail.com
5	Elizabeth Karuiki	SEATINI	Liz.kariuki@seatinikeny.org
6	Deborah Scott	ACCORD	Deborah.scott@acordinternational.org
7	Auma J.O	MoA, Agribusiness/research and liaison officer, Nyamira district	josephauma@yahoo.com
8	Humphrey Young	OSHO Chemicals	humphrey_young@yahoo.com
9	Ruthpearl Nganga	ACCORD	ruthpearl@acordinternational.org
10	Silungi N. Ebby	Agribusiness officer, Uasin Gishu	ebbsil@yahoo.com
11	Steve Okello	Transporter/middlemann	Steve_okello@yahoo.ca
12	Timothy Ngoye	Nandi North, Farmer	japtom@yahoo.com
13	Tom Nyagechanga	KENFAP, Kitale	producers@kenfap.org
14	Axel Harneit-Sievers	Director HBF Office East & Horn of Africa	axel@hbfha.com
15	Hezron Gikanga	HBF Kenya	hgikanga@hbfha.com
16	Cecilia Kibe	RINCOD	cicamy@yahoo.com
17	Bridget Okumu	Eastern African Grain Council	bokumu@eagc.org
18	Reimund Hoffman	GTZ Kenya	reimund.hoffmann@gtz.de
19	Oduor Ogwen	SEATINI	ongwen@sodnet.or.ke
20	Booker Owuor	Sower Solutions Ltd.	bookerwas@gmail.com



Annex IV: Guiding Questions for Interviews

Gathering Facts:

1. What are the most important food crops in Kenya – Maize, Potato, ?
2. What are the best sources for figures of production/prices/trade for these crops?
3. What are the alternatives/substituting food crops?
4. How do you see the recent 4 years of price development for these crops (main & substitutes)? Any unusual developments other than “usual volatility”?
 - a. For producers
 - b. For Consumers
5. How do you see the recent 4 years of factor price development for producing these crops (Land, labour, fertilizer, pesticides, others)
6. How do the domestic food supply chains for these crops look like? – actors and transactions involved, indicative price margins, etc.
7. What are the current reactions by consumers to the recent food price developments?
8. What are the current reactions by farmers to the recent food and factor price developments?
 - a. In Maize growing areas?
 - b. In Potato growing areas?
 - c. In xxx growing areas?
9. What are the current government reactions to the recent food and factor price developments?
10. What are the current reactions by the private sector to the recent food and factor price developments?

Gathering Opinions:

11. Do you think the high commodity prices are incentive to our farmers? (if not now, possibly in future?)
12. Do you think farmers have enough access to resources to expand production? What is the bottleneck?
13. What are the short term requirements to improve the immediate situation (this and the forthcoming planting season)?
 - a. For producers
 - b. For Consumers
14. What are the longer-term requirements to improve food security in Kenya?
 - a. For Producers
 - b. For Consumers
15. Any other observation you would like to share with us?



Annex V: Terms of Reference

High Commodity Prices – who gets the Money? A case study of the impact of high food prices on Kenyan agricultural producers

I) Background and Justification

The dynamic increase in agricultural commodity prices during the past 12 months has gained unprecedented dynamics, particularly in food-deficit developing countries. What started as a “food prices peak” has turned into a political and development crises in a number of poor countries. On the other hand, higher agricultural commodity prices have been lobbied for a long time in order to get the price incentives right for agricultural producers in developing countries who were constantly biased by large developed countries and their system of farming subsidies in international trade.

It is against this background, that governmental and non-governmental organizations of development cooperation have engaged in debating underlying causes and effects of food price trends and in analyzing the different implications – for producers as well as for consumers in developing countries in order to understand the consequences for poverty reduction.

In a sequence of analytical work, this paper will follow a rapid 4-country survey (Mexico, Burkina Faso, Kenya and Cambodia) undertaken by GTZ in July/August 2008. It intends to deepen the analysis of impacts on particularly smallholder food producers in one of the countries. Kenya has been selected as the in-depth country case study representing the East African Region.

II) Objectives of the Paper:

This paper takes the rise of international food prices as a starting point to analyse the effects on the Kenyan agricultural markets (national level) and from a point of view of food producers (farm gate level). The final report will be published as a discussion paper for Heinrich-Boell-Foundation and follows a sequence of analytical work done under the auspice of the EcoFair Trade Dialogue¹⁴.

Specific objectives are the following:

1. National level (macro perspective)

- a. Brief description of national food situation
- b. Better understanding of price building, composition and transmission on national markets (for products which are traded internationally and those which are not traded internationally)
- c. Identification of possible spill over effects on substitute products and cross-price-effects.

2. Farm gate level (micro perspective)

- a. Better understanding of the value and supply chains of national food commodities, including their prices and price transmissions (development of input prices for fertilizer, pesticides, land, labour and fuel, costs of production, farm gate prices, and price developments downstream the value chain)
- b. Better understanding of implications for the different actors along the value chain

II) Methodology and Possible Structure

1) The national price development level (*descriptive prelude*)

Analysis of national price developments and price mechanisms (2005 – 2008) on the major national wholesale markets and (if possible) some price data analysis of three larger rural markets.

¹⁴ see also www.ecofair-trade.org

- For the major staples which form the basis of the national diet.
- for their trade patterns (exported/ imported?) Wheat, Maize, Rice.
- For major staples which are not traded internationally (sorghum, cassava, Irish potato, sweet potato?)
- Interviews with national experts on:
 - i. The possible impact of higher food prices on Kenyan producers

2) The farm gate price development (*main focus of analysis*)

Interviews with 25 farmers in order to get a better understanding of input and output price developments over the past 2 or 3 years.

- Development of a short semi structured interview with a focus on:
 - i. Product price developments
 - ii. Factor price development (land, other inputs, labor)
 - iii. Who buys the products? Middleman, direct, other?
 - iv. Development of sold quantity?
 - v. Potential to expand the production (possible limiting factors)
 - vi. storage possibilities and warehousing
 - vii. price volatility within seasons
 - viii. if possible, rough gross margin analyses

3) Recommendations

- Are there areas of action for rural economic actors (farmers, input suppliers, service providers, traders, etc.) and their associations to react upon the food price developments?
- Which national policy measures are possible to enhance price transmission as production incentive for food producers?
- Do current policies rather support producers or consumers and how could a medium-term strategy and balance look like?
- How could high food prices be turned into opportunities for sustainable and equitable rural development?

III) Overall organizational structure of the survey:

Author: Heike Höffler (University of Leipzig)

1. about 20 - 25 pages in total
 - i. Introduction (2 Pages)
 - ii. Structure of the Ag. Sector (2 1/2 Pages) // with trade data on major food crops.
 - iii. Price development on National level (4 Pages)
 - iv. Price development along the value chain for one or two case studies (e.g. Maize and Sorghum) // farm gate // middle man // wholesale prices etc... (6 - 8)
 - v. Development of factor prices (4- 5 pages)
 - vi. Net price effect for producers.
 - vii. Policy Recommendations (2-3 pages)
 - viii. Annexes

IV) Timeline

Start – as soon as possible
First results and interim report: 6th October 2008
Presentation of interim results: 16th October 2008 (World Food Day)
Draft Report: End November
Final: end December 2008