



# Dadaab and Kakuma Refugee Camps Market Assessment

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June 2014



**World Food  
Programme**

# Dadaab and Kakuma refugee camps market assessment

**Field data collection:** 10-20 March 2014

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Refugee at food distribution point, Dadaab refugee camp, Kenya. WFP/Diego Fernandez

## Contents

Executive summary .....	4
1. Introduction .....	9
Objectives of the study .....	9
Methodology.....	10
Research limitations.....	12
2. Dadaab and Kakuma refugee camps.....	12
Refugee camps economy .....	15
3. Food availability in Kenya .....	16
Maize price trends in Kenya.....	18
4. Market structure in Kenya’s arid lands .....	19
Role of wholesaling - competition .....	21
Transport.....	21
Market integration in the arid lands.....	22
5. Supply chains in Dadaab and Kakuma refugee camps.....	23
Cereals and pulses .....	24
Vegetables and fruits .....	25
Livestock and meat .....	25
Processed food.....	26
Milk .....	26
Eggs .....	27
Fish.....	27
6. Food availability and price trends.....	27
Most commonly traded commodities .....	27
Traders’ perceptions on food availability and price trends .....	30
Price integration analysis.....	32
Constraints to trade and availability.....	34
7. Market conduct.....	35
8. Traders’ capacity to meet increases in demand .....	37
Traders’ own perceptions .....	37
Analysis of proxy indicators of traders’ response capacity.....	39
Business administration capacity.....	45

9. Cost-efficiency of transfer modalities.....	47
10. Gender dynamics in the refugee setting.....	49
Household typology.....	50
Household decision making.....	51
Livelihood activities.....	52
Relaxation.....	57
Conclusion.....	58
11. Identified benefits and risks of a potential cash intervention.....	59
12. Concluding remarks and recommendations.....	60
Summary of the findings.....	60
Recommendations.....	63
Annex I References.....	67
Annex II Cost-efficiency calculations.....	68

## Executive summary

### Objectives of the study and methodology

Functioning and integrated markets are key prerequisites for using a market-based approach for providing food assistance. For cash or voucher transfers to work, people must be able to buy what they need in their local markets and markets must have the capacity to respond to increased demand through increased supply rather than through increased prices. This study aims to achieve an understanding of the market systems in the refugee camps, as well as explore the feasibility of delivery mechanisms.

Analysis was based on the study of both primary and secondary sources. Primary markets data was collected using traders and key informants questionnaires (including market committees, local government officials and partners with experience in cash interventions). Data collection was conducted by 16 enumerators in each refugee camp from March 10 to March 20 2014. 124 retailers, 36 wholesalers and 6 key informant groups were interviewed in Dadaab; and 173 retailers, 25 wholesalers and 5 key informants groups in Kakuma.

Field work for the gender dynamics section was conducted separately so as to avoid any association with a potential WFP intervention. Data collected for this section was qualitative in nature, and consisted of face-to-face interviews and use of participatory tools, with a total of 30 focus group discussions (FGDs) and 21 key informant interviews with the refugee communities living in Dadaab and Kakuma camps.

### Market structure in Northern Kenya

Market chains in the Kenyan arid lands follow transport corridors. These transport corridors are also main international highways to the countries that border the arid lands. Three main routes feed the arid lands. Dadaab refugee camp gets its supplies through the Northeastern corridor that links Nairobi with Mandera and Somalia, whilst Kakuma camp is fed through the Northwestern corridor which links Nairobi with Lokichoggio and South Sudan.

Most of the markets in the arid lands are weakly integrated both amongst themselves and with the main supply markets in Kenya. The only markets that show relatively good signs of integration with the producing areas are the county headquarters and other similar large markets well positioned along the transport corridors. Previous WFP market studies recommended market-based interventions in the arid lands only in large markets well positioned along the transport corridors. Both Dadaab and Kakuma are located on transport corridors and both exhibit the functionalities of major urban settlements.

### Supply chains in the refugee camps

The only large scale locally produced commodities in the arid lands are livestock, milk and fish in the Turkana area. With that exception, most other food commodities are ferried from the main supply markets in the Kenyan central region or imported from Ethiopia and Somalia. With the exception of

livestock, and to a lesser extent cereals and pulses in Kakuma, the role of wholesaling in the camps is limited. In Dadaab camp imported commodities are mostly supplied by wholesalers in Garissa, Thika and Nairobi -or through informal trade from Somalia- which feed the camps without mediation in Dadaab town. In Kakuma camp, wholesaling is dominated by traders in Kakuma town, with Kitale being the most important remote source.

Informal cross-border trade is an important contributor to food availability in Dadaab but not in Kakuma. Liboi is the main entry point for items from Somalia in Dadaab.

The heavy dependence of local traders on external supply sources and the limited role of wholesaling can potentially undermine the multiplier effect of increased demand from a cash injection in the local economy. With the exception of livestock, milk and fish (in Kakuma) trade, which constitutes a small fraction of the overall food trade, only a small fraction of the price structure is captured by local retailers and the few wholesalers. The rest would be shared between transporters, and suppliers of other areas, including from the producing areas of Kenya.

The type of commodities traded in camps is limited, reflecting the obvious influence of food aid distributions, the limited purchasing power and the food demand and consumption patterns.

### **Market conduct**

The number of retailers in both camps is considerably high, and varies between seasons especially open air retailers, not posing any constraint to competition. Furthermore, there are no restrictions to the entrance of new traders in the market. The number of wholesalers in the supply markets is sufficient to guarantee adequate competition levels. There is also a sufficient number of transporters in the market, and hence competition is not a factor that negatively influences the final price of commodities.

The markets inside the camps are used by refugees and host community alike. Most of the customers in both camps are refugees from the same or nearby sub camps, followed by host community from nearby villages. Refugees, in most of the cases, use the camp markets, though they can resort to the town markets if commodities are not available in the camps. Despite the distance from the towns, the host community makes some of their purchases in the camps because of the cheaper prices.

Most of the traders in the camps are refugees, but the camps are not closed to local traders and a limited number do operate in them.

### **Local food availability and market integration**

Availability of food in Dadaab and Kakuma camp markets is determined by the seasonal production cycles, and in the case of commodities not locally produced by the road conditions during the rainy season when roads become impassable. The large majority of the traders in the camps experience seasonal fluctuations in food quantities and prices. As reported by the traders, availability of most food commodities, including the staples, fluctuates around the medium range for most of the year in both camps. To a lesser extent, festive seasons of Ramadan and Christmas, or the school calendars also influence prices in the camps.

The importance of transport in the supply chains and the availability of food in the camps cannot be overstated. The most important constraints to trade in both camps have to do with the road conditions and the transport capacity, and hence with the irregular supply. It is worth highlighting that in Dadaab the most important constraint to trade is linked to problems to ferry food commodities during the rainy season, while the most important constraint in Kakuma is the transport costs associated with the long distance to the main supply markets.

Dadaab experience occasional seasonal access constraints to larger supply markets during the rainy seasons - April to May and October to November - that can last from a few days to even a month depending on the intensity of the rains.

In Kakuma the road conditions during the rainy season were also reported as an influencing factor, though serious disruptions in supply appear to be less frequent than in Dadaab and are mostly caused by flash floods.

The results of the price correlation analysis conducted in this study indicated that there are signs of price transmission between the identified markets along the supply chains although, with the exception of Dadaab town and Nairobi, the refugee camps' market integration is generally poor.

#### **Traders' capacity to meet increases in demand**

Sixty-two percent of the traders in Dadaab and 50 percent in Kakuma mentioned they would be able to serve an increase in demand. Wholesalers are significantly more confident than retailers, which reflects their better established networks. These percentages are lower than the average in the Kenyan arid lands. On average traders mentioned they can increase supplies by 36 percent in Dadaab and by 25 percent in Kakuma using their current supply chain mechanisms. This reported capacity is also lower than the average in the arid lands and in the producing areas.

Most of the traders finance their supplies either with their own capital or from the sales of commodities to clients. Access to credit is very poor in both camps. Only 16 percent of traders in Dadaab and 17 percent in Kakuma have access to some form of credit.

Notwithstanding quality related issues, storage did not appear as an important constraint to trade in the camps.

Similarly, the modes of transport serving the camps are significantly better than the average in the arid lands. This is influenced by the fact that both camps are situated along transport corridors and both constitute major demand hubs due to the large populations.

The average resupply times in Dadaab are 1.5 days during the dry season and 3.3 days during the rainy season. In Kakuma the resupply times are 1.8 and 3 days during the dry and rainy seasons respectively.

Thirty-six percent of traders in Dadaab and 34 percent in Kakuma indicated that a demand increase would have no effect on prices. Around 60 percent of traders in both camps think that prices would

increase in the short or the long run. The high number of positive responses is an indication of the likelihood of price increases in response to increases in demand.

### **Cost-efficiency of transfer modalities**

When a combination of international and local procurement is considered, the delivery costs for WFP are higher than the market costs in Dadaab and Kakuma by 9 percent. By commodity however, only the delivery costs of cereals are higher than the corresponding market costs, being the market costs of pulses, salt and oil higher in both camps.

Considering only local procurement of cereals and pulses the overall results are different. The market value of the full basket is higher both in Dadaab and Kakuma by 12 and 15 percent respectively. By commodity, all market costs are higher than the equivalent delivery costs.

### **Gender dynamics**

The gender dynamics in the refugee settings mainly revolve around three main themes: livelihood activities, relaxation and decision making. Generally, majority of the women engage in petty trade or casual work for them to earn a living. Men on the other hand reported having difficulties in finding work. For the older men, they predominantly work as taxi or motorbike drivers. They are able to find some time in the evening to relax after work while the women prepare dinner for the family. The mode of relaxation basically involves meeting with other men to catch up on local happenings.

However, decision making in the household tends to be two fold where both men and women have to consult each other. For purchase of basic household expenditures such as food, clothing and health care, the women make the decisions on their own and purchase them. In both camps, food purchases were common and a priority in all the household types represented in the discussions. Market accessibility is not an issue of concern.

### **Recommendations**

A limitation to be able to estimate the volumes of additional demand that the markets can absorb is linked to fact that the supply of staple food has been covered by WFP for more than two decades. It is a logical trading practice to specialize in niches not covered by other actors and with lower competition, and hence traders in the camps have more expertise in trading with commodities such as vegetables, fruits, meat or processed food (especially sugar) than with cereals or pulses. Furthermore the source of many traders dealing with cereals is not external, but WFP distributions, which is another handicap in this specific field of trading expertise.

**In view of planning cash-based interventions and from a market perspective, it is recommended to initially replace a small proportion of the food basket, approximately 10 percent of the cereals and pulses with a cash based voucher which can be used to purchase foods that are not included in the basket. From the food security and outcome monitoring (FSOM) reports it is well known what commodities households spend most of their money on, i.e. sugar, milk, other cereals and some meat and vegetables. The regular price monitoring in the camps by WFP shows that the value transfer from**



**a 10 percent reduction could be used to purchase commodities that households normally purchase in such quantities that the nutritional value of their food intake would not be negatively impacted.**

*Khat (Miraa)* chewing and to a lesser extent locally brewed alcoholic drinks are popular entertainments in both camps posing a risk of purchases diversions if cash is the selected transfer modality. An open voucher will allow beneficiaries to purchase the most commonly traded food items, which they otherwise monetize parts of the basket for. This flexibility will also contribute to ensure the markets can respond to the increased demand. It is also recommended to strengthen the traders' links with wholesalers in the supply markets and, as a precautionary measure, to make arrangements with the traders to preposition supplies in preparation for the difficult transport conditions during the rainy season, especially in Dadaab.

It is recommended to roll out the replacement of parts of the general food distribution with a voucher to all refugees in phases. At the initial stages, it is also recommended to select population groups that are easy to identify and target. A potential first target group could be the elderly and their households, currently 11,224 and 2,096 persons in Dadaab and Kakuma respectively. Alternatively, another option could be replacing the current Fresh Food Voucher to households with pregnant and lactating women with the open voucher described above.

From a cost-efficiency perspective, consideration should be given to replacing some of the commodities where the market is proportionally more competitive than WFP in delivering; while maintaining in-kind provision of the others. Of the present WFP food basket, cereals and to a lesser extent pulses are more easily replaceable than vegetable oil.

Market reactions to any cash intervention, especially price trend behaviors, should also be closely monitored. A market monitoring system specifically designed to match the programme design should be put in place at least one month before the beginning of the implementation, and must continue until it is concluded that markets have stabilized. Once price trends are determined to be normal, market monitoring can be streamlined into the regular market monitoring systems and schedules.

The scalability of the voucher interventions must be subject to the results and recommendations of thorough evaluations made after each phase of the interventions.

Furthermore, WFP should proactively assist traders in accessing credit and continue advocating for the improvement of road infrastructure, as the all-decisive factor in further strengthening markets and economic development, and the improving of price data collection in the Kenyan Northern region.

## 1. Introduction

*Well-functioning food markets are central to ending hunger. Not only must enough food be produced to meet consumption needs, but this food must also be accessible. Food markets link food production and consumption sectors, but they can do much more. When food markets are functioning well, they can create jobs and stimulate economic growth by spurring diversification of food systems based on comparative advantage. This can lead to more equal distribution of income and purchasing power, and thus increase nutritional well-being and enhanced food security.*

*World Hunger Series: Hunger and Markets (WFP 2009)*

More specifically, markets contribute to the four pillars of food security namely food availability, food access, food stability and food utilization. Markets enhance food availability by enabling producers to purchase inputs used for food production, and also facilitate trade between surplus and deficit areas. Also, they determine the price of food, and the incomes households receive from the sale of own products and labor, thus influencing access to adequate quantities and quality of food. Markets promote the stability of food supply and prices by ensuring food distribution from surplus to deficit areas and determine food utilization by influencing the quality of food consumed. Consequently, markets play a vital role in the provision of goods and services critical to survival, promotion and protection of livelihoods.

In the Kenyan refugee camps of Dadaab and Kakuma markets play a critical role in bridging the refugee's food and non-food necessities not covered by the humanitarian agencies such as fresh food, clothing, utensils etc.

A key requirement for the implementation of emergency and developmental market based interventions, such as cash or vouchers programs, is that markets must be functioning and integrated. For cash transfers to be feasible and appropriate, people must be able to buy what they need in local markets without causing harmful inflation, for which the market must have the capacity to respond to the increased demand the cash interventions generate.

### Objectives of the study

The study aims to achieve an understanding of the market systems in the refugee camps, as well as explore the feasibility of delivery mechanisms. These are understood to be critical to inform policy and guide programming in order to improve humanitarian response. In addition to that, baseline market information was collected to allow WFP to monitor the impact of any possible intervention. Indicators and methodology were developed based on these key issues.

The specific objective of the study is to provide an in depth understanding of the following:

- 1) Consistent availability of food in the local markets.

- 2) Traders' capacity to serve the increases in demand generated by cash interventions.
- 3) Cost-efficiency of cash vs. food assistance interventions.
- 4) Gender and household spending habits in the refugee settings.

The availability of food in the market will be assessed first through the study of the market structure and supply chains, i.e. how food is being made available in the refugee camps; and secondly through the analysis of a number of proxy indicators of market integration, including a price correlation analysis.

The second level of analysis will be an estimation of the traders' capacity to meet the increases in demand generated by cash interventions without disproportionate increases in prices; which would not only affect the beneficiary caseload, but the entire refugee population. Research indicates that a moderate increase in prices is a determinant of traders' willingness and therefore a factor to increase local food supply<sup>1</sup>. But for vulnerable food consumers an increase in basic food prices implies both a reduction in food consumption, a reduction in the consumption of other goods, and often a switch to less preferred but less expensive foods.

Cost-efficiency is defined in this study as the relationship between the programme's full costs and its outputs. It refers to an analysis of the costs and benefits of alternative transfer modalities in monetary terms, in order to use available resources as efficiently and effectively as possible.

Lastly, the gender dynamics component will explore the decision making typologies among the different households in the refugee setting, the gender roles that inform decision making processes at the household level and certain spending habits including consumption of *khat* or alcohol.

Based on the findings, recommendations will be formulated with respect to the feasibility of cash-based interventions in the refugee camps.

## Methodology

Analysis was based on the study of both primary and secondary sources. The existing relevant literature was reviewed in preparation for the assessment so as to ensure primary data collection would build on, and complement existing sources of information, especially two prior WFP market assessments: Fresh Food Vouchers Market Assessment in Dadaab and Kakuma Refugee Camps (WFP, 2012) and Market Dynamics and Financial Services in Kenya's Arid Lands (WFP, 2013).

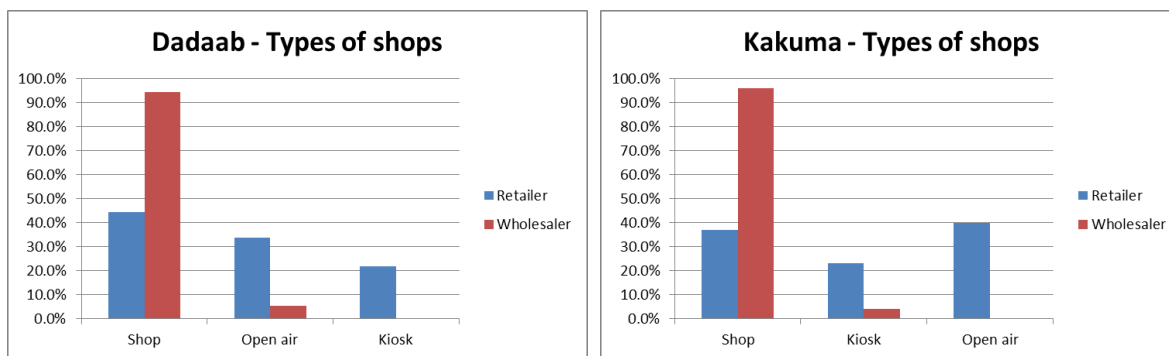
Primary data was collected using traders and key informants questionnaires (including market committees, local government officials and partners with experience in cash interventions). Data collection was conducted by 16 enumerators in each refugee camp from March 10 to March 20 2014. Interviews with traders were conducted using electronic data collection devices. Two WFP staff supervised the field work throughout the duration of the data collection.

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<sup>1</sup> *Market analysis to assist selection between response options in conditions of food insecurity*, Alessandro De Matteis, 2010

In Dadaab the three main Dadaab camp markets were surveyed: Dagahaley, Ifo and Hagadera. In Kakuma refugee camp the survey covered the three camp sections. In Kakuma 1 there are 2 markets so-called Somali and Ethiopian, while in Kakuma 2 and 3 there is only one market per camp. The survey was also conducted in Dadaab and Kakuma town markets so as to gain a better understanding of the wholesaling structures. Interviews were conducted in two types of retail outlets: open air and shops/kiosks.

124 retailers, 36 wholesalers and 6 key informant groups were interviewed in Dadaab; and 173 retailers, 25 wholesalers and 5 key informants groups in Kakuma. The tables below show the types of shops where the interviews were conducted and provide a picture of the most common retail outlets in the camps.



Source: traders' questionnaire

Seven supply chains were analyzed separately: cereals and pulses, vegetables and fruits, livestock and meat, processed food (maize flour, cooking oil, sugar, pasta etc) milk, eggs and fish (in Kakuma only). The interviews were distributed with the aim of obtaining a balanced representation of traders, retail outlets and commodity categories.

Based on the fact that similarities in supply chains and market structures exist within each of the refugee sub camps, data for the three camps in Dadaab and for the three sections of Kakuma were analyzed collectively. Data were analyzed using MS Excel and SPSS.

Field work for the gender dynamics section was conducted separately so as to avoid any association with a potential WFP intervention. Data collected for this section was qualitative in nature, and consisted of face-to-face interviews and use of participatory tools, with a total of 30 focus group discussions (FGDs) and 21 key informant interviews with the refugee communities living in Dadaab and Kakuma camps. The study took place at the different camp sections in the Food Distribution Points (FDPs) or WFP offices. The compositions of the discussion groups were either exclusively male or female from the main communities as well as the minority communities. Women and men were interviewed separately in order to understand women's and men's perspectives in relation to the household decision making structures.

## Research limitations

Estimates of traded or consumption volumes are not part of the scope of this report. Attempts to estimate absolute volumes face several difficulties: the characteristics of the typical market surveys which only collect spot data with limited recall periods, lack of statistical data collection in the refugee camps, limited number of wholesalers, change in the number of traders between climatological seasons and seasonal production cycles.

Furthermore, appraisals of volumes expandability would be inevitably skewed by the current status quo in which traders specialize in market niches not covered by humanitarian aid, e.g. vegetables, fruits, meat, milk etc.

Only spot price data was collected during the study, making it hard to assess price trends, e.g. with respect to seasonality, known periods of food supply or demand fluctuations, etc. This was partly addressed by asking questions on price patterns during a normal year; and by complementing the point-information of the field data with the price time series available.

Price time series from the refugee camps were not available, while the series from some of the supply markets were unworkable due to extent of the gaps, which hampered the analysis of price integration.

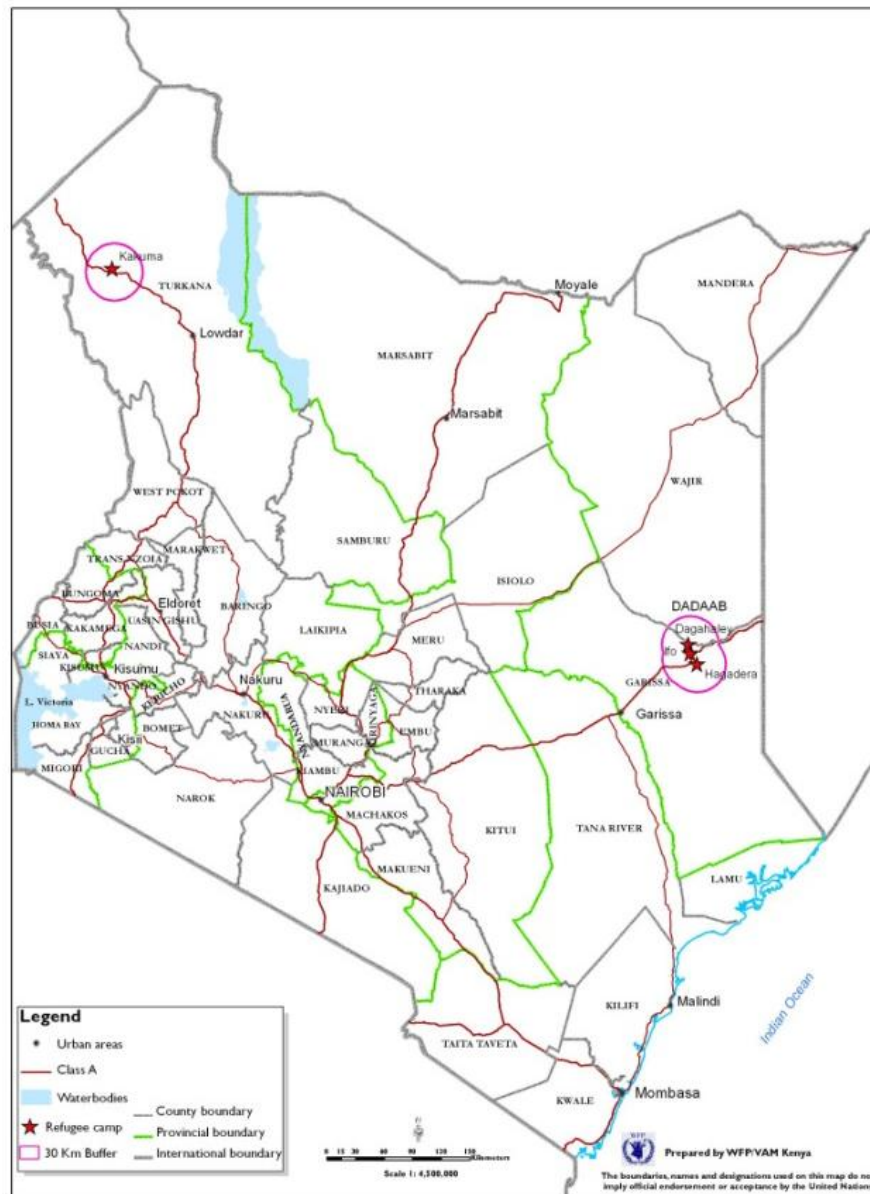
Due to the high insecurity in the Dadaab camp, the assessment supervisors had to work within the perimeter of WFP premises, which prevented visits to the markets and a more direct contact with traders and beneficiaries.

## 2. Dadaab and Kakuma refugee camps

Kenyan refugee camps are characterized by harsh living conditions, limited opportunities for economic activity, insecure environment, and are situated in remote arid regions with little surface water where refugees and local population competes for scarce natural resources. The government policy confines refugees to designated areas and provides only permission to a handful of refugees, who are self-sufficient, to reside outside camps.

Dadaab refugee camps are located in Northeastern Kenya, about 470 km from Nairobi and 100 km from the Somalia border. The region surrounding Dadaab is semi-arid desert with sparse vegetation and no surface water. The three first camps; Dagahaley, Ifo and Hagadera, were established in 1991, subsequent to an influx of Somali refugees fleeing civil war. Ifo 2 was developed in 2007 following the influx of refugees that started in 2006 and then extended in 2011. Kambioos was set up and put into use in 2011. The Kenya-Somalia border has remained officially closed since early 2007. However, the camps continue to experience an influx of asylum seekers.

## Location of refugee camps in Kenya



Source: WFP Kenya, VAM unit

Since the Kenya's military incursion into Somalia in the fight against Al-Shabab in October 2012, registration of new arrivals was suspended. Relief agencies have also scaled down their operations following increased insecurity. Currently the camps host about 345,000 registered refugees. The immense majority of refugees in Dadaab are Somalis, 96.6 percent, followed by a minority of Ethiopians, 4.1 percent, and other nationalities.

Kakuma refugee camp is situated in Turkana District, in Northwestern Kenya. It is about 850 km from Nairobi, and 150 km south of the Sudanese border. The camp was established in July 1992 initially to cater for Sudanese refugees fleeing the conflict in Sudan, but gradually opened up to other nationals as

the need arose. Current population is 166,000 registered refugees but this is increasing on a daily basis due to the emergency situation in South Sudan that started in December 2013.

Somali refugees were until recently the majority in Kakuma, but currently South Sudanese comprise the majority of refugees, 41 percent. At the time of writing, the weekly rate of new refugee arrivals from South Sudan was around 900. The Kenya Humanitarian Country Team planning figure is 50,000 new arrivals by December 2014.

The refugees have depended on WFP food assistance since 1991. Kenya's 2007 Refugees Act prohibits refugees from engaging in gainful employment or other forms of self-reliance outside the camps as work permits are not issued to refugees. That coupled with the movement restrictions limits integration of refugees into the Kenyan community. However, the new Citizenship and Immigration Act (2011) may offer some opportunities for refugees to integrate locally in Kenya<sup>2</sup>.

WFP's food assistance operation in Dadaab and Kakuma focuses on relief and on ensuring that the special nutritional requirements of vulnerable groups are met. During the current phase of the operation WFP has committed to introducing specialized nutritional products and to explore innovative ways to use the markets in the camps to deliver food assistance and improve dietary diversity. Among these initiatives is the introduction of fresh food vouchers to households with pregnant and lactating women and/or children under the age of two.

The current Kenya refugee operation is a 3-year Protracted Relief and Recovery Operation (PRRO) ending in September 2014, providing food assistance to refugees in Dadaab and Kakuma camps and host communities living around the camps. The PRRO initially planned to assist 580,000 refugees and 36,000 members of the host communities.

The following interventions have been introduced since the onset of the current operation:

1. In 2013 WFP piloted a Fresh Food Voucher program for pregnant and lactating women program in Dabaab camp.
2. UNHCR conducted a verification exercise in 2013 in Dadaab camps, which reduced the number of beneficiaries by over 40,000.
3. Biometric fingerprint ID checks for refugees collecting food during the fortnightly general food distribution was rolled out in 2013. This was a joint WFP/UNHCR operation which resulted in a reduction in the number of beneficiaries getting food assistance, both in Dadaab and Kakuma camps, by nearly 80,000<sup>3</sup>.

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<sup>2</sup> Kenya refugees UNHCR operational update, January 2014

<sup>3</sup> WFP Kenya CO, PRRO refugees.

## Refugee camps economy

Refugee camps often endure beyond the specific crisis that underlay their creation, becoming semi-permanent settlements, growing or shrinking in size in response to regional crisis or resolutions. This quasi-permanence coupled with the large population size, provide the camps with the prerequisites for urbanism<sup>4</sup>.

The socio-economic impact of the presence of Dadaab and Kakuma is profound, with the camps being in fact major urban centers for services, shops and social amenities, accessed by refugees and host community alike. The size, population density, commerce opportunities, and occupational backgrounds of the camp create an urban-like atmosphere with shops, hospitals, schools, guest houses, restaurants and centers of worship<sup>5</sup>.

In spite of the policy limitations, over the years the camps have developed their own internal economy which provides goods and services not supplied within the relief packages.

Apart from the food and non-food markets, many refugees offer a variety of services inside the camps. This includes selling cooked food or working in makeshift restaurant or coffee shops. In addition, men and women provide tailoring services, as well as mechanics, carpentry, and beauty services. Telephone services have resulted in a highly lucrative business for refugees with cellphones.



Various business retail outlets in Dadaab and Kakuma refugee camps, Photos: WFP/Diego Fernandez

<sup>4</sup> *Unlikely cities in the desert: the informal economy as causal agent for permanent "urban" sustainability in Kakuma refugee camp, Kenya.* Rahul Oka, University of Notre Dame, 2011

<sup>5</sup> *Refugee Camps or Cities? The Socioeconomic Dynamics of the Kakuma and Dadaab Camps in Northern Kenya.* Marc-Antoine de Monclas and Peter Kagwanja *Journal of Refugee Studies*, 2000



As per the FSOM reports, the majority of households, particularly in Kakuma are however engaged in unsustainable and unreliable income activities with which they try to earn money to cover the expenditures that they have.

The boundaries between formal and informal economies in the camps, as in any other complex settlement, are ambiguous. While many transactions in the camps go unregulated, e.g. informal cross-border trade or open air retailing, food traders do need to obtain a license from the county council and are subject to annual fees payments. 77 percent of the traders in Dadaab and 83 percent in Kakuma stated that they pay annual fees. Shop certificates and other taxes were other reported costs incurred by the traders in both camps.

The entrepreneurial dynamism observed in the camps is not only the result of a desire to fulfill their needs beyond aid, but also to continue their lives, rebuild their identities and their community to overcome the challenges of life in a refugee camp.

The camps act as important links between the refugee and the host population with refugee traders often providing a connection between refugee camp economies and wider national and international markets. These links provide refugees with trading opportunities and exchanges with Kenyan producers and traders both from the vicinity and from distant supply locations<sup>6</sup>.

The camps can also contribute to the development of the surrounding host population instead of causing resource depletion and environmental degradation. Local communities from neighboring villages take advantage of the increased economic activity and the benefits that arise from the camp, including trade, job opportunities and purchases of food at lower prices. These synergies and mutual trade benefits taking place between refugees and the local population also contribute to ease the tensions that may arise due to competition over resources.

However, despite this virtual economic urbanization, due to the transient nature of residence, the camp residents are never truly citizens. As forced migrants waiting to go back or move on, their future is always somewhere else, regardless of their tenure in the camps.

### **3. Food availability in Kenya**

The aim of this section is to provide a picture of the overall food availability situation in Kenya, and whether the current production and import trends would suffice to meet the increased demand generated by a potential market intervention in the camps.

At the national level, food availability is a combination of domestic food production, food stocks and commercial food imports. Food availability in the arid lands is likewise influenced by national policies and international agreements.

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<sup>6</sup> *The Economic Life of Refugees, Karen Jacobsen, Journal of Refugee Studies 2006*

In Kenya, food availability has over time been understood in terms of cereal supply, and food security in terms of having enough maize. Per capita food availability has declined by more than 10 percent over the last three decades<sup>7</sup>.

According to the ministry of agriculture, amongst the key constraints to domestic production are declining soil fertility, high input prices, losses due to pests and diseases, climate change, inappropriate land use and inadequate access to credit. Agricultural production systems in Kenya are largely rain fed, making them vulnerable to the threats of droughts and floods. The ministry further states that continuous cultivation of soils, loss of forest cover and over-emphasis on maize production have led to a decline in soil fertility and yields, in areas with relatively high production potential. However, there is still great potential to increase the area under production since lands are often unexploited due solely to high input costs. Irrigation and water management techniques in these areas hold great potential in this regard.

In Kenya's arid and semi-arid lands, which comprise some 80 percent of the country and have the highest rate of food insecurity, natural resources are degraded by unsustainable land management practices. This has led to a significant loss of bio-diversity which has adversely affected traditional sources of food, income and other basic needs of many rural communities.

Over the past few years, demand for land for various uses has been increasing. Most of the urban areas have witnessed increased conversion of agricultural and livestock land into settlement areas. Seed producers have been seriously affected by competing land uses, with production of seed maize being most affected.

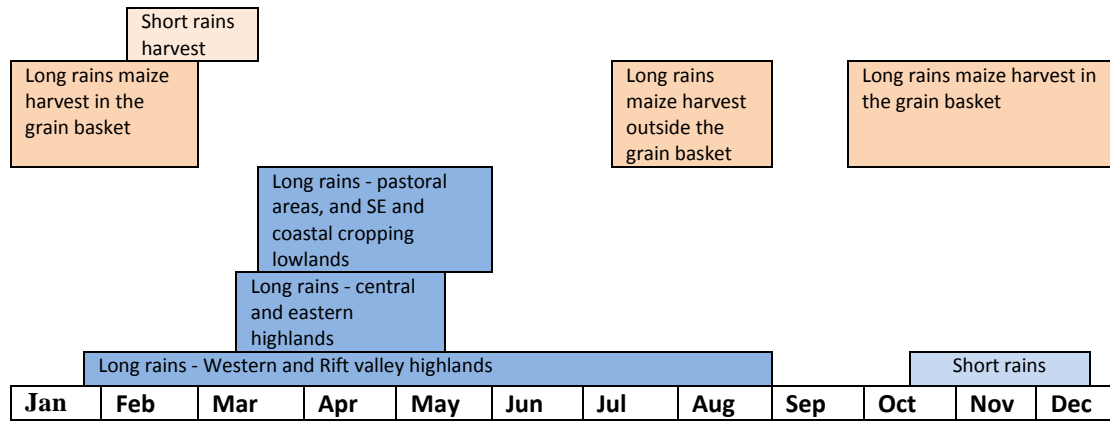
A significant proportion of the food produced is lost due to post-harvest spoilage and wastage, including in some cases from toxin causing micro-organisms. Losses are often substantial for grain and produce (fruits and vegetables) along with spoilage of animal products including milk, meat and fish. According to the ministry of agriculture, losses of stored maize are estimated to be a staggering 30 to 40 percent per annum. Inadequate storage constitutes a public health threat when people consume spoiled food, causes supply fluctuations and exacerbates prices, all of which are key causes of food insecurity and malnutrition.

There is little on-farm and off-farm processing of products in rural areas. Kenya lacks sufficient infrastructure for effective transport, storage, refinement, preservation, distribution and marketing of many foodstuffs.

The maize seasonal calendar below shows the main harvest periods in Kenya. Although the two producing seasons influence prices, the main driving factor in this regard is the long rains maize harvest in the grain basket.

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<sup>7</sup> Kenya National Food and Nutrition Security Policy, Agricultural sector coordination unit (ASCU), 2012



Source: WFP Kenya, VAM unit

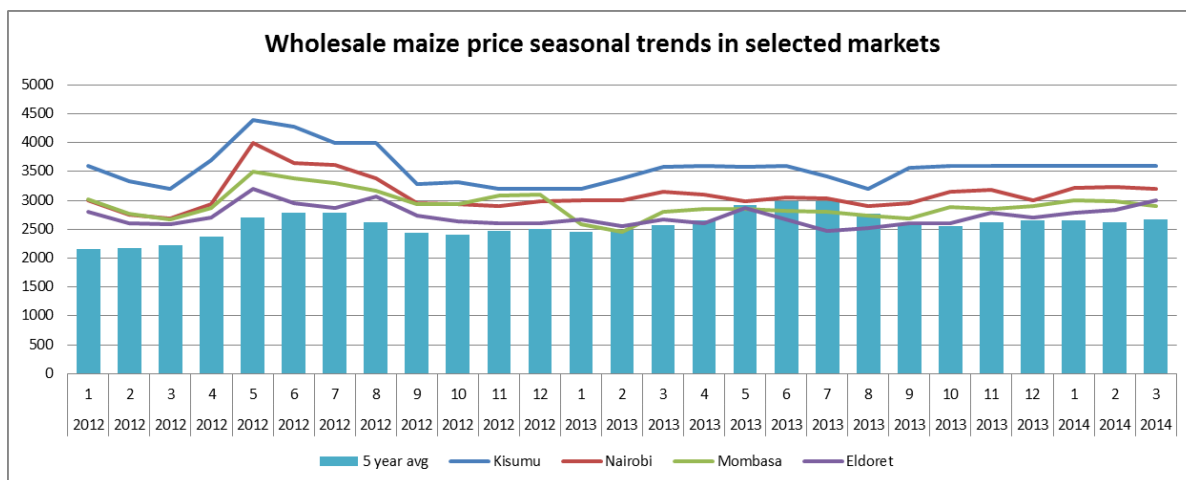
Kenya produces around three million tonnes of maize per year; about 15 percent is sold directly to the National Cereals and Produce Board (NCPB) and large millers. Domestic maize production has increasingly lagged behind population growth, especially in urban areas, where the population is growing at four percent per annum. Since 2000, it has become clear that Kenya has a structural deficit in maize production, even in a bumper harvest year. This deficit has increased to about ten percent of production since 2005.

Most of this deficit is filled by imports, both official and unofficial, from Uganda and Tanzania. Unofficial imports are primarily from Uganda and Tanzania, which are generally regarded as having lower costs of production than Kenya and competitive access costs to some of Kenya’s population centers. Kenya is normally able to import sufficient maize to meet its needs from the two countries at prices below those in world markets.

### Maize price trends in Kenya

The Ministry of Agriculture collects wholesale maize prices per 90 Kilograms bag across the major urban markets including Eldoret, Kisumu, Mombasa, and Nairobi. The Nairobi, Mombasa markets are indicative for urban consumers. Kisumu is a large urban market located in a deficit area with marginal agricultural productivity. Eldoret market is in high potential areas and located in the Western Kenya grain basket zone.

The graph below shows the wholesale maize price trends in these selected markets. Normally, wholesale maize prices decline gradually through February and start increasing as from March through June. Unlike this normal trend and in response to the maize production, in 2014 increase took place earlier than normal. Due to the expected gradual decline in maize stocks, the likely maize price trend at wholesale level will be on an increasing trend through June and increase may even become steeper between June and August at the time when the country will be expecting imports to fill the deficit.



Source: Ministry of Agriculture

#### 4. Market structure in Kenya’s arid lands

Market chains in the Kenyan arid lands follow transport corridors. These transport corridors are also main international highways to the countries that border the arid lands. Three main routes feed the arid lands (see map below):

Northwestern corridor: Nairobi-Kitale-Lodwar-Kakuma-Lokichogio; linking with South Sudan.

North central corridor: Nairobi-Meru/Nakuru-Isiolo/Samburu-Marsabit-Moyale; linking with Ethiopia.

Northeastern corridor: Nairobi-Thika-Garissa-Wajir-Mandera; linking with Somalia.

Other secondary corridors connect Garissa and Moyale through Wajir, Naukuru and Isiolo through Maralal, and Garissa and the border point of Liboi are less relevant in terms volumes traded.

Dadaab refugee camp gets its supplies through the Northeastern corridor, whilst Kakuma camp is fed through the Northwestern corridor. Details of the respective supply chains are provided in the sections below.

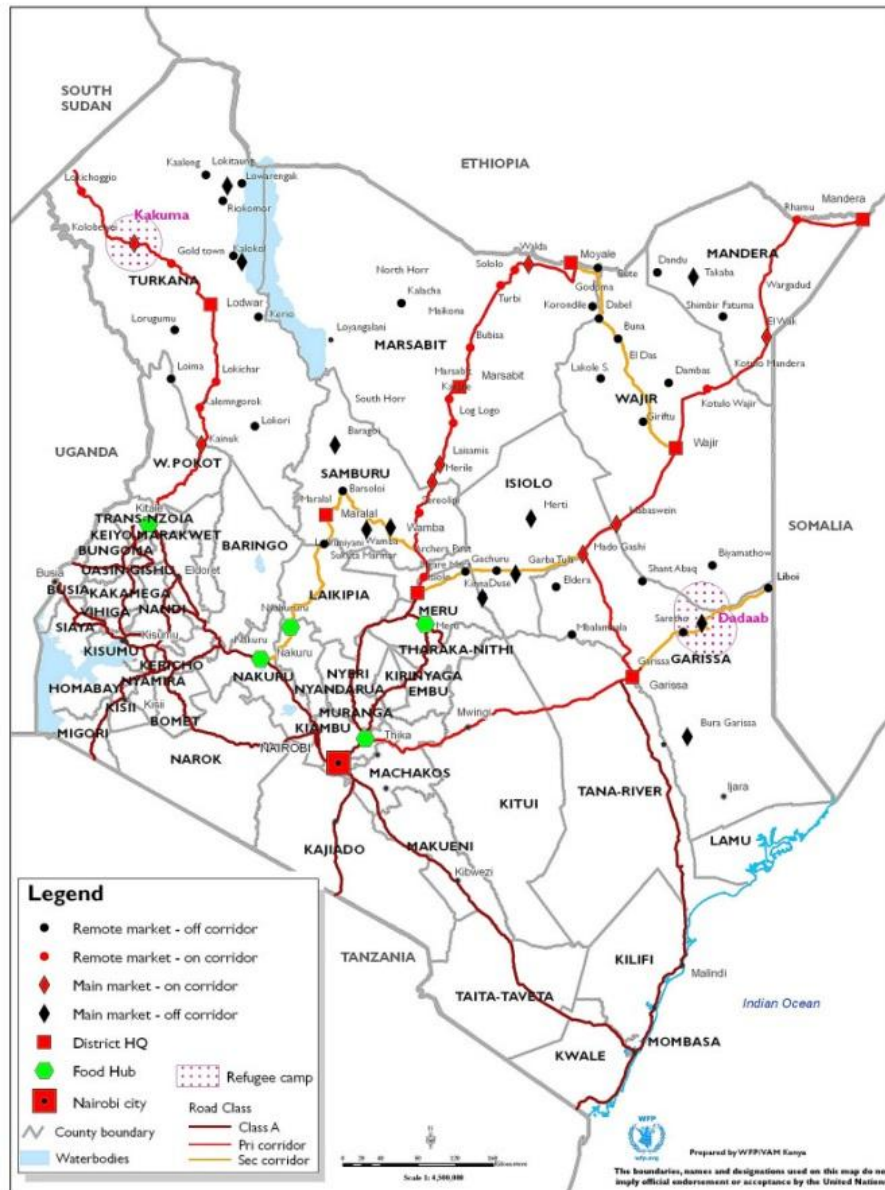
The links within a market chain define the volumes that are traded and also the price that the end consumers receive, while the number and variety of links affect the efficiency of a supply system. Large markets in the Kenyan producing areas and Nairobi are the main suppliers to the largest redistributor markets in the arid lands, which subsequently supply other main and remote markets<sup>8</sup>. The county headquarters are central as supply sources. They dominate the redistribution of food commodities in the arid lands.

The arid lands are highly dependent on food commodities sourced mainly outside of the region. Livestock (mainly goats, sheep, camels and cattle) and milk are the only large scale locally produced food

<sup>8</sup> Main markets are defined as those that redistribute to other smaller locations; remote markets do not act as suppliers for any other location.

commodities in the arid lands. Most of the other commodities supplied to the markets in the arid lands - staples, vegetables, fruits and processed foods - are sourced from large supply markets in the producing areas. The ones that cannot be sourced through these producing regions are supplied by wholesalers from Nairobi, mostly processed foods such as maize and wheat flour, rice, vegetable oil, sugar, salt or tea leaves. In bad years, when yields in the nearest producing regions are low, the supply lines of more basic products, especially cereals, are extended to Nairobi, as wholesalers in these markets are able to source food commodities from outside the country. The map below shows the refugee camps locations vis-à-vis the transport corridors and the different categories of markets in the arid lands.

**Arid lands transport corridors and camp locations**



Source: WFP Kenya, VAM unit

## Role of wholesaling - competition

Wholesalers are a determinant of the efficiency of the supply chains. They purchase food items from producers, importers and middleman/distributors for sale to retailers. Some wholesalers also operate as retailers. Due to their extensive vertical networks, their role is fundamental in the transport of food from surplus regions to the deficit regions. Most wholesalers in the arid lands are located in major towns, mostly county headquarters, and are more specialized than those in smaller locations trading separately in cereals and beans, processed foods or fruits and vegetables. In other smaller locations, wholesaling is often controlled by wholesalers who originate from outside the districts and who sometimes also act as transporters. Wholesalers in these remote markets tend to deal with cereals, beans and processed food altogether. The lack of wholesalers dealing with fruits and vegetables is due to the risks associated with their perishability.

Due to the wholesalers specialization described above, there are more wholesalers per retailer in large county headquarters than in remote markets, but these wholesalers tend to deal with a slightly fewer number of commodities, i.e. reducing effective competition within the respective supply chains.

The limited role of wholesaling in the arid lands can undermine local traders' response capacity and increase the risk of collusion, hoarding and price increases.

## Transport

The importance of transport in the supply chains and the availability of food cannot be overstated. By far, the most important constraints to trade in the arid lands have to do with road conditions and transport capacity. Transport through unpaved roads multiplies the time required to ferry the commodities and increases the need for vehicle repairs. During the rainy seasons, impassable roads cause major disruptions along the distribution channels through long delays and increased exposure of traders to attacks by bandits, thereby increasing the costs of doing business.

On average, prices increase by about 1.3 percent for an additional transport hour from the markets in the producing areas to the county headquarters. Similarly, prices increase by about 1.8 percent for every transportation hour between the county headquarters and the remote markets off the main transport corridors<sup>9</sup>.

All these factors cause prices of staple food commodities in the arid lands to be disproportionately high as compared to the rest of the country and reduce the traders' capacity to scale up supply. In Turkana, for example, the average rate of price increase of goods between source markets and the county's

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<sup>9</sup> *Market dynamics and financial services in Kenya's arid lands, WFP, 2013*

furthest main market, Lokichoggio, is around 40-50 percent with peaks of up to 80 percent in the case of some commodities such as beans<sup>10</sup>.

Commonly, only wholesalers and large retailers have the capacity to organize transport independently. Smaller retailers often resort to aggregate their orders and share truck transport, or more frequently transport is arranged using public transport. Matatus, buses and other public transport are the most common types of vehicles used in the arid lands, followed by 7 and 12 ton trucks. The use of trucks is more common on the main transport corridors, especially between the large supply markets in the producing areas and the county headquarters and other large resupply markets. In contrast with this, the most common vehicles used to transport food in the Kenyan producing areas are 7 tons trucks, followed by 28 and 12 tons trucks.

## Market integration in the arid lands

Market integration is defined as the existence of efficient and timely trade flows between two geographical separate markets. In view of limited local production in the arid lands, this market feature is fundamental to ensure a consistent food supply throughout the year.

Furthermore, the partial market equilibrium model tells us that a lack of market integration can exacerbate the risk of flash inflation caused by a sudden increase in demand generated by a cash intervention. For net food consumers, a price increase can imply both a reduction in food consumption (even though the demand for basic foods among low income families tends to be quite price-inelastic), a reduction in the consumption of other goods, and often a switch to less preferred but less expensive foods. This situation can be mitigated by the fact that the price differential between the target market and the (lower) prices in nearby markets should induce trade flows up to a point where the price differential is equivalent to the transaction costs between the respective markets. Hence the importance of the responsiveness of markets and their integration with other supply markets.

Abundant references in the literature indicate that most of the markets in the arid lands are weakly integrated both amongst themselves and with the main supply markets in Kenya. It is argued that markets in general, are weakly integrated in the arid lands due to poor infrastructure and low population densities which lead to sparsely located domestic markets<sup>11</sup>.

A report released by WFP in 2013<sup>12</sup> studied the maize price integration between large markets in the producing areas, county headquarters in the arid lands and other main and remote markets both on and off the main transport corridors. Findings suggest that the markets in the producing areas are integrated with the county headquarter markets, and the latter are to some extent integrated with other markets on the corridors. However, maize prices in producing areas and county headquarters on the main corridors are weakly integrated with the main markets and the remote markets off the corridors.

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<sup>10</sup> *Market analysis to assist selection between response options in conditions of food insecurity, Alessandro De Matteis, 2010*

<sup>11</sup> *The maize farm-market price spread in Kenya and Uganda, Takashi Yamano and Ayumi Arai, National Graduate Institute for Policy Studies, December 2010*

<sup>12</sup> *Market dynamics and financial services in Kenya's arid lands, WFP, 2013*

Another study comparing maize price trends in a set of 55 markets in four districts in the arid lands (Wajir, Turkana, Mandera, Marsabit and Moyale), concluded that most of the areas considered are marginally connected to the main trading centers, and that the degree of market connection within the districts or with the neighboring districts was weak<sup>13</sup>. In other words, not only there is a certain degree of isolation from the main national markets, but the same degree of isolation appears also within each of the counties considered as well as among them.

In contrast, markets in the high potential mixed farming livelihood zone are better integrated within the zone and with key urban centers, largely due to a fairly sophisticated trade infrastructure. Distances from markets are relatively low coupled with a considerable number of market participants across the marketing chain, thus minimizing transaction costs<sup>14</sup>.

In summary, the results of these studies suggest that markets along the main corridors, especially county headquarters and other large redistributor markets, are better integrated with each other and with the markets in the producing areas than with other markets off the corridors.

**Both Kakuma and Dadaab are categorized as main markets according to their role in the respective corridors and supply chains. Kakuma is located on the Northeastern corridor while Dadaab is located along a secondary corridor that links Garissa with the Liboi on the border with Somalia. This, together with the relatively large size of the camps, are factors that contribute to improve market integration and hence the consistent availability of food in these locations.**

## 5. Supply chains in Dadaab and Kakuma refugee camps

The only large scale locally produced commodities in the arid lands are livestock, milk and fish in the Turkana area. With that exception, most other food commodities are ferried from the main supply markets in the Kenyan central region or imported from Ethiopia and Somalia.

There are many commonalities between the supply arrangements in Dadaab and Kakuma, the two most important differences have to do with the wholesaling structure and the role of informal cross-border trade.

### Wholesaling

In Dadaab camp imported commodities are mostly supplied by wholesalers in Garissa, Thika and Nairobi -or through informal trade from Somalia- which feed the camps without mediation in Dadaab town. This aspect was confirmed by wholesalers in Dadaab town who mentioned that they only serve retailers in town, not in the camps. In Kakuma camp however, wholesaling is dominated by traders in Kakuma town, with Kitale being the most important remote source. This difference in the role of wholesaling

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<sup>13</sup> *Using food aid to stimulate markets in pastoral areas, market assessment, into the EC Food Facility Programme in Northern Kenya, Alessandro De Matteis, Save the Children, March 2012*

<sup>14</sup> *The impact of rising food prices on disparate livelihood groups in Kenya, The Kenya Food Security Steering Group (KFSSG), July 2008*



between Kakuma and Dadaab towns is attributed to the larger distance between Kakuma and the supply markets in the producing areas, as compared with Dadaab, and hence the larger risks and transaction costs for retailers.

### **Cross-border trade**

Informal cross-border trade is an important contributor to food availability in Dadaab but not in Kakuma. Liboi is the main entry point for items from Somalia in Dadaab. The most important commodities imported from Somalia are wheat flour, rice, pasta, sugar, vegetable oil, powder milk, tea, canned fish and salt. Livestock trade with Somalia includes cattle, sheep, goats, camels and donkeys. Cattle sheep and goats are the main livestock species traded across the border into the Kenyan market.

In Turkana, cross-border trade with South Sudan takes place through Lokichoggio; however it is not at a large scale and is one sided mainly with processed food commodities crossing from Kenya to South Sudan.

### **Transport**

A typical method used to manage supplies and reduce transport costs is the formation of small groups of traders that aggregate their orders and facilitate transport in bulk by truck. Transport arrangements are usually made at origin by the suppliers. Commodities are ferried in bundles labeled with the name of the traders and payments are often made through mobile money systems upon reception of the commodities. Due to the prevailing movement restrictions, refugee traders face difficulties to venture outside the camps. When those are overcome, traders sometimes travel to supply markets to purchase and supervise the loading of commodities. Final redistribution of the bundles is often arranged using small means of transportation such as motorcycles.

Traders with established business relationships in the supply markets often arrange deliveries by public transport, buses or matatus, which significantly increase the transport cost per unit. Only large wholesalers on cereals, pulses or processed food can afford to arrange transport individually.

## **Cereals and pulses**

As mentioned earlier, most of the Kenyan maize production comes from the Western and Mount Kenya regions. Wheat is produced in the South Rift Valley. The production of rice in Kenya is limited and mostly confined to two irrigation schemes: Mwea in the central region and Ahero in the Western region. Local production of beans is also concentrated in the Western and Mount Kenya regions, mostly overlapping with the maize producing areas.

In Dadaab camps, the main sources of cereals and pulses are in order of importance informal imports from Somalia, and wholesalers in Mombasa and Garissa.

Retailers in Kakuma camps get their supplies of cereals and pulses mostly from large traders in the camps or alternatively from wholesalers in Kakuma town. The most important supply source outside the camp is wholesalers in Kitale.

While in Dadaab cereals and pulses are mostly sold in shops and kiosks, in Kakuma they are also found in open air retail outlets.

## **Vegetables and fruits**

Vegetables and fruits are mostly produced in the central and Western regions. Production is spread over several districts; some of the leading producers are Nyandarua (prominent for potatoes), Limuru (kales and cabbages) and Kirinyanga (tomatoes). Farms along river Tana in Garissa are also an important source of vegetables and fruits in Dadaab.

Horticultural crops are usually available all season in irrigated fields; under rain-fed most of the crops are grown during the rainy season. Many of these crops grow quickly and farmers easily carry out planting whenever rains are available. However, they are also sensitive to moisture stress and hence any dry spell usually affects production.

Wholesalers in Garissa are the most important source of vegetables and fruits in Dadaab. Thika and Nairobi become relevant supply markets in times of low production or during the dry season. Quite often traders resort to aggregate their orders as described above, though there are also mobile wholesalers who travel from Garissa to sell their products in the camps. To a much lesser extent, some retailers also get their supplies from other traders in the camps and from Somalia.

The most important source of vegetables and fruits in Kakuma is by far Kitale. Wholesalers in Kakuma town are a secondary source, especially when road conditions challenge the main supply from Kitale.

Vegetables and fruits are sold often combined in shops, kiosks and in open air shops. The number of traders fluctuates according to the seasonal availability of produce and the supply cuts during the rains due to transport constraints.

## **Livestock and meat**

Livestock is locally produced in the arid lands, with a large proportion of the transactions taking place directly between the herdsmen and the butchers. Livestock markets are predominately assembly markets where local pastoralists and traders from outside the districts converge.

In Dadaab, butchers get their supplies mostly from assembly markets in Dagahaley and Hagadera, which also source retailers in Dadaab town. Outside the camps the most important sources in Kenya are Wajir and other locations in the vicinity of the camps such as Dadaab town, Alinjugur, Madogashi, Sabuli and Sarif. Dobley and Kismayo in Somalia are also sources of livestock in Dadaab camps. Butchers often organize themselves in groups that rotate to make their purchases in the livestock market.

In Kakuma, livestock also is sourced from herdsmen in the area who gather to sell their animals in assembly livestock markets in the camps where butchers make their purchases. Supplies come from small locations in the vicinity such as Kalobeiyei, Kibich or Lokipoto and from Ethiopia.

In both camps, retailers do the slaughtering in public slaughterhouses for which they have to pay service fees.

Meat is sold in butcher's kiosks, shops and open air outlets. The number of retailers decreases during the breeding season.

## Processed food

Processed commodities traded in the arid lands (sugar, maize and wheat flour, vegetable oil, packed milk, rice, tea etc.) are mostly manufactured in Kenya, the majority of them in Nairobi. Maize flour, wheat flour and vegetable oil are also manufactured in the hub markets: Thika, Nakuru, Kitale, Nyahururu. Salt is mostly produced in the coastal district of Malindi. From the company factories, commodities are handed over to company's appointed distributors / dealers who distribute to the wholesalers.

Wholesales in Garissa are the most important source of processed food in Dadaab followed by Mombasa and the informal cross-border trade across the border with Somalia.

In Kakuma, retailers purchase most of their supplies from wholesalers in Kakuma town followed by wholesalers in the camps. Outside the camps, supplies are mostly sourced from Kitale.

In Dadaab processed food is mostly sold in shops and kiosks. In Kakuma it is traded in shops, kiosks and open air outlets.

## Milk

Milk is locally produced in the arid lands. Goat and camel milk are the most commonly traded in the camps. All of them are produced within the respective counties. Milk supply chains are generally very short: producers sell directly to consumers, retailers buy from producers in the outskirts of the towns, or transporters travel to nearby producing villages to collect milk and sell either directly to consumers or to open air retailers.

Dadaab is a main camel milk producing area, supplying also other parts of the country. The most important sources in the vicinity of Dadaab camp are Hamey, Damajaley and Biya Madowe. There are several supply arrangements working in the camps: 1) producers sell directly to the consumers in the camps; 2) retailers buy from producers in the outskirts of the town/camps and sell to consumers; 3) transporters/middlemen travel to nearby producing villages to collect the milk and sell either directly to consumers or to open air retailers in the camps (this is the only form of wholesale trading in the milk market) and 4) producers (women) in the producing villages organize transport and make arrangements

with the retailers in the camps to receive the produce, payments in this case are made through the transporters.

In Kakuma camp, milk production is also local and most of the produce is supplied in Kakuma town, or sold in the camps directly by the producers. Camel milk is highly consumed by the Somali community and is occasionally ferried from as far as Dadaab.

Milk is sold in both camps exclusively by female open air retailers who do not trade any other product. The number of open air retailers decrease during the dry season.

## Eggs

The most important sources of eggs in Dadaab are Nairobi and Thika either directly or through wholesalers in Garissa. Supplies are arranged either directly by mobile wholesalers from Garissa or, alternatively, by large traders in the camps.

In Kakuma, eggs are most commonly supplied from traders in Kitale to wholesalers in Kakuma town market who subsequently source the retailers in the camps. To a much shorter extent, eggs are also supplied to retailers by larger traders in the camps.

Eggs are sold in shops and kiosks in both camps and, in Kakuma, also in open air outlets. These traders do not trade any other fresh product (occasionally packed milk). At times eggs are also found in kiosks dealing with vegetables and fruits. The number of traders decreases during the rainy season.

## Fish

Fish is only consumed in Kakuma camp, mostly in its dry variety. Fish is supplied to wholesalers and retailers in Kakuma town market from Lake Turkana through Kalokol and from Lake Victoria through Kisumu and Kitale. Retailers in the camps get their supplies from the wholesalers in town.

Fish is traded mostly in shops and kiosks and, to a lesser extent, open air. There are a significant number of retailers operating in the market, and the number increases during the dry season.

## 6. Food availability and price trends

### Most commonly traded commodities

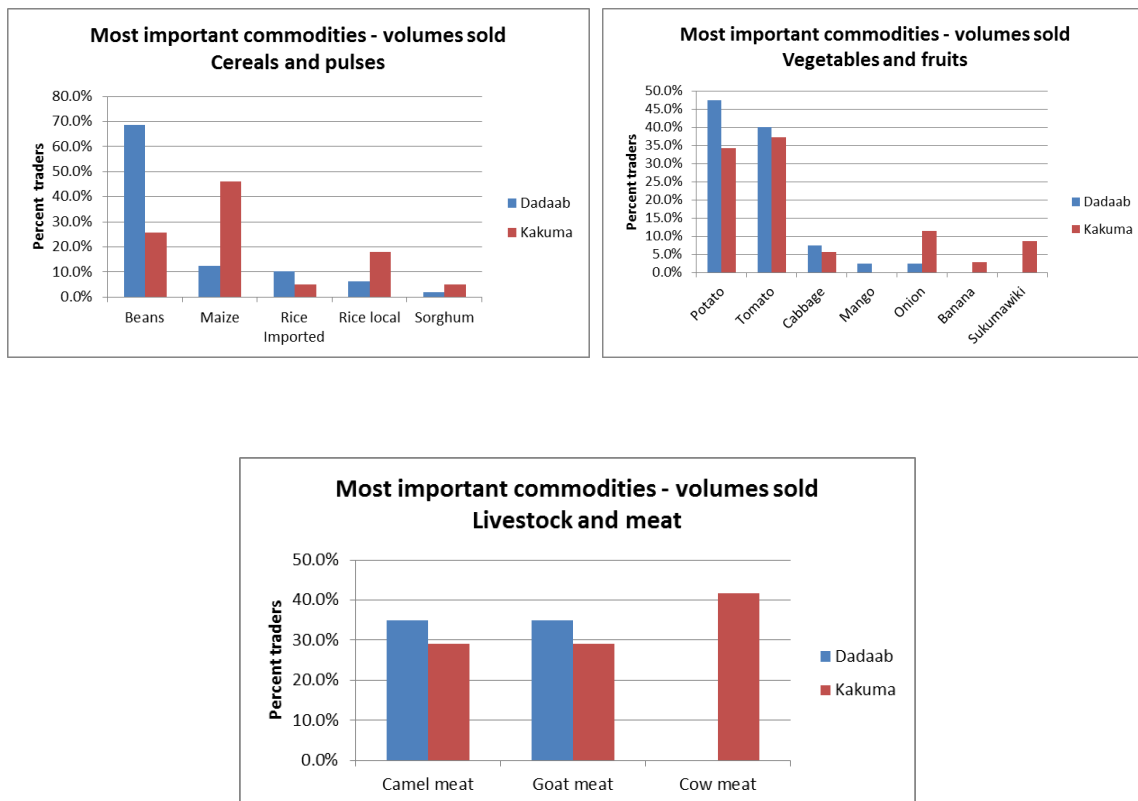
The type of commodities traded in camps is limited, reflecting the obvious influence of food aid distributions, the limited purchasing power and the food demand and consumption patterns.

In terms of the number of traders dealing with each particular commodity, the most commonly traded foods per market chain in Dadaab are (in order of importance): 1) beans, local rice, imported rice and

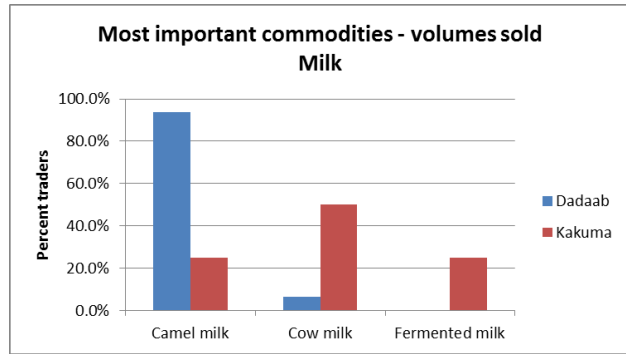
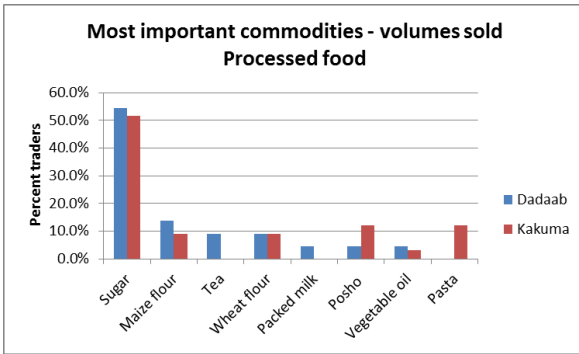
maize; 2) tomatoes, potatoes, onions, sukumawiki, cabbages, bananas and mangoes; 3) camel and goat meat; 4) sugar, wheat and maize flour, pasta, vegetable oil, packed milk and tea; 5) camel and cow milk and 6) eggs.

In Kakuma the most commonly traded commodities are: 1) beans, maize, local rice, sorghum and imported rice; 2) tomatoes, onions, potatoes, cabbage, sukumawiki, bananas and mangos; 3) cow, goat and camel meat; 4) sugar, pasta, vegetable oil, maize and wheat flour, tea, *posho*<sup>15</sup> and packed milk; 5) cow and camel milk; 6) eggs and 7) dry fish.

The traders were also asked to rank their commodities in terms of volumes traded. Below is a comparative based on the percentage of responses provided for the different supply chains with multiple commodities. It is worth highlighting the following: 1) Beans is the most important commodity in Dadaab while in Kakuma is maize. 2) Potatoes and tomatoes are the most important commodities in the vegetables and fruits supply chain in both camps, while the consumption of fruits is very low. 3) Camel and goat are the most traded meats; cow meat was only found in Kakuma. 4) Sugar is clearly the most important processed food in both camps. While pasta is an important commodity in Dadaab it did not appear among the top in terms of volumes. 5) Camel milk is the most important in Dadaab and cow milk in Kakuma. Goat milk is typically consumed during the rainy season only.

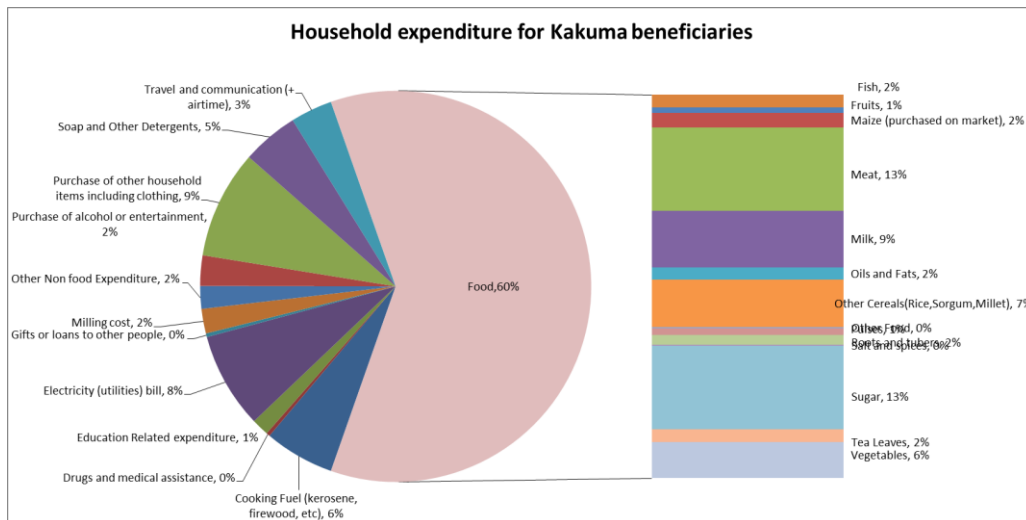
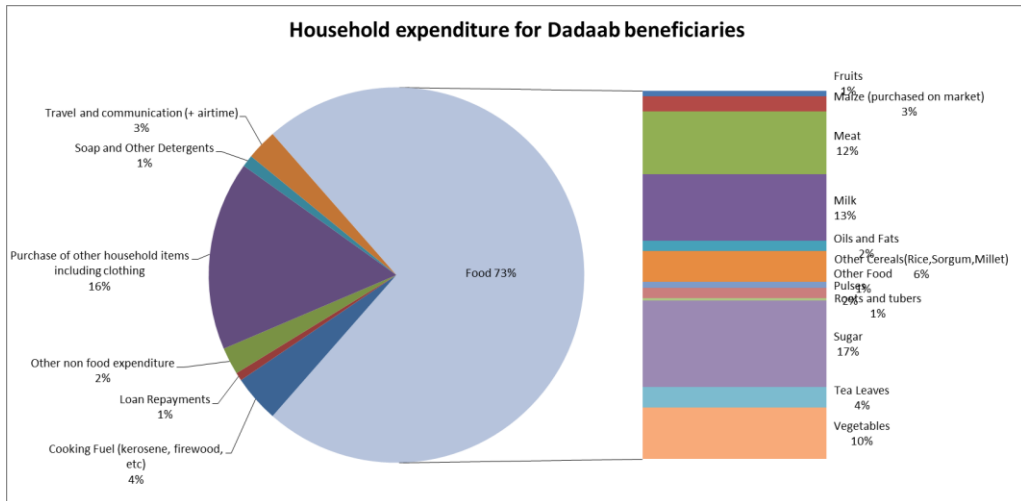


<sup>15</sup> Locally milled maize flour.



Source: traders' questionnaire

These graphs also correspond to the information obtained through the FSOM and households' expenditure pattern. The majority of households' expenditure is on food and the food items that are most commonly purchased are sugar, milk, other cereals and some meat and vegetables. The diagrams below show the most common household expenditures in the camps.



Source: WFP Kenya, FSOM February 2014

## Traders' perceptions on food availability and price trends

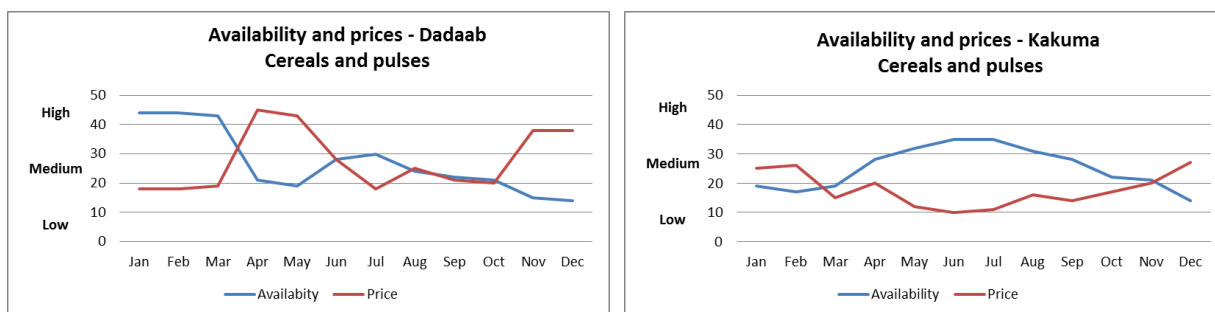
Availability of food in Dadaab and Kakuma camp markets is determined by the seasonal production cycles, and in the case of commodities not locally produced by the road conditions during the rainy season.

As reported by the key informants, Dadaab experience occasional seasonal access constraints to larger supply markets during the rainy seasons - April to May and October to November - that can last from a few days to even a month depending on the intensity of the rains.

In Kakuma the road conditions during the rainy season were also reported as an influencing factor, though serious disruptions in supply appear to be less frequent than in Dadaab and are mostly caused by flash floods.

Supply of cereals and pulses depends mostly on the production cycles. Key informants reported that some large retailers increase their stocks before the rains, which mitigates the impact of the poor road conditions. Prices depend mostly on the seasonal production cycles and they usually mirror the availability trends. The graphs below show the reported availability and price trends in both camps<sup>16</sup>.

**Availability of cereals and pulses fluctuates around the medium range for most of the year in both camps.** In Dadaab, besides the production cycles, the supply constraints during the rainy seasons appear to have a strong influence both on availability and prices. In Kakuma availability and prices appear to be mostly influenced by the production and cycles and by the cross-border trade with Uganda.

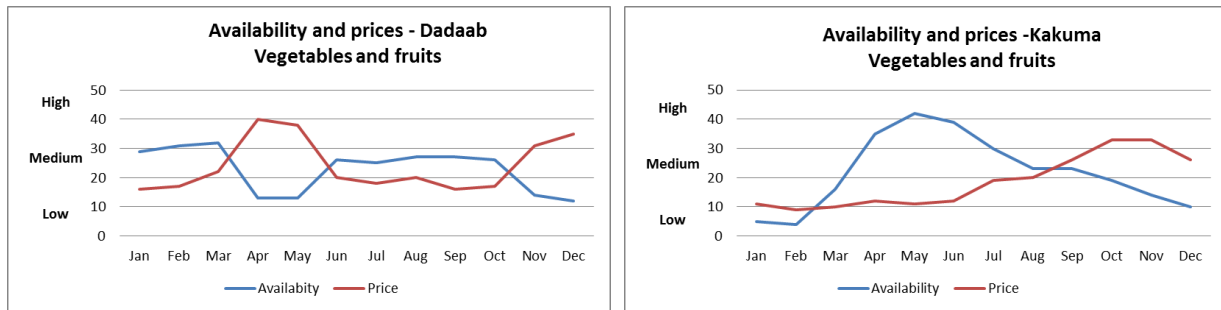


Source: traders' questionnaire

Due to the different growing periods, availability of vegetables is higher during the rainy seasons while volumes of fruits spill over into the dry season. In Dadaab the availability was reported to be between medium and low throughout the year, with occasional inaccessibility due to the rains reducing the flow of produce as shown in the graph below. In Kakuma, supply is generally linked to the production cycles with the highest point occurring at the peak of the rainy season in the producing areas. Supply reductions due to road conditions during the rains hamper the availability of perishable products to a larger extent than that of more durable ones. Prices of vegetables and fruits are mainly determined by

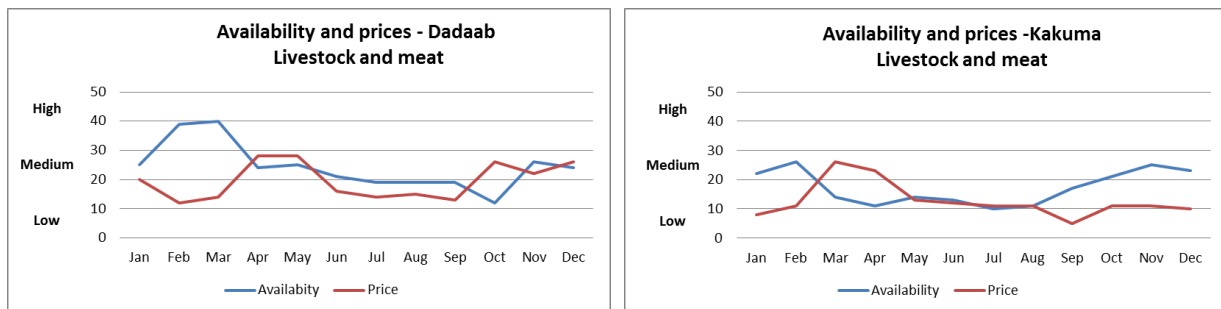
<sup>16</sup> The traders were asked to estimate the availability and the price levels ranking them as high, medium, low or not available. The responses were weighted and averaged per commodity and per month.

the harvest performance and production cycles; by the distance and transport costs, especially during the rainy season, and by the festive seasons of Ramadan and Christmas.



Source: traders' questionnaire

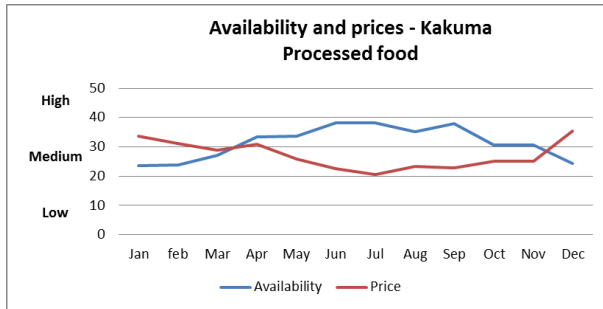
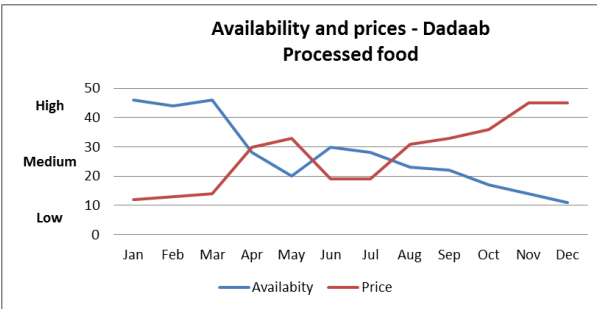
In a normal year herdsmen keep their animals for breeding during the rainy seasons which reduces the availability and increases the prices. During drought years, migration in search for water become larger (in time and distance travelled), which also affects availability and prices. It is worth highlighting that, despite both camps being located in a livestock producing area, the availability of meat was reported to be between medium and low during a significant portion of the year. Meat prices reflect the availability and production cycles. In a normal year, prices of meat are lower during the dry season and increase during the breeding periods. That said, due to the extended migrations – and the decreased availability – during drought years, prices can also be high during the dry season. In times of exceptionally severe droughts herdsmen are often forced to sell their livestock at throwaway prices. Festive seasons also influence prices, though much less than the seasonal production patterns.



Source: traders' questionnaire

Availability of processed food at origin does not depend on production cycles and hence is fairly consistent throughout the year, only being influenced by occasional supply cuts during the rainy season. Consequently, prices are also mostly influenced by the road conditions. As with other imported commodities, availability and prices in Dadaab appear to be more volatile than in Kakuma, which is due to the higher susceptibility of Dadaab to road conditions during the rains.





Source: traders' questionnaire

Availability of milk is highly subjected to seasonal fluctuations, being higher during the rainy seasons. The lowest points of production occur from June to August. Sporadic seasonal migrations in search for pasture can cause isolated supply shortages and increases in prices even during the rains. Milk price trends normally mirror the seasonal production cycles swinging between low and high according to the volumes available in the market. The highest and lowest points coincide with the peaks of the dry and the rainy season respectively<sup>17</sup>.

Eggs are consistently available throughout the year with decreases only during the rainy season caused by delays in transportation. Prices of eggs are influenced by the sporadic supply cuts and transport delays during the rains. Increased demand during festive seasons can also cause price increases.

Fish captures take place during the rainy seasons (which is attributed to the nutrients brought into the lake by the seasonal rivers). The peaks of availability in the market occur immediately after the rains once the production is ferried from the lakes. Production lasts for an average of three months, and the shelf life of dry fish is up to six months. Prices of fish fluctuate following the production cycles: dropping during the rainy seasons and increasing as the dry season progresses. Transport costs and festivities were also reported as influencing factors.

## Price integration analysis

Market integration analysis is carried out through a combination of price integration analysis and analysis of proxy indicators of market integration. Market integration is defined as the existence of efficient and timely trade flows between two geographically separate markets. A necessary but insufficient condition for that to occur is that commodity prices in markets respond to one another or move in the same direction, i.e. price signals are transmitted between markets. Market price transmission is generated by the rational economic behavior of traders who, in situations of competitive and integrated markets, exploit commercial opportunities by buying food commodities in markets where prices are low to sell them when and where they can make a profit. The basic principle of this type of analysis is the assumption that the closer the changes in prices experienced on two markets, the more integrated the two markets can be considered.

<sup>17</sup> The number of traders found in the markets dealing with milk, eggs and fish was insufficient to generate availability and price trends graphs.

A necessary and sufficient condition for market integration is that food effectively moves between markets in response to imbalances in supply and demand. In other words, price integration is not sufficient to conclude whether or not markets are integrated. The existence of price transmission between markets does not necessarily mean that trade flows between them. From an analytical perspective, this means that the maize price integration analysis has to be complemented with the analysis of proxy indicators of market integration: seasonal availability of food, transport capacity, constraints to trade, competition levels etc.

The analysis of price patterns in this section is based on monthly price series of maize from 2011 to 2013 on Nairobi, Thika and Kitale (two of the camps’ supply markets) and Dadaab and Kakuma towns as proxy markets for the refugee camps. Price time series in Garissa, the main supply market to Dadaab, and the camp markets are not available which prevents a more accurate analysis. The price data originates from the Kenya National Bureau of Statistics and the Ministry of Agriculture Livestock and Fisheries Development. The price gaps identified between 2011 and 2013 were filled with the mean of the surrounding prices. The analysis focuses only on maize due to lack of consistent price time series for other commodities. Hence, the results of the price integration analysis using maize prices should be carefully interpreted and cannot be generalized to all commodities given differences in supply chains. The table below shows the Pearson correlation coefficients between the selected markets.

**Price correlation between selected markets**

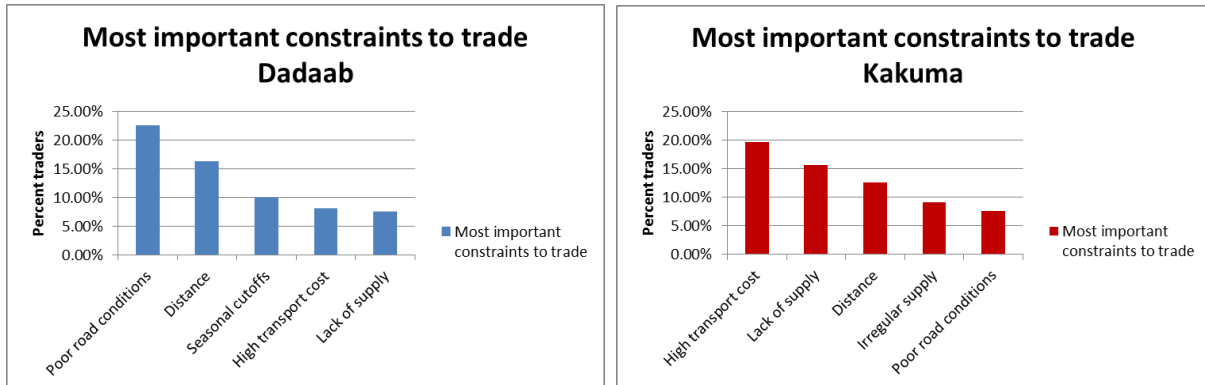
Correlation coefficient	Nairobi	Thika	Dadaab	Kitale	Kakuma
Nairobi	1	0.486795	0.691853	0.44767	0.395644
Thika	0.486795029	1	0.435466	0.495784	-0.05064
Dadaab	0.691852935	0.435466	1	0.184118	-0.0108
Kitale	0.447670319	0.495784	0.184118	1	0.352158
Kakuma	0.395644303	-0.05064	-0.0108	0.352158	1

Source: KNBS and MoALF

Although it appears that the integration between Dadaab and Kakuma towns and Nairobi is higher than with the more direct supply markets, Thika and Kitale respectively, the results are consistent with the supply chain qualitative findings. Dadaab town appeared to be integrated with Nairobi and Thika but not with Kitale and Kakuma; while Kakuma town is integrated with Nairobi and Kitale but not with Thika and Dadaab. That said, only Nairobi and Dadaab town reach a 0.6 correlation coefficient, the theoretical threshold that determines a strong price correlation, and hence a relatively good market integration. These results are consistent with other more generic market integration analyses in the Kenyan arid lands, as described above.

## Constraints to trade and availability

The main trade barriers in both camps have to do with road conditions and transport, and with the lack or irregular supply. It is interesting to note that in Dadaab the most important constraint to trade reported by the traders was poor road conditions which is clearly linked to the accessibility problems during the rainy season, while the most important constraint in Kakuma is high transport costs which appears to be linked to the long distance to the main supply markets.



Source: traders' questionnaire

The information provided by the traders is consistent with the reports from key informants. In Dadaab, key informant groups stated that the most important constraints to trade have to do with the road conditions and the associated transport costs. During periods of heavy rains the road between Garissa and Dadaab is only passable by small vehicles, which can halt deliveries for days or even weeks.



Trucks transporting food and humanitarian agencies' vehicles stranded during the rains in the vicinity of Dadaab. Photos: WFP/John N. Mwangi and Jairus Mutisya

This limitation was well portrayed by a *khat* trader in Dadaab town, as indicated in the excerpt below:

*“People can forget to buy milk for the babies, but never forget to buy khat. That’s the only supply that doesn’t stop during the rains; there are 4WDs coming from Meru every day, even during the worst rainy days”*

In Kakuma, key informants also reported that an important constraint to trade is the road conditions and the associated high transport costs, especially between Kitale and Lodwar, but also between Kakuma town and the camps. When a seasonal river (*lagaa*) between Kakuma town and Kakuma 3 floods during the rains, transport halts for one or two days, which especially affects deliveries of perishable products.

The difficulties refugee traders have to obtain travel permits and the consequent movement restrictions were mentioned in both camps as an important trade deterrent.

Lack of trucks, poor access to credit, insecurity on the roads and in the camps, and high Government taxes were other reported constraints to trade.

The difficulties to transport food during periods of heavy rains become evident in 2006, when WFP launched a special air operation to airlift food supplies to Dadaab camp and other areas in Northeastern Kenya.

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### *Special Air Operations Kenya 2006 - 2007*

*On the 10th of November 2006, heavy rains resulted in devastating flash floods in the Northeastern region of Kenya. Population affected by the floods, together with 120,000 refugees in the three camps in Dadaab, became totally unreachable as from the 11th of November and for an unknown period of time. The humanitarian response had to be immediate, imposing deliveries of food aid and relief cargo by air.*

*WFP Kenya Country Office, in conjunction with the Air Operations Unit of WFP headquarters, launched a special air operation immediately after the first assessment mission that took place on 17th and 18th November.*

*Kenya air deliveries stopped at the end of January 2007 when most of the locations became reachable by road.*

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## **7. Market conduct**

### **Use of the markets**

Refugee camp markets are used by refugees and host community alike. Most of the customers in both camps are refugees from the same or nearby sub camps, followed by host community from nearby villages. Refugees, in most of the cases, use the camp markets, though they can resort to the town markets if commodities are not available in the camps. Despite the distance from the towns, the host community makes some of their purchases in the camps because of the cheaper prices. This price differential is attributed to the fact that most services in the camps are provided for free, somehow subsidizing retail businesses.

Most of the traders in the camps are refugees, but the camps are not closed to local traders and a limited number do operate in them.

### **Demand trends**

Demand trends are dictated by the limited purchasing power of refugees and by the available supply of food commodities. The volumes of sales are fairly consistent throughout the year with trends following the seasonal availability patterns. Demand generally mirrors seasonal availability with peaks triggered by festive seasons such as Ramadan, Christmas or the school holidays.

### **Competition**

The number of retailers in the camps is considerably high, and varies between seasons especially open air retailers, not posing any constraint to competition. Furthermore, there are no restrictions to the entrance of new traders in the market. Traders with established structures (shops/kiosks) have to obtain a license from the county council and pay annual fees (the same as Kenyan traders) and this process usually takes only a few days. The regulation of trade among refugee merchants followed claims from the host community to even the business environment between the host and refugee traders. The only difficulty to open a new business can be allocation of space in the market by the market committees. Open air retailing is usually more unregulated than the one in shops and kiosks.

With the exception of livestock, and to a lesser extent cereals in pulses in Kakuma, the role of wholesaling in the camps is limited. As indicated above, in Dadaab most of the wholesaling takes place in Garissa, Thika and Nairobi; while in Kakuma wholesaling is dominated by traders in Kakuma town and Kitale.

Key informants recounted in both camps that there is a sufficient number of transporters in the market, and hence competition is not a factor that negatively influences the final price of commodities.

In order to assess the traders' negotiating power and hence their vulnerability to price shocks, they were questioned on how the purchasing price of food commodities is usually determined. As per the traders' perceptions, it appeared that traders in Dadaab have a higher capacity to influence prices than in Kakuma. Eighty percent of the traders in Dadaab and 51 percent in Kakuma mentioned prices are determined through negotiations. As opposed to this, prices are determined by the wholesaler for 18 percent of the traders in Dadaab and 51 percent in Kakuma.

While some key informants reported collusion in price setting by wholesalers dealing with imported commodities, the number of wholesalers in the supply markets is sufficient to guarantee adequate competition levels.

## 8. Traders' capacity to meet increases in demand

This section of the report aims to provide an understanding of traders' capacity to meet the increases in demand that are expected to be generated by potential cash interventions without disproportionate increases in prices.

Increases in prices due to cash interventions will not only affect the beneficiary caseload, but the entire vulnerable population living within the market catchment areas overlapping with the targeted geographic areas. In a context of general inflation, consumers tend to accumulate which increases demand and traders tend to hoard, which decreases supply. Both behaviors tend to have further inflationary consequences. For vulnerable food consumers an increase in basic food prices implies both a reduction in food consumption, a reduction in the consumption of other goods, and often a switch to less preferred but less expensive foods. Research indicates however, that a moderate increase in prices is a determinant of traders' willingness and therefore a factor to increase local food supply<sup>18</sup>.

### Traders' own perceptions

A way of assessing traders' capacity to respond to increased demand is through direct questions on traders' perception on their ability to increase supplies under the existing cost structure and value chain.

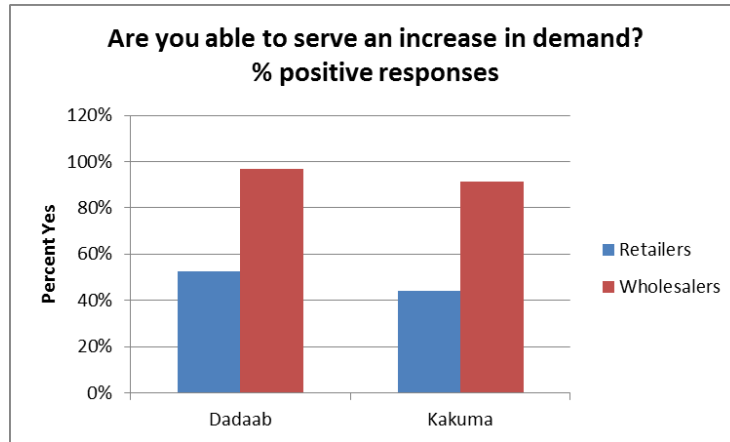
However, traders' answers may be biased by a number of factors such as the perception of potential business opportunities, or the fear that the information could be used by fiscal authorities or competitors. Researchers have also expressed concerns that traders' confidence in accessing additional commodities may lead to an overestimation of supply expandability<sup>19</sup>. In view of this, the findings on the traders' perceptions of their own response capacity are complemented by the analysis of a number of proxy indicators that influence traders' capacity.

Traders were asked whether they are able to serve an increase in demand under the existing cost structure and value chain. Overall, 62 percent of the traders in Dadaab and 50 percent in Kakuma mentioned they would be able to increase their supplies. Wholesalers are significantly more confident than retailers as shown in the graph below. Perceptions were consistent across the different supply chains.

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<sup>18</sup> *Market analysis to assist selection between response options in conditions of food insecurity, Alessandro De Matteis, 2010*

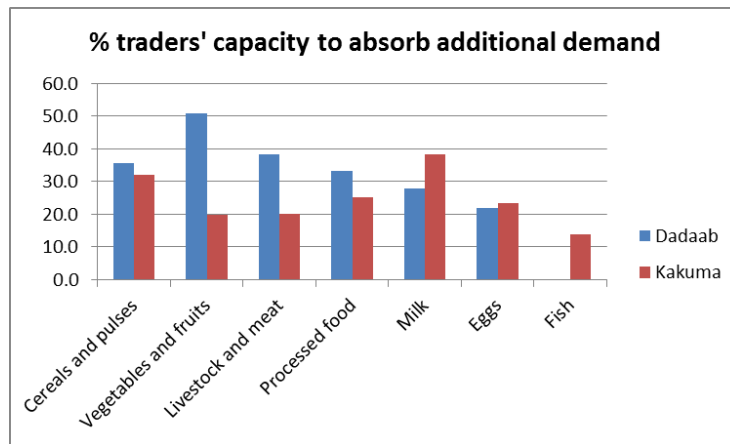
<sup>19</sup> *Using food aid to stimulate markets in pastoral areas, market assessment, into the EC Food Facility Programme in Northern Kenya, Alessandro De Matteis, Save the Children, March 2012*



Source: traders' questionnaire

These percentages are lower than the average in the Kenyan arid lands where overall 79 percent of the traders' believe they are able to serve increases in demand<sup>20</sup>.

The traders were also asked about how much increase in demand they can absorb using their current supply chain mechanisms. On average traders mentioned they can increase supplies by 36 percent in Dadaab and by 25 percent in Kakuma. The figure below shows the reported proportions of additional demand traders can meet by supply chain. This reported capacity is lower than the average in the arid lands where wholesalers can meet increases in demand of around 68 percent and retailers of around 54 percent. In comparison to these findings, the average reported capacity of wholesalers and retailers in the producing areas of Kenya is 93 and 83 percent, respectively.

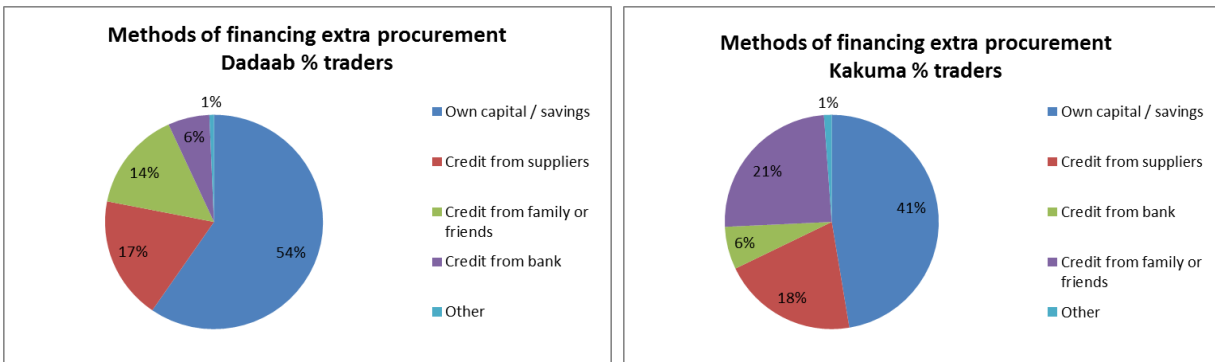


Source: traders' questionnaire

The traders were questioned about the methods of financing and storing the extra procurement if they need to increase supplies. The responses were consistent in both camps. Most of the traders would finance the extra supplies using their own capital. In Dadaab the most common source of credit would be advances from suppliers followed by credit from family and friends, and credit from banks. In

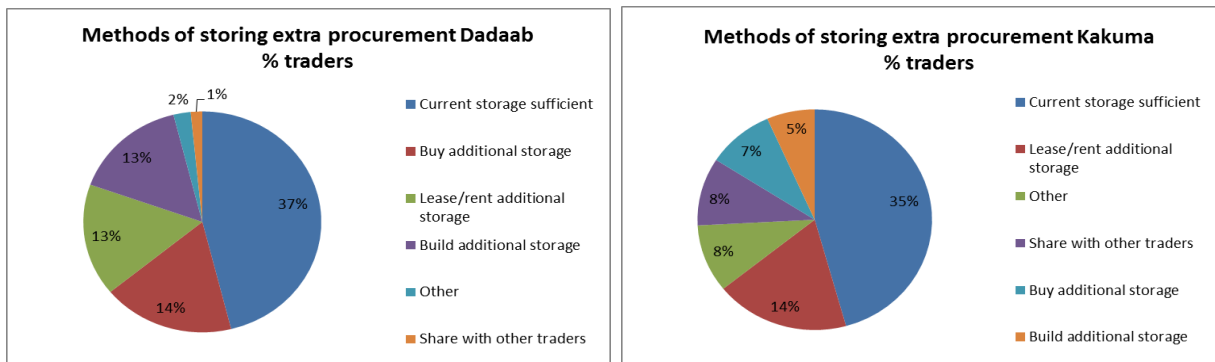
<sup>20</sup> Market dynamics and financial services in Kenya's arid lands, WFP Kenya, 2013

Kakuma credit from friends appeared to be the most important credit source, followed by credit from suppliers and credit from banks.



Source: traders' questionnaire

As for the methods of storing the additional supplies, the majority of the traders in both camps responded that their current storage capacity is sufficient. This is followed by buying, building and renting additional storage in Dadaab and by renting, sharing and buying in Kakuma.



Source: traders' questionnaire

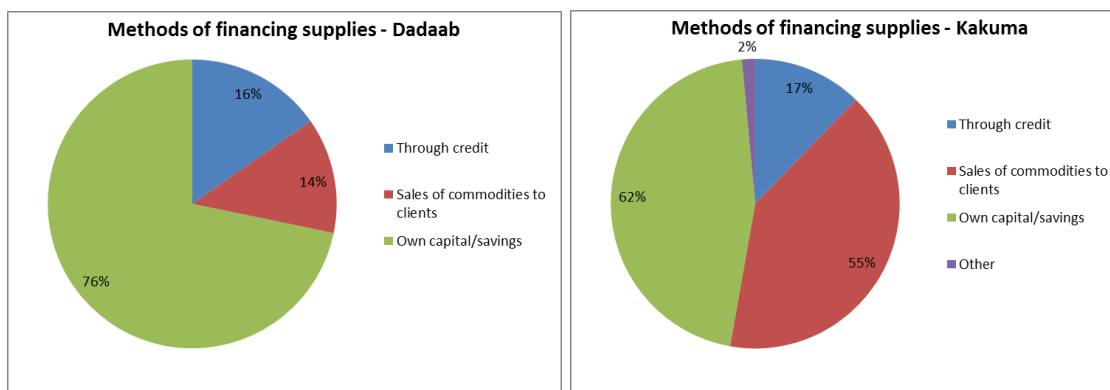
## Analysis of proxy indicators of traders' response capacity

The following section includes a basic comparison of a set of variables that serve as proxy indicators for traders' response capacity.

### Access to credit

Most of the traders finance their supplies either with their own capital or from the sales of commodities to clients. Access to credit is very poor in both camps. Only 16 percent of traders in Dadaab and 17 percent in Kakuma have access to some form of credit.





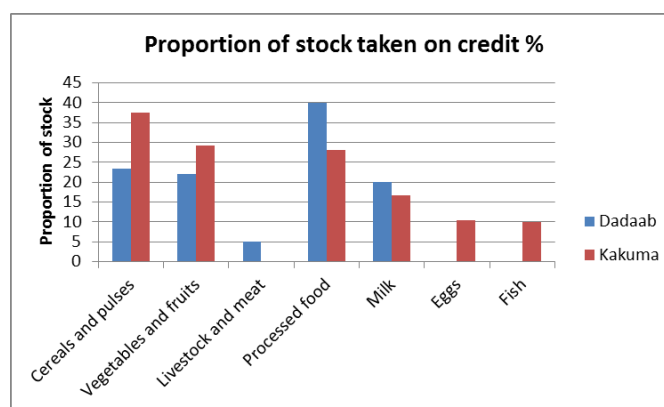
Source: traders' questionnaire

The table below shows the different types of credit traders regularly use as a percentage of the total number of traders interviewed. The most common source is advances from suppliers. The use of banks is marginal, and most of the alternative sources of credit are informal and also very low.

Type of credit and % traders - Dadaab	
Advance from wholesalers/suppliers	9.4%
Merry go round	4.4%
Bank	1.3%
Friends or family within the camp	1.3%
Type of credit and % traders - Kakuma	
Advance from wholesalers/suppliers	7.6%
Friends or family within the camp	5.6%
Trader's association	3.5%
Friends or family from across the border	2.0%
Bank	1.5%
Other traders	1.0%

Source: traders' questionnaire

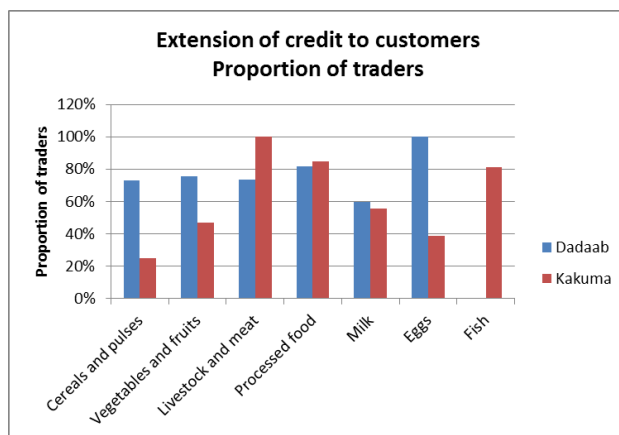
The graph below shows the proportion of stock taken on credit by the traders. Overall imported commodities are purchased on credit more than the locally produced ones, which can be explained by the higher role of wholesaling in these kind of transactions.



Source: traders' questionnaire

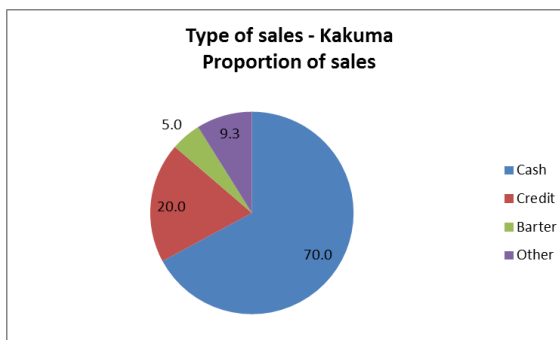
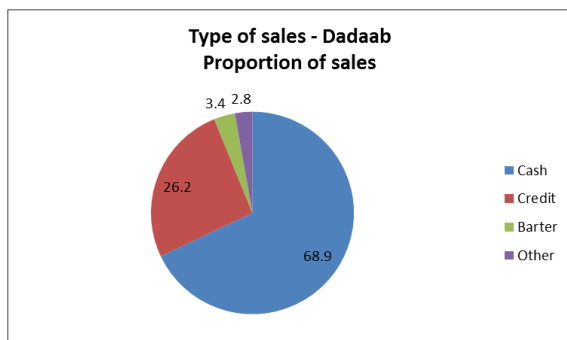
## Extension of credit to customers

Seventy-six percent of the traders in Dadaab and 46 percent of the traders interviewed in Kakuma extend credit to their customers. The table below shows the proportion of traders by supply chain. On average, livestock and meat, and processed food appear to be the supply chains with the highest proportion of traders selling on credit.



Source: traders' questionnaire

The charts below illustrate the proportion of sales made in cash, credit and barter by those traders who do extend credit to their customers. Most of the sales are made in cash in both camps, 69 percent in Dadaab and 70 percent in Kakuma. Credit constitutes 26 percent of the sales in Dadaab and 20 percent in Kakuma. The use of barter is very low in both camps, 3.4 and 5 percent. The average repayment period is 30 days in Dadaab and 20 days in Kakuma.

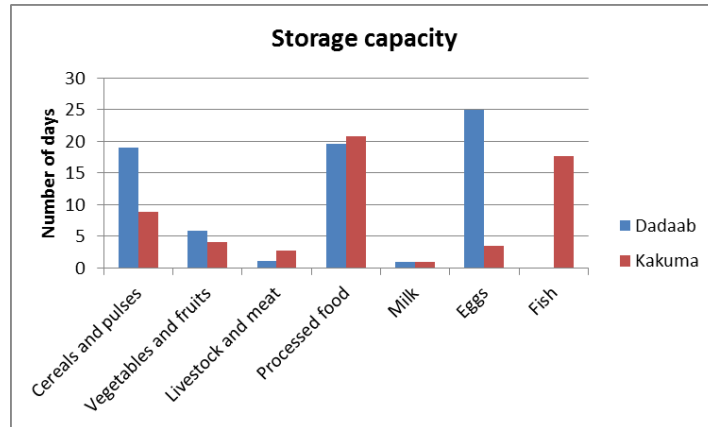


Source: traders' questionnaire

## Storage capacity

The storage capacity of traders was assessed in terms of number of days of supply they can store. As expected, due to the poor infrastructures in the camps and the lack of electricity, durable commodities such as cereals, pulses or processed food can be stored for quite longer than perishable foods. The relatively high number of days of storage of fish in Kakuma is due to the fact that fish is mostly traded in

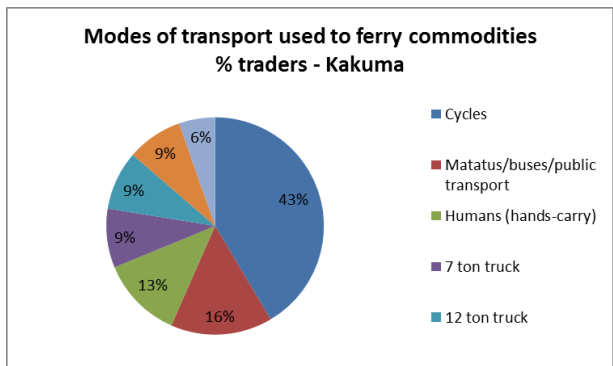
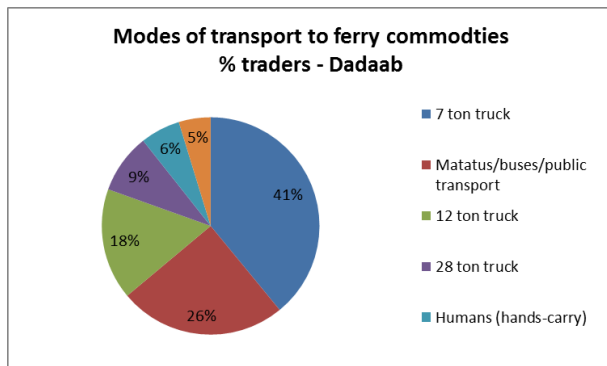
its dry variety. The sharp difference between the two camps in the storage periods of eggs is explained by the different wholesaling capacity of Dadaab and Kakuma towns, and the different resupply schedules (see below).



Source: traders' questionnaire

### Transport capacity

The modes of transport used by traders to ferry their food commodities from the supply markets is clearly influenced by the different supply chains and wholesaling arrangements. While it may appear that the traders' transport capacity is higher in Dadaab than in Kakuma, the higher tonnage of the vehicles used in Dadaab is due to the fact that commodities are, in most cases, transported from faraway locations like Garissa or Thika; while in Kakuma commodities are very often supplied in the nearby Kakuma town<sup>21</sup>.

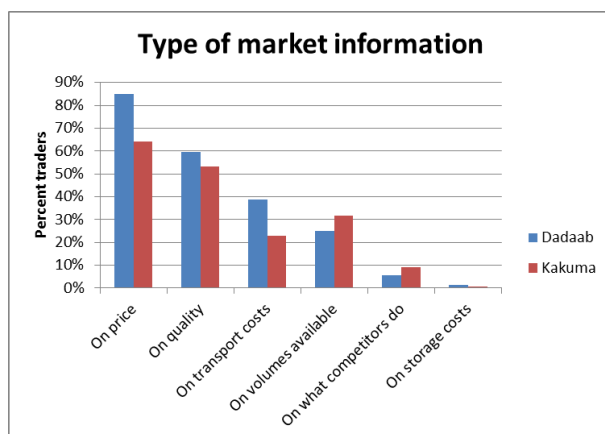


Source: traders' questionnaire

<sup>21</sup> Percent in the charts add to more than 100 because traders were allowed to provide multiple answers to the question about modes of transport.

## Access to market information

Ninety-two percent of the interviewed traders in Dadaab and 69 percent in Kakuma mentioned they have access to some form of market information. The types of market information accessible to traders are the same in both camps: prices, food quality, transport costs and volumes available.



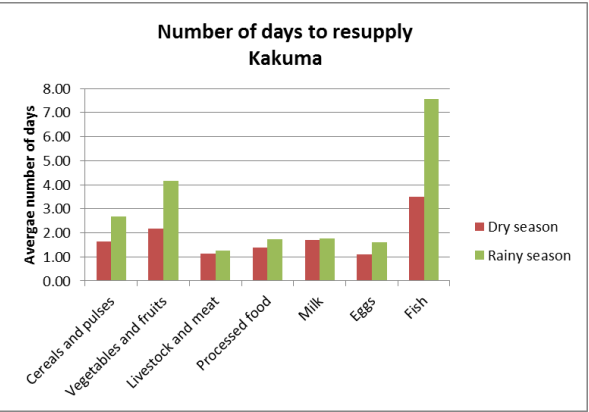
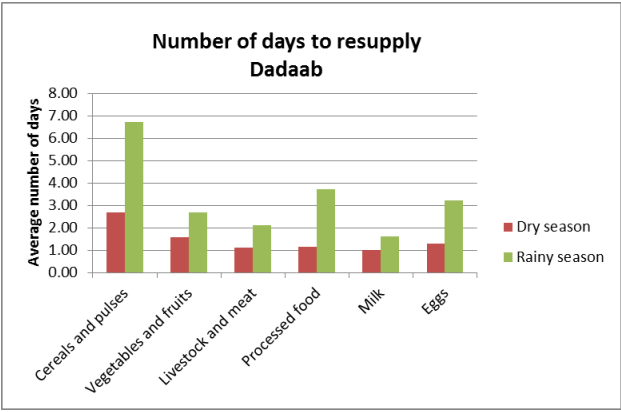
Source: traders' questionnaire

The most important sources of information in both camps are suppliers and wholesalers, the radio and traders' associations.

## Resupply capacity

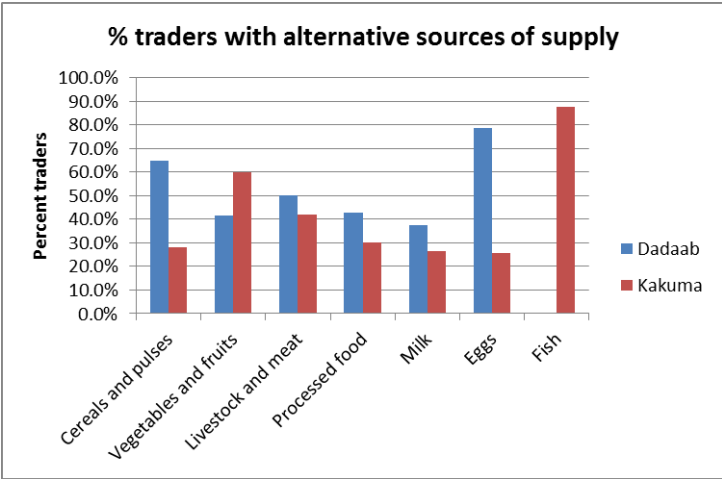
As expected, the resupply schedules of perishable products are much more frequent than one of more durable commodities. The majority of the traders in Dadaab resupplies cereals, pulses and processed food fortnightly or monthly, eggs three times a month, vegetables and fruits once or twice a week, and meat and milk daily. Kakuma follows the same patterns, though the higher wholesaling capacity of Kakuma town compared with Dadaab town, appears to have an impact in the resupply schedules of durable commodities. Cereals and pulses are mostly resupplied weekly or fortnightly, processed food monthly, eggs once or twice a week, vegetables and fruits twice a week, milk twice a week, meat daily and fish once or twice a month. While a frequent resupply schedule is indicative of readiness to increase supplies, it also reveals a poor storage capacity. As mentioned earlier, reportedly some large cereals and beans traders have the capacity to stock supplies in preparation for supply cuts during the rains, which is advantageous in view of the planning of market based interventions.

The graphs below show the differences in resupply time during the dry and the rainy season. The average resupply times in Dadaab are 1.5 days during the dry season and 3.3 days during the rainy season. In Kakuma the resupply times are 1.8 and 3 days during the dry and rainy seasons respectively.



Source: traders' questionnaire

On average, 54 percent of the traders in Dadaab and 42 percent in Kakuma mentioned they have an alternate source of supply for their most important commodities. The tables below show the proportion of traders with alternative sources of supply in both camps. With the exception of vegetables and fruits, the proportion of traders with alternative sources of supply is higher in Dadaab than in Kakuma, which could be explained by the more challenging supply conditions during the rains in Dadaab. It is interesting to note the significant difference between the two camps in the proportion of traders with alternative sources of cereals and pulses.



Source: traders' questionnaire

Traders dealing with livestock and meat, and with vegetables and fruits resort to different supply sources during the rainy and the dry seasons. The rest of commodities are, in most of the cases, supplied by the same source throughout the year.

Traders were also questioned about the most important factors they take into consideration when deciding which suppliers to use. Price and quality, followed by distance to the supply markets were the main factors both in Dadaab and Kakuma camps.

## Quality checks

The large majority of the traders in both camps, 99 percent in Dadaab and 96 percent in Kakuma, reported they check for quality when procuring food commodities.

## Business administration capacity

The following section provides an analysis of the traders' operational capacity in terms of access and use of payment methods, hardware, accounting etc.

### Electronic devices in use for business

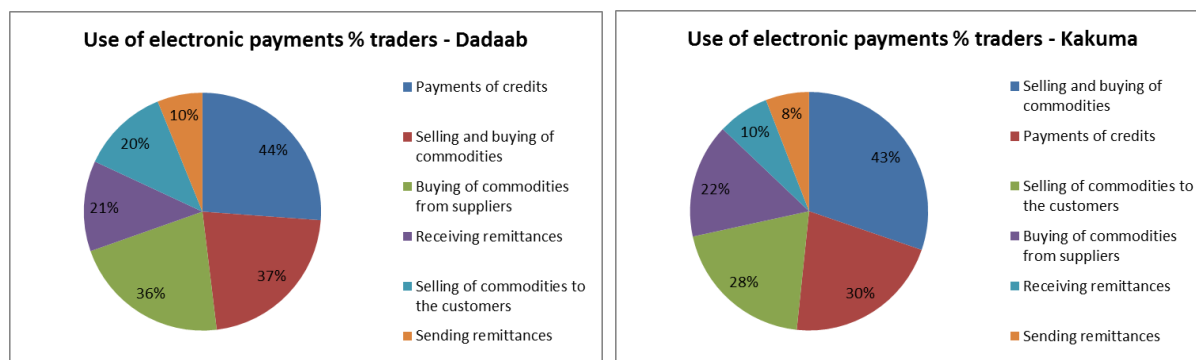
The only devices in use by a significant proportion of the traders are calculators, 61 percent of the traders in Dadaab and 43 percent in Kakuma, and mobile phones, 58 percent of traders in Dadaab and 66 percent in Kakuma.

The mobile phone network in use by the large majority of the interviewed traders who have access to mobile phones is safaricom.

### Use of banks and mobile money services for transacting

The number of traders with bank accounts is relatively low in both camps. Thirty percent of the traders in Dadaab and 28 percent in Kakuma stated they have an account. Most of the traders in Dadaab have their accounts in Equity bank; in Kakuma the presence of banks is more evenly divided between KCB and Equity.

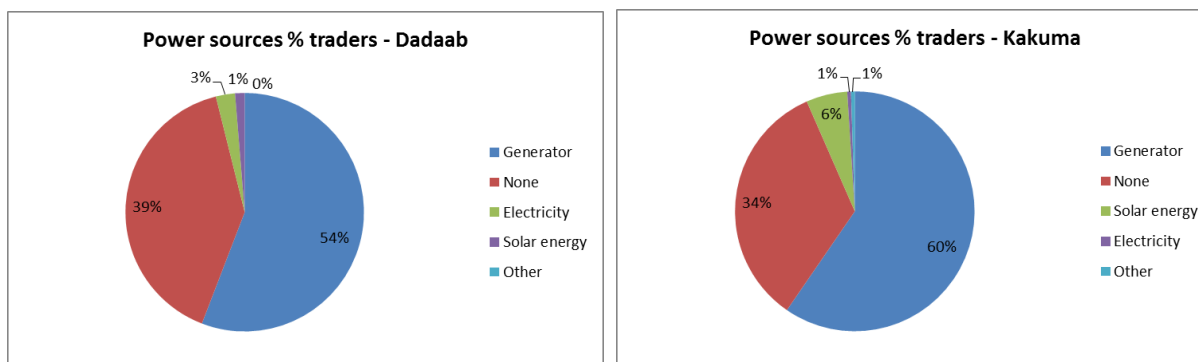
The diagrams below illustrate the various uses of mobile money transactions in the camps. The most common transactions are payment of credits, and selling and buying commodities. All the reported transactions are made through the M-Pesa mobile money service.



Source: traders' questionnaire

## Power sources

The most typical source of power in both camps is generators, 54 percent of the traders in Dadaab and 60 percent in Kakuma. Thirty-nine percent of the traders in Dadaab and 34 percent in Kakuma do not have access to any source of electricity.



Source: traders' questionnaire

## Book keeping

Accounting systems are rudimentary in both camps. The reported number of traders that keep books and record of their transactions was larger in Dadaab, 84 percent, than in Kakuma, 37 percent.

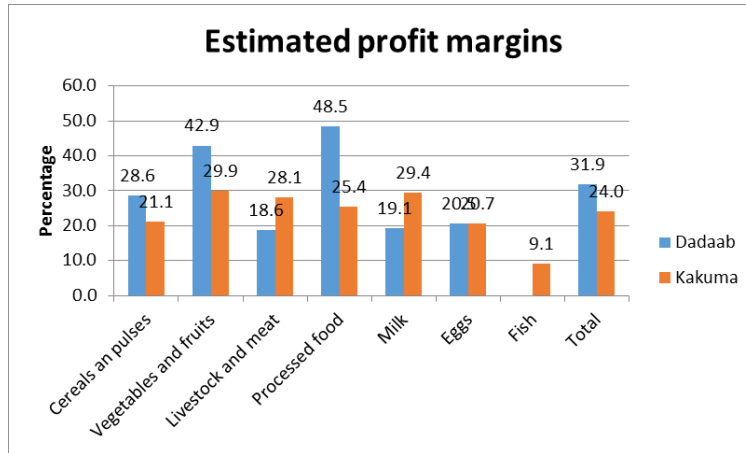
## Length of time in business

Lastly, the number of years the shops have been operating can be an indicator of the strength of the traders' business relationships. Although both camps were established more than twenty years ago, the average number of years shops have been operating in Dadaab, 7.5, is higher than in Kakuma, 4.

## Prevailing profit margins in the market

Profit margins are an indicator of dominant traders' behavior and hence of the degree of competition in the market. In a low purchasing power area, excessively high margins also reduce the capacity of customers to meet their basic needs.

Traders are usually reluctant to answer questions related to their business costs, turnovers or profit margins. In order to reduce the sensitivity of the question, traders were requested to assess the typical profit margin in the market. The tables below illustrate the responses by supply chain. Profit margins are on average higher in Dadaab, 32 percent, than in Kakuma, 24 percent. By supply chain, the highest margins are made by traders dealing with processed food and vegetables and fruits in Dadaab, and by traders dealing with milk, vegetables and fruits and meat in Kakuma.



Source: traders' questionnaire

## 9. Cost-efficiency of transfer modalities

This section aims to compare the cost-efficiency of different transfer modalities, i.e., in-kind vs. voucher or cash transfers in the refugee camps. Cost efficiency is defined as the relationship between the programme's full costs and its outputs. It refers to an analysis of the costs of alternative transfer modalities in monetary terms, in order to use available resources as efficiently and effectively as possible.

For the in-kind modality the procurement value and logistic costs<sup>22</sup> to transport the commodity to the respective market are considered, while for cash or vouchers the local market price at the time of the survey is used. The WFP delivery costs were provided by the various WFP Kenya CO units, while the market prices are an average of the data obtained during the field data collection and the price data collected by Dadaab and Kakuma field offices. The details of the calculations are shown in annex II

At the time of writing 80 percent of the cereals distributed in the camps were internationally procured (mostly sorghum) and 20 percent locally procured (maize). Out of this total, 100 percent of maize, the most commonly available cereal in Kenya, was locally procured. Similarly, the only pulses purchased and distributed were internationally procured yellow split peas, a commodity that is neither available in the local market. This circumstance poses a dilemma for a pairwise rate comparison of WFP delivery costs with the market value of a potential cash distribution. In view of this, two scenarios are presented in this analysis: 1) actual WFP delivery costs in the refugee camps (sorghum, maize, beans<sup>23</sup>, vegetable oil and salt) vs. the market value of the most commonly available commodities in the market (maize, beans, vegetable oil and salt) and 2) WFP delivery costs of the equivalent to the most available food basket in the market vs. the market value of the most commonly available commodities in the market (maize, beans, vegetable oil and salt in both cases). The first scenario takes into consideration the current

<sup>22</sup> The logistics costs are composed of transport, storage and handling, quality control and salaries for logistics staff.

<sup>23</sup> WFP distributes other pulses and cereals in the form of flour, but in order to simplify the analysis and considering that beans is the most commonly available pulse in the market only this commodity is considered in the analysis.



international and local procurement of cereals and beans, while the second is based only on the local procurement of these commodities. In both cases, all salt is locally procured and all oil internationally procured.

In both scenarios the comparisons are made based on the total food basket and by commodity, see table below.

Food basket per person per day for a 15 days cycle	
Cereals	420 gr
Pulses	60 gr
Vegetable oil	35 gr
Salt	5 gr
CSB (not included in the calculations)	40 gr

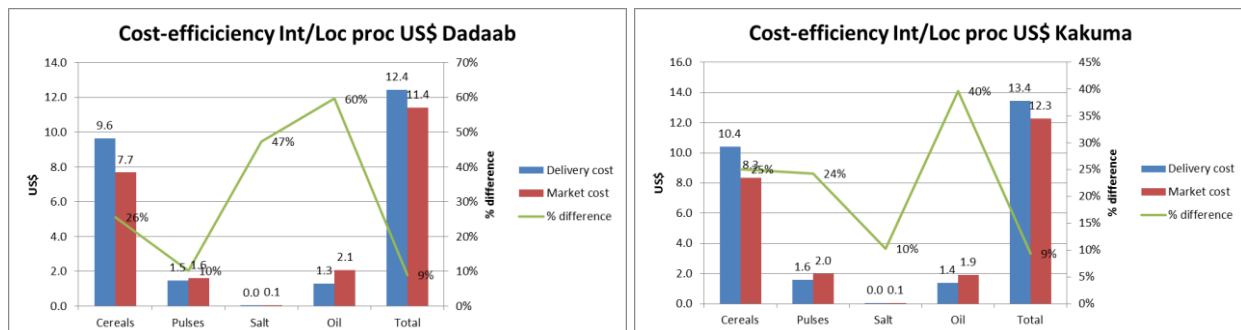
Source: WFP Kenya CO

The following limitations apply to the presented cost-efficiency analysis:

- 1) Time series of all commodity prices are not available for the respective markets. Thus the study of seasonality effects is not possible.
- 2) Corn and soya blend (CSB) is not available in the market which prevents the comparisons of the entire food basket.
- 3) Costs that would occur for the distribution of vouchers or cash (ODOC/delivery costs) are not yet established. In order to enhance the comparability of results, cost-efficiency calculations were made excluding the operational costs from both the in-kind and the cash components. It is therefore recommended to integrate additional cost estimates when available and then conduct a more comprehensive analysis.

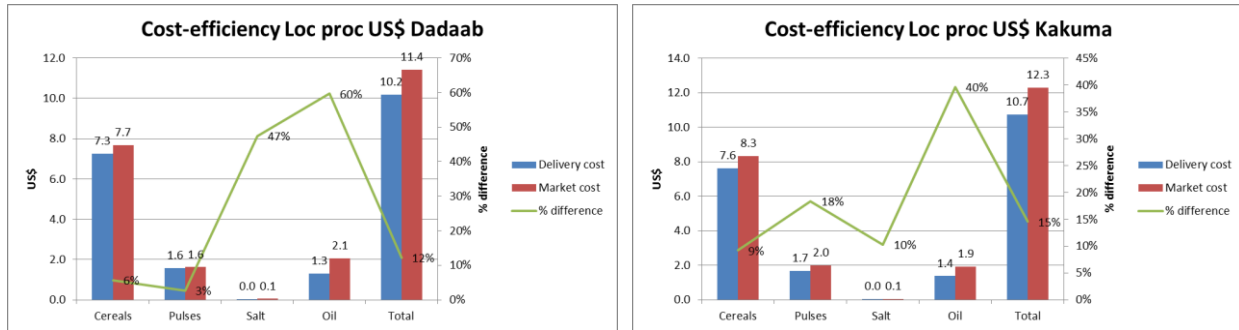
The below graphs illustrate the cost-efficiency calculations results by commodity and for the total food basket (excluding CSB)<sup>24</sup>.

### International and local procurement



<sup>24</sup> Delivery cost: procurement and logistics costs for WFP to deliver food to the camps. Market costs: cost in the local markets of the equivalent commodities.

## Local procurement



Source: WFP Kenya CO and field data collection

Under the international and local procurement scenario, the delivery costs for WFP are higher than the market costs in Dadaab and Kakuma by 9 percent. By commodity however, only the delivery costs of cereals are higher than the corresponding market costs, being the market costs of pulses, salt and oil higher in both camps.

Considering only local procurement of cereals and pulses the overall results are different. The market value of the full basket is higher both in Dadaab and Kakuma by 12 and 15 percent respectively. By commodity, all market costs are higher than the equivalent delivery costs by various percentages as indicated in the graphs above.

## 10. Gender dynamics in the refugee setting

Humanitarian emergencies caused by war or natural disaster have profoundly different impacts on different genders. Women, men, boys and girls are affected in different ways by crisis and emergencies, and have different capacities for coping with and preparing for these situations.

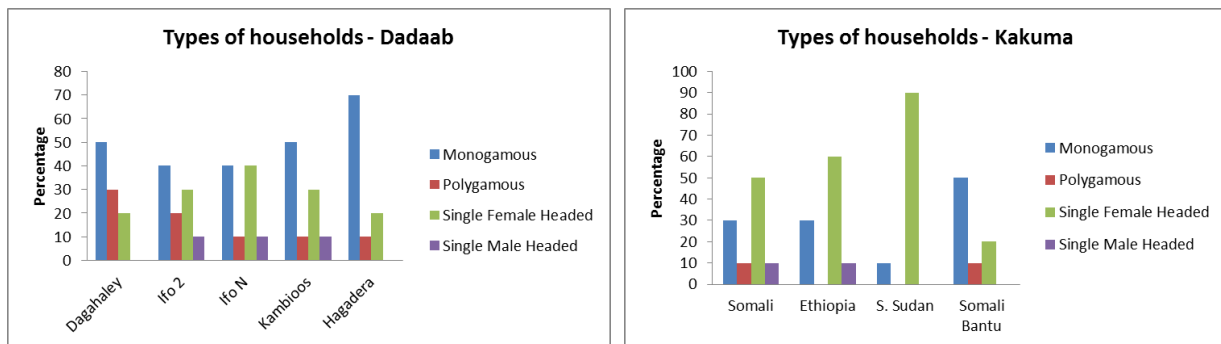
For effective and efficient programming it is crucial to understand the gender differences and gender roles within the targeted communities, to have a clear picture of how the role and status of men and women in different contexts would affect the interventions and how different food assistance options would affect these roles. When cash or vouchers are used to improve food security, it is critical to understand the role of men and women in decisions related to household expenditures.

The objective of this section of the study is to explore and better understand the decision making typologies among the different households in the refugee setting and the different gender roles that inform decision making processes at the household level. Furthermore, this section also provides an analysis of on household's spending habits including consumption of *khat* or alcohol.

## Household typology

Household refers to a person or group of two or more related or unrelated people who usually reside in the same dwelling, and who make common provision for food or other essentials for living. The household therefore is one of several social units that determine production, consumption, and investment decisions. Different types of households are likely to operate from different resource bases and face different incentives and constraints.

The most common household types in all the subcamps within Dadaab refugee camp are monogamous with the highest representation in Hagadera, followed by Dagahaley and Kambioos. This is followed by single female headed households with majority being widows in Ifo N and polygamous households being higher in Dagahaley. Single male headed households were few as men were reported to re-marry. Child-headed households were not found as they are placed under foster care of other families. Polygamy is commonly practiced in Somali culture, however within the camp setting the men said it was expensive maintaining more than one family with the limited resources.



Source: Focus groups interviews

The most common family setup in Kakuma is single female headed household especially among the South Sudanese community as shown in the table below, indicating 90 percent of households. Women reported of losing their husbands to war or leaving them behind fighting. This is closely followed by Ethiopia at 60 percent and Somali at 50 percent. Monogamous family setup is common among the Somali Bantu at 50 percent. Somali community mentioned divorce has also contributed to single female headed households. Polygamy is practiced but not so common at 10 percent among the Somali and Somali Bantu communities. Male headed households were reportedly few at 10 percent in both Somali and Somali Bantu respectively; with women reporting that men mostly re-marry. Child-headed families did not arise as UNHCR and implementing partners Lutheran World Federation (LWF) place them with foster families.

## Household decision making

In the two camps, women make decisions related to household expenditure such as what food to buy, when to go to the market, when to seek health services or buy clothes for the family. For those in monogamous or polygamous families, the men give them some cash for household use.

In Dadaab, the men and women focus groups reported that it is the responsibility of the women to manage and take care of the home. For daily household expenses, they do not have to consult with a male participant saying “...*the money is so little and it is given to the wife as she knows the needs of the family*” (Food Advisory Committee, male member).

The Sudanese women in Kakuma Refugee Camp reported that they have to put all the day’s income on the table for discussions with the husband on how to spend it. They budget together even for purchase of food items or clothes.

Single female headed households (in both camps) make the decisions without consulting.

However on matters regarding business investment, in all the groups interviewed, married women consult their husbands while the single women consult relatives (parents or siblings) before investing.

Men on the other hand sometimes consult their wives, with women stating that those who do not drink or are educated consult them. They consult them on how much is needed for household expenditure such as food, how much to save and how much each can take for personal use. This was evident in the two camps.

### Household cash income contribution

In Dadaab, it was reported that where men are able to find work, their share of household income is higher than that of women. “*This is our culture and religion, a woman does not have to share what one has. It is the man to provide*” (FGD in Dadaab). Key informants in Dadaab reported that a man’s contribution can be approximately 70 percent and a woman’s contribution approximately 30 percent.

Women’s income is spent on her family to buy food, clothes, mobile phone airtime and beauty products. However, women from the minority communities in Dadaab said: “*beauty is a luxury and not a priority when the cash is so little*” Men spend their cash on family expenses, paying herders for those with goats (as they can put all of them from different households and hire one herder to go and graze), and buying *khat*.

In Kakuma, women reported engaging in various income generating activities as it is more difficult for their husbands to find work or make some decent money. Those who are able to work contribute approximately 40 percent from various activities (cooking, washing clothes for others and selling of firewood).

Women in the Somali Bantu community in Kakuma reported participating in merry go round (called *Mavuno*) where members contribute approximately 100 Ksh in some group and others 500 Ksh (depends on the ability of the members), and the cash is given to one member. They take turns until everyone has received the contribution per cycle. In some groups they are also able to borrow cash and repay with interest. Twenty percent of women from the same community also reported getting financial assistance by an NGO to start small businesses after being trained and developing business proposals.

### **Debts and repayments**

In both camps, it is common to take food items and other non-food items from the local shops or from friends and neighbors on credit. In monogamous or polygamous setups, where both men and women do not have any income, they borrow food items from neighbors, relatives or take on credit from the shops. The man makes the decisions for borrowing in terms of how much to borrow and women go to the shops for the credit. From the shops they can borrow food and other items while from relatives they borrow food only. The food is paid in-kind to relatives and neighbors, after they receive their rations from WFP, and paid for in cash to the local shopkeepers. In Kakuma, it was noted that when a man does not have any income, they borrow from neighbors and shops.

In both camps participants reported consulting before incurring debts. In the Somali community in Dadaab, the women will have the debt written in the husband's name with his consent at the local shop. The husband will then ensure the debt is repaid. He may pay directly or send his wife to pay. Sometimes they repay the debt in full or in part with the approval of the shopkeeper.

Single female or male headed households borrow food from relatives and neighbors. In one of the FGDs in Kakuma, it was reported that some single mothers resort to commercial sex work in order to feed their children (this being a sensitive topic the women did not want to divulge much when probed the possible number of women engage in commercial sex).

### **Livelihood activities**

In using participatory approach, the Daily Activity Clock (12 hour o'clock), the participants in the focus group discussions were able to illustrate all the different kinds of activities carried out within twelve hours by men and by women. Each of the interviewed group gave their own general activities as well as those of the opposite gender. The comparisons between women's clocks and men's clocks showed that women work longer hours as they have little time for relaxation. They asserted that majority of them relax over the weekend when the children are not going to school.

Women activities can be classified as triple roles namely: reproductive role - child bearing/rearing responsibilities and domestic tasks e.g. cooking, cleaning house and compound or washing clothes; livelihood activities for cash income such as cooking and selling of food, collecting firewood and water for sale or managing small shops; and community roles which may include providing counseling services, or participating in village politics. Men activities on the other hand are classified into multiple roles and

include small to medium businesses, drivers, traders, mechanics or carpenters; and community roles such block leaders or leaders in the food advisory committees.

According to the 2012 UNHCR/WFP Joint Assessment Mission Report (JAM), there were approximately 6,000 employed refugee workers in Kenya with a salary range of 4,000 Ksh for unskilled worker and 10,352 Ksh for highly skilled workers. The Kenyan Law does not permit refugees to work or accept employment contracts.

In a focus group discussion with men in Kambioos camp (Dadaab), participants reported that it is hard to find work as there is no market where they can go offer their services as casual laborers. Overall in Dadaab and Kakuma camps the younger men (30 percent younger men compared to 20 percent older men in Dadaab and 20 percent younger men compared to 10 percent older men in Kakuma) are able to offer skilled labor (as carpenters, masonry, welders, etc.) and unskilled labor such as loaders. Dadaab has more organizations and hence the ability to engage more refugees as incentive workers.

The older women, 20 percent, are able to get casual labor as house servants and provide cleaning services for others to earn an income in Dadaab. In Kakuma the women complained that jobs have reduced when compared to the past. Ethiopian women focus group reported that before they would get jobs to cook approximately four times a month but this has reduced to almost none (once or twice in a long while). The Ethiopian women reported finding it had to get employed due to language barrier as majority in their community do not speak English or Swahili. Hence most of them cook and sell within their homesteads.

### **Dadaab camp**

The women reported waking up as early as 6.00 am and tending to household chores (preparing children for school, preparing breakfast, fetching water and cleaning the house) before going to work on small businesses or look for casual work. Ninety percent of the women interviewed engage in some form of income generating activities, as shown below.

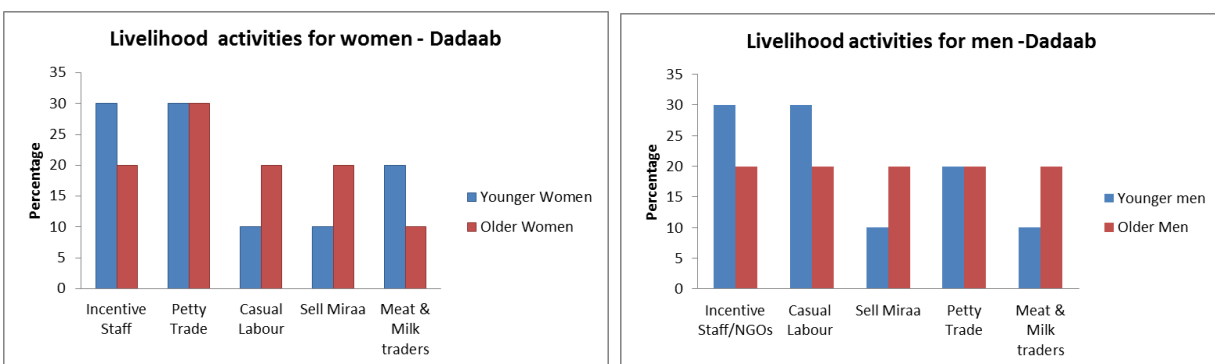
Men tend to wake up later than women apart from the Somali community where they have 5.00 am prayers in the mosque. After morning prayers, those with goats will take them out to graze after taking breakfast. Others go to look for work or to their businesses. Thirty percent of the men interviewed reported going to the bush/forest to look for firewood to sell and may take up to 3 days before returning.

Men reported that for the majority, it is hard to get capital to start small businesses or get jobs within the camps. This was mostly reported by participants in Kambioos where they said they do not have a market and the minority communities. In the focus group discussion with the minority communities men reported taking up gender roles such as cooking breakfast or fetching water to keep busy, which they said was not their role back home (country of origin).

*“We stay and help at home to keep busy. There is a poster in the camp of men without arms and legs, that’s just us, we cannot get work” (Dadaab Minority Group FGD).*

In IFO 2, men reported going to fetch firewood as its unsafe for women. They may be attacked or raped while out in the bush.

Income generating activities constitutes an important source of household income supplementing family incomes. Men and women engage in activities that contribute to the household income. Thirty percent of the participants (young and older women) interviewed reported buying and selling of meat and milk within the camp, with younger women being more involved. Twenty percent of both younger and older men in the focus group discussions also reported trading in meat and milk. They buy from the host community who are mainly pastoralists, or other traders within the larger camp and subsequently sell within their camps. Refugees also have livestock in the camps and they use these herds to diversify their rations or for income generating purposes.



Source: Focus group discussions

In the groups interviewed 30 percent of the younger and older women were involved in small petty trading. Among the men, the older men are more involved in businesses as some operate transport services (taxis, *'boda boda* and *matatu*) and own more business than the younger men: restaurants, internet cafes, butcher shops, mobile phone shops, hotels, barbershops, electricity suppliers, second-hand motor vehicle dealers, *khat* sellers and money transfer services.

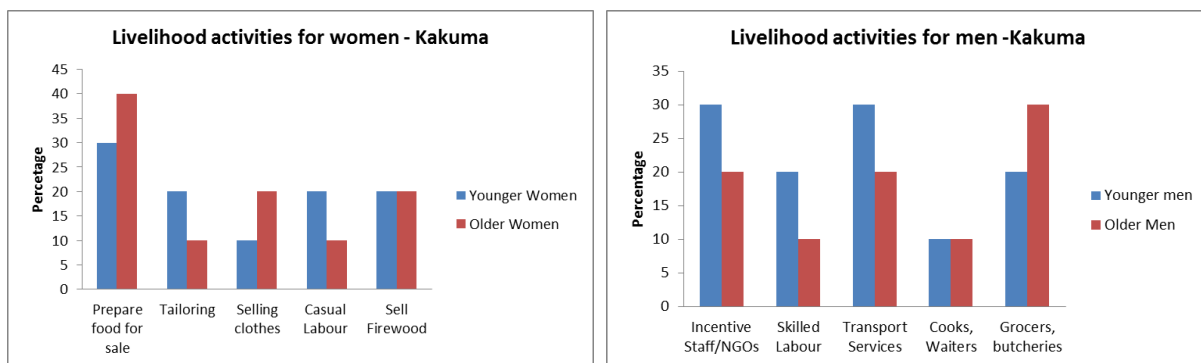
Women are involved in small businesses which include selling milk or meat, small grocery shops, selling clothes, fetching and selling water or firewood. The women also cook in hotels or cook and sell within their homesteads (cook *chapati* and *maadanzi*), do tailoring and washing of clothes for others to earn some income.

### Kakuma camp

The women reported waking up as early as 5.00 am especially in the Ethiopian community to prepare food for sale (*injera*, *chapati* and *Maandazi*). Women from other communities (Somali, Somali Bantu and Sudan) reported waking up at 6.00 am to prepare breakfast for the family and prepare the children for school. In Kakuma, the women start fetching water from around 6.30 am from the piped watering points within their blocks. The water is available at different times in each block setting. They clean the house and the compound before proceeding to open their small businesses. All the women participants interviewed engage in some form of income generating activities, as stipulated below. Eighty percent

reported going to the market in the afternoon to buy food for the family or for the businesses, fetching water and firewood and preparing the family evening meal. The Ethiopian women interviewed reported cooking a lot in the morning session (for those who cook and sell) or cooking at lunchtime enough to be eaten in the evening as well. In the evening before sleeping the Ethiopian and Sudanese women reported they prepare the dough for early morning cooking, before retiring to bed.

Cooking and selling of food was common between women in the camp. Forty percent of the older women and 30 percent of the younger women were involved in preparing food and selling to the restaurants or small hotels and others selling from their houses. The most common type of food they prepare is the Ethiopian *injera* as well as *chapati* and *maandazi*. Other income generating activities include tailoring, domestic cleaning services for others and fetching and selling of firewood at an average of 20 percent for each group interviewed.



Source: Focus group discussions

Approximately 30 percent of the younger men are able to get jobs as incentive workers within the camp, and 20 percent providing skilled labor such as mechanics, electrician and carpenters. Thirty percent of the younger men are involved in transport business as drivers (taxi or boda boda). The older men are involved more in having shops for groceries, meat or stationery shops. Ten percent of those interviewed are working in restaurants as cooks or waiters.

Other businesses available for both men and women within the camps, are primarily groceries or food stores, *khat* traders, clothes and shoes sellers, milk traders, telephone or electricians, hotels, restaurants, etc. Unlike in Dadaab, the groups interviewed in Kakuma did not report trading in *khat* although they reported taking it. However, majority of men in Dadaab and Kakuma camps reported that it is difficult to find work.

Overall, women look for diverse income generating activities to supplement assistance provided in the camps when compared to men. A common statement in the focus group discussions with men was that “it is difficult to find work” whereas women will look alternative ways to get an income (e.g. provide cleaning services for others, cooking and selling of food). Dadaab has more diversity than Kakuma in terms of livelihood activities that men and women engage in.



## **Cross-cutting issues in both camps**

### **Sale of WFP Rations**

Sale of WFP rations was common in both camps however more pronounced in Dadaab. In Hagadera Dadaab camp, women have merry go round groups (informal groups of 10 members) where they give a nominated member an agreed amount of food ration which she sells to get cash. This goes on until all the 10 members have had their turn. Also in Hagadera, they reported bartering the food received with other items such as milk and meat with shop keepers.

In Kakuma, in a focus group discussion with women from the Ethiopian community, they complained that their food access have drastically reduced after the introduction of biometrics. This used to assist the women to have more food for the family and for sale. In Kakuma the women reported selling some portion of the sorghum in order to get cash for milling the remaining portion.

All refugees receive WFP food rations every two weeks.

### ***Khat (Mira)* trading**

In Dadaab the older women were reported to engage in selling of *khat* when compared with younger women. Out of 3 traders who were willing to be interviewed, 2 were women. Due to security reasons the team could not venture into the markets but was able to interview 3 within the premises where the focus group discussions were taking place.

In Kakuma, traders were more willing to share information on *khat* trading. Majority of their clients are men at approximately 90 percent with a few women buying and taking it in hiding. Key Informants reported that it is against their religion to consume *khat* and even worse for the women if seen taking it. Those who take do so in their houses.

### **Remittances**

Financial assistance amongst Somali refugees in the Dadaab camps, and regional remittance flows between the camps and Somali homelands, the diaspora or Nairobi are important sources of cash in Dadaab.

The Somali participants interviewed in Dadaab reported receiving remittances from family and friends in the diaspora, although they declined giving approximate amount received in a month. Men reported giving 70 percent of the remittance to their wives for household use and keeping 30 percent for personal use (buy clothes, *khat*, and airtime for their phones).

In Kakuma, both the Ethiopian and Somali communities reported receiving some financial assistance from relatives and friends in Nairobi, the diaspora or the countries of origin.

## Relaxation

Men are able to find time to relax in the evening while the women prepare dinner for the family. This was found to be common in both camps. Women relax during the weekends when the children are not going to school. They visit friends and relatives, go to the salon if they can afford it or rest at home.

Majority of the men interviewed reported meeting with other men in the evening to catch up on local happenings. In such gathering they chew *khat* which helps them to relax while the younger men play games like football, listen to radio (BBC Somali channels and local camp radio stations) or read the Quran. The participants also reported that for those who are idle, they sometimes chew it all day to pass time.

*Khat (miraa)* chewing was mostly common among the Somali communities both in Dadaab and Kakuma. In the Ethiopian community a few men, 20 percent, were reported chewing *khat* and another 20 percent reported taking local brew “*changaa*” which costs approximately 10 Ksh per glass. However, it was noted that there were administrative government efforts to eradicate the brewing of the alcohol. Among the Sudanese community in Kakuma, 10 percent of men were reported to taking “*busaa*” or “*changaa*”.

**Average costs of *khat***

Types of <i>khat</i>	Dadaab (Ksh/kg)	Kakuma (Ksh/kg)
Lare	250	NA
Speciale	150	250
Gisa	200	500
Alenle	300	300
Kageta	500	1,000
Colombo	1,000	1,500

Source: interviews with traders and consumers

In Dadaab 70 percent of the *khat* clients are male youth aged 14 to 30 years, 28 percent are older men above 30 years and 2 percent are women. Those who work are able to buy the *khat* every day. On a bad day, they may take on credit or share with friends who can afford to buy. Very few women chew it and if they do, they do so in hiding as they may not find someone to marry them or get frowned upon.

Key informants in IFO N (Dadaad) stated that the Islam religion does not allow anyone to take it or sell it. Most people start while they are young (15 to 18 years) due to peer pressure. A key informant shared his experience. He stated that he chews it on Fridays and Sundays (when he does not work) spending 500 Ksh on a kilo of *khat*, 100 Ksh on cigarettes and 100 Ksh on tea which he uses to accompany the *khat*. When asked how one feels, he said: “*it is not good, it is like alcohol, one gets addicted and keeps taking because while taking one is happy and relaxed but the following day one has a headache!*”. The younger men chew the cheaper ones with majority, 80 percent, buying a kilo per day while 20 percent would receive a share from those who are able to buy. In an FGD with younger men in the Somali community, they talked of gathering in a place they have identified as a “jobless corner” or “relief

corner” as this is where those who are idle meet to eliminate the stress and discuss the problems they have.

Those who are addicted sometimes steal from people in order to get cash to buy it and reportedly become violent after chewing it. The traders talked of receiving approximately 25 to 30 kilos for sale per day from wholesalers or selling on behalf of someone and earning a commission.

In Kakuma, the majority of those who take *khat* were from the Somali community. In the Ethiopian community the 20 percent who were reported to take it did not chew it daily, only twice or thrice a week.

Ninety-five percent of *khat* clients in Kakuma are men. Traders complained that since the government banned night travel of public transport it now arrives in the afternoon and sometimes they are not able to sell the entire stock. On average the traders receive 30 kilograms per day (10 kg Giza and 20 kg special) and usually sell the entire stock during the day. A male trader in Kakuma camp called it a: *“social drug, people mix with others when chewing it. There is no violence as they chew but if those who are addicted miss it, they can be violent”*.

Women traders reported using the cash earned to buy food for the family. One trader informed the team that she gets a commission of 100 Ksh per kilogram sold.

## Conclusion

The gender dynamics in the refugee settings mainly revolved around three main themes: livelihood activities, relaxation and decision making. Generally, majority of the women engage in petty trade for them to earn a living though they have to wake up early and tend to household chores before going to work on small businesses or look for casual work. This translates into them working longer with little time for relaxation. The only days they find time to relax is on weekends when the children are not going to school. They would mainly visit their friends or relatives. Men on the other hand reported having difficulties in finding work. For the older men, they predominantly work as taxi or motorbike drivers. They are able to find some time in the evening to relax after work while the women prepare dinner for the family. The mode of relaxation basically involves meeting with other men to catch up on local happenings.

However, decision making in the household tends to be two fold where both men and women have to consult each other. For purchase of basic household expenditures such as food, clothing and health care, the women make the decisions on their own and purchase them. In both camps, food purchases were common and a priority in all the household types represented in the discussions. Market accessibility was not an issue of concern apart from Kambioos in Dadaab which did not have a functional market. However, the participants reported being able to make purchases from the neighboring camps.

# 11. Identified benefits and risks of a potential cash intervention

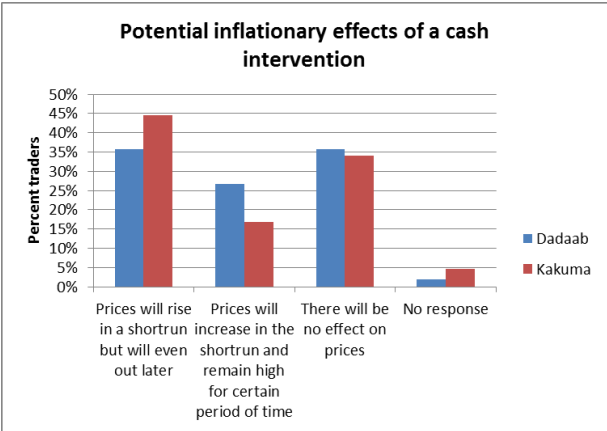
Key informants and traders were questioned on their perceptions of the benefits and risks of a potential cash intervention in the camps. The opinions were fairly consistent in both camps.

Among the identified benefits were the reduction of sales of WFP food in the market and the increased flexibility to meet other needs and preferred foods. Some informants mentioned however that they were afraid the amount of cash that would be distributed would not be adequate to buy enough food for the entire household.

Respondents also mentioned that cash interventions would help to stimulate the local economy and that if cash (vs. vouchers) was the selected modality that would attract more traders to the market.

As for the risks, key informants warned in both camps against the risk of opportunistic pricing or flash inflation among retailers, mostly at the onset of the interventions, and that wholesalers may be tempted to collude to rise prices. Some respondents in Kakuma argued that the current price of cereals and pulses is low because of the WFP food beneficiaries sale, but that if those supplies decrease the overall market prices will increase.

The traders’ perceptions about the potential inflationary effects of a sustained increase in demand generated by a cash injection are described in the graph below. Thirty-six percent of traders in Dadaab and 34 percent in Kakuma indicated that a demand increase would have no effect on prices. Around 60 percent of traders in both camps think that prices would increase in the short or the long run.



Source: traders’ questionnaire

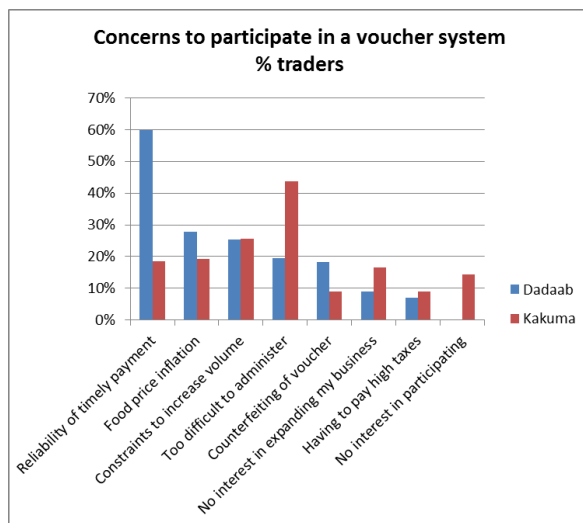
In Dadaab, the market committee in Dagahaley mentioned that due to the current specialization of traders in commodities not provided by WFP, increasing supply of cereals and beans can be challenging. According to the committee, cash transfers can work to allow refugees to buy meat, milk, sugar or vegetables.

Another concern strongly conveyed in both camps was the risk, especially among men, of using cash for buying *khat* and alcoholic drinks (in Kakuma only). A respondent in Kakuma strongly recommended vouchers over cash to mitigate this risk. He however argued that a problem with a voucher system is that small traders would not be able to compete with the large retailers in the camp.

A key informant in Dadaab mentioned that the risks of prompting corruption are higher with cash than with in-kind distributions.

In Dadaab, 76 percent of the interviewed traders reported that they would be interested in participating in a food voucher programme. In Kakuma this interest is much lower, only 25 percent of the traders. This gap in traders’ perceptions is attributed to the lack of understanding in Kakuma of how humanitarian market based interventions work as WFP has not piloted any voucher programme there, and the fear that they would not be able to meet WFP selection criteria to participate in the program. This perception was shared by key informants and some of the interviewed traders.

The traders were asked about the most important concerns they have when considering participating in a voucher system. In Dadaab the most important ones in order of importance are the reliability of timely payments, the increase in food prices and the constraints to increase volumes. In Kakuma the most important concerns are the difficulties to administer it, the constraints to increase volumes and the increase in food prices.



Source: traders’ questionnaire

## 12. Concluding remarks and recommendations

### Summary of the findings

#### Market structure

The only large scale locally produced commodities in the arid lands are livestock, milk and fish in the Turkana area. With that exception, most other food commodities are ferried from the main supply

markets in the Kenyan central region or imported from Ethiopia and Somalia. With the exception of livestock, and to a lesser extent cereals and pulses in Kakuma, the role of wholesaling in the camps is limited. In Dadaab camp imported commodities are mostly supplied by wholesalers in Garissa, Thika and Nairobi -or through informal trade from Somalia- which feed the camps without mediation in Dadaab town. In Kakuma camp, wholesaling is dominated by traders in Kakuma town, with Kitale being the most important remote source.

Informal cross-border trade is an important contributor to food availability in Dadaab but not in Kakuma. Liboi is the main entry point for items from Somalia in Dadaab.

The heavy dependence of local traders on external supply sources and the limited role of wholesaling can potentially undermine the multiplier effect of increased demand from a cash injection in the local economy. With the exception of livestock, milk and fish (in Kakuma) trade, which constitutes a small fraction of the overall food trade, only a small fraction of the price structure is captured by local retailers and the few wholesalers. The rest would be shared between transporters, and suppliers of other areas, including from the producing areas of Kenya

The type of commodities traded in camps is limited, reflecting the obvious influence of food aid distributions, the limited purchasing power and the food demand and consumption patterns.

The number of retailers in both camps is considerably high, and varies between seasons especially open air retailers, not posing any constraint to competition. Furthermore, there are no restrictions to the entrance of new traders in the market. While some key informants reported collusion in price setting by wholesalers dealing with imported commodities, the number of wholesalers in the supply markets is sufficient to guarantee adequate competition levels. There is also a sufficient number of transporters in the market, and hence competition is not a factor that negatively influences the final price of commodities.

Most of the traders in the camps are refugees, but the camps are not closed to local traders and a limited number do operate in them.

### **Local food availability and market integration**

Availability of food in Dadaab and Kakuma camp markets is determined by the seasonal production cycles, and in the case of commodities not locally produced by the road conditions during the rainy season when roads become impassable. The large majority of the traders in the camps experience seasonal fluctuations in food quantities and prices. As reported by the traders, availability of most food commodities, including the staples, fluctuates around the medium range for most of the year in both camps. To a lesser extent, festive seasons of Ramadan and Christmas, or the school calendars also influence prices in the camps.

The importance of transport in the supply chains and the availability of food in the camps cannot be overstated. The most important constraints to trade in both camps have to do with the road conditions and the transport capacity, and hence with the irregular supply. It is worth highlighting that in Dadaab

the most important constraint to trade is linked to problems to ferry food commodities during the rainy season, while the most important constraint in Kakuma is the transport costs associated with the long distance to the main supply markets.

The results of the price correlation analysis conducted in this study indicated that there are signs of price transmission between the identified markets along the supply chains although, with the exception of Dadaab town and Nairobi, the refugee camps' market integration is generally poor. These results are consistent with other more generic market integration analyses in the Kenyan arid lands, and with the analysis of other proxy market integration indicators.

### **Traders' capacity to meet increases in demand**

Sixty-two percent of the traders in Dadaab and 50 percent in Kakuma mentioned they would be able to serve an increase in demand. Wholesalers are significantly more confident than retailers, which reflects their better established networks. These percentages are lower than the average in the Kenyan arid lands. On average traders mentioned they can increase supplies by 36 percent in Dadaab and by 25 percent in Kakuma using their current supply chain mechanisms. This reported capacity is also lower than the average in the arid lands and in the producing areas.

Most of the traders finance their supplies either with their own capital or from the sales of commodities to clients. Access to credit is very poor in both camps. Only 16 percent of traders in Dadaab and 17 percent in Kakuma have access to some form of credit.

As expected, the resupply schedule of perishable products is much more frequent than one of more durable commodities. The majority of the traders in Dadaab resupplies cereals, pulses and processed food fortnightly or monthly, eggs three times a month, vegetables and fruits once or twice a week, and meat and milk daily. Kakuma follows the same patterns, though the higher wholesaling capacity of Kakuma town compared with Dadaab town, appears to have an impact in the resupply schedules of durable commodities. Cereals and pulses are mostly resupplied weekly or fortnightly, processed food monthly, eggs once or twice a week, vegetables and fruits twice a week, milk twice a week, meat daily and fish once or twice a month. While a frequent resupply schedule is indicative of readiness to increase supplies, it can also reveal a poor storage capacity.

### **Cost-efficiency of transfer modalities<sup>25</sup>**

When a combination of international and local procurement is considered, the delivery costs for WFP are higher than the market costs in Dadaab and Kakuma by 9 percent. By commodity however, only the delivery costs of cereals are higher than the corresponding market costs, being the market costs of pulses, salt and oil higher in both camps.

Considering only local procurement of cereals and pulses the overall results are different. The market value of the full basket is higher both in Dadaab and Kakuma by 12 and 15 percent respectively. By commodity, all market costs are higher than the equivalent delivery costs.

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<sup>25</sup> Cost-efficiency calculations were made excluding the operational costs from both the in-kind and the cash components.

## Recommendations

A limitation to be able to estimate the volumes of additional demand the markets can absorb is linked to fact that the supply of staple food has been covered by WFP for more than two decades. It is a logical trading practice to specialize in niches not covered by other actors and with lower competition, and hence traders in the camps have more expertise in trading with commodities such as vegetables, fruits, meat or processed food than with cereals or pulses. Furthermore the source of many traders dealing with cereals is not external, but WFP distributions, which is another handicap in this specific field of trading expertise.

In view of the planning of cash-based interventions and from a market perspective, it is recommended to initially replace a small proportion of the food basket, approximately 10 percent of the cereals and pulses with a cash based voucher which can be used to purchase foods that are not included in the basket. From the food security and outcome monitoring (FSOM) reports it is well known what commodities households spend most of their money on, i.e. sugar, milk, other cereals and some meat and vegetables. The regular price monitoring in the camps by WFP shows that the value transfer from a 10 percent reduction could be used to purchase commodities that households normally purchase in such quantities that the nutritional value of their food intake would not be negatively impacted.

*Khat (Miraa)* chewing and to a lesser extent locally brewed alcoholic drinks are popular entertainments in both camps posing a risk of purchases diversions if cash is the selected transfer modality. An open voucher will allow beneficiaries to purchase the most commonly traded food items, which they otherwise monetize parts of the basket for. This flexibility will also contribute to ensure the markets can respond to the increased demand. It is also recommended to strengthen the traders' links with wholesalers in the supply markets and, as a precautionary measure, to make arrangements with the traders to preposition supplies in preparation for the difficult transport conditions during the rainy season, especially in Dadaab.

It is recommended to roll out the replacement of parts of the general food distribution with a voucher to all refugees in phases. At the initial stages, it is also recommended to select population groups that are easy to identify and target. A potential first target group could be the elderly and their households, currently 11,224 and 2,096 persons in Dadaab and Kakuma respectively. In terms of tonnage the initial monthly reduction in food deliveries would be 71 Mt of cereals and 10 Mt of pulses in Dadaab, and 13 Mt of cereals and 2 Mt of pulses in Kakuma<sup>26</sup>. Alternatively, another option could be replacing the current Fresh Food Voucher to households with pregnant and lactating women with the open voucher described above.

At the current market prices, 10 percent of the cereals and pulses basket would amount to 71.73 Ksh and 79.56 Ksh per person per month in Dadaab and Kakuma respectively. The tables below show a sample set of commodities available in the market for those costs. The implications of establishing

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<sup>26</sup> With the current camps' population the overall monthly reduction would be 435 Mt of cereals and 62 Mt of pulses in Dadaab, and 209 Mt of cereals and 30 Mt of pulses in Kakuma.



different transfer values between camps should be taken into consideration when designing the programme.

Commodities available – Dadaab (71.73 Ksh)			
Commodity	Unit	Unit price Ksh	Units able to purchase
Maize	Kg	27.50	2.61
Rice	Kg	75.42	0.95
Cow milk	Liter	44.00	1.63
Tomatoes	Kg	63.33	1.13
Red onions	Kg	57.92	1.24
Sugar	Kg	81.25	0.88
Banana	Kg	55.00	1.30

Commodities available – Kakuma (79.56 Ksh)			
Commodity	Unit	Unit price Ksh	Units able to purchase
Maize	Kg	45.00	1.8
Rice	Kg	125.00	0.6
Cow milk	Liter	45.00	1.8
Tomatoes	Kg	140.00	0.6
Red onions	Kg	80.00	1.0
Sugar	Kg	107.50	0.7
Banana	Kg	100.00	0.8

Source: FSOM data and own calculations

Cereals and pulses are mainly providing macronutrients and thus if WFP were to replace 10 percent of them with a cash transfer in the form of a voucher were the value is based on market prices, the below could be some potential baskets that an individual could use the voucher for, based on our knowledge of their expenditure pattern:

RATION CONTENTS		DAILY			
Click below to select food items or type them in on the bottom two rows		RATION	ENERGY	PROTEIN	FAT
		g/person/day	kcal	g	g
MAIZE GRAIN, WHITE		378	1,323	37.8	15.1
BEANS, DRIED		54	181	10.8	0.6
OIL, VEGETABLE [WFP SPECS.]		35	310	0.0	35.0
CSB SUPERCEREAL (CSB+) [WFP SPECS.]		40	150	6.1	3.2
SALT, IODISED [WFP SPECS.]			0	0.0	0.0
MILK, COW, WHOLE		59	39	1.9	2.3
GOAT, MODERATELY FAT			0	0.0	0.0
SUGAR		0	0	0.0	0.0
Ration total		566	2,003	56.6	56.3
Beneficiaries: Whole Population			2,100	52.5	40.0
% of requirements supplied by ration			95%	108%	141%
% of energy supplied by protein or fat				11.3%	25.3%

The above is a reduction of the cereals and pulses by 10 percent, and for that market value this theoretical person has purchased milk for that amount (59g). This option would provide 95 percent of the recommended daily Kcal requirements.

RATION CONTENTS		DAILY			
Click below to select food items or type them in on the bottom two rows		RATION	ENERGY	PROTEIN	FAT
		g/person/day	kcal	g	g
MAIZE GRAIN, WHITE	▲▼	378	1,323	37.8	15.1
BEANS, DRIED	▲▼	54	181	10.8	0.6
OIL, VEGETABLE [WFP SPECS.]	▲▼	35	310	0.0	35.0
CSB SUPERCEREAL (CSB+) [WFP SPECS.]	▲▼	40	150	6.1	3.2
SALT, IODISED [WFP SPECS.]	▲▼		0	0.0	0.0
MILK, COW, WHOLE	▲▼		0	0.0	0.0
GOAT, MODERATELY FAT	▲▼		0	0.0	0.0
SUGAR	▲▼	30	120	0.0	0.0
Ration total		537	2,084	54.7	54.0
Beneficiaries	Whole Population ▼		2,100	52.5	40.0
% of requirements supplied by ration	?		99%	104%	135%
% of energy supplied by protein or fat	?			10.5%	23.3%

Here the person has chosen to replace it with sugar (30g), reaching a total 99 percent Kcal compared to the recommended daily requirement.

Finally, the third person replaces the cereals and pulses with rice (59g) and meets 104 percent of daily requirements. The three options used here are the commodities that households spend their money on as shown in the expenditure pie chart earlier in this report. It is also the most traded commodities as well as the ones that traders say they can meet increased demand of.

RATION CONTENTS		DAILY			
Click below to select food items or type them in on the bottom two rows		RATION	ENERGY	PROTEIN	FAT
		g/pers on/day	kcal	g	g
MAIZE GRAIN, WHITE	▲▼	378	1,323	37.8	15.1
BEANS, DRIED	▲▼	54	181	10.8	0.6
OIL, VEGETABLE [WFP SPECS.]	▲▼	35	310	0.0	35.0
CSB SUPERCEREAL (CSB+) [WFP SPECS.]	▲▼	40	150	6.1	3.2
SALT, IODISED [WFP SPECS.]	▲▼		0	0.0	0.0
MILK, COW, WHOLE	▲▼		0	0.0	0.0
GOAT, MODERATELY FAT	▲▼		0	0.0	0.0
SUGAR	▲▼		0	0.0	0.0
RICE, POLISHED	▲▼	59	212	4.1	0.3
Ration total		566	2,176	58.8	54.3
Beneficiaries	Whole Population ▼		2,100	52.5	40.0
% of requirements supplied by ration	?		104%	112%	136%
% of energy supplied by protein or fat	?			10.8%	22.4%

From a cost-efficiency perspective, consideration should be given to replacing some of the commodities where the market is proportionally more competitive than WFP in delivering; while maintaining in-kind

provision of the others. Of the present WFP food basket, cereals and to a lesser extent pulses are more easily replaceable than vegetable oil.

Changes in food security and nutrition status must be closely monitored during any project implementation, but if a portion of the ration is replaced with a voucher where households can purchase the items they normally buy after monetizing parts of the ration, the nutritional impact could be minimal.

Market reactions to any cash intervention, especially price trend behaviors, should also be closely monitored. A market monitoring system specifically designed to match the programme design should be put in place at least one month before the beginning of the implementation, and must continue until it is concluded that markets have stabilized. Once price trends are determined to be normal, market monitoring can be streamlined into the regular market monitoring systems and schedules.

The scalability of voucher interventions must be subject to the results and recommendations of thorough evaluations made after each phase of the interventions.

Furthermore, WFP should proactively assist traders in accessing credit and continue advocating for the improvement of road infrastructure, as the all-decisive factor in further strengthening markets and economic development, and the improving of price data collection in the Kenyan Northern region.

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## Annex II Cost-efficiency calculations

		USD/mt	USD/mt
	<b>Costs and Services</b>	<b>Dadaab</b>	<b>Kakuma</b>
<b>Internationally procured cereals</b>	Sorghum (US In Kind)	313.00	313.00
	Shipping	284.00	284.00
	Mombasa Port costs	30.00	30.00
	Primary Transport	65.93	120.88
	Secondary Transport from EDP to FDPs	-	-
	EDP Management	17.55	14.65
	Distribution costs-LTSH	14.37	24.33
	Distribution costs-ODOC		
	ODOC costs - Other		
	<b>TOTAL DOC rate/mt</b>	<b>724.86</b>	<b>786.86</b>
	Cost of 1kg (USD)	0.72	0.79
	DSC cost - 12%	0.09	0.09
	<b>Total Food Basket cost per kg (USD)</b>	<b>0.81</b>	<b>0.88</b>
	<b>C&amp;V cost</b>	Current market price per Kg (Ksh)	47.00
Current market price per Kg (USD)		0.54	0.59
C&V related costs		0.00	0.00
DSC - 12%		0.07	0.07
<b>Total food basket cost per Kg (local purchase in USD)</b>		<b>0.61</b>	<b>0.66</b>
<b>% difference (minus indicates higher cost of in-kind)</b>		<b>-25.00%</b>	<b>-25.03%</b>

		USD/mt	USD/mt	
	<b>Costs and Services</b>	<b>Dadaab</b>	<b>Kakuma</b>	
<b>Ex-Eldoret Locally procured maize</b>	Cost (food + Q & Q locally procured)	415.00	415.00	
	Port costs	-	-	
	Primary Transport	67.67	86.18	
	Secondary Transport from EDP to FDPs	-	-	
	EDP Management	17.55	14.65	
	Distribution costs-LTSH	14.37	24.33	
	Distribution costs-ODOC	-	-	
	ODOC costs - Other	-	-	
	<b>TOTAL DOC rate/mt</b>	<b>514.60</b>	<b>540.16</b>	
	Cost of 1kg (USD)	0.51	0.54	
	DSC cost - 12%	0.06	0.06	
	<b>Total Food Basket cost per kg (USD)</b>	<b>0.58</b>	<b>0.60</b>	
	<b>C&amp;V cost</b>	Current market price per Kg (Ksh)	47.00	51.00
		Current market price per Kg (USD)	0.54	0.59
C&V related costs		0.00	0.00	
DSC - 12%		0.07	0.07	
<b>Total food basket cost per Kg (local purchase in USD)</b>		<b>0.61</b>	<b>0.66</b>	
<b>% difference (minus indicates higher cost of in-kind)</b>		<b>5.65%</b>	<b>9.22%</b>	

	USD/mt		
	Dadaab	Kakuma	
<b>Ex-Nairobi (locally procured beans)</b>	<b>Costs and Services</b>		
	Cost (food + Q & Q locally procured)	691.00	691.00
	Port costs	-	-
	Primary Transport	60.15	100.64
	Secondary Transport from EDP to FDPs	-	-
	EDP Management	17.55	14.65
	Distribution costs-LTSH	14.37	24.33
	Distribution costs-ODOC	-	-
	ODOC costs - Other	-	-
	<b>TOTAL DOC rate/mt</b>	<b>783.08</b>	<b>830.62</b>
	Cost of 1kg (USD)	0.78	0.83
	DSC cost - 12%	0.09	0.10
	<b>Total Food Basket cost per kg (USD)</b>	<b>0.88</b>	<b>0.93</b>
<b>C&amp;V cost</b>	Current market price per Kg (Ksh)	69.50	85.00
	Current market price per Kg (USD)	0.80	0.98
	C&V related costs	0.00	0.00
	DSC - 12%	0.10	0.12
	<b>Total food basket cost per Kg (local purchase in USD)</b>	<b>0.90</b>	<b>1.10</b>
<b>% difference (minus indicates higher cost of in-kind)</b>	<b>2.66%</b>	<b>18.37%</b>	

	USD/mt		
	Dadaab	Kakuma	
<b>Internationally procured pulses</b>	<b>Costs and Services</b>		
	Yellow Split Peas (US in kind)	430.00	430.00
	Shipping	200.00	200.00
	Mombasa Port costs	30.00	30.00
	Primary Transport	65.93	120.88
	Secondary Transport from EDP to FDPs	-	-
	EDP Management	17.55	14.65
	Distribution costs-LTSH	14.37	24.33
	Distribution costs-ODOC	-	-
	ODOC costs - Other	-	-
	<b>TOTAL DOC rate/mt</b>	<b>757.85</b>	<b>819.86</b>
	Cost of 1kg (USD)	0.76	0.82
	DSC cost - 12%	0.09	0.10
<b>Total Food Basket cost per kg (USD)</b>	<b>0.85</b>	<b>0.92</b>	
<b>C&amp;V cost</b>	Current market price per Kg (Ksh)	69.50	85.00
	Current market price per Kg (USD)	0.80	0.98
	C&V related costs	0.00	0.00
	DSC - 12%	0.10	0.12
	<b>Total food basket cost per Kg (local purchase in USD)</b>	<b>0.90</b>	<b>1.10</b>
<b>% difference (minus indicates higher cost of in-kind)</b>	<b>6.08%</b>	<b>19.93%</b>	

		USD/mt	USD/mt
		Dadaab	Kakuma
Internationally procured pulses	<b>Costs and Services</b>		
	Yellow Split Peas (internationally procured)	436.00	436.00
	Shipping	52.00	52.00
	Mombasa Port costs	30.00	30.00
	Primary Transport	65.93	120.88
	Secondary Transport from EDP to FDPs	-	-
	EDP Management	17.55	14.65
	Distribution costs-LTSH	14.37	24.33
	Distribution costs-ODOC		
	ODOC costs - Other		
	<b>TOTAL DOC rate/mt</b>	<b>615.85</b>	<b>677.86</b>
	Cost of 1kg (USD)	0.62	0.68
	DSC cost - 12%	0.07	0.08
<b>Total Food Basket cost per kg (USD)</b>	<b>0.69</b>	<b>0.76</b>	
C&V cost	Current market price per Kg (Ksh)	69.50	85.00
	Current market price per Kg (USD)	0.80	0.98
	C&V related costs	0.00	0.00
	DSC - 12%	0.10	0.12
	<b>Total food basket cost per Kg (local purchase in USD)</b>	<b>0.90</b>	<b>1.10</b>
% difference (minus indicates higher cost of in-kind)		<b>30.54%</b>	<b>45.05%</b>

		USD/mt	USD/mt
		Dadaab	Kakuma
Internationally procured vegetable oil	<b>Costs and Services</b>		
	Oil (internationally procured)	894.00	894.00
	Shipping	73.00	73.00
	Mombasa Port costs	30.00	30.00
	Primary Transport	73.61	134.94
	Secondary Transport from EDP to FDPs	-	-
	EDP Management	17.55	14.65
	Distribution costs-LTSH	14.37	24.33
	Distribution costs-ODOC	-	-
	ODOC costs - Other	-	-
	<b>TOTAL DOC rate/mt</b>	<b>1,102.53</b>	<b>1,170.93</b>
	Cost of 1kg (USD)	1.10	1.17
	DSC cost - 12%	0.13	0.14
<b>Total Food Basket cost per kg (USD)</b>	<b>1.23</b>	<b>1.31</b>	
C&V cost	Current market price per LT (Ksh)	140.00	130.00
	Current market price per Lt (USD)	1.62	1.50
	C&V related costs	0	0.00
	DSC - 12%	0.19	0.18
	<b>Total food basket cost per Kg (local purchase in USD)</b>	<b>1.97</b>	<b>1.83</b>
% difference (minus indicates higher cost of in-kind)		<b>59.66%</b>	<b>39.59%</b>

		USD/mt	USD/mt
	<b>Costs and Services</b>	<b>Dadaab</b>	<b>Kakuma</b>
<b>Locally procured salt</b>	Cost (food + Q & Q locally procured)	118.00	118.00
	Port costs	-	-
	Primary Transport	65.93	120.88
	Secondary Transport from EDP to FDPs	-	-
	EDP Management	17.55	14.65
	Distribution costs-LTSH	14.37	24.33
	Distribution costs-ODOC	-	-
	ODOC costs - Other	-	-
	<b>TOTAL DOC rate/mt</b>	<b>215.86</b>	<b>277.86</b>
	Cost of 1kg (USD)	0.22	0.28
	DSC cost - 12%	0.03	0.03
	<b>Total Food Basket cost per kg (USD)</b>	<b>0.24</b>	<b>0.31</b>
	Current market price per Kg (Ksh)	27.50	26.50
	Current market price per Kg (USD)	0.32	0.31
<b>C&amp;V cost</b>	C&V related costs	0.00	0.00
	DSC - 12%	0.04	0.04
	<b>Total food basket cost per Kg (local purchase in USD)</b>	<b>0.36</b>	<b>0.34</b>
	<b>% difference (minus indicates higher cost of in-kind)</b>	<b>47.36%</b>	<b>10.32%</b>