



NILF

Norwegian Agricultural
Economics Research Institute

Discussion paper

No. 2012–1

People in Crises:
Tackling the Root Causes of Famine in the Horn of Africa

Habtamu Alem Terefe

Norwegian Agricultural Economics Research Institute
P.O. Box 8024 Dep
NO-0030 OSLO
NORWAY

Corresponding author: Habtamu.Alem.Terefe@nilf.no

This version: March 2012
(Please do not quote without permission from the author.)

Copyright © by the Author. All rights reserved. Readers may take verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

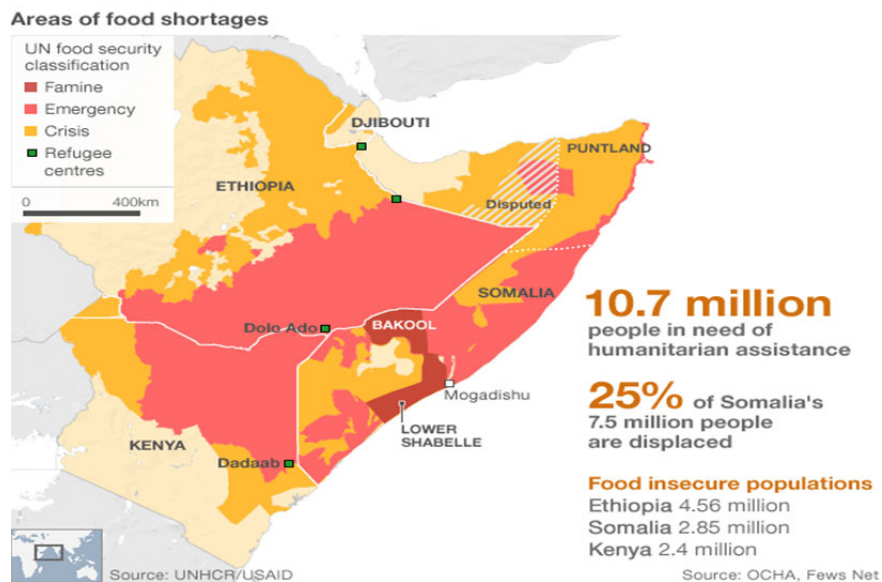
Papers in this series are meant for stimulating discussions. The authors would welcome all kinds of responses to this paper. The interpretation and conclusion in this paper are those of the author(s).

This discussion paper may have been submitted to a journal and have entered the journal's review process. Should the journal decide to publish the article the paper no longer will have the status of a NILF Discussion Paper and will be withdrawn from this website. From then on a link will be made to the journal in question referring to the published work and its proper citation.

Copies of this discussion paper are available at
http://www.nilf.no/publikasjoner/Discussion_Papers/2012/dp-2012-01.pdf

1 Introduction

The Horn of Africa includes Ethiopia, Djibouti, Eritrea, Kenya, Somalia, Sudan and Uganda and is the poorest region on the continent. More than 40 per cent of the population of over 160 million is living in areas prone to extreme food shortages (FAO, 2011). In mid-2011 the world became witness to a widespread food crisis in the Horn of Africa, which has escalated into acute shortages of food notably in the regions of southern Somalia, northern Kenya, south-eastern Ethiopia and Djibouti. The U.N. Humanitarian Coordinator for Somalia on July 20 declared that severely reduced food access, acute malnutrition, and high crude mortality rates indicate ongoing famine conditions in the Bakool and lower Shabelle regions in southern Somalia (UN, 2011).



Source: - OCHA and UNHCR/USAID, 2011

USAID estimates that 2.8 million people in southern Somalia and 12.4 million people in Djibouti, Ethiopia, and Kenya require immediate, lifesaving humanitarian assistance (USAID, 2011). Furthermore, more people in Eritrea, Uganda, Sudan and South Sudan are also facing a worrying food situation. The causes of food crisis are both environmental, structural and avoidable factors have taken in a broader spectrum of problems affecting the region. This paper addresses in detail some important causes and aggravating factors of famine in Horn of Africa and recommend possible interventions to tackle food shortage and famine in a sustainable way.

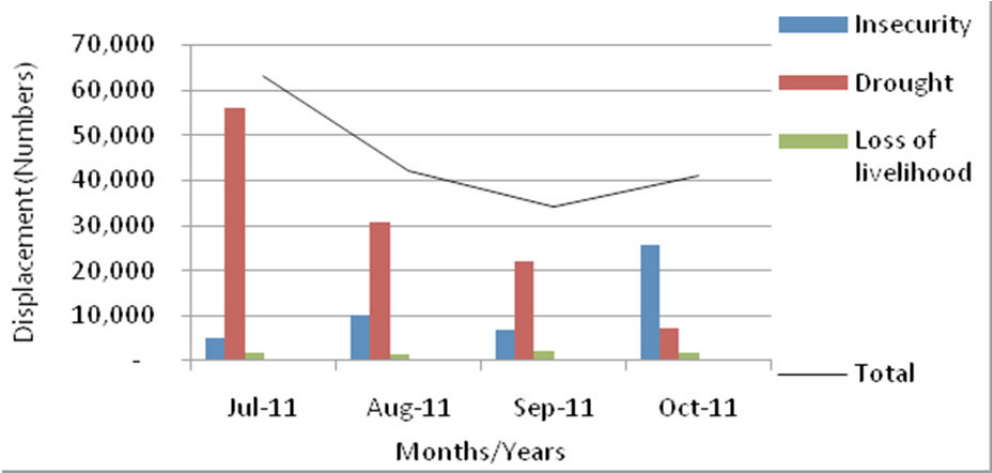
2 Root causes of food shortage and famine in the horn of Africa

Food shortage and famine in the Horn of Africa are not a sudden occurrence like earthquake in Haiti and flooding in Indonesia, but are rather the result of a prolonged and slow process of combined factors. Moreover, famine in the region is not caused merely by climate changes but it is the result of deeper structural and geopolitical anomalies. Analysts generally believe that the current food shortage and famine in the region is the result of a combination of the following factors.

2.1 Drought and Climate Change

Agricultural production in the Horn of Africa largely depends on nature. Climate change events such as droughts, erratic rainfall distribution and increased temperatures affect the growing and harvesting of crops. Ninety-five percent of the food grown in the Horn of Africa is rain fed, thus production is vulnerable to adverse weather condition (IAC, 2004). Drought ranks as the single most cause of severe food shortages between July and September, and represents one of the most important natural triggers of malnutrition, famine and displacement of people in the region (figure 1). It affects the four dimensions of household food security, availability, stability, access and utilization (FAO, 2011). Adverse weather conditions disrupt agricultural activities, including crop planting date, area coverage and productivity.

Figure 1 Causes of people displacement in the Horn of Africa (July - December 2011)



Source: FAO, Food Security and Nutrition Analysis Unit, December 2011

The 2011 drought in the Horn of Africa started when the normal rainfall delayed in Kenya, Somalia, Eritrea and Ethiopia; for example maize sowing was delayed by 10 to 30 days (FSNAU, 2011). In Eritrea rainfall was delayed by one month which affects the cropping cycle of maize, millet and sorghum resulting in a decline in annual crop harvest (ibid, 2011). Cereal production in Southern Somalia was estimated 37,600 MT in 2011, of which 62 percent maize, 36 percent sorghum and 2 percent rice. This is the lowest cereal production in the last seventeen years and 19 percent of the 2010 crop production (FEWSN, 2011). The region is in the middle of its worst drought in more than 60 years following two seasons with no rains that have led to crop failures, widespread loss of livestock, and rising food prices in parts of Ethiopia, Kenya, Djibouti, Somalia and Uganda (UNDP, 2011). Drought has been worst hit especially in northern Kenya, south-eastern Ethiopia, southern Somalia and Djibouti. It also affects household food security situation in North and South Sudan especially Darfur and Northern Uganda in Karamoja region.

An estimated 15 to 20 million pastoralists live in the Horn of Africa and their livelihood is based on raising and herding livestock. Pastoralists inhabit in semi-arid and arid zones of the region. They move from place to place during dry seasons in search of water and grazing land but their movement is restricted due to the cumulative effects of drought and conflict. Northern and eastern pastoral districts of Kenya received 10 to 50 percent below the normal rain which leads to shortage of grazing resources and pasture. As a consequence livestock

health has deteriorated and milk production has declined for the majority of nomadic households. Milk is the main source of protein and other nutrients to pastoralists’ children. United Nations Office for the Coordination of Humanitarian Affairs estimated that due to drought in Ethiopia around 60 percent of the cattle, 40 percent of the sheep and 25 to 30 percent of the goats have died. Moreover, in Djibouti almost 50 percent of the cattle have been reduced during the past five years (OCHA, 2011).

2.2 Population Growth

Rapid population growth with limited alternative livelihood options increases pressure on fragile land resources. The average annual rate of population growth in the Horn of Africa countries is very high compared to developed countries (Table 1). For example in 2011 the Ethiopian population grew by 3.2 percent while the Norwegian population grew by only 0.3 percent.

Table 1 Average annual percentage change in the population

Countries	1995	2005	2011	2015	2050
Djibouti	2.3	1.4	2.2	2.2	1.9
Ethiopia	3.0	3.2	3.2	3.2	3.2
Kenya	2.5	3.0	2.6	1.9	1.2
Eritrea	7.2	2.9	2.5	2.2	1.8
Norway	0.5	0.4	0.3	0.3	0.3
Somalia	3.5	2.8	1.6	1.8	2.6
Sudan	2.6	2.6	2.5	2.5	2.2
Sweden	0.2	0.2	0.2	0.2	0.1
Uganda	2.2	3.5	3.6	3.6	3.4
United Kingdom	0.3	0.6	0.6	0.5	0.4
United states	NA*	0.9	0.9	0.9	0.8

*NA = Not Available

Source: Computed from U.S. Census Bureau International Database

In the Horn of Africa poor households have more children than rich households. A survey conducted by Fotso showed that in Kenya the poor households have three times more children than the rich households; and high fertility of the poor households may be unplanned or

unwanted (Fotso, 2006). High rates of fertility amongst subsistence farmers and the associated increase in population density result in the further subdivision of family plots, thereby placing increased pressure on the agricultural production and deforestation (Anna, 2011). Rapid population growth has encouraged continuous cropping and shorter fallow periods, which in turn have resulted in land degradation, fragmentation and deforestation.

2.3 Deforestation and Land Degradation

In the Horn of Africa the rate of afforestation is very negligible in light of the very high rate of forest clearing for purposes such as expanding agricultural land, household energy consumption and construction. Deforestation, inappropriate agricultural practices and overgrazing have been the major causes of land degradation and desertification¹. For poor and vulnerable households' forest product selling like charcoal are the basis of livelihood diversification and food shortage coping strategy. For example in Djibouti 15 percent of the rural population depends on charcoal² as a main income (OCHA, 2011). In the region, access to electricity is very low, thus charcoal provides the household with energy and a considerable amount of the household income. However, inefficient and intensive production of charcoal is a burden to the society and existing forest resources which results severe environmental problem. For instance Ethiopia has lost an average of 140,900 hectares forest cover per year. The country lost 18.6 % of its forest cover between 1990 and 2010, these massive deforestation changes the country in to arid (Butler, 2011). In Somalia export of charcoal to the Gulf States has become a big business and intensified charcoal production by using battery powered chain saws for cutting of the forests in Mogadishu, Kismayo and Bosaso (IRIN, 2007).

Inventory of Conflict and Environment estimates a total charcoal production of 112,000 metric tons in 2000 which rose to 150,000 metric tons by 2005. From these only 20 percent were used for domestic energy consumption, while 80 percent is intended for stoves in the Gulf States (ICE, 2007). The environmental impacts of this illegal clearance of trees are drought, soil erosion, and large amounts of agricultural and grazing lands being destroyed.

¹ *Land degradation* is deterioration in the quality of land, its top soil, vegetation, and water resources. *Desertification* is the transformation of arable or habitable land to desert.

² Charcoal is traditionally made by chopping down trees, setting fire to a closely stacked pile of branches and trunks, and covering it with earth so that the amount of oxygen and air is limited.

Although the export of charcoal has been banned by Somalia's Transitional Federal Government (TFG), the trade is booming in areas controlled by Islamist opposition groups, with locals saying volumes have risen sharply in the past months (IRIN, 2011).

Overgrazing is another environmental problem which causes land degradation and desertification. As a result of overgrazing, in Uganda the erosion and emergence of low-value grass species have subdued the land's productive capacity which leads to desertification (Andreas, 2005). It is estimated that two-third of African land is already degraded to some degree and land degradation affects at least 65 percent of the entire African population (IFAD, 2011). An estimated \$ 42 billion in income and 6 million hectare of productive land are lost in Africa due to land degradation and declining agricultural productivity (UNDP/GEF, 2004). Poor households affected by merciless deforestation do not have adequate resources to deal with the problem and household food shortage arises as a consequence. This can lead to many people migrating to other areas in search of food which is becoming a common phenomenon in the region. Population growth, deforestation and land degradation leads to lower per capita availability of land resources. This put a greater downward pressure on agricultural wages, which can further lead to migration and inter-ethnic conflict (Urdal, 2011).

2.4 Conflict and Political Instability

Conflict could be both a cause and a consequence of household food shortage in the region. It has a direct negative impact to agricultural production by breaking down public order, infrastructure, social capital, institutions and productive assets. Conflict which causes insecurity in the region was the main cause of people displacement in October 2011 (figure 1). The figure also shows that drought was the second cause of people migration next to conflict in October, 2011. The Agency for Technical Cooperation and Development report that conflict overtaking drought as the primary cause of migration; and displaced people are extremely vulnerable to a variety of risks such as food insecurity, malnutrition, poor health and the direct impact of conflict (ACTED, 2011).

Conflict in the Horn of Africa has inter-state and intra-state dimensions. A border war between Ethiopia and Eritrea during May 1998 – December 2000 destroyed both countries' resources and 100,000 people lost their lives. Even if a peace deal was agreed, tensions still remain high and governments in the two countries allocate a huge amount of their scarce

resources to this border dispute. The shift of resources from economic and social utility to war utility affects the two countries agricultural output and household food security. The ongoing conflict in Darfur and the lingering effects of the civil war in the South of Sudan has left much of the country food-insecure (WFP, 2011). Due to conflict and political instability high agricultural potential areas in southern Sudan and northern Uganda are not readily opened up. In June and September 2011, approximately 350,000 farmers were forced to flee their farms during the cultivation season due to fighting between the Sudan Armed Force (SAF) and Sudan People Liberation Army (SPLA) in South Kordofan and Blue Nile states (USAID, 2011).

Political instability and the on-going conflict in Somalia has aggravated the food shortage in the country and prevented agricultural production and international investment to soften the effects of the drought. Conflict and insecurity is a limiting factor for the humanitarian operations in Somalia which aggravate the food shortage and famine in the country. Several humanitarian aid groups were banned from helping people in 2009 by Al-Shabab, the militant Islamist group that controls much of southern Somalia. The food crisis has reached a higher level because of the fact that many people whose situation was very vulnerable did not get adequate help in time (Rashid, 2011).

World Food Programme estimates that it cannot reach some 2.5 million people in need of urgent relief in Somalia. Conflict and insecurity remains the limiting factor in Somalia region and the United Nations as well as non-governmental organizations suspended operations in the late November 2011(OCHA, 2011). In the Horn of Africa there are over 4 million internally displaced persons and almost 1.4 million refugees mainly due to prolonged and seasonal violence (ibid, 2011). The continued insecurity has, at the same time, limited humanitarian agencies' access to those that most need assistance, deepening on the crisis and forcing yet more people into displacement (FAO, 2011). A cumulative effect of long lasting conflict and instability hinder agricultural production, investment and food distribution in the region.

2.5 Low Agricultural Productivity

Crop yields in the Horn of Africa are among the lowest in the world. In the region crop yields are below global levels except for cassava, beans, coffee and tea. Productivity of maize production in Eritrea has experienced large decline over the last decades (Omamo et al. 2006). Soil fertility depletion is the root cause of declining per capita food production and it has a large contribution to household food insecurity in the region. A study conducted in 37 African countries showed an annual loss of 4.4 million tons of nitrogen, 0.5 million tons of phosphors, and 3 million tons of potassium from cultivated land. These rates are higher than Africa's annual fertilizer consumption of 0.8 million tons of nitrogen, 0.26 million tons of phosphors, and 0.20 million tons of potassium (Sanchez et al., 1997 and Bationo, et al., 2006).

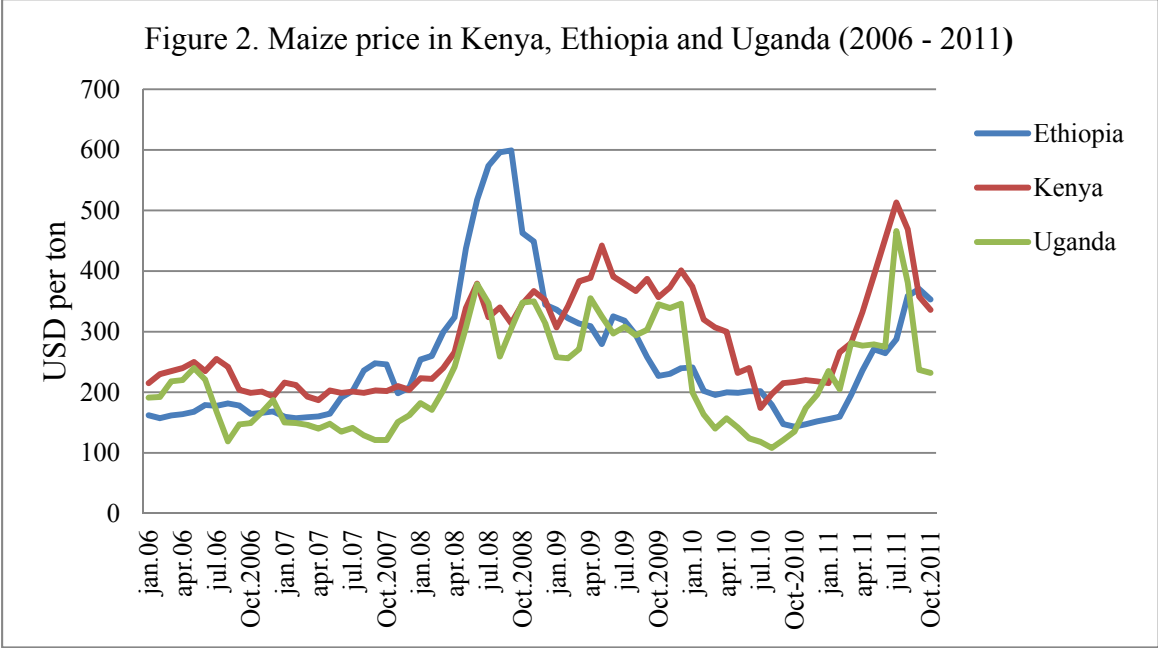
High agricultural input prices are one of the reasons for low use of inorganic fertilizers in the region. Farm level inorganic fertilizer prices in Africa are the highest in the world, for example the cost of urea is about US \$ 500 in western Kenya while US \$ 90 in Europe (Bationo et al., 2006). High price of fertilizer can be attributed to poor infrastructure, high transaction costs and poor marketing facilities; for example to move 1,000 km of one ton fertilizer it costs US \$ 100 in sub Saharan Africa while US \$ 15 and US \$ 30 in the United State and India, respectively (Sanchez et al., 1997 and Bationo, et al., 2006). Moreover, smallholders in the Horn of Africa lack training and credit facilities to use modern technologies. Lack of adequate access to credit imposes a significant negative impact on technology adoption, agricultural productivity, nutrition, health, and overall household welfare (Diagne and Zeller, 2001). High input price and lack of rural based financial institutions in the Horn of Africa cause low productivity; thus agricultural outputs are very low even in the years when smallholders get enough rain. Decreases in the supply of agricultural output at an increasing population (demand) increase food prices, *ceteris paribus*.

2.6 Soaring Food Prices

Although a sharp increase in commodity and food price in mid-2008 and 2011 is not a direct cause of famine, it has added to poor households' problems in obtaining enough food. A number of supply and demand factors contribute to food price increase in the region. A combination of poor crop production, the disruption of commodity flows due to violence, civil insecurity and movement restrictions have driven up food prices at a time where households in the region are most vulnerable to food shortages (FAO, 2011). The price of

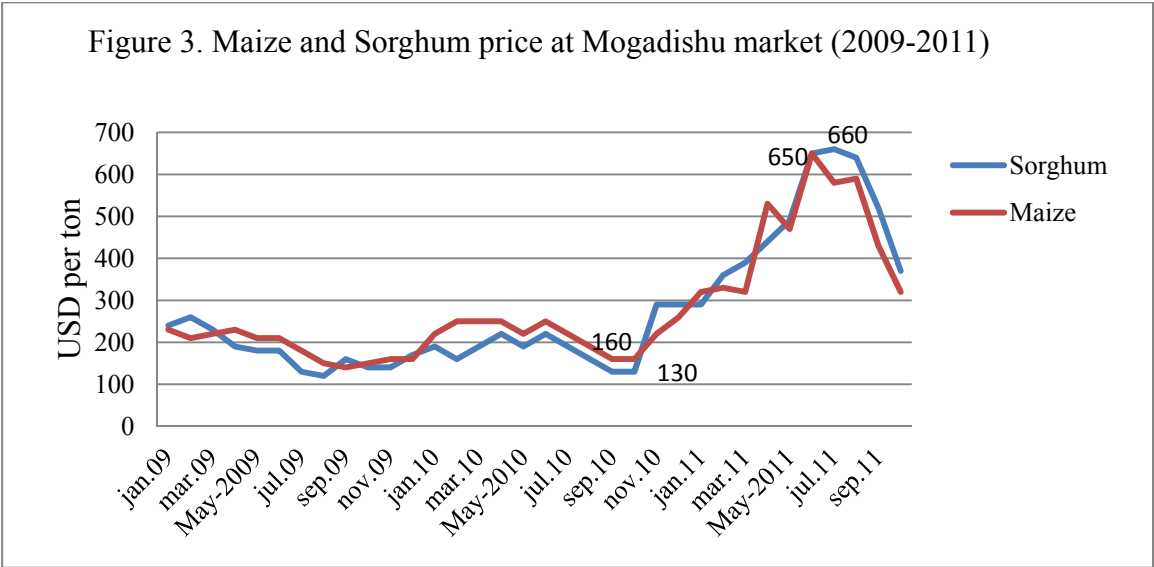
maize and other staple crops in the Horn of Africa increased at unprecedented rates during 2008 and 2011. Many households in Horn of Africa are both producers and consumers of agricultural products. The net effect of food price changes will be resolute by which effect is greater in the short run. Poor households in the region spent most of their income on food and when food prices increase suddenly it is difficult to adjust their demand to the raising food price, thus net buyers of food could experience hardship and unrest.

Food price raise has an income and substitution effects on consumers. First, food price raise has an income effect in which decreases the purchasing power of poor households and forced to reduce consumption of food from a level which is already very low. Moreover, poor households overcome the income effect of food price increase by selling their productive assets like oxen and/or engaged in off farm activities. For example increase their income by fire wood sale in which this activity increase deforestation and soil degradation in the region. Second, food price increase has a substitution effect in which consumers' shifts to less nutrient food and exposed to malnutrition and endemic disease. Undernourishment and disease decrease labor productivity and will be a barrier to agricultural development. A healthy and educated population will in turn contribute to productivity and economic growth (USAID, 1994).



Source: - Computed from FAO database and RATIN <http://www.ratin.net/priceinfo.asp>

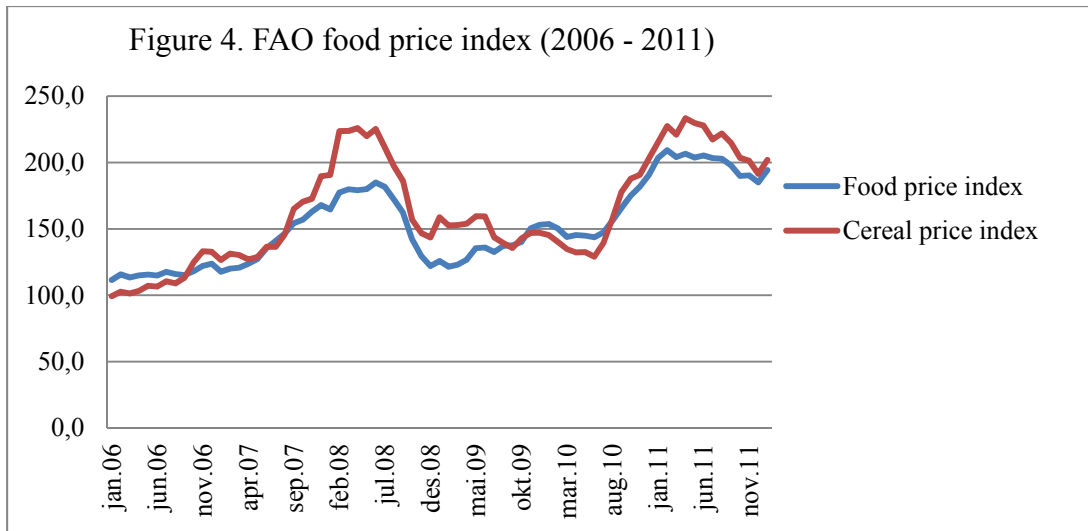
Maize is a major food crop mainly produced in Kenya, Ethiopia and Uganda. It is a main source of the total dietary energy supply to poor households. Figure 2 shows maize prices³ from 2006 through 2011. For instance the price of maize at the Addis Ababa market in September 2008 was 600 USD per ton, at this price poor households could not afford to buy maize. The 2008 food price hikes may have pushed an additional 100 million people into poverty (Ivanic and Marin, 2008). Prices for staple foods which are near the heights of the 2008 food crisis levels, are putting even the basics beyond the reach of poor households. In July 2011, maize prices in Kenya were USD 513 per ton which constitutes an annual price rise of 195 percent. In July 2011, maize prices in Ethiopia and Kenya were up to 191 percent and 161 percent above their five year average respectively.



Source: compute from FAO database

In June 2011 maize was traded in Mogadishu retail market at a record price of USD 650 with a percentage change of 306 percent compared to the September 2010 price. Moreover, red sorghum was in July 2011 sold at USD 660 per ton with a percentage change of 408 percent compared to October 2010 (figure 3). Sorghum prices in Somalia were 393 percent higher than the five year average (OCHA, 2011).

³Kenya, Nairobi, Maize, Wholesale, (USD/ton), Uganda, Kampala, Maize, Wholesale, (USD/ton); and Ethiopia, Addis Ababa, Maize, Wholesale, (USD/ton)



Source: Computed from FAO database.

Higher food prices with lower purchasing power have affected vulnerable groups. Vulnerable groups especially children, pregnant women, disabled members, HIV affected households and elderly headed households have been the first to perish due to the soaring food price. Moreover, pastoralists have lost their livestock which they depend on for their income thus they have no money to buy food, even if food is available in the local market. Local people especially the poor households have found themselves unable to buy agricultural goods in the markets, where the asking food price for any remaining food on sale is too high to afford. If the food price increases are out of their control, it leads to a massive migration to urban and refuge centers. In south Somalia an additional 100,000 people fell into food crisis due to the soaring local cereal prices (FSNAU, 2011). The 2008 and 2011 food prices trend in the Horn of Africa is in line with international food price index. How have volatile international food prices been transmitted to domestic markets in the Horn of Africa? It needs to be assessed.

3 Summary and intervention

Food shortage and famine in the Horn of Africa are not a sudden occurrence but is a prolonged process of combined impact of both manmade and avoidable factors. Drought, conflict and environmental problems have taken in a broader spectrum of problems affecting the region. Drought and violent conflicts have exhausted the coping mechanisms of the poor people and forced to cross national borders into neighboring countries as refugees. People in the region have suffered and they will continue to suffer unless the root causes of food shortage are tackled in a sustainable manner. Food shortage problems in the region have a multi-dimensional source so that tackling current and possible future crises to come obliges adopting holistic and coordinated approaches. Although more research is needed on finding out the best approaches to alleviate food shortage and famine in the Horn of Africa, policy actions are required at local, regional and national level to protect those vulnerable households.

Investing on irrigation schemes and applying improved water management system promote stability during prolonged droughts and can reduce vulnerability during environmental shocks. The region needs to increase agricultural production to feed the current and growing populations. Increasing farm level productivity is crucial to improve smallholder income and livelihood. Irrigation helps improve crop productivity, especially when used in conjunction with productive enhancing technologies such as drought resistant seeds and fertilizer. Preserving and planting drought resistant forests is a crucial step to prevent further desertification and food shortage. Planting agro-forestry could protect desertification and provide important sources of household food. High fertility rates among the poor households contribute a significant obstacle to achieve household food security thus, intensified family planning programs would be required to minimize the risk of future catastrophe.

It is not the scope of this paper to analyze different methods of conflict resolution in the region. However, it is crucial to resolve internal and external violence using traditional and international conflict resolutions methods. Peace, stability and resolving conflicts without violence are important steps to tackle future food shortage, to achieve household food security and promote socio economic development in the Horn of Africa.

4 References

- Andreas Rechkemmer (2005). *Global Forest Management: What has been achieved, what comes next? Critical choices for structural, legal and financial options.* Wissenschaftszentrum Berlin für Sozialforschung (WZB)
- Anna Rabin (2011). *Production Growth and Food security in the Horn of Africa.* Think Africa Press.
- ACTED (2011). *Agency for Technical Cooperation and Development News*, Nairobi
<http://www.acted.org/en/displacement-increases-southern-somalia-insecurity-main-cause>
- Bationo, A., Hartemink A., Lungu O., Naimi M., Okoth P., Smaling E, and Thiombiano L. (2006). *African Soils: Their Productivity and Profitability of fertilizer use.* Background Paper Prepared for the African fertilizer summit. June 9 -13, 2006. Abuja, Nigeria.
- Butler, Rhett A (2011). *Tropical Rainforest Conservation.* Mongabay.com. San Francisco.
- Diagne, A and Zeller, M. (2001). *Access to Credit and its Impact on Welfare in Malawi.* IFPRI, Washington, D.C.
- FEWSN (2011). *Famine Early Warning System Network*
<http://www.fsnau.org/downloads/Somalia-Dekadal-4th-24August2011.pdf>
- FAO (2011). *The Elimination of Food Insecurity in the Horn of Africa.* Technical Cooperation Development.
- Fotso Jean (2006). *The African Population and Health Research Centre, Kenya Oral evidence to the Group, 5th June 2006, p.7*
- FSNAU(2011). *Quarterly Brief- focus on Post Deyr 11/12 season Early Warning*, December, 2011.
- IAC (2004). *Realizing the promise and potential of Africa agriculture.* Inter Academy Council, Amsterdam.
- ICE (2007). *Somalia's Coal Industry.* Inventory of conflict and Environment case study number 201, May, 2007.
- IFAD (2011). *Rural poverty Portal*,
<http://www.ruralpovertyportal.org/english/topics/desertification/ifad/speech.htm>
- IRIN (2011). *Charcoal trade booming despite ban.* Human news and Analysis. IRIN, January 20, 2011. <http://www.irinnews.org/Report.aspx?ReportID=91679>
- IRIN (2007). *Focus on Charcoal Trade.* Human news and Analysis. IRIN, May 19, 2007.
<http://www.somaliawatch.org/archiveoct00/001026601.htm>

- Ivanic, Maros & Martin, Will (2008). *Implications of higher global food prices for poverty in low-income countries,* " Policy Research Working Paper Series4594, The World Bank.
- OCHA (2011) *Horn of Africa Drought Crisis, Situation Report No. 12*, September 2011.
- OCHA (2011) *Horn of Africa Drought Crisis, Situation Report No. 22*, November 2011.
- Omamo, S.W., Diao, X., Wood, S., Chamberlain, J., You, L., Benin, S., Wood-Sichara, and Tatwangire, A. (2006). *Strategic priorities for agricultural development in eastern and central Africa*. IFPRI Report 150. IFPRI (International Food Policy Research Institute), Washington, DC, U.S.A.
<http://www.ifpri.org/pubs/ABSTRACT/rr150.asp#dl>.
- RATIN (2011). *Monthly Price Data*. Enter Africa Grain council.
<http://www.ratin.net/priceinfo.asp>
- Rashid Abdi (2011). *Al-shabab and Somalia's spreading Famine*. Council on foreign Relations. <http://www.cfr.org/somalia/al-shabaab-somalias-spreading-famine/p25630>
- Sanchez, P., Shepherd. K., Soule, M., Palce, F., Buresh, R., Izac, A., Mokwunye, F., Kwesiga F., Ndiritu C., and Woomeer P. (1997). *Soil fertility replenishment in Africa*: SSSA special publication NO. 51, Soil Science Society of America, Madison, Wisconsin.
- UN (2011). *The United Nation News and briefings*.
http://www.un.org/News/briefings/docs/2011/110720_Somalia.doc.htm
- UNDP/GEF (2004). *Reclaiming the Land Sustaining Livelihoods: Lessons for the future*, United Nations Development Fund/Global Environmental Facility, November 2004.
- UNEP (2011). *United Nation Environmental Program News center*.
<http://www.unep.org/newscentre/default.aspx?DocumentID=2649&ArticleID=8828>
- Urdal Henrik (2011). *Demography and Armed Conflict: Assessing the Role of Population Growth and Youth Bulges*, CRPD working paper No.2 September 2011.
- USAID (2011). *East Africa Food Security Outlook*. Famine Early Warning System Network. October 2011 to March 2012.
- USAID (1994). *Building a Foundation for Food Security and Crisis Prevention in the Greater Horn of Africa: A Concept Paper for Discussion*
- WFP (2011) *WFP Remote Access Secure Services*.
http://home.wfp.org/stellent/groups/public/documents/op_reports/wfp227883.pdf