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# Emergency Market Mapping and Analysis: Southern and Western Provinces of Zambia

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A summary market analysis focussing on maize grain and mixed beans

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## Executive summary

Zambia has been affected by two consecutively poor agricultural seasons. In 2015 the staple crop production in the country was reduced by about 22% overall. In Western Province, maize production was reduced by 44%. As a result, almost 800,000 people (133,158 HHs) across the 31 most affected districts were targeted for food assistance using government stocks of maize held by the Food Reserve Agency<sup>1</sup>. The 2015/2016 the El Nino weather system brought about a very late start to the rains which were also disrupted by a two week dry spell in February and extremely high temperatures particularly in the south of the country.

However, the national picture for maize production is stable and no overall shortfall is expected. The Government of Zambia states the maize stocks of 3,540,577 metric tonnes are currently available for the 2016/2017 marketing season. Based on the national maize requirement this equates to a surplus of 634,681 metric tonnes. Despite this, many farmers in the affected areas remain critically food insecure. FEWSNET has categorised much of southern Western province (southern Senanga, Sioma, Shangombo, Sesheke, Mwandu) and eastern Southern province (Kazungula) as IPC acute security phase 3 or in crisis and the valley area (Gwembe, Sinazongwe) as phase 2 or stressed.<sup>2</sup> These households have little or no personal food stocks as result of the consecutively poor agricultural seasons. They have fewer financial and other resources with which to access food from the market.

Concern Worldwide, in partnership with other agencies, initiated the START funding line in order to undertake an Emergency Market Mapping and Analysis to identify potential response options to address the situation of poor and very poor households in the affected areas. The market assessment process identified maize grain and beans as critical markets for the target group. The process also involved a more cursory survey of the markets for cooking oil, sorghum, millet, groundnuts and cassava. The market assessment aimed to address four key questions:

*What strategies can be employed to address the financial deficit faced by farmers?*

The key gap is poor market demand manifested in the lack of personal resources available to poor and very poor households to meet their food needs. Household interviews and income/expenditure surveys indicated households were already spending proportionally more on food than they would in a good agricultural year. As minimal personal food stocks are depleted households will need to rely on the market more much earlier in the season than is usual. To meet the household resource deficit and enable access to food the report analyses a range of options including food aid, vouchers, conditional and unconditional cash transfers. Unconditional cash transfers to affected households are the recommended option.

*Will farmers affected by poor seasonal rains be able to access essential goods (food) and services from the market?*

The market assessment found that the market system overall had not been significantly disrupted by two poor agricultural seasons. Overall the national production figures based on the 2015/2016 Crop Forecast Report are broadly positive ruling out national level shortages. The various distribution channels, though poorly developed and unintegrated for the most part, function to distribute key commodities such as maize grain and beans to areas where there is demand. The affected area is characterised, for the most part, by low population concentrations often living in areas quite remote from central markets, with poor access to transportation services. Nevertheless, it is clear that communities have access to and use markets in the central district villages and towns when necessary despite these difficulties.

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<sup>1</sup> In Depth Vulnerability and Needs Assessment Report 2015

<sup>2</sup> Zambia Food Security Outlook February to September 2016

*Will the market be able to meet an increase in demand?*

The market survey found volumes of trade in maize grain and beans would be sufficient at a provincial level to meet a significant increase in household demand particularly if any responses included strategies to support district level retailers anticipate such an increase. It is also clear that the market changes throughout the season. In April, when the survey took place, households are traditionally more reliant on their personal food stocks than the market and so consumer demand is less. The market assessment indicated that traders and retailers at district levels are capable of distributing commodities where there is demand. Traders and retailers in Senanga indicated, for example, that they were not stocking maize as it wasn't in demand at this time. In Shangombo seasonal markets begin operating around October each year with traders from as far as Mumbwa and Kaoma selling or exchanging maize grain

The assessment found that maize grain retail prices varied significantly across the districts assessed. Where maize grain prices reached 2.5 – 3 ZMW per kg it is more economical for consumers to buy mealie meal, the wholesale and retail distribution channels for which are more organised, and more able to respond due to the organisational capacity of larger milling companies.

*How is the market likely to change in the near future?*

The nature of any changes on the market are very unlike the kind of disruptions brought on by sudden onset natural disasters or conflict. However, the market in Zambia is faced by a number of other pressures which need to be considered. It is likely that inflation and other factors will remain quite high keeping food prices high. The pressure on prices is also affected by the demand (formal and informal) for maize grain and mealie meal from neighbouring countries who were more adversely affected by recent poor weather.

The report makes a number of initial recommendations in terms of short and longer term responses. In terms of a more immediate response the following recommendations are made which are further articulated in a cash transfer feasibility analysis which compares different subsidy options (food aid, cash and vouchers):

- Based an analysis of the market, and considering a range of subsidy options, the report recommends a discrete time bound humanitarian cash transfer programme. The value of the support needs to be decided by household monthly deficits and include provisions for inflation and transport costs. The cash transfer programme could use the existing social cash transfer programme delivery mechanism expanding the coverage beyond labour constrained households in addition to providing an incremental increase to existing social cash transfer beneficiaries.
- Cash for work schemes can also be considered: these schemes should focus on addressing improved access to main roads for rural communities amongst of public goods. Cash for works schemes could also be incorporated into district development plans – for example, paying local communities to provide aggregate and sand for school construction and so on.
- Support to retailers through credit or cash grants (particularly those stocking cooking oil and beans) would provide these market actors with liquidity to meet an increase in demand. Retailers have limited access to financial services and incur significant transport costs sourcing supplies from distant wholesale markets.
- In terms of early recovery provide input vouchers to drought affected farmers in October and November with sufficient flexibility to enable further purchases in January if necessary. Communities in the drought affected areas, particularly in Western province tend to receive less external support from the Farm Input Subsidy Programme or development actors. Many rely on saved/recycled seed. They will have few personal resources to invest in their own agricultural production. Input vouchers should include maize and non-maize varieties and should be exchanged with participating agro dealers.

## Emergency context

Zambia was affected by the extended dry period during 2014/2015 season. As a result, the staple crop production in the country was reduced by about 22% overall. In Western Province, maize production was reduced by 44%. As a result, almost 800,000 people (133,158 HHs) across the 31 most affected districts were targeted for food assistance using government stocks of maize held by the Food Reserve Agency<sup>3</sup>. The affected districts were spread across all of Zambia.

The 2015/2016 agricultural season has been affected by the El Nino weather system. The affect has been most acutely felt in the southern areas of Zambia particularly the southern districts of Western province, and the eastern and southern lowland valley areas of Southern province. The El Nino weather system manifested itself through a very late start to seasonal agricultural rains. The rains did not start properly until the end of December and early January. The agricultural season was also disrupted by a two week dry spell in February and extremely high temperatures particularly in the south of the country bordering Zimbabwe. In many cases, affected farmers faced very poor germination rates and in the worst cases, farmers lost all of their crops.

But not all areas were affected by poor rains. Seasonal rains in northern parts of the country were much better, and even farmers who were able to plant in January in southern areas of Western province experienced a better agricultural season than in 2014/2015. On May 4<sup>th</sup> 2016 the Government of Zambia announced that the maize crop forecast for 2015/2016 was 9.73 percent better than the previous year expecting to yield 2,873,052 metric tonnes up from 2,618,221 in the previous year.<sup>4</sup>

This forecast is supported by discussions with district officials and focus groups undertaken during the market assessment which determined that the agricultural seasons was better particularly in northern parts of Western province. The situation in Kaoma was significantly better than in 2014/2015.<sup>5</sup> Although anecdotally district officials estimated an improvement of between 10 and 30 percent on last year for Mongu, Senanga, Shangombo but also an improvement in Sioma/Nangweshi. The more positive picture was echoed by Food Reserve Agency staff in Shangombo and Sioma who expected to meet their purchasing targets of 5000 x 50kg bags of maize. Officials were not as optimistic in Southern province nor in the southern districts of Western province (Sesheke and Mwandji). Here some officials in the District Agricultural Offices described significant drops in production compared with last year (Choma and Gwembe) or a mediocre harvest if farmers managed to plant again in January (Sinazongwe).

Where the outlook was negative the picture was not entirely an issue with poor rains. As has been noted seasonal rains came late starting in earnest in January and continuing to April. Despite a damaging two week dry spell in February the rains were largely sufficient for farmers who planted late in January. Many farmers did not choose to do so for three main reasons. Firstly, the general advice to farmers is plant early, which many farmers did. Secondly, the meteorological department issued warnings of poor weather so farmers were hesitant to risk time, labour and expense (seed) in planting large areas. Thirdly, farmers were made more cautious by the experiences of 2014/2015. Small holder farmers are rationally risk averse. Addressing this situation and farmer behaviour has implications for potential interventions by humanitarian actors.

The overall national picture for maize production is stable and no national shortfall is expected. The Government of Zambia states the maize stocks of 3,540,577 metric tonnes are currently available for the 2016/2017 marketing season. Based on the national maize requirement this equates to a surplus of 634,681 metric tonnes. However, many farmers in the affected areas remain critically food insecure.

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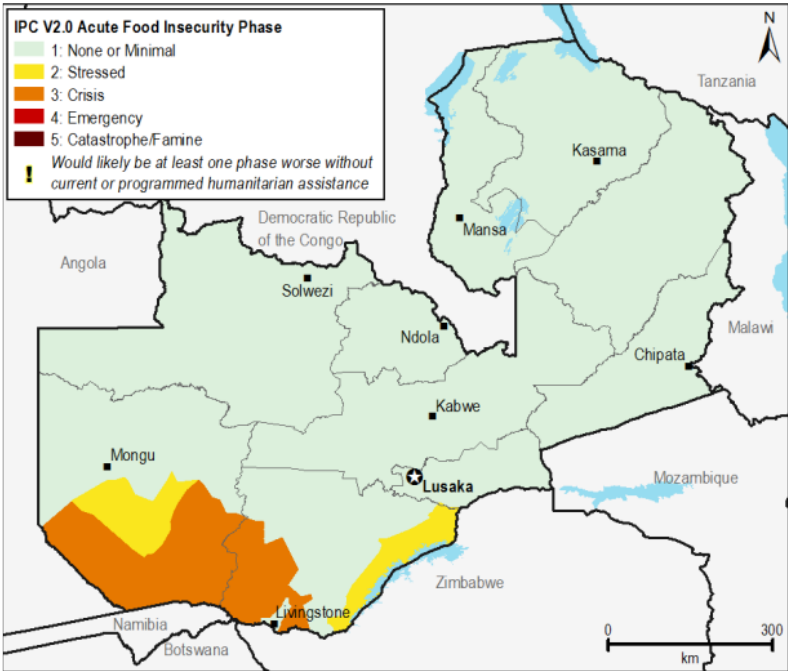
<sup>3</sup> In Depth Vulnerability and Needs Assessment Report 2015

<sup>4</sup> The Post Newspaper May 4<sup>th</sup>

<sup>5</sup> Kaoma Acting Senior Agricultural Officer who participated in the assessment team.

FEWSNET has categorised much of southern Western province (southern Senanga, Sioma, Shangombo, Sesheke, Mwanzi) and eastern Southern province (Kazungula) as IPC acute security phase 3 or in crisis and the valley area (Gwembe, Sinazongwe) as phase 2 or stressed. It needs to be noted that even in good agricultural years many farmers are not able to meet their own food needs through agricultural production particularly in Western province. Surveys from Concern’s programming in Mongu, Senanga and Kaoma shows that over 36% of households have a hunger gap of five months or more (months when households consume less than two meals per day).<sup>6</sup>

**Figure 1: Food Insecurity Phases in Western and Southern Zambia**



*Source: FEWSNET May to September forecast*

Many communities in these areas have minimal or no personal household food stocks at all. Households need to rely on markets for food but have fewer resources with which to do so. Opportunities for incomes have significantly reduced due to the poor agricultural season in general. Household assets have been already been depleted as a result of the poor season in 2014/2015.

In terms of plans for current responses the Disaster Mitigation and Management Unit is currently repeating the Vulnerability and Needs Assessment conducted in 2015 with support from international agencies. The Zambian government is distributing relief maize in selected districts in response to the food insecurity stress and, according to recent reports, this will continue in 2016/2017. The Government of Zambia and donors are considering other complementary subsidies most probably cash utilising or scaling up existing delivery mechanisms such as the social cash transfer programme currently targeting labour constrained households nationally. Non-Governmental Organisations are also considering options and developing contingency plans. One agency, World Renew, initiated a response in April 2015. In 2016 World Renew is targeting 3,500 households in Mwanzi districts with a considerable food ration (2 x 25 kg of mealie meal, 2.5 litres of oil, 2.5 kg of beans per household per month).

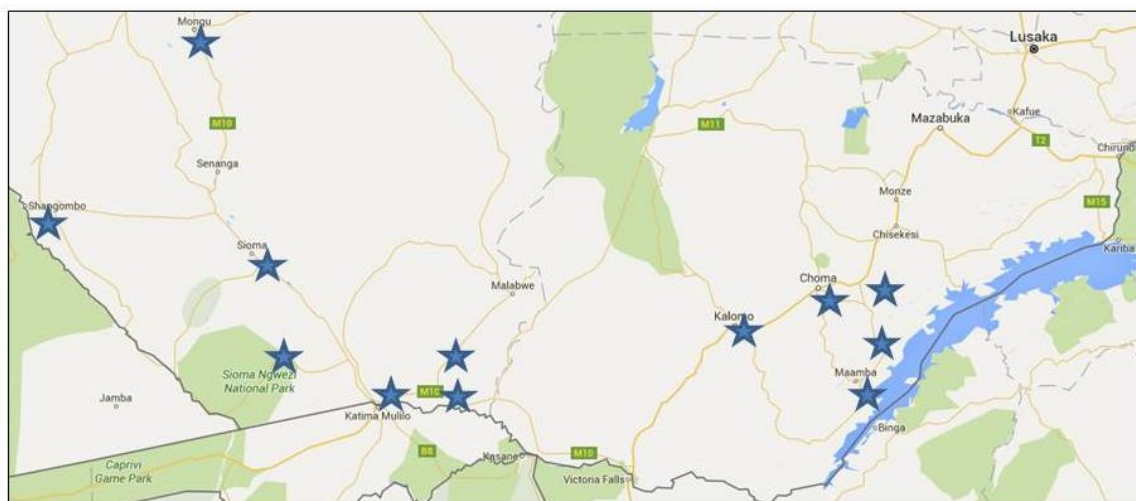
<sup>6</sup> Concern Worldwide IPRWEP Annual Programme Survey 2015

## EMMA methodology

The assessment applied the approach as outlined in the Emergency Market Mapping and Analysis (EMMA) Toolkit in a slow onset emergency. The EMMA toolkit applies qualitative and quantitative methods based on ten steps in order to undertake a market assessment rapidly and efficiently. The approach includes a gap analysis at household level to understand current and expected critical gaps, a market analysis to evaluate the capacity of the market to respond to those needs and a response analysis to identify appropriate programming interventions.

The assessment took place between 19th April to 2nd May. The assessment covered 11 districts in the Western and Southern provinces of Zambia. The assessment was led by Concern Worldwide with support and participation from Catholic Relief Services and its implementing partner, Caritas Mongu and the Government of Zambia (District Agricultural Officers from Kaoma and Choma districts). The 11 districts were selected as they were either major trading areas for commodities coming into the area (Mongu, Livingstone and Choma) and having received very poor rains and expecting critically poor crop yields (Shangombo, Sioma, Senanga, Sesheke, Mwandia, Zimba, Sinazongwe, Gwembe, Kalomo).

**Figure 2: Map of area surveyed**



An external consultant led a team of eight field team members each comprising a team leader. The external consultant conducted a two day training and preparation workshop prior to the field research to train team members in the EMMA toolkit methodology and to schedule the field research. The field research itself took nine days. This was necessary given the geographical scope of the research. The research teams split into two teams of four and five respectively in order to cover the number of districts required.

The quantitative and qualitative tools used included a focus group guideline, household income and expenditure survey sheet, wholesaler/trader data sheet, agro-dealer questionnaire and market trader questionnaire. The household income and expenditure survey sheet and wholesaler/trader sheet were downloaded and adapted from the EMMA toolkit website.<sup>7</sup> In total the field work covered 13 focus group discussions, 37 household income and expenditure surveys, 15 key informant interviews with 17 traders, 15 agro dealers and 44 market retailers. Data entry took place regularly during the process and the team leaders liaised continuously during the process to discuss preliminary findings.

<sup>7</sup> <http://www.emma-toolkit.org/documents/questionnaires>

It is important to note that the rapid market assessment does not intend to produce large statistically significant data sets. Data collection is guided by what is considered sufficient to draw conclusions and make recommendations. The data collection focuses more on trends and patterns rather averages, for example.

The surveyed tools focused on the maize and beans markets but also included data on the production and availability of sorghum, cassava, cooking oil and groundnut and this was requested by Concern Worldwide and other participating agencies (World Vision, Save the Children, Oxfam and Catholic Relief Services). The consultant is aware that this deviates slightly from the standard focus on a single market system in a single geographic area in a normal emergency market mapping exercise. This was partly driven by the different agro-ecological zones within the assessment area, which are characterised by the production of different crop types, and the desire of the commissioning agencies to understand more about non-maize markets with a view to encouraging household production and consumption away from maize, the key household staple in almost all of Zambia.



### The Target Population

The target population are poor, small holder farmers in southern most parts of Western and Southern provinces. The target geographic area is centred around the districts in the Western and Southern provinces of Zambia that have been most affected by the poor seasonal rains in the 2015 and 2016 agricultural years. These districts include Senanga, Sesheke, Shangombo, Mwanzi, , Gwembe, Pemba, Sinazongwe and Chomo. Mongu was included in the assessment as it is a central market for commodities entering Western province.

The target districts comprise high levels of heterogeneity in terms of population density, livelihood activities and other important socio-economic characteristics. Western province is characterised by very low population density with between 6-10 people per km<sup>2</sup> in Shangombo, Senanga and 3-5 people per km<sup>2</sup> in Sesheke and Mwanzi (and Mulobezi). In Southern province the population density increases slightly from Kazungula and Gwembe (6-10 people per km<sup>2</sup>) to Sinazongwe, Choma and Pemba (21-35 people per km<sup>2</sup>).<sup>8</sup> Interestingly, in Shangombo district over 30% of households are headed by women, and large numbers of dependents relative to the working population.<sup>9</sup>

The target districts apart from Mongu are located in a similar agro-ecological zone (AEZ I in terms of IAPRI classification). This zone includes Zambia’s major valleys Gwembe, Lunsemfwa and Luangwa. It is generally drought prone and characterised by low rainfall (<800 mm per year). Despite being in a similar livelihood zone the districts in Western Zambia (Shangombo, Senanga and Sesheke) are not significant producers of maize relative to other districts. Small holder farmers in these districts do not tend to produce sufficient quantities of maize for their own consumption even in good agricultural years. Further to the east in Southern province maize production becomes more significant in the upper land areas but drops in the valley areas (Gwembe, Sinazongwe).

While all households choose to plant maize, other livelihood activities vary depending on location. Household pursue livelihood activities that maximise the opportunities presented by the natural resources they have available. Farmers plant maize for their own consumption and for surplus sale as there is always a ready market. Other crop choices are made based on the agro-ecological suitability (sorghum, millet) or market (rice, sunflower, tobacco, cowpeas). Most farmers pursue a range of other activities to earn cash. For example, farmers in the Mongu area earn cash through fishing, and planting vegetables all year round utilising the residual moisture from the flood plains as the waters recede following the rainy season. Where possible this report will discuss specific livelihood activities and they relate to market assessment. It is important to note that economic opportunities in the areas are strongly related to agriculture. A poor agricultural season reduces the need for agricultural labour. There are reduced opportunities for fishing and vegetable production. Thus, the poor rains catalyse a range of negative impacts beyond the poor harvest.

**Figure 3: Seasonal Calendar**

Activity	April	May	June	July	September	October	November	December	January	February	March
Land Preparation											
Planting season											
Peak labour demand											

<sup>8</sup> 2010 National Census  
<sup>9</sup> Post Harvest Survey 2013/2014

Lean Season												
Rainy season												
Harvest												
Peak vegetable production and sales												
FRA Maize Buying Season												
Seasonal maize mkts Shangombo												

Source: FEWSNET and focus group discussions

Typically land is prepared in September and October as the rains are expected by the end of October and early November. In a normal year the rains will continue fairly evenly from November through to March or April. The main harvest starts in April. During this time maize begins to appear on the markets as farmers require money to meet expenditures, particularly school fees. The maize price rises in July when the Food Reserve Agency begins buying maize. Farmers and traders from districts producing surplus maize (Kaoma, Mumbwa) begin to transport maize to Shangombo in November as demand increases at this time as farmers start to reach the end of their own food stocks.

**Table 1: Population data and maize production and sales figures**

<i>District</i>	<i>District Population (Households)</i>	<i>Maize yield per hectare</i>	<i>Proportion of maize crop sold</i>	<i>Population Density people per km<sup>2</sup></i>	<i>Poverty Headcount</i>
Mongu	28124	1000.1-1500	20.1-30	6-10	0.71
Senanga	19560	1000.1-1500	10.1-20	6-10	0.87
Sioma/Nangweshi	14012	500.1-1000	20.1-30	3-5	0.95
Shangombo		500.1-1000	20.1-30	3-5	
Sesheke	15328	1000.1-1500	30.1-40	3-5	0.85
Mwandi		1000.1-1500	30.1-40	3-5	
Gwembe	8356	2000.1-2500	20.1-30	11-20	0.82
Sinazongwe	16374	1500.1-2000	30.1-40	21-35	0.77
Choma	39725	2500.1-3000	50.1-60	21-35	0.72
<i>Source</i>	<i>2010 CSO</i>	<i>Data from various GoZ sources compiled in Atlas of the Small Holder Farming Sector in Zambia – IAPRI 2015</i>			<i>Mapping Subnational Poverty In Zambia – World Bank March 2015</i>

The table above details the district population numbers and the ratio of poor to non poor. The poverty headcount ratio indicates the proportion of households between the absolute and moderate poverty lines: using the Cost of Basic Needs Approach, the Central Statistical Office defines the extreme poverty line for a household of six as monthly expenditures corresponding to ZMK 435,574 or the adult equivalent ZMK 96,366 per month (or ZMW 96 in the revised currency) per month and the moderate poverty line as ZMK 659,960 or adult equivalent ZMK 146,009 (ZMW146 in the revised currency). These figures refer to 2010 and need to be adjusted for inflation. But overall these districts comprise large numbers of poor and very poor people. The table also includes details on maize production. Overall it can be seen that maize yield per hectare is very low for the most part in the districts targeted for the assessment despite being the crop prioritised by farmers. Only Gwembe and Choma produced yields above 2000 kg per hectare in the 2014/2015. Most farmers sell approximately 20-30 percent of their crop with the remainder being used for personal household food stocks.

## Critical market systems

The terms of reference for the market assessment identified the potentially critical markets as maize, beans, sorghum, cassava, cooking oil, rice and groundnuts. An initial planning meeting with Concern Worldwide and participating agencies agreed that the assessment would focus on maize and beans and include, where possible, an analysis of the other markets.

While non-maize crops are cultivated in varying degrees in Western and Southern provinces maize is almost always prioritised by farmers. Farmers choose to grow maize both to consume themselves and to sell. Maize grain processed as mealie meal is by far the most important staple food for the target population and is consumed at every meal for the most part. Maize is therefore the first critical market system. Beans are produced widely in the target area but often not for surplus sale. However, they are widely available throughout Western and Southern Zambia reflecting a consistent consumer preference not evident for the other crop varieties. For humanitarian actors interested in food security and nutrition beans are an important and cheap protein source. Beans are the second critical market system.

**Table 2: Farmer priority crops choices**

District	One	Two	Three	Source
Mongu	Cassava	Maize	Rice	FGDs (Ndiki)
Senanga	Maize	Cassava/Rice	Rice/Cassava	FGDs (Simbondwe)
Sioma/Nangweshi	Maize	Sorghum	Pearl Millet	District Agricultural Coordinator
Shangombo	Maize	Millet	Sorghum/Beans	District Agricultural Coordinator
Sesheke	Maize	Millet	Sorghum	Senior Agricultural Officer, FGD
Mwandi	Maize	Groundnuts	Sorghum	FGDs Lipumpo, Mutuapata
Gwembe	Maize	Cotton	Groundnuts	FGD Gwembe Central
Sinazongwe	Maize	Sorghum	Groundnuts	FGD Sinazeze
Choma	Maize	Cowpeas	Tobacco/Sunflower	FGD Sibanyati

The principle objective of the terms of reference for the market assessment was to identify through a rapid market analysis appropriate responses (cash/vouchers/in-kind/market support/advocacy) to meet emergency and early livelihood recovery needs in Western and Southern Provinces. This objective will be addressed through looking at the following key questions (in accordance with the EMMA approach).

1. *What strategies can be employed to address the financial deficit faced by farmers?*
2. *Will farmers affected by poor seasonal rains be able to access essential goods (food) and services from the market?*
3. *Will the market be able to meet an increase in demand?*
4. *How is the market likely to change in the near future?*

## **The Market System**

The current situation is perhaps an atypical subject for the EMMA tool. The situation is a slow (impending) on set potential emergency which is currently being carefully evaluated by a number of studies, this market assessment being one of them. The market structure, actors, rules and regulations and support services have not been affected in any significantly adverse way. As already been noted maize production nationally is sufficient to meet national requirements. The assessment has therefore focussed on the markets current capacity to meet the needs of drought affected households.

### **Actors in the market chain**

This section describes the main actors in the agricultural market chains in the target area focussing on maize and beans; the people and businesses that produce, harvest, transport, buy and sell. These sections are accompanied by market maps indicating the number of actors and the volumes of trade at each level based on the districts sampled. The market chain descriptions attempt to place the production of maize in the context of the other commodities identified as important for poor and very poor farmers (sorghum, millet, groundnut, mixed beans (including cowpeas) and cassava).

#### ***Input providers***

Agricultural input providers include the Government of Zambia through the Farm Input Subsidy Programme (FISP), NGOs, farmers themselves and private agro dealers most of whom distribute inputs as part of the Farm Input Subsidy Programme. The Farm Input Subsidy Programme targets farmers who are able to pay the 50% contribution to the costs of the inputs. In practise this means that areas that traditionally produce maize surpluses receive the most subsidies. These areas include districts such as Kaoma in Western province and Kalomo and Choma in Southern province. According to Concern's Annual Programme Survey in Mongu, Senanga and Kaoma focussing on poor and very poor farmers only 8.7 percent accessed seed through FISP as they couldn't afford the individual contribution and they weren't members of a cooperative. Likewise, farmers in districts such as Shangombo, Sioma and Nangweshi tend not receive support through FISP and are much more reliant on seed traded between themselves or agro dealers from whom they mainly purchase maize seed and fertilizer if they have the resources to do so.

This market preference for maize seed is reflected in the business agro dealers do. The market assessment included interviews with eight agro dealers in Mongu, Senanga, Sesheke, Kalomo and Choma. All sold maize as the main seed variety. Prices varied from 150 – 250 ZMW per 10 kg bag depending on the seed type and variety (hybrid or Open pollinated varies (OPV). The agro dealer in Senanga sold sorghum, and millet, cowpeas and groundnut seed were also available in Mongu. Agro dealers also sold vegetable seed. It is clear that agro dealers do very little business outside of the main sales period which starts in August to December when farmers procure maize through their own resources or with FISP support. It is also clear that farmers do not demand other seed varieties in any great quantities, and consequently these are not available. Seed for secondary crop choices (millet, groundnut, sorghum and cassava) are overwhelmingly provided through recycled seed or trade between farmers. No agro dealers were found in Sioma/Nangweshi, Shangombo or Mwandu. In some areas development projects are promoting seed certification programmes to produce quality declared seed (cowpeas/cassava/rice) but relative to the total farming population these important schemes are quite small.

#### ***Producers***

Producers are small, medium and large scale farmers. This assessment focuses on small holder farmers. For the purposes of this document small holder farmers are defined as men and women who farm less than two hectares with little or no mechanisation save oxen teams and ploughs. Small holder farmers in the target area typically prioritise maize as their first crop. This is because of three main

reasons. Firstly, it is the preferred staple food. Secondly, there is a ready market in the Food Reserve Agency or farmer/traders and thirdly because maize production is subsidised by the Farm Input Subsidy Programme.

Farmers supplement their maize production with other crop choices depending on their location. Southern areas in Western province favour sorghum and millet (finger and pearl varieties). Moving up into the mid area (Senanga) farmers tend to move towards cassava and rice which becomes more common in Mongu. Beans and groundnuts are also popular. For non-maize varieties, farmers generally produce for their own consumption with some surplus sale. The exceptions are rice which farmers in Senanga and Mongu grow for cash in order to buy maize or maize meal. Cassava, which farmers process into chips, is also an important income source particularly in Senanga and Mongu.

Though farmers have faced two consecutive adverse agricultural seasons the national production picture in 2015/2016 indicates that there is sufficient quantities available in the market. The table below details the national situation for maize, sorghum, rice, millet groundnuts and mixed beans. Overall production increased on the previous season apart from millet and mixed beans. Sorghum production notably has increased by over 42 percent. Mixed beans experienced a significant drop on last year and a 36 percent drop on the 2013/2014 season. The reasons for the changes by crop are related to weather and other factors specific to each crop.

**Table 3: National Production Figures for selected crops by year**

Crop	2013/14	2014/15	2015/16	% change on last year	% change on 2013/2014
Maize	3,350,671	2,618,221	2,873,052	9.73 %	-14.25 %
Sorghum	11,557	8,123	14,107	73.67 %	22.06 %
Rice	49,640	25,514	26,675	4.55 %	-46.26 %
Millet	30,504	31,967	29,973	-6.24 %	1.74 %
Groundnuts	143,591	111,429	131,562	18.07 %	-8.38 %
Mixed beans	61,749	50,398	45,351	-10.01 %	-26.56 %

Source: Reproduced from the 2014/2015 and 2015/2016 Crop Forecast reports

At the time of the market assessment it was not possible to get a breakdown by district of all of the crops to give a more localised picture. However, data was available for maize production. The table below provides production figures for maize in selected districts in Southern province. Overall, it indicates a significantly better situation than was expected given that some of these areas experienced some of the worst seasonal weather with a 17.5 per cent increase overall.

**Table 4: Maize production in selected districts in Southern Province by Year**

District	2011-2012	2012-2013	2013-2014	2014-2015	2015/2016	% change on last year
Gwembe	8,706	10,360	15,644	10,169	13,694	25.7%
Itezhi-tezhi	39,973	14,659	28,597	17,158	16,677	-2.9%
Kalomo	182,096	152,434	190,177	114,106	148,391	23.1%
Kazungula	34,838	31,499	31,050	18,630	29,359	36.5%
Livingstone	335	288	790	474	117	-304.5%
Mazabuka	59,695	47,863	73,303	54,977	43,869	-25.3%
Monze	65,542	57,942	71,207	42,724	48,881	12.6%
Namwala	41,712	30,020	54,792	22,739	43,006	47.1%
Siavonga	15,164	8,031	10,688	6,413	15,102	57.5%

Sinazongwe	14,960	12,337	27,222	16,333	15,448	-5.7%
<b>Total</b>	<b>573,177</b>	<b>453,532</b>	<b>597,999</b>	<b>369,894</b>	<b>448,187</b>	<b>17.5%</b>

Source: Reproduced from the 2014/2015 and 2015/2016 Crop Forecast reports

Assuming the accuracy of the crop forecast report the conclusions to draw from this is that there is sufficient maize and most probably other crop varieties present in the market, even though many farmers will have suffered extremely high personal losses. The key questions then relate to the markets capacity to distribute food to areas where it is required at a reasonable cost.

### **Buyers**

During the market assessment trade in agricultural commodities was overwhelmingly focussed on maize grain and generally in Southern province as buyers aggregated maize at quite low prices (1.1-1.4 ZMW per Kg) benefiting from farmer's (those who produced surpluses) urgent need for cash to meet household expenditures such as school fees. Very little trade in non-maize varieties was witnessed at all. This is partially because the assessment took place quite early in the season particularly given the late planting for most crop types: millet and sorghum was still in the fields in Shangombo and other southern areas of Western province. It is also because there are fewer markets for non-maize crops in the areas assessed, and farmers appear to grow varieties such as sorghum and millet for their own consumption. It is also because trade in these crop types is very informal, taking place between households at a very local level often through non cash transactions.

Buyers for maize from small holder farmers include the FRA, milling companies and traders. The FRA typically buys maize from July and August onwards when the grain moisture content has reached 12 percent. Small holder farmers are unable to wait this long due to their need to meet urgent expenditures so generally sell earlier in the season for lower prices. The FRA pays 75 ZMW for a 50 kg bag of maize nationally and aims to meet annual quotas which are specific to each district. Usually farmer transport their maize production to FRA district warehouse where it is stored. Proportionally the FRA buys 40% of the maize produced, though this is supposedly limited to specific quotas for each district.

The nature of maize sales and buyers differs between districts. In Shangombo and Sioma/Nangweshi over 70 percent of maize is sold to other households.<sup>10</sup> In Gwembe and Monze this percentage is also quite high at 30-40 percent.<sup>11</sup> In Sesheke, Mwandu, Mulobezi and Kazangula between over 60 percent is sold to small traders presumably for the local retail market.<sup>12</sup> The implications for this year are that the volume of local available maize for inter household trade and local retail trade are probably going to be more limited despite the better than expected production figures. Anecdotally many farmers in Southern province reported that they were going to keep their own maize stocks rather than sell due to increasing prices and their experiences over the last two seasons in particular the fear that the next season will also be affected by a dry spell.

In Western province maize buyers are small and medium traders who aggregate maize mostly for retail. In the area assessed small traders are typically farmers who buy maize to trade at the nearest market. They don't procure large quantities (at least not this year) and aim to make small incremental margins. Sometimes they exchange maize for goods. For example, one trader in Shangombo was buying maize in exchange for sachets of glucose. Small traders do not tend to sell the maize they buy outside of their district but play a small role in redistributing maize within their locality. Medium to large scale traders also operate in Western province. These traders buy and transport larger quantities of maize from districts with surplus maize (Kaoma and Mumbwa) to districts where maize is in

<sup>10</sup> Atlas of the Smallholder Farming Sector in Zambia, IAPRI, 2015

<sup>11</sup> As above

<sup>12</sup> As above

demand (Shangombo). Often they trade maize for goods in kind notably cows in what appears to be a very unequal trade with one cow being exchanged for 4 to 5 x 50kg bags of maize. In Shangombo a cow can be purchased for ZMW 600. During the assessment it was difficult to get a clear picture of the volumes traded by medium and large traders as these exchanges typically start in October each year when small holder farmers reach the end of their food stocks (in fair to good years).

In Southern province many farmers are able to produce large surpluses of maize in good years particularly on higher areas (as opposed to the valley area where yields tend to be much smaller). The maize trade is larger here traders aggregating maize in large quantities in the markets for onward sale. This sale is either to other traders (in quantities >5 MT), direct to millers or is reportedly stocked for export.

It is necessary to discuss processed maize meal or mealie meal in the context of this assessment. The government through FRA releases maize stocks to millers through contract agreements who process maize into breakfast (refined) and roller (wholegrain) meal which milling companies then redistribute around the country through their own distribution networks, wholesalers and retailers. By determining the price at which FRA sells to millers the Government of Zambia plays a key role in determining the price of mealie meal. The other key determinant of mealie meal prices is transportation costs which can make a significant difference with a 25 kg bag of mealie meal typically costing 15 to 20 ZMW more in an area such as Shangombo as compared with Lusaka.

Buyers for the other non-maize products can be very roughly categorised into small traders who aggregate farmer surpluses to sell/retail at district markets (sorghum, millet and mixed beans (including cowpeas) and market retailers who buy products from farmers to process and sell in local markets (cassava chips, groundnuts and beans). Given that local production of non-maize varieties is likely to be reduced, as is the case with maize these buyers will not be able to source locally and will have to look outside of the districts where they usually do business. As these buyers are also retailers this has implications in terms of transport costs which are likely to increase. Buyers of beans, at this stage, did not indicate that the wholesale prices had increased.

### ***Retailers***

As has been noted most small level buyers of maize and other products are also maize retailers selling maize in small quantities (a tin/pail at the District market). Retailers for non-maize items also operate at the District markets (very few retailers operate outside the main markets). These retailers are those aggregating and retailing local produce (sorghum, millet and mixed beans - including cowpeas) and/or importing agricultural and processed food items from outside the district. Retailers that import from outside the district typically sell a range of household items (biscuits, cooking oil, mixed beans) which they buy wholesale mainly from Lusaka. Notably retailers of maize and non- maize items tend to be female.

Sorghum, millet and groundnuts were not witnessed to any significant degree in most markets. Partially this is because of the late rains particularly in southern Western province where much of the crop was still in the field. There was one trader selling Sorghum in Mongu and five in Livingstone. Cassava chips and cassava flour was present in Mongu (N=50) and Senanga (N=6).



**Figure 4: Mixed beans Shangombo Market**



The market assessment found that cooking oil (sunflower/vegetable oil) was available at all markets usually sold out of boxes of 6 x 750 ml bottles. Retailers and traders usually sourced their stock from wholesalers in Lusaka or across the border at Shoprite and other markets in Namibia (Sesheke, Katimo Mulilo). Cooking oil was sometimes repackaged and sold in smaller quantities (Shangombo, Senanga).

Any intervention looking at cash or vouchers necessarily involves retailers so it is worth considering retailers in more detail. Based on the survey of market retailers over 80% were female in Western province and approximately 60% female in Southern province. Most retail operations are very small either an individual operating a market stall or a small kiosk rented in a building. All retailers interviewed are unable to access formal financial services but do access small loans between themselves. Retailers who stock items not sourced locally incur significant transportation costs as they need to restock from wholesale markets usually in Lusaka. They tend to undertake this journey individually re-stocking their shop with oil, beans and other processed products when required. All retailers noted that transportation costs was the most significant obstacle they faced.

### **Key Infrastructure, inputs and market-support services**

#### ***Storage***

The FRA manages the only significant storage facilities in operation. The FRA operates large depots or warehouses at each district level. From these depots the FRA buys and aggregates local maize production based on quotas. The maize is then stored at site or moved to holding centres for redistribution elsewhere if necessary. The market assessment did not cover large private storage facilities. At the community level households maintain their own personal food storage facilities.

#### ***Transport***

The road between major market towns in Southern and Western province is relatively good. There are two exceptions. The road from Sioma to Shangombo is generally very poor with a journey over 150 km taking 4-5 hours (depending on how much you value your car). The section between Sesheke to Kazungula is also degraded with many pot holes. Road infrastructure off the main trunk road is generally very poor. Transport off the main road is generally through sandy ox-cart tracks in Western province. In Southern province more unsurfaced roads exist serving a denser population for the most part. Transport services are provided by private bus/mini bus service providers, and rented trucks (7.5 tonne+). Distances are large and transport costs are significant particularly to areas like Shangombo. Moreover, retailers tend to procure individually or in small groups from their locality directly from wholesale markets in Lusaka rather than towns such as Mongu or Livingstone. Retailers travel by bus and procure items which they then transport individually again by the same means.



## ***Finance***

Access to finance is extremely limited in rural areas. Farmers access financial services sometimes through Village Savings and Lending Associations but these are not common. During the market assessment no retailer or trader reporting accessing financial services. It can be assumed that large scale traders, particularly in maize, do access financial services through the formal banking sector. But retailers do not. They operate on very small pools of individual capital which they supplement through small loans between themselves. Retailers play a critical role in transporting and distributing commodities from surplus producing areas and wholesale markets to more rural areas. The limited access to credit is a concern if retailers are to react to increasing demand in rural areas, and the development of rural markets more generally.

## **Market environment**

### ***Pricing***

The Government of Zambia plays a critical role in the pricing of maize grain and mealie meal. The Government of Zambia, through FRA, buys maize from farmers at 75 ZMW per 50 kg bag (1.6 ZMW/kg) – 2014/2015 season. This is higher than the current buying price in Choma and Kalomo (1.1 – 1.4 ZMW/kg). The FRA nominally procures only specific quotas in each district which are provided centrally. E.g. Shangombo has a target of 5000 x 50kg bags or 250,000 kg. In practise the FRA has tended to procure in excess of the original quotas.

The FRA starts buying maize typically in July and during this time maize prices rise in accordance with the FRA price. The FRA also sells maize through community off sales at each district depot. Households are entitled to buy one to two bags of maize at 75 ZMW per 50kg bag per month (depending on the district). The FRA therefore controls the price of maize grain largely once it starts buying maize from farmers, and occupies a central space in the maize grain market.

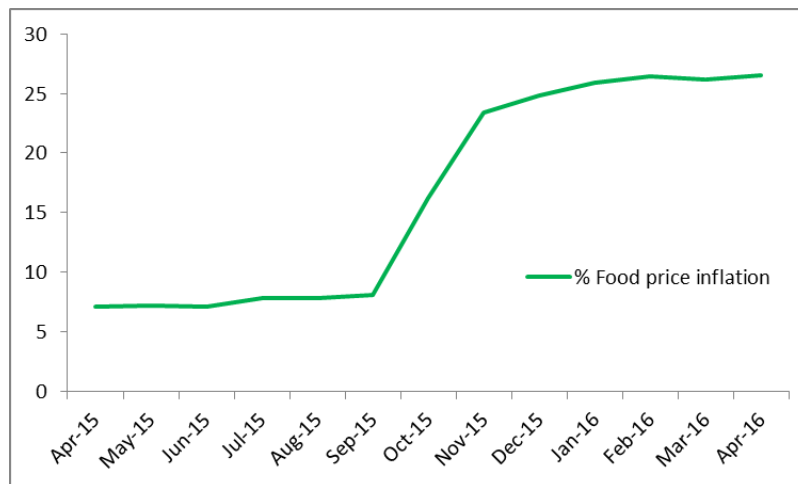
The Government of Zambia's floor price does influence mealie meal prices, as the FRA is the central supplier of maize to the millers. But as already noted mealie meal prices are also influenced by transport costs and production costs currently and likely to remain high due to load shedding.

### ***Foreign exchange rates and inflation***

The Zambian Kwacha suffered during 2015 at one point becoming the world's third worst performing currency. It has much improved in 2016 (in fact being one of the world's best performing currencies). Nevertheless, it is trading at approximately 9 ZMW to the US dollar from 5 ZMW earlier in 2015. The appreciation of the Kwacha against the US dollar has not yet impacted on inflation, particularly food price inflation which at April 2016 remains at 26.5% largely driven by the prices of rice, chicken, tomatoes and sugar.

The increase in demand which is largely expected as more people will look to markets particularly in rural areas is likely to push prices to increase particularly as the markets are poorly integrated and undeveloped. This is upward pressure is also likely to be supported by strong international demand for maize grain and other cereals from countries such as Zimbabwe, Mozambique and Malawi where harvests were significantly worse than Zambia.

**Figure 5: Food Price Inflation Apr 2015 to Apr 2016**



*Source: CSO Monthly Bulletin April 2016*

### **Other Government subsidies**

The Government of Zambia not only subsidizes the production and distribution of maize grain (and therefore also of maize meal). The Government subsidizes fuel. Subsidies to the fuel and power generation sector amount to an estimated 660 million USD per year (Bloomberg News). Changes to this subsidy will impact on the fuel and transport costs. Any negotiations with the IMF, which are possible after the elections on August 2016, are likely to include the level of subsidies here. If subsidies are reduced it is likely to affect transportation costs.

### **Market Maps**

This section depicts three market system maps covering maize in Western and Southern Provinces and beans in both provinces. Overall, and largely based on the crop forecast reports, the assessment is that the market is minimally disrupted. The key issue is the small holder farmers producing local surpluses are less likely to have significant quantities for sale reducing the availability of local maize to poor households to trade between themselves.

There are significant caveats to these maps. Firstly, it is not possible to meet all traders and retailers and establish exactly the volumes being traded at various levels. The numbers of traders and retailers were based on counting people at each market and through questionnaires. Nevertheless some of the figures seem very low. For example, the number of traders in beans in Livingstone is small, and it is likely that there are significantly more and consequently much higher volumes being traded. Secondly, not all markets are represented in the maps. There are significantly more markets particularly in Southern province than the team were physically capable of assessing.

The maps should be seen as indicative of the kinds of volumes and prices being traded at each district. It is highly likely that other similar size markets would have comparable numbers of traders/retailers and therefore similar size in terms of volumes and prices. A more detailed analysis by district is presented below in the following section to provide a more accurate scenario of the kind of demand that could be expected should certain percentages be provided with cash or vouchers and whether or not supply would be sufficient.

Figure 6: Maize Market Map Western Province

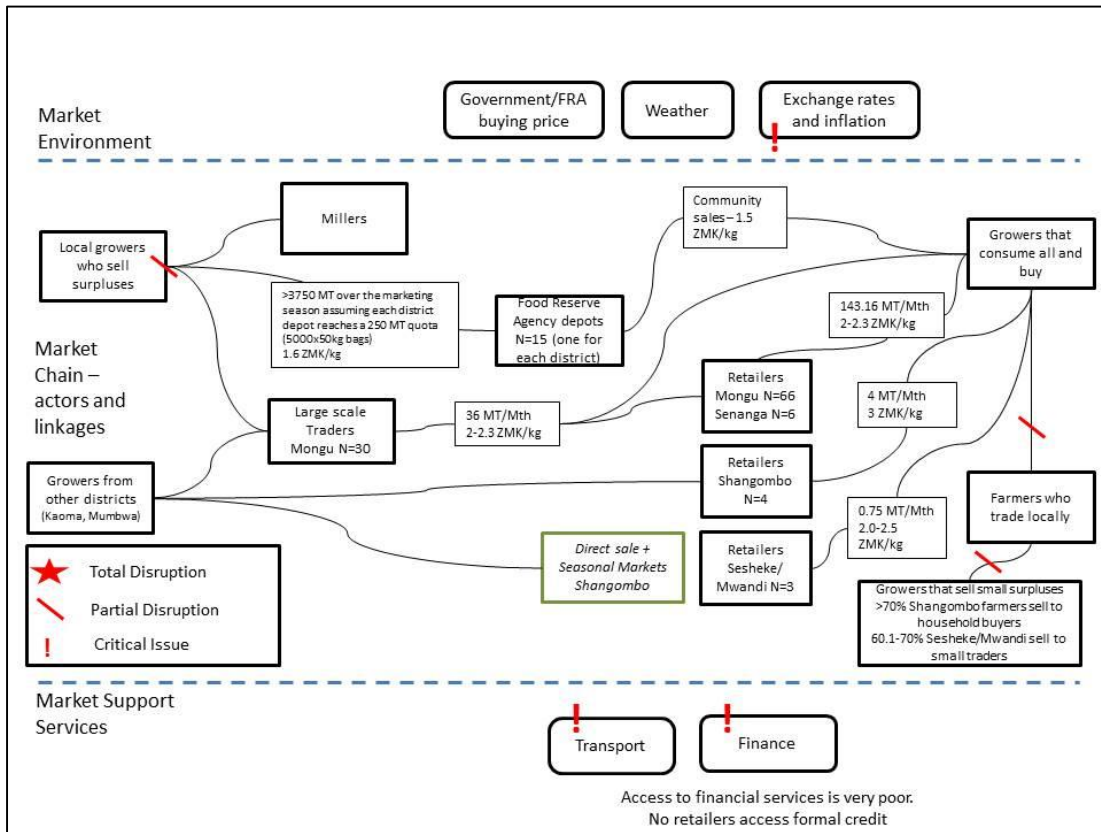
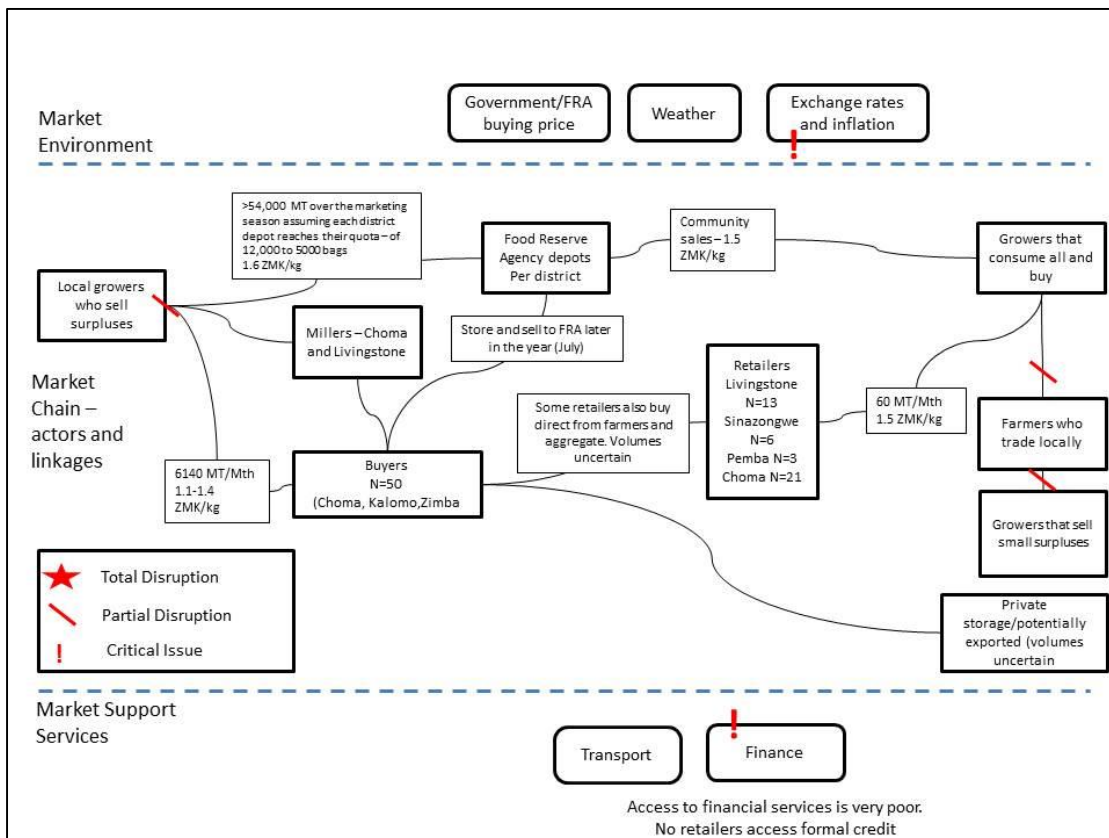
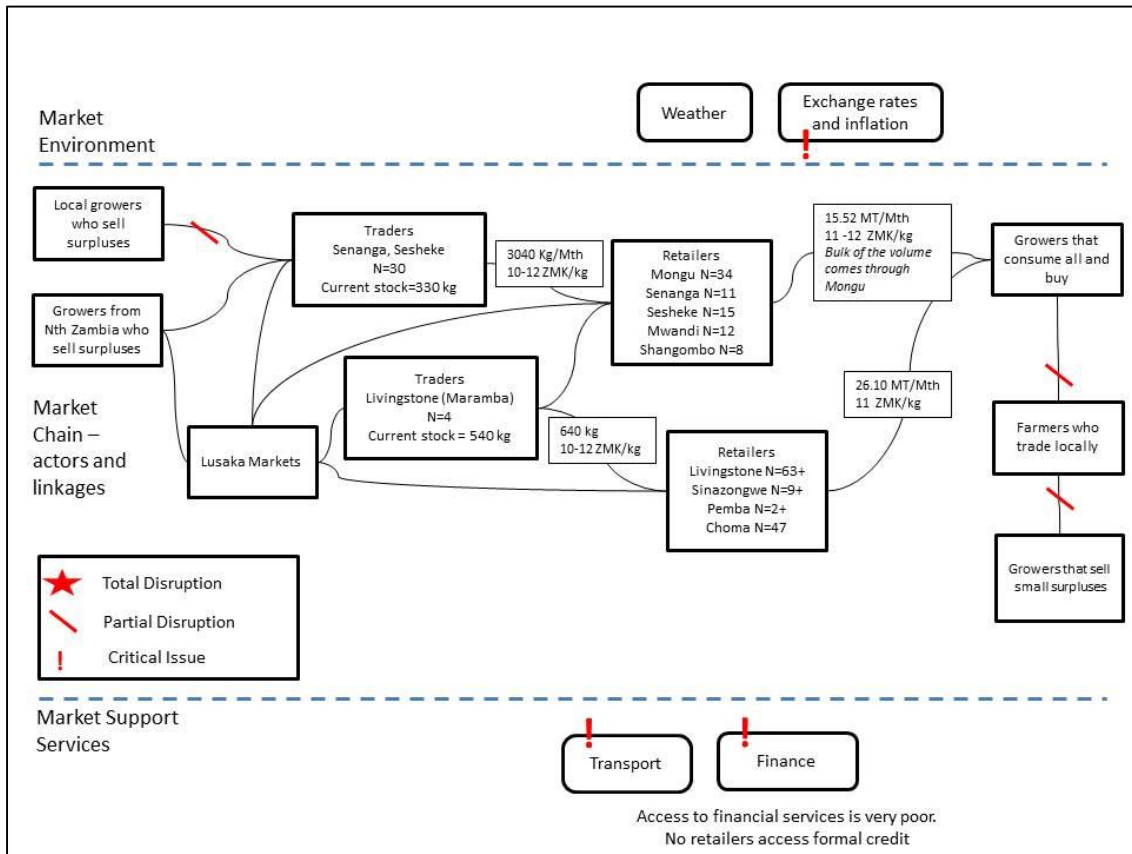


Figure 7: Maize Market Map Southern Province



**Figure 8: Mixed Beans Market Map Southern and Western Province**



## The Market System and Implications for Humanitarian Response

Market Actor	Key Findings	Implications for response
Input Supplier	<p>Input provision is overwhelmingly biased towards maize production. Agro dealers are poorly concentrated in the assessment area mainly as the market is very thin particularly in the southern areas of Western province. The Government of Zambia's Farm Input Subsidy Programme is making non-maize inputs available in the new e-voucher system (only currently in Southern province) but the FISP programme is not reaching many people in southern Western province.</p> <p>Markets for non-maize crops which do comparatively well in southern zones (cassava, sorghum, millet) are very poorly developed and only appear to be traded very locally and used to supplement mealie meal.</p>	<p>The findings here are more related to recovery and longer term development interventions.</p> <p>In the forthcoming season subsidised inputs would support farmers address a shortfall in their own ability to invest in production. Subsidised inputs can utilise a voucher system in conjunction with ensuring agro dealers are supported with resources and networks to make maize and non-maize seed available. If possible, agro dealers should work with farmers groups to select agents through which they can market, and potentially deliver inputs.</p> <p>The voucher system should be flexible enabling repeat purchases if early rains fail.</p> <p>Longer term programming to develop non maize production e.g. sorghum, millet, groundnut, cowpea and cassava value chains.</p>
Producers – poor and very poor smallholder farmers	<p>Producers have no or low food stocks and need to rely on the market for food. They have minimal resources with which to do so. The volume of locally traded and exchanged maize is also reduced so farmers will rely on imports of maize grain and mealie meal (and other food items) to their district. The key problem is therefore a lack of market demand caused by household resource deficit. Many of these poor and very poor farmers will be able to access food aid through FRA and cheap maize through community sales.</p> <p>Markets are distant from most communities with potential implications for women/men and vulnerable groups. Other voucher programmes (e.g. Concern's input voucher scheme) has demonstrated that communities including vulnerable groups are able to overcome logistical challenges usually through grouping together for transport or making arrangements collectively with dealers.</p>	<p>The key programming options here are to address the individual household deficit in financial resources through subsidies. The options include food aid, social cash transfers, food vouchers (with participating traders) and food/cash for work schemes – these options are discussed in a subsequent section of the report.</p> <p>The provision of cash is not new in many of the affected areas through the Government of Zambia's social cash transfer programme. Any provision of cash should not duplicate this programme but aim to work within it to address the particularly circumstances this year through increasing coverage or value (or both).</p>
Buyers	The FRA nationally will be able to reach their quotas in most districts and will have sufficient scope to distribute maize to where it is needed. Consequently	With lower volumes of locally traded maize available at informal retail markets households will rely

	<p>maize delivered through food aid and community sales will continue</p> <p>Medium Large Traders will be able to source sufficient maize to trade with millers, sell to FRA and export (if permits are approved). Medium and Large traders will also have the resources to transport maize to markets but prices are likely to be high for end consumers.</p> <p>Small household and market traders and household buyers are the main marketing channel for maize in much of the target area. Small holder producers will have little or no surpluses to sell. These buyers will have less to trade and the volumes on very informal local retail markets will be much reduced mean retailers will have to source stock from outside local markets,</p>	<p>more on purchases of mealie meal.</p> <p>Intervention options here include working with millers and their wholesale and retail distribution networks to ensure that mealie meal (and potentially beans and oil) is available in more remote areas and priced appropriately.</p> <p>Options to use food vouchers with millers can be explored given the millers organisation capacity. While this might address immediate food needs it would have detrimental consequences to smaller traders.</p>
Retailers	<p>Retailers are a key delivery point for any humanitarian intervention. Retailers are generally small informal operators. They are mainly female, and do not access formal credit. Retailers and traders also incur huge transport costs as they re-stock individually travelling to Mongu for maize, and Lusaka for beans and cooking oil. The main question relates to their collective capacity to react to a <i>large</i> increase in demand. Their organisational capacity and distribution limit the ability to exchange goods for vouchers</p>	<p>The provision of cash subsidies to critically food insecure households needs to be accompanied by a comprehensive communication process with retailers in key markets. An emergency intervention should also consider providing cash support or credit to retailers early in the response to ensure they have the resources to stock/re-stock and meet an increase in demand, as well as to mitigate against the pressure to increase prices.</p> <p>Longer term strategies are required to make the market more efficient in order to reduce costs for the consumer. These include (1) enabling traders and retailers to access credit e.g. from micro finance institutes or the formal banking sector (2) organising retailers and traders by district in order to share transport costs and support more integrated trading (3) supporting improved storage at retail levels (4) improving communication between different markets.</p>
Storage	<p>The FRA is the only entity with sizeable storage facilities. Some traders and smaller retailers have their own storage facilities.</p>	<p>There are no immediate considerations in terms of an emergency response.</p>
Transport	<p>Retailers travel themselves to main wholesale markets (usually Lusaka) to procure their stock and transport this back either on a bus or hiring a vehicle sometimes</p>	<p>No immediate options in terms of a humanitarian response. There are potentially options for organising</p>

	in partnership with other traders.	transport services more efficiently.
Finance	Access to financial services is a critical constraint for producers and retailers in particular. Producers cannot access credit to meet short term needs and therefore sell their early harvest at very low costs. Retailers cannot access sufficient credit to meet an increase in demand, or grow their business.	The immediate needs are to ensure that retailers have access to credit/cash to restock.  In the longer term addressing access to credit more broadly would play a key role in developing more remote rural economies.
Pricing	The Government of Zambia controls the floor price of maize when the FRA starts buying in July of each year. Millers process maize grain and distribute processed mealie meal. The processing costs are higher than usual due to frequent load shedding.	No immediate response options available.
Foreign Exchange Rate and Inflation	Inflation is likely to be an ongoing factor. Food prices are likely at least to remain high or increase further.	Any cash subsidy needs to be able to be adjusted quickly in response to rising prices of key commodities (mealie meal, beans and cooking oil)

*Will farmers affected by poor seasonal rains be able to access essential goods (food) and services from the market?*

As has been noted in previous areas of this report the key result of the poor seasonal rains in Zambia has been the poor harvest for small holder farmers in Southern Western and Southern province in Zambia. It is difficult to generalise on the impact across small holder farmers in the geographic area targeted for this assessment due to the degree of difference in terms of livelihood activities and income sources. Good seasonal rains enable households to produce good harvests enabling some surplus sale (significant in Southern province). There are also usually good opportunities for agricultural labour and other income earning activities such as charcoal manufacturing (better with damp soil), fishing, vegetable production (longer growing season as farmers plant in the residual moisture of flood plain as the water recedes).

As the foundation of the rural economy is agriculture poor seasonal rains catalyse a range of negative affects in terms of the various livelihood activities together with limiting income from agricultural sales and limiting food stocks forcing a far greater reliance on markets for food, as well as FRA community sales, food aid and other social protection schemes.

Therefore, the principal question relates to the affected farmers own resources to access the market. As a household economy assessment was not available for the target area, the market assessment included a household income and expenditure questionnaire sampling individual households in areas where focus groups were conducted. The main qualification here is that many households clearly engage in a significant amount of non-financial transactions particularly with maize or for maize (e.g. many farmers in Mongu trade fish in Kaoma for maize) which are not covered by the survey. Nevertheless, the following information gives a useful summary of the changes in income and expenditure this year.

The table below describes the difference in average monthly expenditure and income in Zambian Kwacha. It is presented in order to give an idea of the kind of monthly deficits currently being experienced compared with a 'normal' year, i.e. a year respondents considered a good year agriculturally. The questionnaire was conducted at the end of April so the figures reflect a time when most respondents were selling some agricultural produce. The figures reported have been manipulated

to provide annual incomes and then divided by 12 to provide a monthly figure. But it is understood that agricultural communities do not have a regular monthly income. There are a number of further qualifications to this information. It is difficult for respondents to remember a ‘normal year’. The number of respondents is small, and reflects the situation in specific areas rather being genuinely representative. Some of the respondents were perhaps atypical for the district population. Where this is the case notes are included in the table to explain. Nevertheless this information provides a useful indication of the changes this year.

**Table 5: Income minus Expenditure figures for some households (ZMW)**

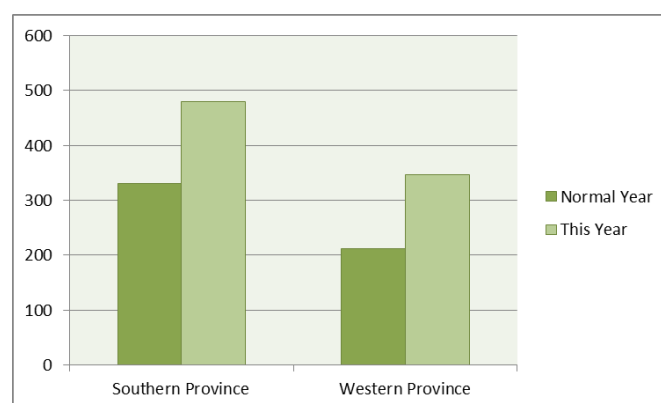
	No of Reps	Average Income minus Average Expenditure				Notes
		Norm Year	Month	This Year	Month	
Mongu	9	247.15	20.60	-165.35	-13.78	Concern Worldwide project beneficiaries (involved in a development project)
Senanga	5	1320.5	110.04	653.50	54.46	farmers who were earning good incomes through selling cassava chips and vegetables (lived near the flood plains)
Shangombo	6	152.43	12.70	-173.13	-14.43	Farmers surveyed all lived near the main Nangweshi to Shangombo road
Mwandi	3	465.72	38.81	-16.50	-1.38	Respondents all receiving significant food aid ration from an NGO – reported no/little expenditure on food
Sinazongwe	3	287.64	23.97	-668.47	-55.71	
Gwembe	3	105.28	-8.77	-406.8	-33.90	
Pemba	3	1318.9	109.91	259.17	21.60	
Choma	3	1099.6	91.63	-98.83	-8.24	

The table indicates that most respondents reported a monthly deficit. It can be assumed that this deficit will increase through the year as farmers sell their agricultural produce, and are not able to access other sources of income. The limited food stocks farmers have will also increase expenditure on food purchases at the market. Expenditure on food is already much greater this year than in ‘normal’ years. Respondents reported spending up to 45% and 63% more on food in Southern and Western province respectively than in normal years. Expenditure on other items (transport, health, education, other) remained relatively stable at this time probably indicated that households had reserves or resources to meet the extra costs for the moment. This is likely to change. Notably the major household expenditure aside from food is education. That households will save in this area by cutting on education costs is supported by evidence from previous poor agricultural seasons (Save the Children).

It is difficult to speculate on the reserves households have in terms of food, assets and other income sources to meet household food expenditures. Most households in focus group discussions indicated that they had no reserves (Mwandi, Gwembe, Sinazongwe) to approximately two months of food reserves (Shangombo, Sioma, Mongu) to more than three months (Senanga). Very approximately this indicates that poor and vulnerable households communities require external support to start soon with the support being increased in July and August in order to limit negative coping strategies (withdrawing children from education, migration, selling of livestock). Oxfam’s recent impact survey on the El Nino provided evidence that households are withdrawing children from school.



**Figure 9: Changes in expenditure on food (ZMW/month)**



*What strategies can be employed to address the financial deficit faced by farmers?*

External support includes temporary provision of food aid or cash or food vouchers. Food aid would address the issue of price inflation, ensure proper targeting and address concerns over market capacity to supply particularly given the constraints retailers face in accessing credit. However, Food aid represents a highly regressive strategy in the Zambian context for a number of reasons. Firstly, Zambia has sufficient food nationally and the market and the Government of Zambia, albeit with inefficiencies, work to distribute this where required. Secondly food aid destroys already weak markets, disincentives local production of food and creates dependency. Although on a superficial level these negative impacts were already discernible in Mwandia, the only district with a large food aid programme implemented by an NGO. The provision of food aid also needs to consider that the Government of Zambia operates a substantial food aid programme through FRA albeit with concerns over targeting and efficiency. The FRA is reportedly planning on distributing 100,000 MT in food aid in response to the current situation.

This report argues that a comprehensive food aid programme is not appropriate in this context, despite the market weaknesses, the financial resources of target farmers and the long distances to District markets. Focus groups indicated that communities are used to travelling long distances to access markets. The question really is how can agencies address household resource and financial deficits in the short and long term and how can agencies support the market to work more efficiently.

More appropriate response strategies include meeting the household deficit through cash transfers or vouchers. A cash transfer programme can take a number of forms. Unconditional Cash Transfer are where participants receive money as a direct grant with no conditions or work requirements. There are no requirements to repay any money and no requirements regarding how the cash is used. Conditional cash transfers involve conditions on how the money is spent. These conditions include requiring recipients to procure food, or pay for school fees. Vouchers, take many forms, and can be exchanged for a set quantity or value of goods, denominated either as a cash value or as predetermined commodities or services. Vouchers are redeemable with preselected vendors, or at vouchers fairs set up by the implementing agency. Finally there is cash for work where payment in cash or voucher as a wage for work, usually in public or community programmes.

**Table 6: Impact of a Cash Transfer Programme in Kalabo, Kaputa and Shangombo**

The Government of Zambia implemented a Child Grant Social Transfer Programme in Kalabo, Kaputa and Shangombo targeting households with children under 5 with 60 ZMW per month. An impact evaluation by the American Institutes for Research (2013) found the following:

- Expenditure on food increased 76% with the largest share being spent on cereals then meats including poultry and fish

- Increase also in expenditure on health and hygiene 7%, clothing 6% and transport/communication 6%
- No major change in expenditure on education or tobacco or alcohol
- An increase in the number of children who had three key needs met (shoes, second set of clothing and a blanket)
- Land under productive use increased by 18% plus and increase in input and tool use leading to an overall increase in production
- Households increasingly used their own labour for their own production, rather than looking for piece work at the expense of their own production
- An overall reduction in extreme poverty and improving food security

Depending on the numbers of people affected by the poor seasonal rains these types of response would likely provoke an increase in demand for key food items even if implemented along side the current FRA maize grain food aid programme. Whether or not the market is able to meet such an increase is the next critical question.

*Will the market be able to meet an increase in demand?*

This report speculates on the needs of the target group and offers potential scenarios based on percentages of affected households by district using existing data from the 2015 Vulnerability Assessment and more recent needs assessments. Essentially, this is a question of whether the market would be able to cope with a significant increase in demand with or without subsidies by external actors. The table below presents some scenarios based on changes in demand and the picture of current supply of maize grain and beans based on interviews with traders and market retailers as of April/May 2016.

The overall supply of commodities is determined by the current average volume of business conducted by retailers and traders multiplied by the number of traders in each market which were physically counted where possible or estimated based on responses from respondents. In general though it can be assumed that the volume is greater as this only represents the trade at District level.

**Table 7: Comparisons of market supply against potential increases in demand**

District	Population CSO 2010	Population (households)	% Affected	Households requiring support	Volume Maize/M onth	Volume Beans/M onth	Cash value maize/ Month	Cash value beans/ Month	Supply Vol Maize/ Month	Deficit	Supply Vol Beans/ Month	Deficit
<b>Western Province</b>												
Mongu	168743	28124	5%	1406	35.15	1.41	87.89	14.06	178.56	143.41	10.50	9.09
Senanga	117359	19560	5%	978	24.45	0.98	61.12	9.78	8.20	-16.25	5.76	4.78
Sesheke (+Mwandi)	91970	15328	25%	3832	95.80	3.83	239.51	38.32	0.75	-95.05	2.06	-1.77
Shangombo (+Sioma)	84070	14012	25%	3503	87.57	3.50	218.93	35.03	4.00	-83.57	0.24	-3.26
<b>Subtotal</b>					<b>242.98</b>	<b>9.72</b>	<b>607.45</b>	<b>97.19</b>	<b>191.51</b>	<b>-51.47</b>	<b>18.56</b>	<b>8.84</b>
<b>Southern Province</b>												
Choma (+Pemba)	238348	39725	10%	3972	99.31	3.97	248.28	39.72	4123.71	4024.40	9.40	5.43
Gwembe	50136	8356	40%	3342	83.56	3.34	208.90	33.42	0.00	-83.56	1.00	-2.34
Kalomo	246207	41035	25%	10259	256.47	10.26	641.16	102.59	1820.00	1563.53	3.00	-7.26
Sinazongwe	98246	16374	40%	6550	163.74	6.55	409.36	65.50	11.79	-151.95	0.72	-5.83
Livingstone (+Zimba)	133881	22314	20%	4463	111.57	4.46	278.92	44.63	244.51	132.94	16.61	12.14
<b>Subtotal</b>					<b>714.65</b>	<b>28.59</b>	<b>1786.62</b>	<b>285.86</b>	<b>6200.01</b>	<b>5485.36</b>	<b>30.73</b>	<b>2.14</b>

This table uses fairly conservative estimates of drought affected households and assumes a level of demand or support equating to 50% of a household ratio (25 kg of maize grain and 1 kg of beans). With these numbers it indicates that the market can meet the additional demand at a provincial level of maize although the volume of maize currently on the market in Western province is short by 51 MT, a relatively small amount which can easily be met by traders from Kaoma and Mumbwa.

Given current figures (volumes and price volumes) which are modest estimations due the season and quantities currently on the market the table indicates that the market very probably can meet a

considerable increase in demand based on the scenario presented at a provincial level. The market assessment indicated that traders and retailers at district levels are capable of distributing commodities where there is demand. Traders and retailers in Senanga indicated, for example, that they were not stocking maize as it wasn't in demand at this time. The table above represents trade by private actors only and does not include the FRA plans to distribute 100,000 MT of maize grain in food aid, as well as significant volumes in community sales.

Therefore, there is strong evidence that the market will be able to react to changing demand. In fact, markets appear to be quite cyclical particularly in areas which rely on maize imports from other districts. In Shangombo, Senanga, Sioma, Nangweshi, Mwandi, Sesheki, Kazangula local communities do not typically produce sufficient food to last them all year even in good years. In Shangombo seasonal markets begin operating around October each year with traders from as far as Mumbwa and Kaoma selling or exchanging maize grain (often for very positive rates of return). Local farmers also use these markets to sell and exchange sorghum and millet between themselves.

**Figure 10: Mealie Meal retail outlet in Sioma**



Also notably communities in these districts (apart from the seasonal markets in Shangombo) do not appear to buy maize grain in any great quantities except for small level exchanges between themselves. If they go to the market they tend to buy mealie meal which is always present whereas maize grain is not. Millers operate efficient distribution networks and are able to meet any increase in demand. Moreover, it is not the case that mealie meal is necessarily more expensive than maize grain particularly in more remote markets. The financial consequences of buying mealie meal as opposed to maize grain are fairly neutral and many people are choosing to buy mealie meal anyway for economic reasons due to the increasing price of maize grain during the 2015/2016 season. Maize grain prices in the survey varied from 1.1-1.4 ZMW/kg buying price in Zimba, Kalomo and Choma to 3 ZMW/kg retail in Shangombo. Once maize grain exceeds 2 ZMW/kg the additional milling costs make procuring meal mealie a better offer at current pricing levels.

**Table 8: Mealie Meal and Maize Grain price comparison**

Item	Qty	Value	Milling costs	Total	Notes
Roller	25	65-75	0	65-75	
Breakfast	25	85-100	0	85-100	
Maize grain	25	50-75	7.5	57.5-82.5	Milling costs 6 ZMW per 20 kg

*How is the market likely to change in the near future?*

This is a difficult question to answer accurately. The nature of any changes on the market are very unlike the kind of disruptions brought on by sudden onset natural disasters or conflict. The summary

analysis indicates that the market will not be significantly disrupted at all given the better than expected maize harvest particularly in Northern Zambia which was less affected by poor rains.

However, the market in Zambia is faced by a number of other pressures which need to be considered. Although the currency has appreciated markedly in recent weeks this trend is by no means certain to continue. In fact the Kwacha began depreciating slightly over the last week edging towards 10 ZMW per USD. Consequently it is likely that inflation will remain quite high keeping food prices high. This is highly significant given how much prices increased in 2015 to 2016 when the average national maize grain prices have increased by 35.13 percent.

The pressure on prices is also affected by the demand (formal and informal) for maize grain and mealie meal from Zambia's neighbours DRC, Malawi, Zimbabwe and Mozambique. Malawi, Zimbabwe and Mozambique suffered agricultural seasons far worse than Zambia. Any leverage the FRA has over mealie meal prices by selling maize and below market costs is limited by the high cost of production (increased power costs due to load shedding).<sup>14</sup>

It is useful to discuss how the market for other commodities might change during the year. Millet and sorghum are traded more locally than maize, beans and cooking oil. Their retail prices are less affected by high transport costs. It isn't expected the millet or sorghum prices will be affected by the same inflationary pressures as maize grain for example. The price of beans and cooking oil are likely to rise. Beans and cooking oil are procured from outside areas affected by poor seasonal rains. The production of mixed beans nationally has been poor for two agricultural seasons. There are indications that international agencies such as WFP will look to procure beans at scale reducing the volumes in the market.

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<sup>13</sup> Monthly Presentation, Central Statistics Office Zamstats.gov.zm

<sup>14</sup> FEWSNET Zambia Food Security Outlook February to September 2016

## Main Conclusions and Recommendations

The emergency market analysis concludes that the poor agricultural season has not disrupted the market in any significant way. The main impact of the poor agricultural season is at the household level in specific areas where farmers have experienced poor harvests and consequently have little or no personal food stocks for sale or for their own consumption. The market assessment did not analyse specifically where these areas are or the specific numbers of affected as this work is being undertaken currently by the Disaster Mitigation and Management Unit. Farmers and communities affected by poor seasonal rains will have less personal food stocks particularly maize, and live in areas where there are lower volumes of locally traded maize. Consequently, they will have to rely on the market to meet their food needs. It needs to be understood that many farmers traditionally rely on markets later in the year (from October) as their personal food stocks are utilised. Historically the market has demonstrated that it has the capacity to respond to this increase in demand even if the terms of trade are poor for the end consumer.

Therefore, while the market in general is poorly developed and unintegrated there are good reasons to conclude that it could respond to an increase in demand should an emergency response involve cash transfers above what is included in the Government of Zambia social cash transfer programme. This is particularly the case if market actors, specifically retailers, could be prepared and supported to respond to an increase in demand. The current situation offers an opportunity to support the market in the long term through the provision of subsidies, while at the same time working with and supporting the Government of Zambia’s own food aid and community support programmes.

The following strategies are considered in the context of addressing the immediate short fall in household resources to procure food and supporting the existing market function better in order to meet the needs of poor and very poor farmers who rely on markets to supplement their agricultural production.

	<b>Direct (Market Sensitive)</b>	<b>Indirect (Market Strengthening)</b>
Emergency – supporting immediate food needs	<p>Implement a cash transfer programme in affected districts (see feasibility analysis below). This should avoid duplicating the national social cash transfer programme. It will require developing targeting criteria and an additional registration process. The value of the support needs to be decided by household monthly deficits and include provisions for inflation and transport costs.</p> <p>Consider cash for work schemes. these should focus on addressing improved access to main roads for rural communities and other public goods. Cash for works schemes could also be incorporated into district development plans – for example, paying local communities to provide aggregate and sand for school construction and so on.</p>	<p>Provide credit or cash grants to market retailers stocking cooking oil and beans: retailers procure these items from wholesale markets usually Lusaka. They face a considerable constraint in access credit. A cash grant would enable them to procure sufficient stock to meet any increase in short term demand. An alternative approach could involve NGO facilitating access to credit for retailers and underwriting the risk. Retailers in more remote markets should be prioritised (Senanga/Sesheke/Sioma/Nangweshi/Shan gombo)</p>
Recovery	<p>Provide input vouchers to drought affected farmers in October and November. Communities in the drought</p>	<p>Train Agro dealers and village agents in providing appropriate extension services and capitalise on their own commercial</p>

	<p>affected areas tend not to receive any external support from FISP or development actors. Many rely on saved/recycled seed. They will have few personal resources to invest in their own agricultural production. Input vouchers should include maize and non-maize varieties and should be exchanged with participating agro dealers.<sup>15</sup></p> <p><i>The main challenge here is the lack of variety in terms of non-maize varieties currently available at agro dealers. There is a potential opportunity to support greater access to non-maize seed in the lead up any voucher programme particularly in terms of linking agro dealers to Quality Declared Seed programmes or other seed multiplication programmes.</i></p> <p>Support flexible and response extension services through district agricultural offices and agro dealers</p>	<p>interests to increase production for their own purposes (increase sale of inputs, increase availability of agricultural produce to trade).</p>
<p>Long term – NB most of the recommendations coming out of this market assessment lend themselves more to longer term development programming. These initial ideas need further analysis and research and are presented here as initial scoping suggestions only at this stage.</p>	<p>Develop markets for non-maize seed varieties. Some agencies are increasing access to non-maize varieties through Quality Declared Seed programmes – e.g. cowpeas in Mongu. Initiative such as these should be scaled up and be more directly linked with agro dealers as the main outlet.</p> <p>Agro dealers should be supported to expand their business model. Currently agro dealers conduct a limited model of selling maize seed and fertilizer between October to January with some veterinary supplies and vegetable seeds outside of this period. Agro dealers could be supported to back buy and aggregate produce. They could also be supported to operate through village agents to reach more farmers by facilitating bulk purchases and even deliveries. Input vouchers could be used to subsidize this innovation.</p>	<p>Work with financial service providers to develop financial services for retailers and traders including agro dealers. Currently very few of these market actors are able to access financial services particularly loans and business training.</p> <p>Develop markets for non-maize varieties i.e. sorghum, cowpeas and millet particularly with Quality Declared Seed programmes. Programmes to develop the sorghum value chain have existed in the past (beer brewing and animal stock feed). A key strategy will be to work with processors to develop this market.</p> <p>Provide structure and coordination to existing markets through the provision of infrastructure and better communication channels. Opportunities for wholesale markets to Botswana for beans/groundnuts in Kazungula as well as Namibia in Katimo Mulilo.</p>

<sup>15</sup> Concern Worldwide has implemented an input voucher programme with good results: it provided farmers with choice and enabled quick access to inputs supporting earlier land preparation and planting. Recipients organised themselves to access inputs and support better linkages with agro dealers.

## Feasibility Analysis for Cash Transfers and other Subsidy Options

The following table presents the advantages and disadvantages of various subsidy options in order to support the argument for unconditional cash transfers. The advantages and disadvantages are based on the context in Zambia following the market assessment. The list is not exhaustive and there are potentially further points that could be made.

Options	Advantages	Disadvantages
Option One		
<p>Unconditional cash transfer to newly targeted beneficiaries over a minimum period of 6-8 months to support families during the most difficult period up to the next harvest. Amount needs to consider (1) household deficit and degree to which the deficit will decrease during the season (2) food price inflation (3) transport costs to markets.</p> <p>Requires additional early support to traders to ensure capacity to meet demand</p>	<ul style="list-style-type: none"> <li>• Allows beneficiaries to buy other things they desperately need (food &amp; non-food items, access services like health, education, school etc.)</li> <li>• Enables recipients to pay off debts and limits negative coping strategies</li> <li>• Stimulates local markets, particularly for local non-maize produce</li> <li>• Delivery option exists through current social cash transfer programme</li> <li>• Ability to monitor outcomes against broad range of social and economic indicators</li> <li>• Ability to model surge responses which could also be appropriate for sudden on set emergencies</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult targeting process</li> <li>• Questions over delivery mechanisms if agencies can't align the additional support with the Gov of Zambia's social cash transfer programme</li> <li>• Considerable burden agency administration and support in the with targeting and support to registration</li> <li>• Risks associated with theft (if direct cash provision is the delivery mechanism)</li> </ul>
Option 2		
Conditional cash transfer	<ul style="list-style-type: none"> <li>• Ensures recipients utilise cash for specific purposes i.e. school fees, procurement of food.</li> </ul>	<ul style="list-style-type: none"> <li>• Restricts households ability to manage their own expenditures</li> <li>• Additional monitoring burden for minimal added value as compared with unconditional transfers</li> </ul>
Option 3		
Commodity vouchers distributed to beneficiaries in exchange for specific items e.g. mealie meal, cooking oil and beans through partnerships with larger businesses particularly milling companies using retail outlets (shipping containers)	<ul style="list-style-type: none"> <li>• Rapid means of addressing food insecurity</li> <li>• Create demand for larger traders particularly millers</li> <li>• Can control price inflation through MoUs with suppliers/partners</li> <li>• Supports efficient monitoring and evaluation</li> </ul>	<ul style="list-style-type: none"> <li>• Requires partnerships with larger businesses e.g. milling companies therefore damaging to small, local traders (mostly women)</li> <li>• Commodity vouchers require frequent monitoring of distribution outlets</li> </ul>
Option 4		
Combination of commodity voucher and cash	<ul style="list-style-type: none"> <li>• Creates demand for larger traders particularly millers</li> <li>• Stimulates local market for non mealie meal traders and includes</li> </ul>	<ul style="list-style-type: none"> <li>• Heavy administrative burden on agencies during the initial set up process (if agencies can't align with Gov social</li> </ul>



	other benefits associated with unconditional cash listed above.	cash transfer programme) <ul style="list-style-type: none"> <li>• Commodity vouchers require frequent monitoring of distribution outlets</li> <li>• Potential to undermine small local traders and push them out of the market.</li> </ul>
Option 5		
Cash for work	<ul style="list-style-type: none"> <li>• Supports the creation of useful local infrastructure particularly access roads, can feed into district development plans</li> <li>• Stimulates local markets, enables households address resource deficits</li> <li>• Can be implemented through partnerships with local government</li> </ul>	<ul style="list-style-type: none"> <li>• Useful for people with time and labour (not for vulnerable groups)</li> <li>• Considerable organisational burden on implementing agencies</li> <li>• Agency risk associated with mismanagement</li> </ul>

End.