State of the Nation: Food and Nutrition Security Report

December 14
Food and Nutrition Council

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1.Introduction

Prior to introduction of the multi-currency system the country experienced negative economic growth which hit rock bottom in 2008 at – 17.7 per cent. The introduction of the multi-currency system and other economic stabilizing measures in 2009 saw the country having positive economic growth since 2000, which had shown a solid recovery and has sustained the growth from 6 per cent in 2009 to 11.9 per cent in 2011. Economic growth rate started to slow down after 2011 during which period it declined from 11.9 per cent in 2011 to 10.6 per cent in 2012 and 3.4 per cent in 2013. From 2009 inflation remained below 5 per cent and it has remained very low but during 2014 it became negative in February up to June and also recording year on year price declines of 0.1 per cent for October 2014. ZIMSTAT[1] (2012) indicates that poverty is worse in rural areas than in urban areas. Six in ten households in Zimbabwe are poor whilst 16 per cent are extremely poor. The rural households are the worst affected by poverty in comparison with urban households (76 per cent rural and 38 per cent urban households). Also, 30 per cent of the rural households are extremely poor compared to 6 per cent in urban areas.

Food production remained depressed from 2002 to 2013 and the country continued to depend on importing significant amounts of cereals to meet its domestic demand for human consumption, livestock use and industrial needs. In 2014, the country had an improvement in food and nutrition security, although levels are still high for a country which was once a net exporter of food. The improvement in food insecurity levels of 6 per cent observed in the 2014/15 consumption year during the peak hunger period[2] against 25 per cent in the 2013/14 consumption year was mainly attributed to improved cereal production, increasing average household income coupled with relatively low prices and the government inputs scheme whose input distribution was timeous.

In terms of nutrition, according to ZIMSTAT (2014) stunting prevalence in children 6-59 months has shown a downward trend from a peak of 35 per cent in 2005/6 to 27.6 per cent in 2014. This is supported by ZimVAC (2014) which showed that there was an improvement in the consumption of an acceptable diet by households from 57 per cent to 68 per cent. There has been a decrease in the proportion in anaemia among children 6-59 months from 56 per cent in 2010 to 31 per cent (MoHCC, 2012). Of concern are the high levels of iron deficiency in children 6-59 months (72 per cent) and women of child bearing age (61 per cent). According to MoHCC (2012), 22 per cent of women aged 15 – 49 years were vitamin A deficient, 61 per cent were iron deficient and 26 per cent anaemic. Pregnant women and those living with HIV had higher levels of vitamin A deficiency, 32 per cent and 28 per cent respectively. The proportion of women who had received prenatal iron supplements in their last pregnancy within two years prior to the survey was 69 per cent. A higher proportion of women from rural areas (72 per cent), had received iron supplements than those from urban areas (63 per cent).

[1] ZIMSTAT is an acronym for Zimbabwe Statistical Agency
[2] The peak hunger period occurs during the last quarter of the consumption year i.e. between January and March
[3] MOHCC stands for Ministry of Health and Child Care in the Republic33 of Zimbabwe

1.Introduction

The causes of household food insecurity and malnutrition are multifaceted hence necessitating the need for a multi-sectoral approach in tackling the causes. There is an increasing realization of the overlap between sectors on issues of food and nutrition security with all sectors concerned about improving resilience, reducing vulnerability, improving food security and nutritional outcomes towards a shared goal of improving economic growth. A multi-sectoral approach in addressing under-nutrition is critical and requires multiple actors which include government, civil society, development agencies, as well as PPPs[8]. The special place for business and science in addressing specific nutritional problems and developing and scaling up interventions to strengthen the food system and enable the healthy growth of young children is also fostered by the FNSP. Coordinated inter-sectoral planning and action is called for.

FNC [9]is mandated by the FNSP to "promote a cohesive national response to the prevailing household food insecurity and malnutrition through co-ordinated multi-sectoral action" (GoZ, November 2012, p. 36). FNC has established FNSCs[10] at provincial and district levels as structures to ensure that food and nutrition security is addressed through multi-sectoral actions and interventions. According to FNC (2014), the FNSCs are mandated to lead the coordination of food and nutrition security activities at sub national level through providing a platform for interaction among relevant government ministry representatives, partners and the civil society being guided by policies and strategies that promote, support and impact on food and nutrition security (FNC,2014,p.14).

This paper seeks to give the state of food and nutrition security in Zimbabwe as at the end of 2014 and takes the following structure. It is divided into five sections which are introduction, socio-economic trends, food security situation, nutritional situation and conclusion. The socio-economic trends section covers macro-economic trends which are made up of gross domestic product, poverty and inflation. The food security situation section looks at season quality, crop production made up of cereal, groundnuts, tobacco and cotton production and food security made up of household food security and key factors that influence household food security. Nutrition situation section covers malnutrition, micronutrient deficiency, infant and young child feeding practices and child mortality.

[4]Public-Private Partnerships
[5]FNC is an acronym for Food and Nutrition Council
[6]Food and Nutrition Security Committees

2. Socio – Economic Trends

1.1 Demographics

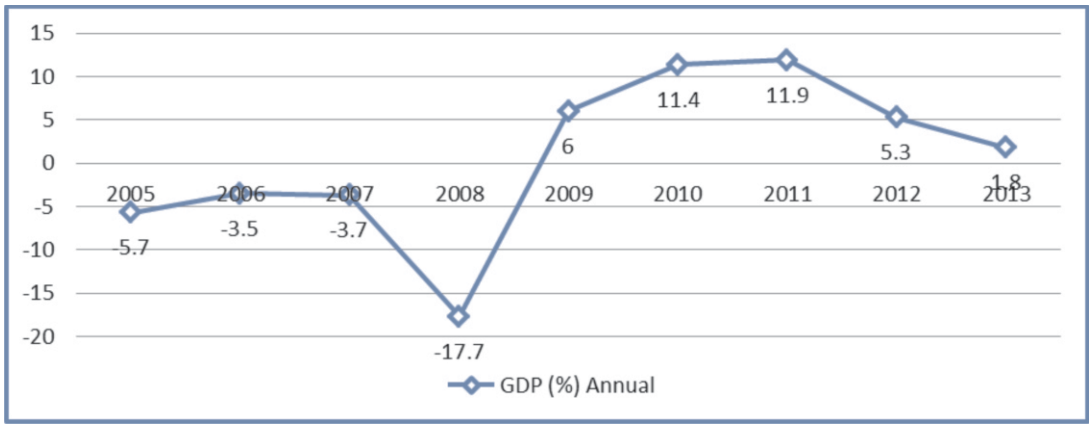
According to ZIMSTAT (2013), Zimbabwe's population in 2012 was approximately 13.1 million. About 67 per cent of the population resides in rural areas whilst 33 per cent resides in urban areas. The average household size was 4.2 and the majority of the households were male headed (65 per cent). The 15-64 years age group (55 per cent) made the majority of the population followed by the under 15 years age group (41 per cent) whilst the above 64 years age group constituted approximately 4 per cent of the population. Of the economically active population, 37 per cent was reported to be communal farmers/workers, 52 per cent were employed in other sectors and 11 per cent unemployed.

2.2 Macroeconomic Trends

2.2.1 Gross Domestic Product

According to GoZ (2013), Zimbabwe achieved a real GDP[9]. growth rate of 5.4 per cent in 2009, 11.4 per cent in 2010, reaching a peak of 11.9 per cent in 2011(Graph 2.21-1). National economic growth declined (GoZ, 2013) from 11.9 per cent in 2011 to 10.6 per cent in 2012 and 3.4 per cent in 2013 (Graph 2.21-1). The GDP in Zimbabwe was worth 10.8 billion US dollars in 2012 which was an increase from the 7.4 US dollars billion in 2011. Due to liquidity shortages, low domestic savings, low investment inflows and power supply deficits in the economy, the Mid-Year Fiscal Policy Review, estimated the 2014 GDP growth at 3.1%.

Graph 2.2-1 Annual GDP



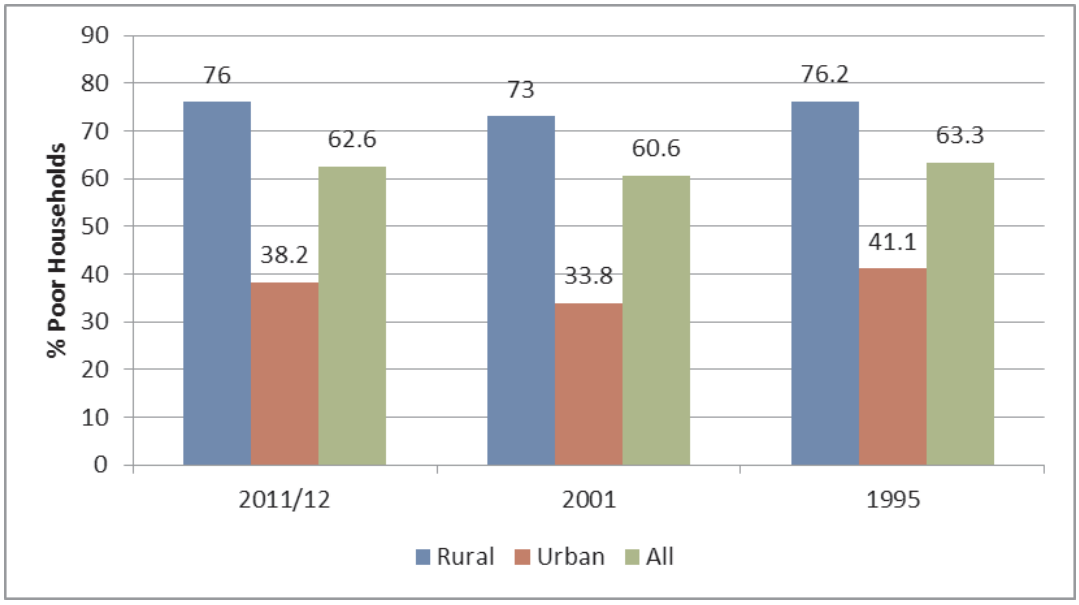
Source: ZIMSTAT (2014)

[7]GDP refers to the Gross Domestic Product

2. Socio – Economic Trends

2.2.2-Poverty

Graph 2.2-2 Proportion of Poor Households

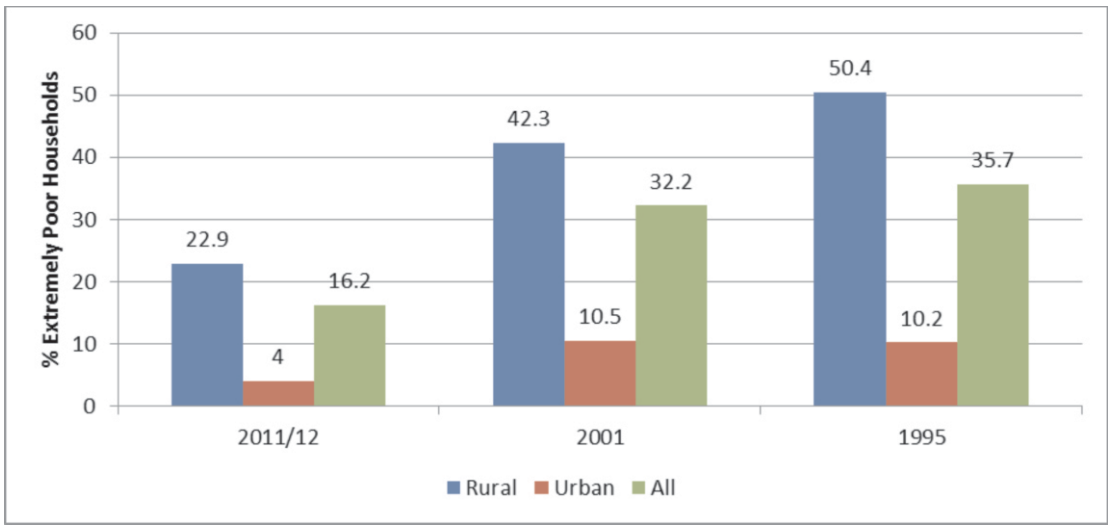


Source: ZIMSTAT (2012)

According to ZIMSTAT (2012), about 72.3 per cent of the population live below $2.56/day and 22.5 per cent below $1.10/day. 62.6 per cent of the household were deemed poor whilst 16.2 per cent were in extreme poverty. The rural households (76.0 per cent) were poor compared to 38.2 per cent in urban areas. Rural poverty was most prevalent in communal lands (79.4 per cent), followed by resettlement areas with 76.4 per cent. Poor households in Zimbabwe are characterised by high dependency ratios; dependency is highest for the poorest households. The extremely poor households in rural areas have larger household sizes than the extremely poor households in urban areas. The survey also noted that elderly headed households were associated with higher prevalence of poverty than households headed by younger heads.

2. Socio – Economic Trends

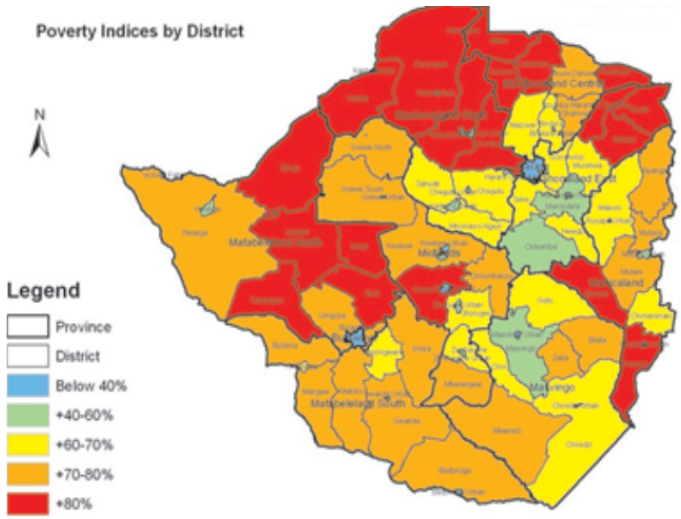
Graph 2.2-3 Proportion of the Extremely Poor Households



Source: ZIMSTAT (2012)

The proportion of extremely poor households was 16.2 per cent in 2011/12 (Graph 2.2-3), this fell from 32.2 per cent in 1995/6 and 35.5 per cent in 2001 (ZIMSTAT, 2012). Figure 2.2-1 shows that poverty varied substantially both within and between provinces.

Figure 2.2-1 Proportion of Poor Households by District



Source: ZIMSTAT (2012)

2. Socio – Economic Trends

2.2.2.1 Poverty Datum Lines (PDL[8])

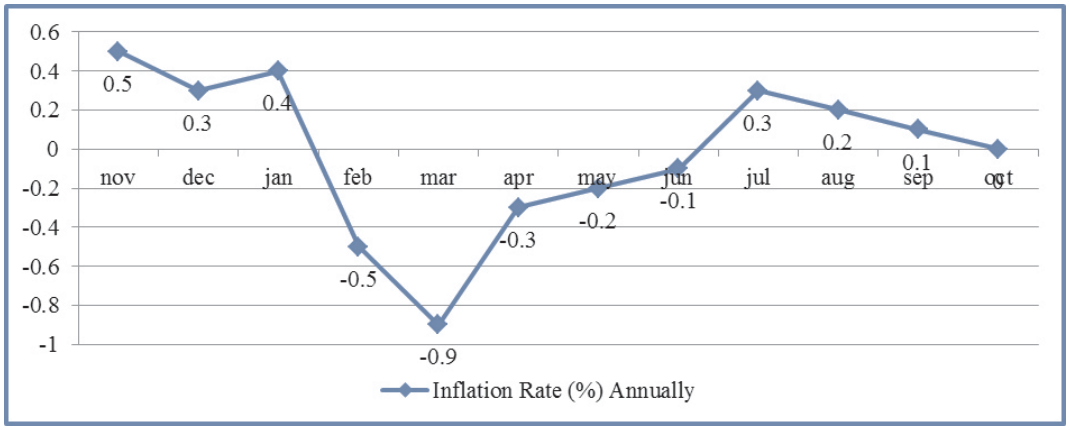
According to ZIMSTAT (2014), the October FPL[9] for an average household of five persons stood at $155.07. This represented a decrease of 0.6 per cent when compared to the September 2014 figure of $155.94. Also the TCPL[10] for an average household of five persons stood at $500.09 in October 2014. This represents a decrease of 0.56 per cent compared to the September 2014 figure of $502.90.

2.2.3 Inflation Rates

The 2015 National Budget pronouncement projected inflation to remain below 1per cent in 2014 and that it will remain low and subdued in 2015. From the February to June 2014 and October 2014 the country experienced negative inflation which the Minister of Finance and Economic Development attributed to self-correction of the price structure which has left most domestic prices for goods and services higher than those of neighbouring countries.

The month on month inflation rate in October 2014 was -0.11 per cent meaning that prices as measured by the all items CPI [11]decreased at an average rate of 0.11 per cent from September to October 2014. The month on month Food and Non Alcoholic Beverages inflation was -0.24 per cent in October 2014, gaining 0.10 percentage points on the September 2014 rate of -0.34 per cent. The month on month non-food inflation stood at -0.04 per cent compared to September 2014 rate of 0.15 per cent (ZIMSTAT, 2014).

Graph 2.2-4 Monthly Inflation Rates for 2014

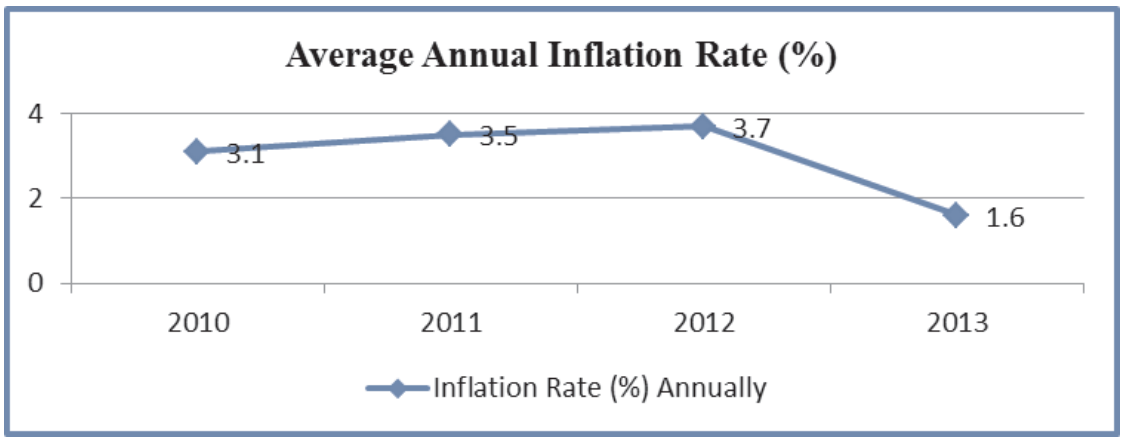


Source: ZIMSTAT (2014)

[8]PDL = Poverty datum line which represents the cost of a given standard of living that must be attained if a person is deemed not to be poor.
[9]FPL = Food poverty datum line which represents the minimum consumption expenditure necessary to ensure that each household member can (if all expenditures were devoted to food) consume a minimum food basket representing 2 100 calories
[110]TCPL = Total Consumption Poverty Line which represents what an average household requires to purchase both food and non-food items for them not to be deemed poor.
[11]CPI = Consumer Price Index

2. Socio – Economic Trends

Graph 2.2-5 Annual Inflation Rates



Source: ZIMSTAT (2014)

3. Food Security Situation

3.1 Season Quality

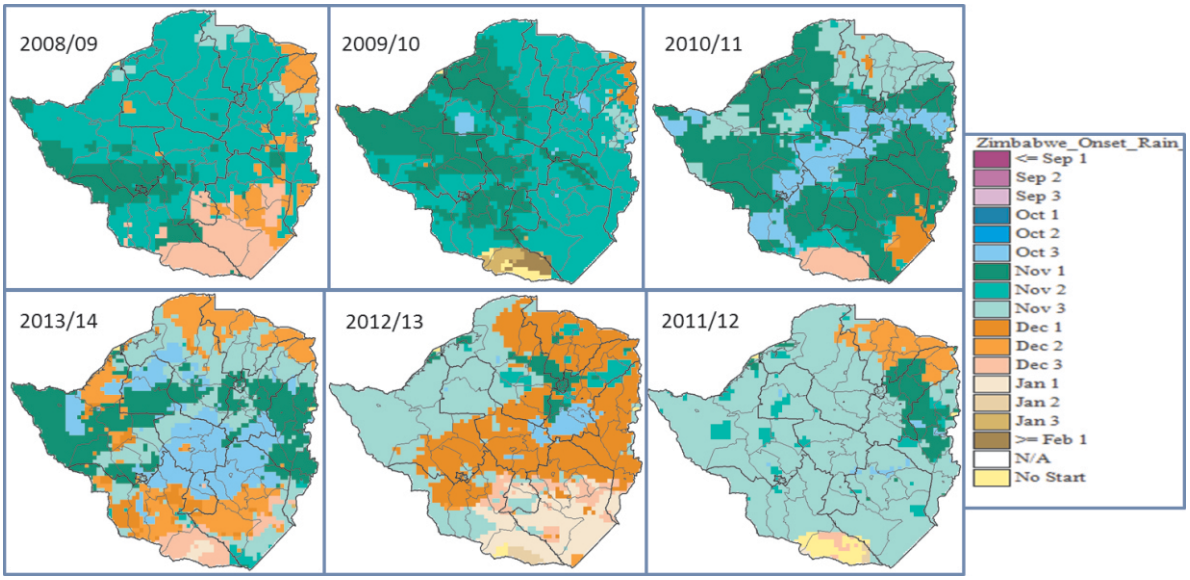
3.1.1 2013/14 Agricultural Season

Rainfall season quality has a profound influence on crop production particularly cereal production in Zimbabwe, given that the bulk of it is rainfed. Rainfall season quality is determined by the duration of the season, amount of rainfall received, and temporal and spatial rainfall distribution. The performance of the 2013/14 season is discussed in these terms in the following sections.

3.1.1.1 Rainfall Onset[1] and Rainfall Received

The majority of the country had an early onset of rains compared to the average season with the central parts of the country ranging from the east to west receiving effective rainfall about 20 days earlier than normal (Figure 3.1-1). Onset occurred from the 11th day of October to the 30th day of November except for the northern parts of the Hurungwe, Mbire, Mount Darwin, Muzarabani, Rushinga, and Mudzi districts and parts of Chivi, Masvingo, Chiredzi, Zaka, most parts of Matabeleland South province and parts of Binga district which had an onset as late as 30 December.

Figure 3.1-1 2013/14 Rainfall Season Onset



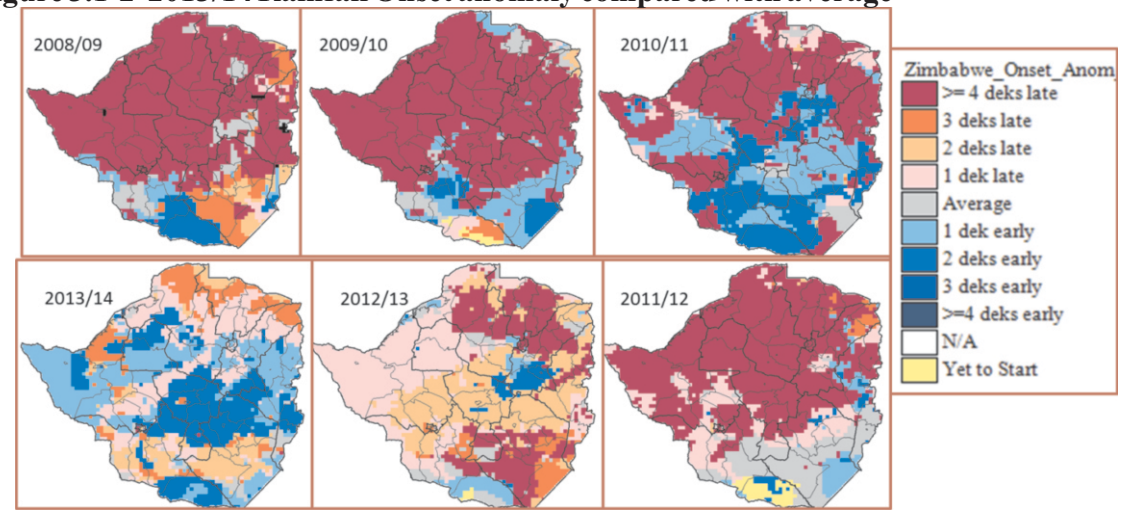
Source: FEWS NET/NOAA

[1]Onset is defined as the first dekad with 25 mm or more of rains, followed by two more dekads summing to at least 20mm

3. Food Security Situation

Over the last five years, most parts of the country had onset between the 21st and 30th of November. According to the 2013/14 season central parts of the country had a start between the 1st and 20th of November which was an early start compared to the five preceeding years whilst the the rest of the country had an onset between the 1st and 31st of November which was a late start.

Figure 3.1-2 2013/14 Rainfall Onset anomaly compared with average



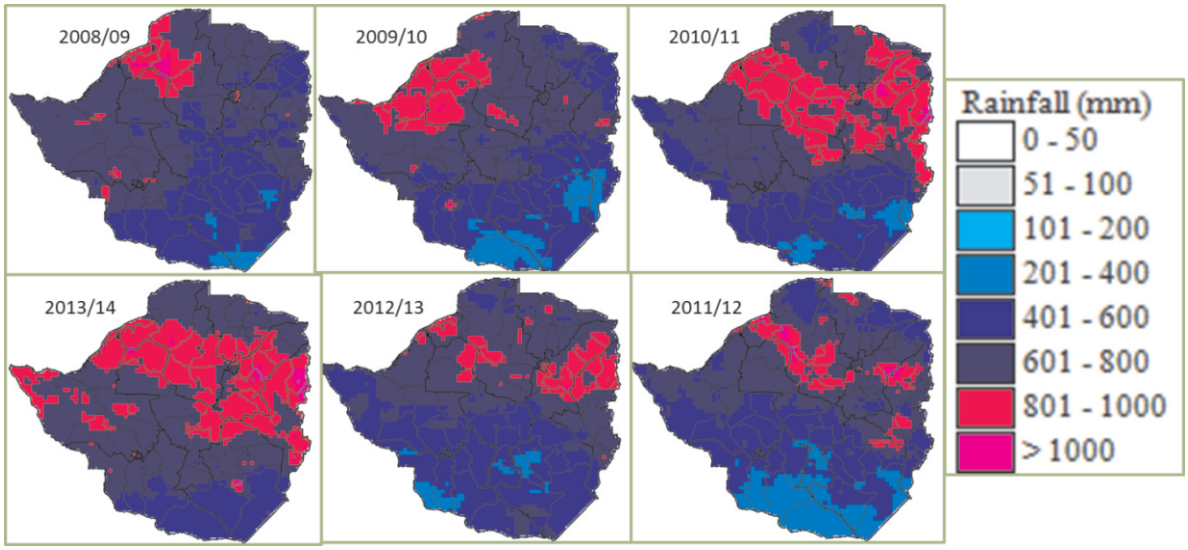
Source: FEWS NET/NOAA

In comparison with long term average onset dates, the season had a 1 to 20 days dekad early start except for those areas which are in the southern part of the country and the Zambezi valley which in comparison with long term average had a 11 to 30 days late start (Figure 3.1-2). Over the last five years onset had an anomaly of being late more than 30 days but the 2013/14 seaon had early start of between and 1 and 20 days.

Most parts of the country received above 600mm, save for the south most parts comprising of Chiredzi, Mwenezi, Beitbridge and Gwanda districts that received between 400 and 600mm of rainfall (Figure 3.1-3). From the south central to south west and north east parts of the country, amounts ranging from 600 to 800mm were received (Figure 3.1-3). The central parts of the country ranging from Manicaland, Mashonaland East and West province to Gokwe North, Kariba and Binga district received the highest amounts of rainfall ranging from 800 to 1000mm during the 2013/14 rainfall season.

3. Food Security Situation

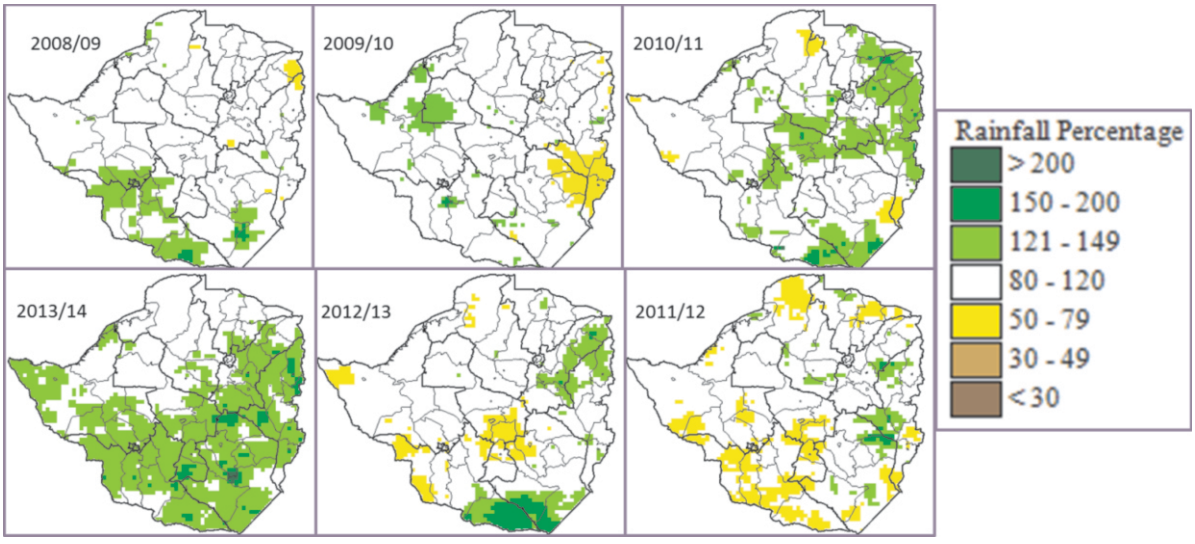
Figure 3.1-3 2013/14 Percentage of Average and Total Rainfall Received



Source: FEWS NET/NOAA

Generally, the country has been receiving rainfall ranging from 400 to 800mm but in 2013/14 most parts of the country received 600mm with northern central part receiving above 800mm. In comparison with the long term average rainfall, most parts of the country received rainfall amounts that were 120 per cent and above average. The north western part of the country where rainfall amounts ranged between 80 and 120 percent of the average, were an exception (Figure 3.1-4). This is a departure from the five year trend of 80 to 120 per cent of average.

Figure 3.1-4 2013/14 Percentage of Average Rainfall Received



Source: FEWS NET/NOAA

3. Food Security Situation

3.1.1.2 Water Requirement Satisfaction Index (WRSI)

Most part the country had an average WRSI of 80 to 95 per cent with pockets in the country with mediocre (60 to 80 per cent), good (95 to 99 per cent) and very good WRSI of 99 to 100 per cent. The WRSI is indicative of how water requirements of crops were met during the period under discussion. It should be noted that different crops have different water requirements. For examples see Table 3.1-1

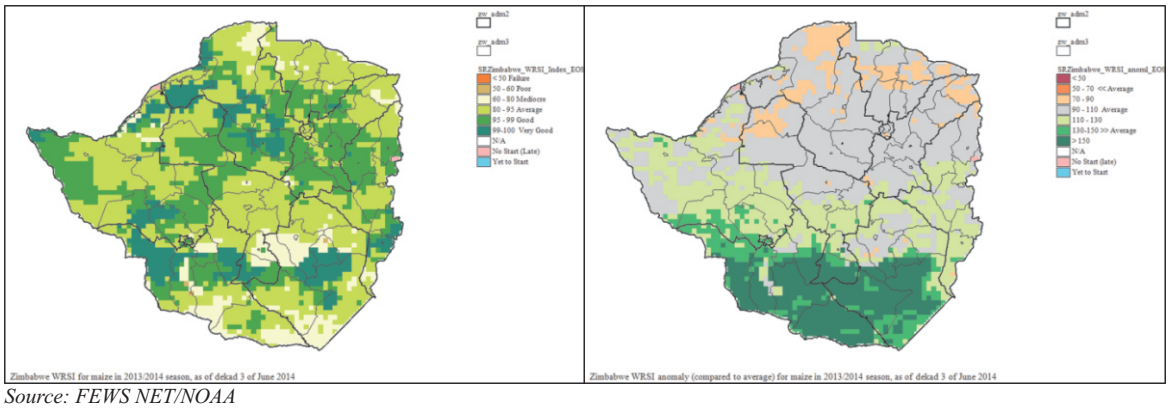
Table 3.1 -1 Crop Growing Period Water Requirement

Crop	Water requirement (mm)
Bean	250 – 500
Cotton	550 – 950
Sorghum	300 – 650
Maize	400 – 800
Tobacco	300 – 500
Coffee	800 - 1200

From Table 3.3 -1 above and 3.3-5 below, which gives WRSI for maize, it can be concluded that the rainfall managed to satisfy on average 80 per cent of the maize crop water requirement in the 2013/14 season. This is indicative of maize crop being a success in the country.

In comparison with the long term average WRSI, most parts of the country had WRSI 100 per cent of average with south-most parts of the country being more than 150 per cent of the average. Pockets in the country particularly areas in the Zambezi valley had WRSI which was 70 to 90 percent of the average.

Figure 3.1- 5 WRSI and Anomaly Compared with Average at the end of the Season



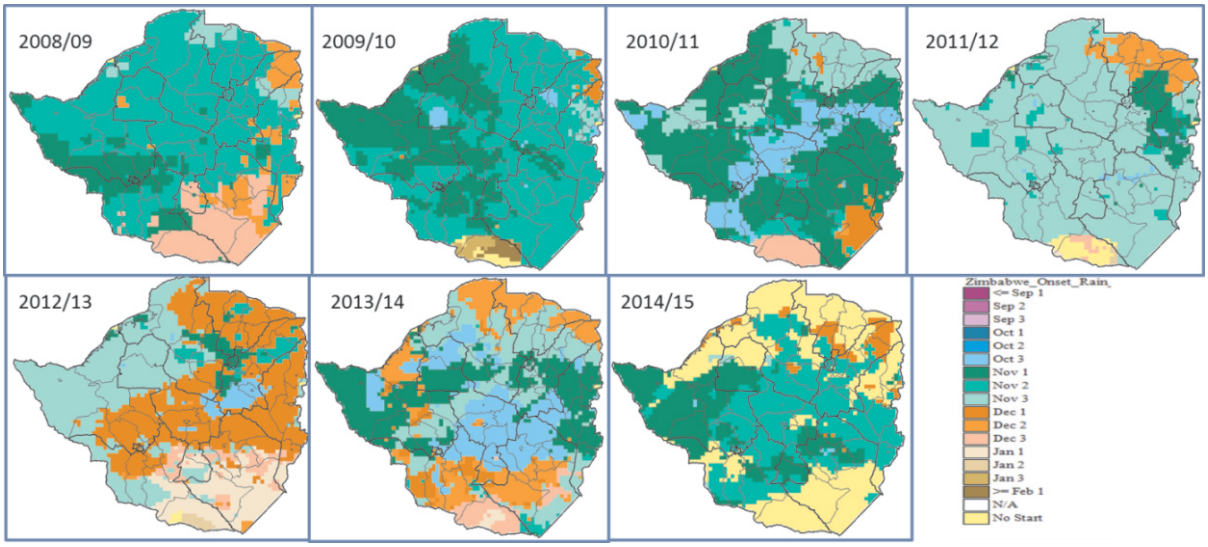
Source: FEWS NET/NOAA

3. Food Security Situation

3.1.2 2014/15 Season

Compared to the 2013/14 season, the season has started late by 10 to 20 days (3.1-6). Generally most of the country had onset on the 20th of December with the central parts of the country from Manicaland to Matebeleland North and South having onset between the 10th and 20th of November. The season is yet to start in Beitbridge district (Figure 3.1-6).

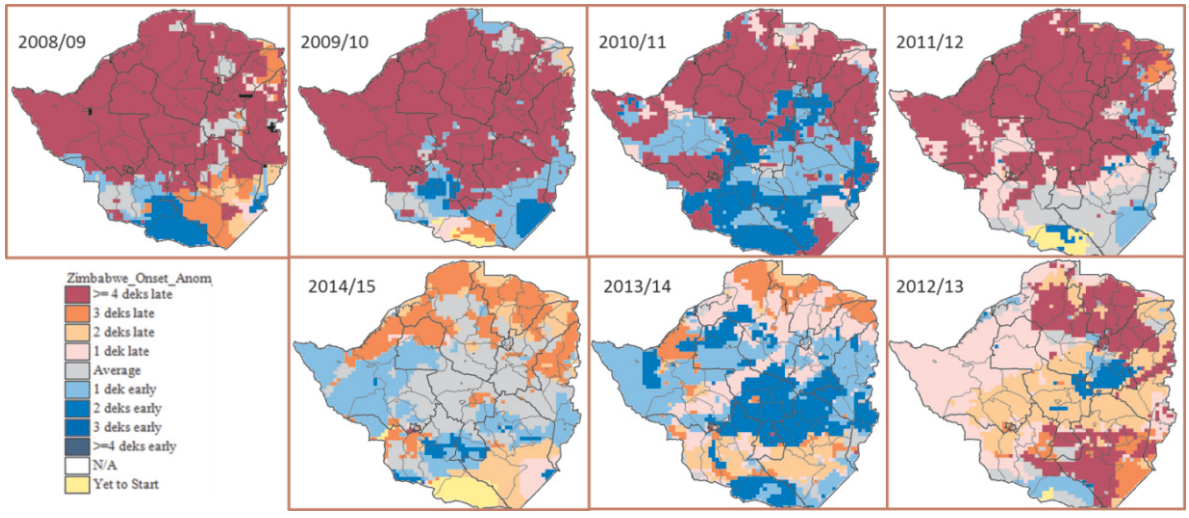
Figure 3.1-6 Season on Onset



Source: FEWS NET/NOAA

According to Figure 3.1-7, the season had a late onset by 10 to 30 days as compared to the five preceding years.

Figure 3.1-7 Season on Onset Anomaly

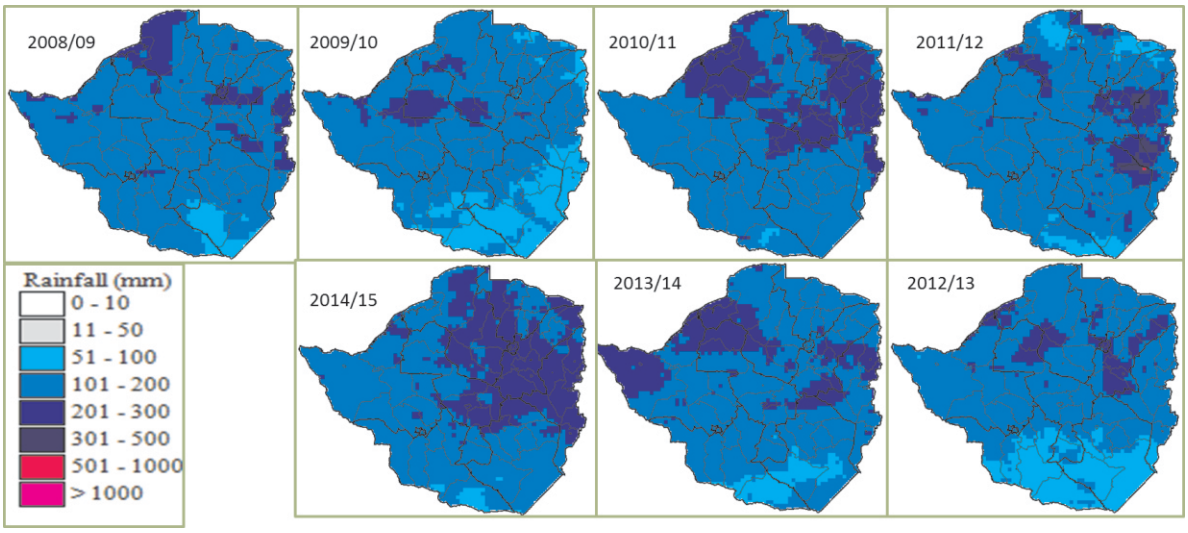


Source: FEWS NET/NOAA

3. Food Security Situation

In terms of total amount of rainfall received, the attaining scenario as at the end of December 2014 was similar to the one in the 2013/14 season except that for the 2014/15 season areas that had received more than 200mm of rainfall has shifted towards the southern parts of the country. In general, most parts of the country have received more than 100mm of rainfall (Figure 3.1-8). Also in comparison with the five years prior to the season there is no significant difference (Figure 3.1-8).

Figure 3.1-8 Total Rainfall Received as at the end of December 2014

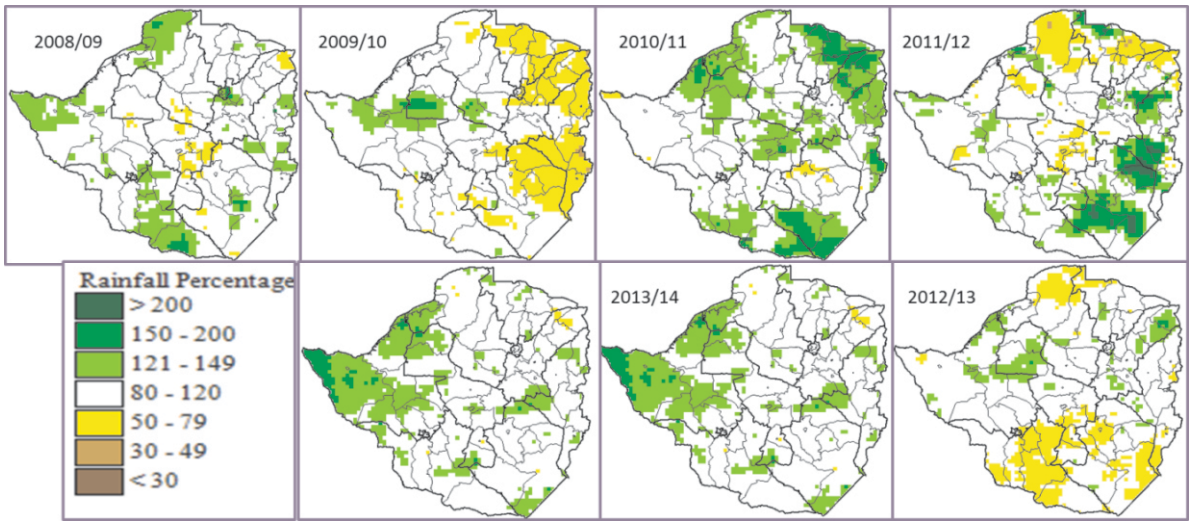


Source: FEWS NET/NOAA

Comparing the 2014/15 amount of rainfall received with the long term average most parts have received rainfall which is not significantly different from the average (Figure 3.1-9). Generally the country has received rainfall that has a difference of between 80 and 120 percent of the long term average. Comparing the current season with the previous season, the difference between the two is that in the 2014/15 season areas that have received rains that are less than the average by more than 50mm (Figure 3.1-9) are more concentrated in the northern part of the country whereas in the 2013/14 season it was in the north eastern and south eastern part of the country. Also in the 2014/15 season there are more pockets that have received rainfall which is more than the average by above 120 per cent and these are in the northen half of Chipinge, Mutare, part of Chiredzi and Umguza districts (Figure 3.1-9).

3. Food Security Situation

Figure 3.1-9 Amount of Rainfall Received by the end of December 2014 as Percentage of Average



Source: FEWS NET/NOAA

A brief analysis of the 2014/15 season given above indicates that the current season's performance has not been much different from the previous season except for a delayed onset of the rains of which if the season ends as normal, in early April 2015, its quality will be compromised by reduced duration and the yields of long season crops and varieties will be reduced.

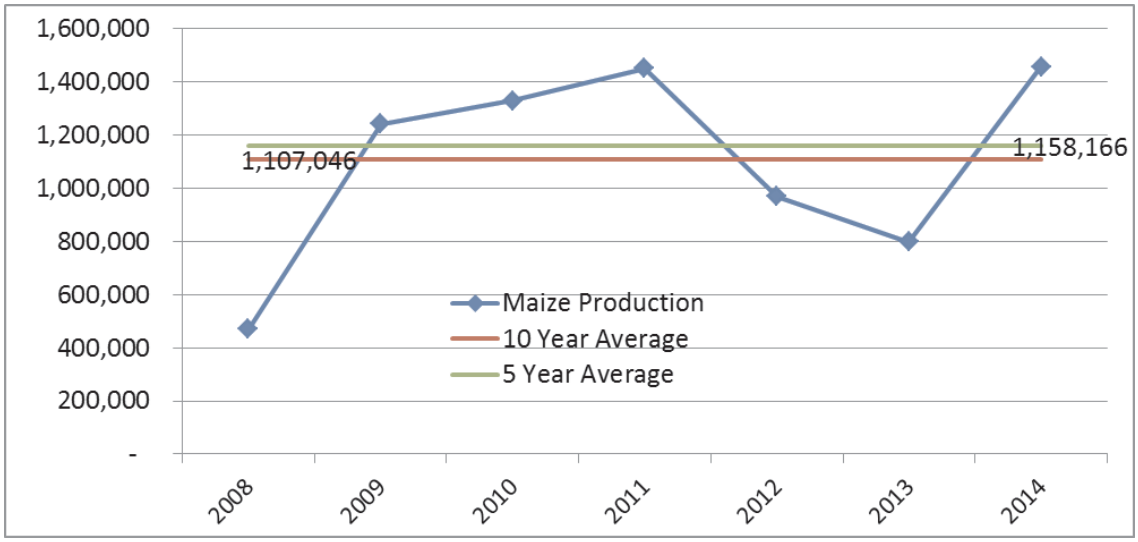
3.2 Crop Production

3.2.1 Cereal Production

The 2013/14 season was an exceptionally good season in terms of agriculture production particularly to cereal production. Most parts of the country had an increased cereal production in comparison with the past six seasons and the five and ten year average as can be seen in graph 3.2-1.

3. Food Security Situation

Graph 3.2 -1 Maize Production in Tonnes



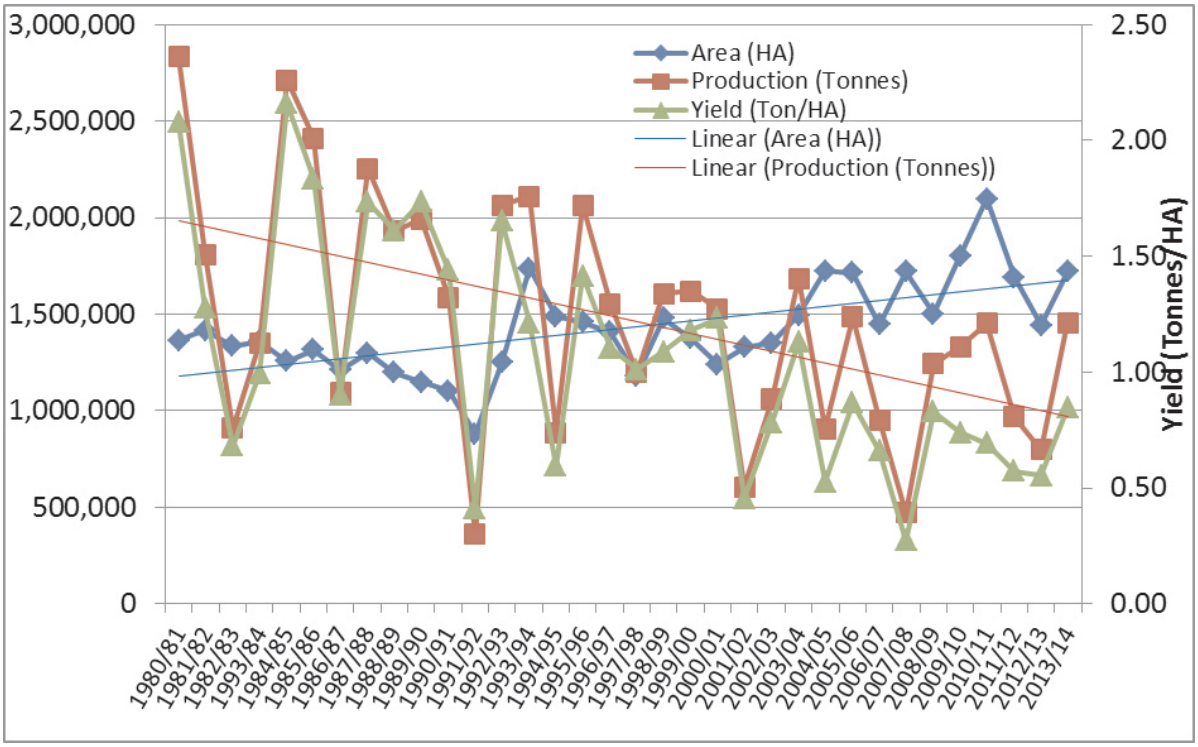
Source: MAMID, 2008 to 2014

Though from the graph 3.2-1 a noticeable increase in terms of cereal production can be observed, it should be noted that from 2000 the production levels have been decreasing whereas the area under cereals particularly maize have been on the increase (graph 3.2-2). The increase in production can therefore be misconstrued as a result of an improvement in productivity[2]. From graph 3.2-2, the increase in production is a function or is a result of the increase in area though over the years productivity has suffered. From the function of yield, an increase in area can result in an increase in production even though productivity might have remained or increased slightly. This can be illustrated by comparing the 1984/85 season which had an area of approximately 1,256,000Ha planted to maize with a production of 2,711,000 metric tonnes giving productivity of 2.16 tonnes per HA and 2013/14 season which had an area of approximately 1,721,000Ha planted to maize with a production of 1,456,000 metric tonnes giving productivity of 0.85 tonnes per HA. Depressed productivity is the scenario that has been obtaining in Zimbabwe since the 2000/01 season. National maize production has been on the decline as shown by the production trend line whereas the area under the crop has generally been on the increase as also shown by the area trend line in 3.2-2.

[2]Productivity is the function of area and production which is calculated by the formula: Yield (T/HA)= $\frac{Production}{Area}$
hence *production = area x yield*

3. Food Security Situation

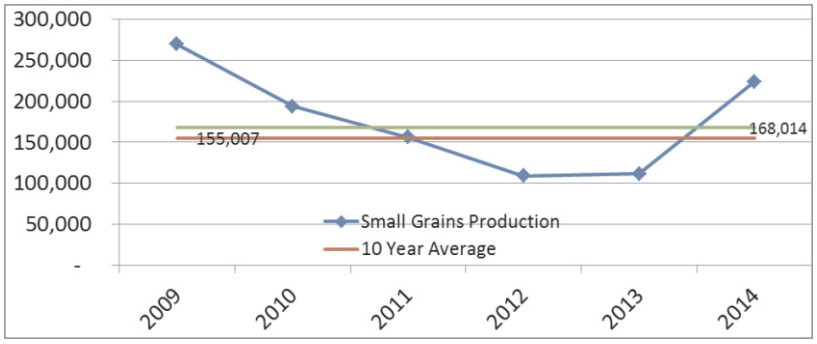
Graph 3.2-2 Maize – Area (HA), Production (tonnes) and Yield (T/HA)



Source: CSO(1981 to 2006), MAMID, 2008 to 2014

Since 2009, the production of small grains has been on the decline though in the 2013/14 season there was a significant increase of approximately 100 percent compared to the previous season and 45 and 33 percent increase compared to the ten and five year averages respectively (graph 3.2-3). The production of small grains has generally been concentrated in the southern parts of the country which constitute the drier region of the country.

Graph 3.2-3 Small Grains Production in Tonnes



Source: MAMID, 2008 to 2014

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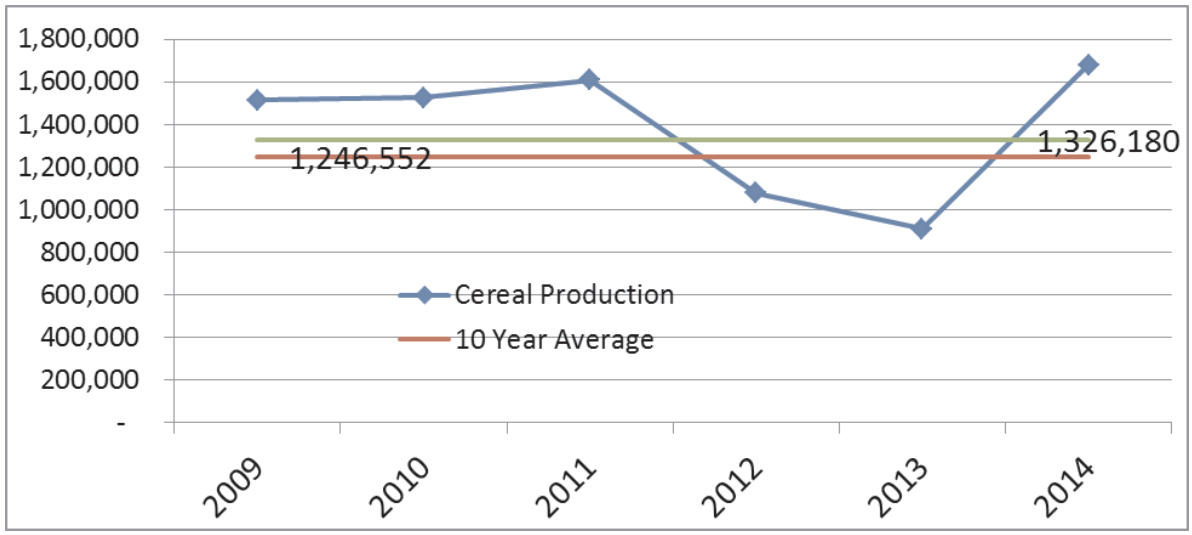
Overall cereal production during the 2013/14 season has increased significantly compared to the last six seasons. This season's production can only be compared to the production of the 2010/11 season which had approximately 1, 6 million tonnes of cereals produced (Graph 3.2-4). As can be observed in Graph 3.2-4, the season compared to the previous season had a 76 percent increase in total cereal production and 35 and 27 percent increase compared to the ten and five year averages respectively. This season was quite an exceptional one in season quality. The increase in cereal production though much influenced by the increase in area under maize can be attributed to well distributed rainfall and availability of inputs on time particularly from the government. It should also be noticed that cereal production in Zimbabwe is dependent on the major staple crop, which is maize, production. As can be observed in Graph 3.2-5 over the past 10 years approximately 88 percent of cereal production was from maize production but the 2013/14 season saw the contribution decrease by 1 percentage point compared to the 10 year average. The contribution of maize to cereal production has been generally on the decrease as depicted by the trend line in Graph 3.2-5. This does not necessary entail an increase in other cereals but that other cereals production has remained constant or that decrease in the production of other cereals was at a slow rate compared to that of maize.

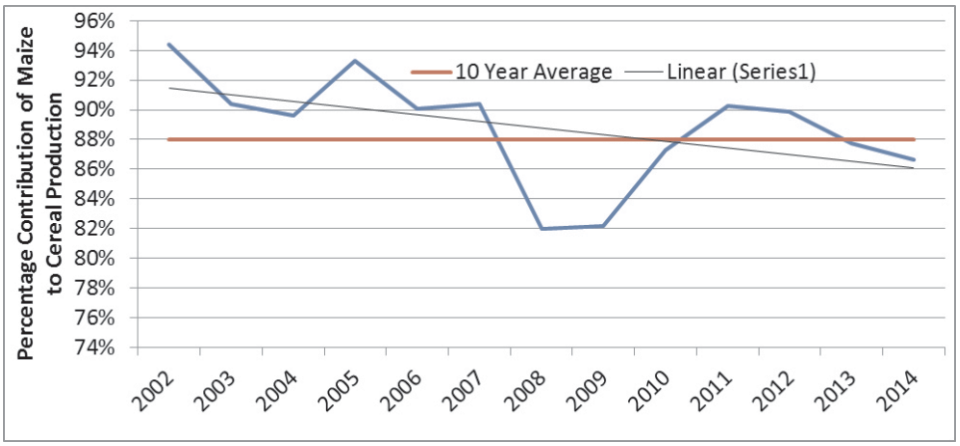
Graph 3.2-4 Cereal Production in Tonnes



Source: MAMID, 2008 to 2014

3. Food Security Situation

Graph 3.2-5 Contribution of Maize Grain Towards Cereal Production



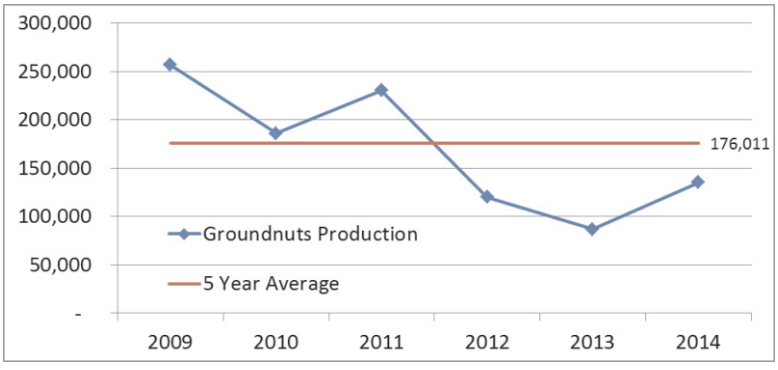
Source: MAMID, 2008 to 2014

With above 80 percent of the cereal production from maize one can conclude that the cereal production scenario in Zimbabwe is greatly influenced by maize production hence whatever factors influence maize production will have a profound influence on cereal production.

3.2.2 Groundnuts Production

Groundnuts are one of the major food crops grown in Zimbabwe and their production has been on the decline since 2009 when their production reached 257,000 tonnes, a level that is yet to be attained. Groundnuts besides being a source of nutritious food are a source of income particularly in areas where production is high such as the Gokwe area. Compared to the last season, production of groundnuts has seen a 56 percent increase but was 23 percent below the 5 year average (see graph 3.2-6).

Graph 3.2-6 Groundnuts Production



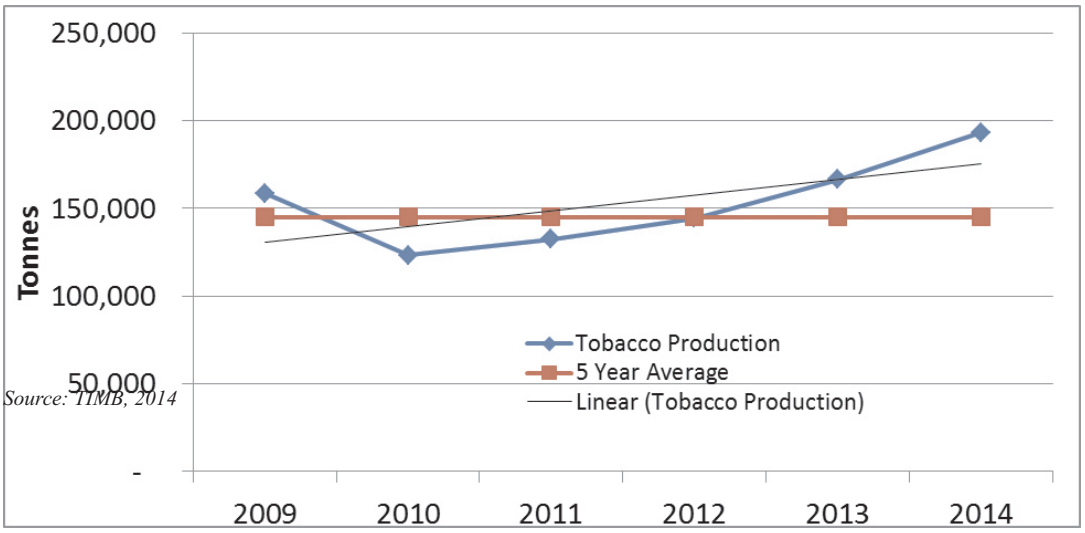
Source: MAMID, 2008 to 2014

3. Food Security Situation

3.2.3 Tobacco Production

According to TIMB (2014) tobacco production has been on the increase since 2010 (graph 3.2-7) and its production has had a significant impact on incomes particular in those areas it is grown though it should be noted that according to ZIMVAC (2009 to 2014) it was grown by less than 10 percent of the rural population in the country. It should be noted here that though it was grown by 10 percent of the rural households it created significant employment opportunities for poor able bodied people through casual labour necessary through its labour intensive production processes. In comparison with the last season, production has increased by 16 percent and against the five year average it is high by 33 percent (graph 3.2-7).The increase in production can be attributed to the land reform, the fall in the profitability of maize and cotton, the inputs financing and credit support and the availability of a liquid and ready market.

Graph 3.2-7 Tobacco Production



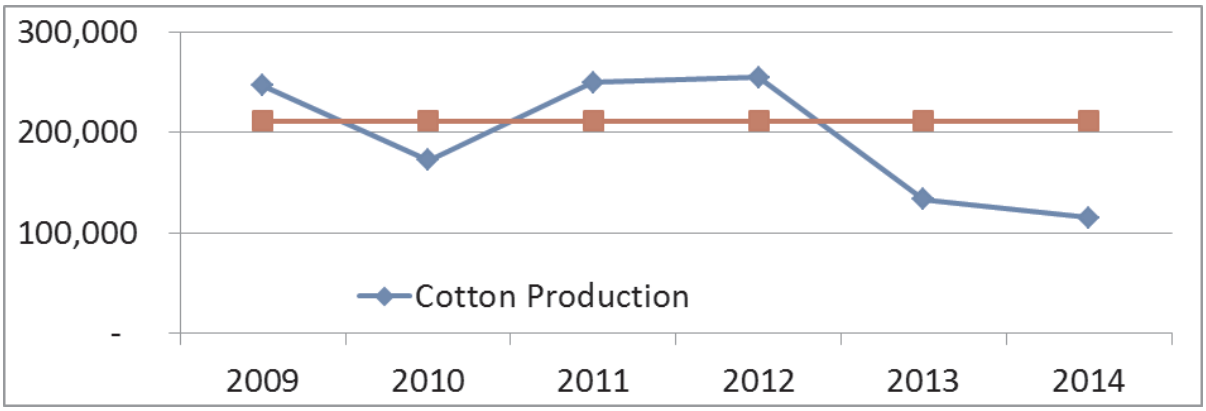
Source: TIMB, 2014

3.2.4 Cotton Production

Cotton production has been on the decline mainly due to depressed prices over the years (graph 3.2-8). Five year average production is at approximately 211,340 tonnes of lint with the 2013/14 season production falling short of the average by 46 percent and short of last year's production by 33 percent. The decrease in production can be attributed to the depressed world cotton prices which have a bearing on local prices forcing former growers to switch to more viable cash crops such as tobacco.

3. Food Security Situation

Graph 3.2-8 Cotton Production Trends



Source: MAMID, 2008 to 2014

3.3 Food Security

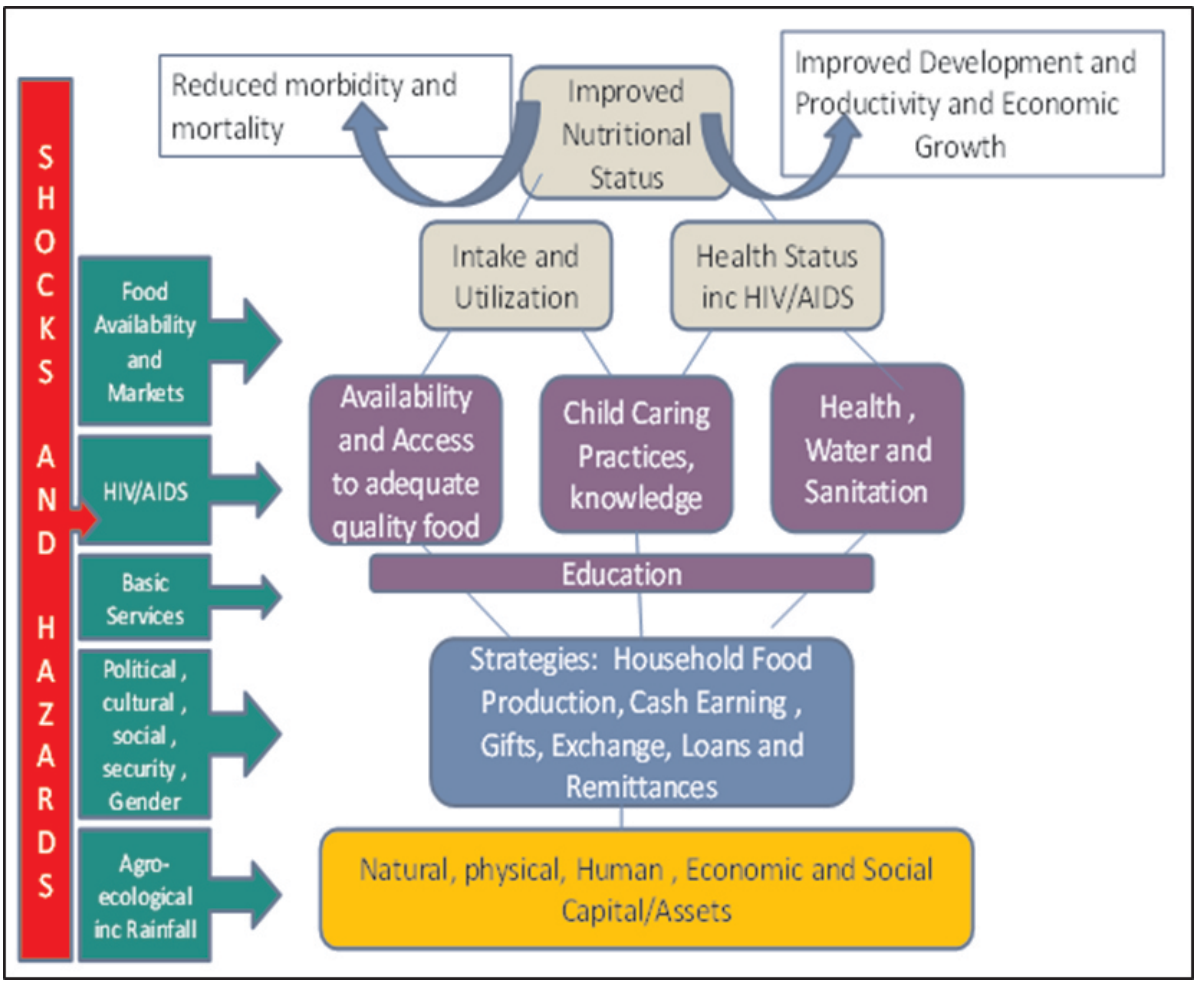
Since becoming common currency in development discourse, the concept of food security has evolved from being just about food supply and availability to being a much more complex and multi-dimensional phenomenon that also includes access to food, food utilisation and nutrition, food safety, food preference and the cultural aspects that go with this and the stability of food availability, access and utilisation.

At the 2009 World Summit on Food Security, the FAO[3], encapsulated these ideas into a coherent definition of food security that can be applied at household, community, regional and global level as "Food security exists when all people at all times have physical, social and economic access to sufficient, safe and nutritious food that meet their dietary needs and food preferences for an active and healthy life". ZimVAC's conceptualisation of food and nutrition security has evolved with these international developments and has drawn principal guidance from the UNICEF conceptual framework on the causes of malnutrition.

[3]United Nations Food and Agriculture Organisation

3. Food Security Situation

Figure 3.3-1 The Food and Nutrition Conceptual Framework



Source: FNC (2010) adapted from the UNICEF framework on causes of malnutrition

The food and nutrition conceptual framework recognizes that the manifestation of malnutrition is a result of a number of direct and indirect causes. Good nutritional status leads indirectly to better outcomes in morbidity and mortality as well as improved education outcomes, productivity and development.

Immediate causes are influenced by a set of three inter-related underlying causes. These are household food security, adequate caring practices as well as a good health environment and access to health services.

3. Food Security Situation

The underlying causes are influenced by livelihood strategies and assets. Food security is the outcome of the livelihood strategies adopted by a household. It includes the activities required for a means of living. The livelihood strategies are based on the assets or capital available to the household, which include its human social and natural and physical and financial resources. The underlying causes, livelihood strategies and assets play out and are informed by the broader national and regional contexts within which households and communities exist. This includes the overall food availability and market system in the country, the prevalence of major diseases including HIV/AIDS, the policies, capacities and infrastructure in place to support basic social services. The context is influenced by the broader social and economic, political environment as well as the agro-ecological patterns prevailing.

A number of different shocks and hazards (existing, emerging and new) are likely to continue to impact on the context and people's livelihoods. These may include the broader economic global crisis (economic slowdown), climate change and resulting recurrent flooding and droughts, further political instability (which may lead to further displacement or further economic decline). The ZimVAC rural food and nutrition security analysis strives to establish and describe a households' current[4] access to adequate food and to forecast household food access over a consumption year[5].

In satisfying these two objectives, ZimVAC is guided by the conceptual framework in determining the variables on which to collect both primary and secondary data. The conceptual framework further informs the categorisation of relationships and linkages amongst the different variables in the various algorithms ZimVAC applies.

Broad relevant context issues on hazards/shocks and the socio economic situation are mainly identified and analysed through secondary data review and analysis. Common issues in this regard would include droughts, floods, and marked crop, animal and human diseases outbreaks. The national economic situation analysis often takes special note and reference to the agricultural sector given its importance to rural livelihoods in Zimbabwe.

[4]At the time of the assessment which is usually in May of each year.
[5]The consumption used by ZimVAC was derived from the National Early Warning Unit's cereal balance sheet marketing year.

3. Food Security Situation

Both the current food security analysis and the food access projections aim to describe the underlying causes of malnutrition but with greater emphasis on the "availability and access to adequate food". ZimVAC collects and analyses a range of data that describe and estimate household food access at the time of the assessment. These include number of meals consumed in a day, household consumption coping strategies, the diversity of the food consumed as well as household food access indicators such as the food consumption score and the household hunger scale. Without any explicit attempt to describe the state of and access to all household capitals/assets, the ZimVAC household food access projection takes a livelihoods based approach that attempts to estimate the contribution to household food access by all the livelihoods strategies at its disposal.

The ZimVAC food security analytical framework uses "food access" as a proxy for food intake and utilisation, but whenever funds permit anthropometric measurements are collected and analysed to give better insights into food utilisation. Otherwise, the food utilisation situation is deciphered from available secondary data sources such as the Demographic and Health Surveys, Multiple Indicator Surveys and specific nutrition surveys.

Treatment and consideration of the "health, water and sanitation area" is often limited to water and sanitation and hygiene practices as well as prevalence of cough, fever and diarrhoea in children five years and younger. Analysis of the third underlying cause of malnutrition, "caring practices" has involved considering child feeding habits (number of meals), thus far, this has hardly been interrogated in the ZimVAC food security analysis. These themes are discussed and presented as separate and complementary units of analysis in the description of the food and nutrition security situation in ZimVAC rural livelihoods reports.

3.3.1 Household Food Security

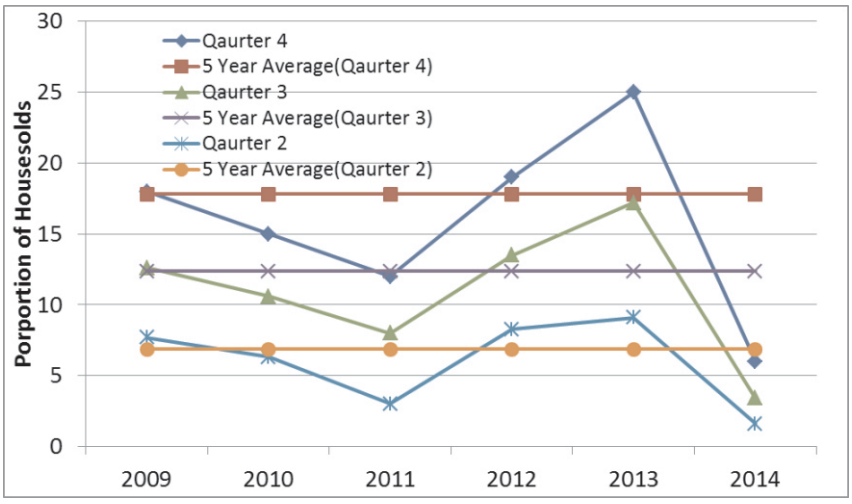
The food security situation in the country is mainly influenced by agriculture production as has been demonstrated in 3.3-3. The household food security status was determined by measuring the household's potential access to enough food to give each member a minimum of 2100 kilocalories per day during the consumption year. Each of the surveyed households' potential access was computed by estimating the households' likely disposable income during the

3. Food Security Situation

consumption year in question from the following possible income sources cereal stocks, own food crop production, potential income from own cash crop production, potential income from livestock and income from other sources such as gifts, remittances, casual labour, pensions and formal employment. Total energy that could be acquired by the household from the cheapest available energy source using its potential disposable income was then computed and compared to the household's minimum energy requirements. When the potential energy a household could acquire was greater than its minimum energy requirements, the household was deemed to be food secure. When the converse was true, the household was defined as food insecure. The severity of household food insecurity was computed by the margin with which its potential energy access is below its minimum energy requirements (ZimVAC, 2014).

The food security situation (ZimVAC, 2014) in the country has shown an improvement due to the improvement in cereal production that has been experienced in the country coupled with a stable macro-economic environment. According to ZimVAC (2014) 5.8 percent of the population, which is approximately 564,300 people, has been forecasted to be food insecure during the peak hunger period and this is a 76% decrease compared to the previous consumption year's 25 per cent (see graph 3.3-1). Compared to last year the rate of increase from the 1st to the 2nd quarter was slower (0.68 (2013/14) and 0.70 (2012/13)) but became faster from 2nd to 3rd (0.53) and 0.47 last year and 3rd to 4th quarter (0.41) compared to 0.31 last year.

Graph 3.3-1 Food Insecurity Proportions Trends by Quarter



Source: ZIMVAC, Rural Livelihoods Assessment, 2009 to 2014

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The picture is based on the following assumptions (ZimVAC, 2014, pp. 84-86):

1. Households' purchasing power will remain relatively stable throughout the consumption year, i.e. average household income levels are likely to track households' cost of living.
2. The national average livestock to maize terms of trade will remain relatively stable throughout the consumption year.
3. Staple cereals in the form of maize, small grains (sorghum and millets) or mealie meal will be available on the market for cereal deficit households with the means to purchase to do so throughout the consumption year. This assumption is predicated on the Government maintaining the liberalised maize trade regime.
4. The 2014/15 maize prices will average out at around US$0.39/kg nationally, US$0.39/kg in the staple cereal surplus districts and US$0.54 /kg in the cereal deficit districts. Maize price monitoring by Agritex, FAO and WFP informed this assumption.
5. National cotton, tobacco and soya bean producer prices will average out at US$0.35/kg, US$3.18/kg and US$0.50/kg for the whole 2014/15 marketing season respectively.

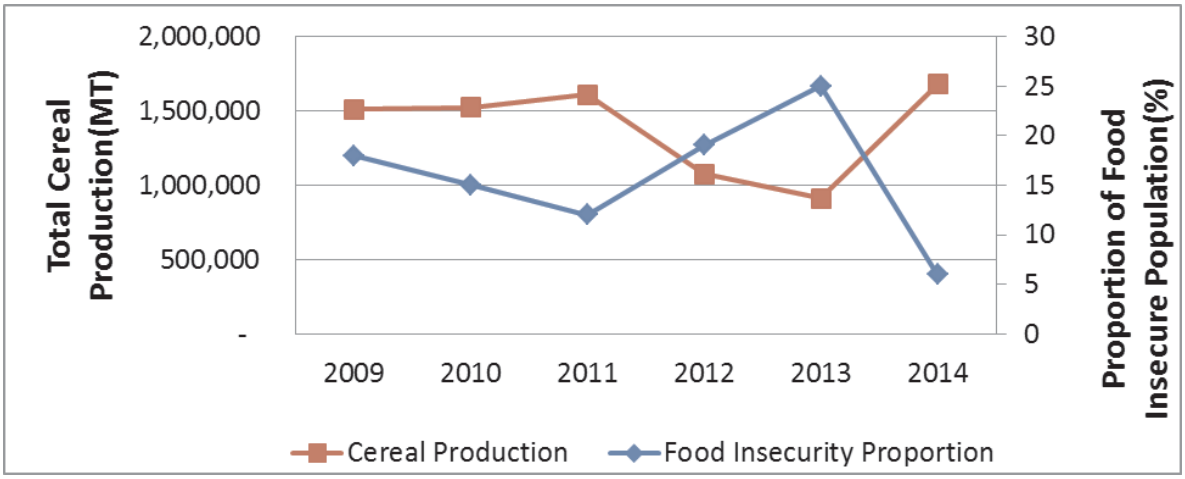
According to ZimVAC(2014) projection, the third quarter (October to December) of the 2014/15 consumption year will have food insecurity levels of approximately 3.4 percent of the population which translates to 330972 people (ZIMVAC, 2014, pp. 87 - 95). To ascertain whether this projection is still holding it is paramount that we explore whether the assumptions on which this projection was based are still holding. In the next section an analysis on the current status of some of the assumptions particularly prices, availability and reliance on own production is going to explored.

3.3.2 Cereal Production

Cereal production has shown to have the most single impact on the food insecurity situation in the country and this can be demonstrated by looking at the relationship between cereal production and food insecurity levels over time. This relationship was explored using data from ZimVAC and the MAMID crop and livestock assessment surveys. These are two different surveys carried out using different methodologies, different sampling frames by different enumerators but with a striking relationship as shown in graph 3.3-2. Graph 3.3-2 overleaf shows an inverse relationship between cereal production and food insecurity levels which in its

self partly explains the sharp decrease in the proportion of the population that is food insecure in the 2014/15 consumption year.

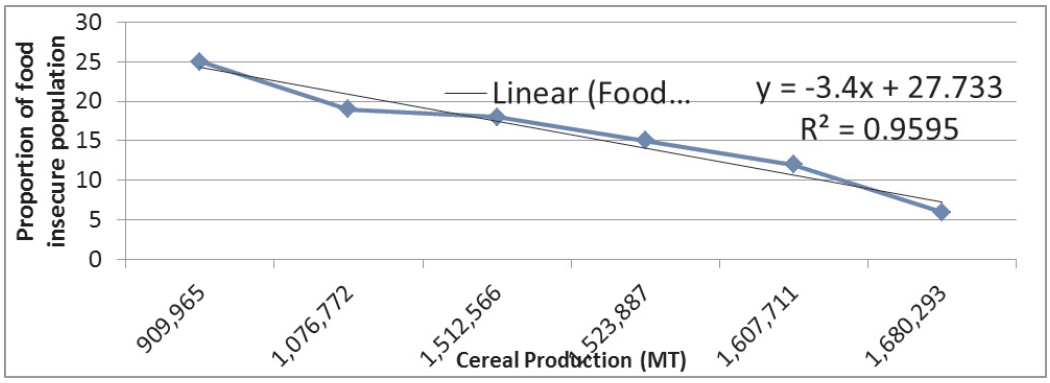
Graph 3.3-2 Cereal Production and Proportion of Food Insecurity Trends



Source: MAMID – Second Round Crop and Livestock Assess Report(2007 to 2014); ZIMVAC, Rural Livelihoods Assessment, 2009 to 2014

Lower and reducing food insecurity projections have tended to be associated with improved macro-economic conditions as well as rainfall season quality in the preceding consumption year. Zimbabwe's agriculture, crop production in particular, continues to be highly dependent on both the amounts and distribution of the summer rainfall season. As shown in the graph below there is a very strong linear relationship between annual national cereal harvest estimates with the rural food insecurity prevalence projections.

Graph 3.3-3 Relationship Between Cereal Production and Proportion of Food Insecurity



Source: MAMID – Second Round Crop and Livestock Assess Report(2007 to 2014); ZIMVAC, Rural Livelihoods Assessment, 2009 to 2014

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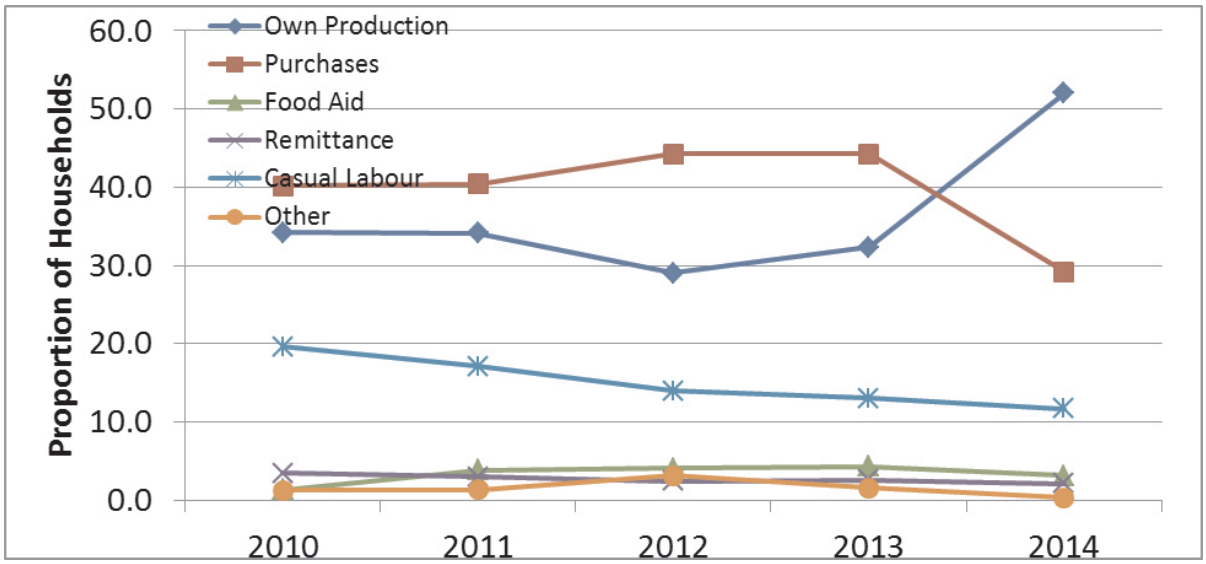
According to NEWU's (2011 to 2014) AFSMS[6] during the month of October from 2010 to 2013 source of cereals consumed was mainly from purchases from the open market with 40 percent or more households using this source. During these years consumption from own production would be approximately 30 percent of the households but in 2014 during the same month the scenario seems to be different from previous years. In October 2014 the indication was that more than 50 percent of the households were consuming cereals from own production and less than 30 percent consuming from purchases on the open market (Graph 3.3-4).

Graph 3.3-4 - Sources of Cereals Consumed for October



Source: NEWU (2011 to 2014)

From Graph 3.3-4 indications are that the majority of the households are still consuming from own production and grain for purchase is readily available. This was a peculiar year indeed as can be seen from Graph 3.3-5 as households consuming cereals from own production are more than those consuming from purchases for the fisrt time since 2010 during the month of October. Also a five year average analysis of monthly sources of cereals consumed accentuates the fact that this is peculiar year in which consumption from own production will remain relatively significant until the last quarter of the consumption year. Trendwise, purchases from the open market should be significant during the last two quarters of the consumption year (Graph 3.3-5).

[6]Agiculture and Food Security Monitoring System

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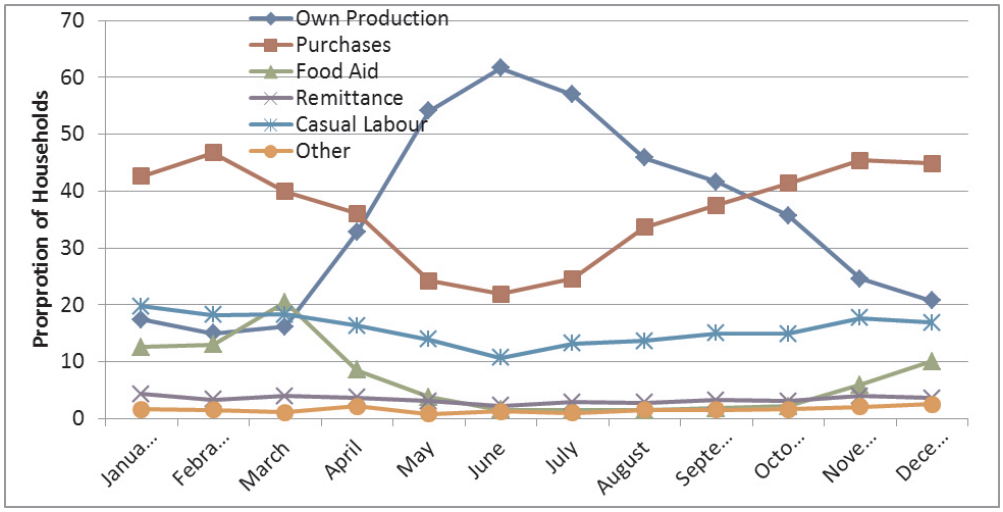
Graph 3.3-5 Five Year Monthly Average Sources of Cereals Consumed



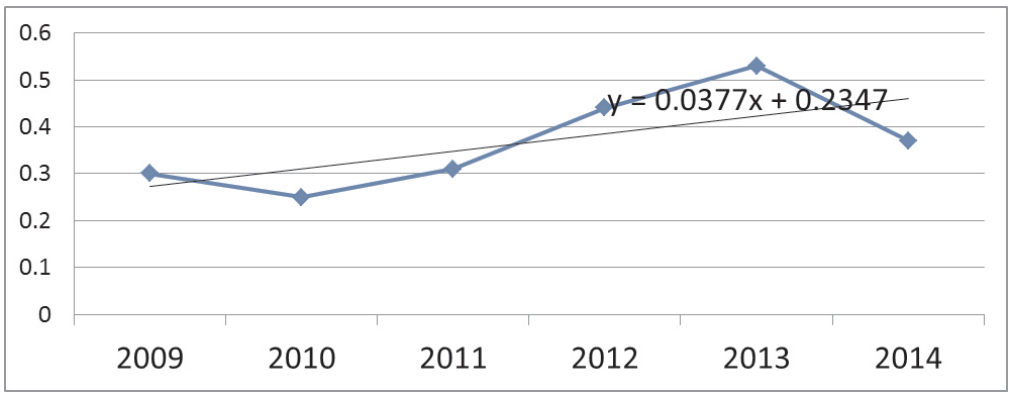
Source: NEWU (2011 to 2014)

3.3.3 Agriculture Commodity Prices

3.3.3.1 Maize Grain Prices

ZimVAC (2009 to 2014) reports maize grain prices to have decreased from 2009 to 2010 and thereafter have been on an upward trend until 2013 when the highest national average of USD0.53 per kg was attained (Graph 3.3-6). The price range for the five years was from USD0.20 to USD0.53 per kg of maize grain. At the time of the ZimVAC 2014 Rural Livelihoods Assessment the prices for maize grain averaged USD0.37 per Kg which was a 30 percent decrease compared to the same period in the previous consumption year (see Graph 3.3-6).

Graph 3.3-6 Average Rural Maize Grain Prices in May



Source: ZIMVAC, Rural Livelihoods Assessment, 2009 to 2014

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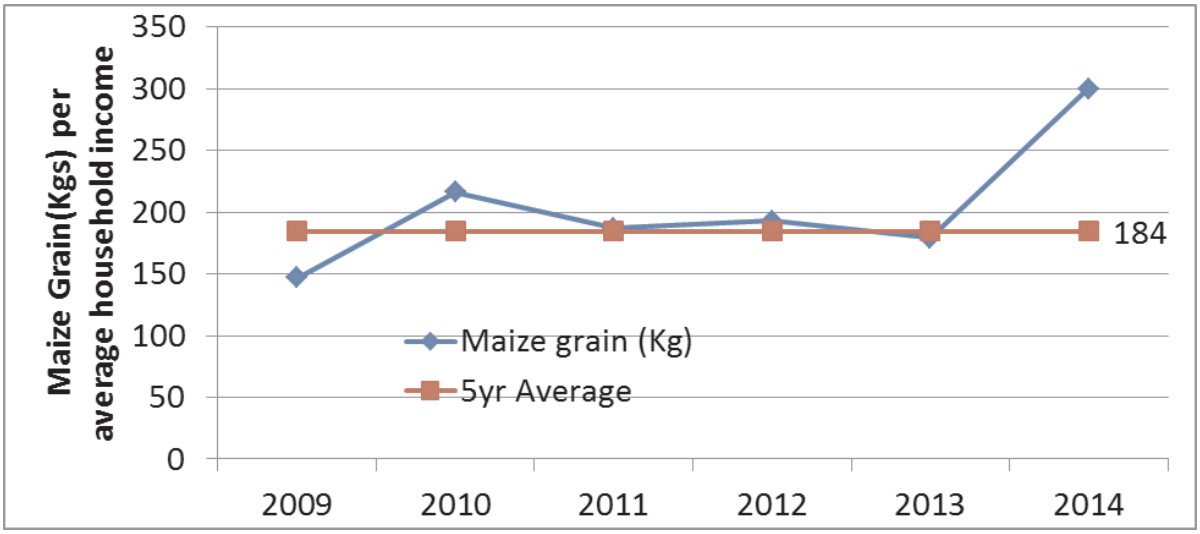
Inadequate purchasing power among the poor is often cited as the reason why food insecurity can persist amidst food abundance (Jayne & Chisvo, 1990). Comparing maize grain prices and average household income from 2009 to 2014 one can conclude that the obtaining food security scenario in the 2014/15 consumption year as predicted by ZIMVAC (2014) was partly influenced by the household purchasing power in terms of the amount of maize grain the household could purchase from average household income as shown in 3.3-7. The 2014/15 consumption year purchasing power[7] of 300 kgs of grain was far above the five year average purchasing power of 184kgs which also buttresses the low levels of food insecurity during the consumption year. ZimVAC (2014) assumed that maize grain prices will remain relatively stable hovering around USD0.39/Kg and according to NEWU(2011 to 2014) the national maize grain average price in October 2014 was around 0.32/Kg (3.3-8). With this evidence it can also be concluded that at the national level the potential amount of maize grain that households can purchase from average monthly income will remain relatively stable through to the end of the consumption year.

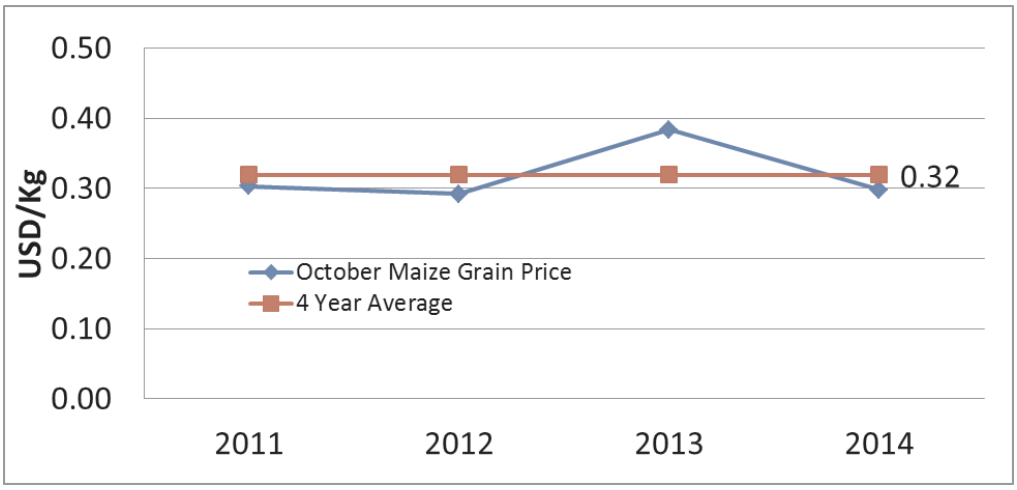
Graph 3.3-7 Household Purchasing Power in Terms of Maize Grain



Source: ZIMVAC, Rural Livelihoods Assessment, 2009 to 2014

[7]Household purchasing power is here defined as the potential amount of maize grain that a household can purchase from its potential average monthly income

Graph 3.3-8 October National Average Maize Grain Prices Trend



Source: NEWU (2011 to 2014)

From the above evidence, it can also be concluded that at the end of the year 2014 the following assumption made by ZimVAC in May 2014 was still holding:

1. The 2014/15 maize prices will average out at around US$0.39/kg nationally, US$0.39/kg in the staple cereal surplus districts and US$0.54 /kg in the cereal deficit districts.

3.3.3.2 Livestock Prices

3.3.3.2.1 Cattle Prices and Terms of Trade

ZimVAC (2014) found out that on average a beast was costing approximately USD350 with an average beast being equal to approximately 950Kgs of maize grain (Graph 3.3-9) and NEWU (2014) through its AFSMS found out that an average beast was costing USD375 and the terms of trade being 1260Kg (3.3-10).

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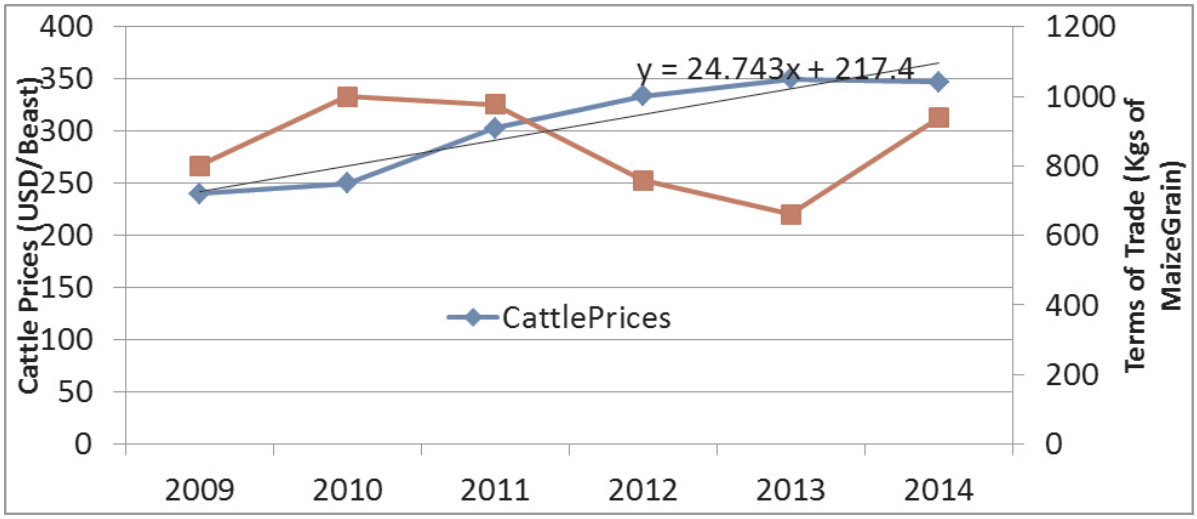
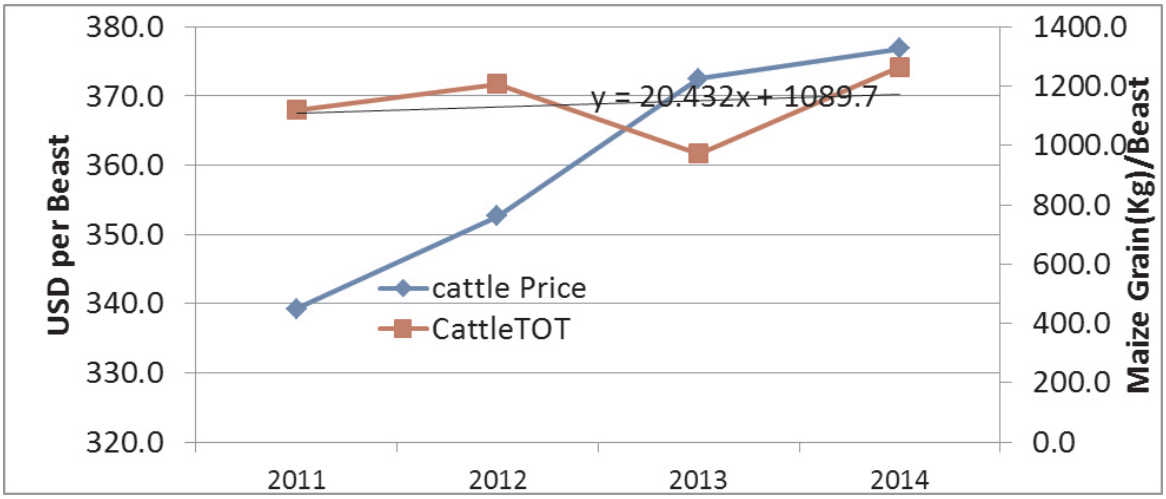
Graph 3.3-9 Cattle Prices and Terms of Trade Trend



Source: ZIMVAC, Rural Livelihoods Assessment, 2009 to 2014

Graph 3.3-10 October Cattle Prices and Terms Of Trade



Source: NEWU (2011 to 2014)

This improvement in the terms of trade of cattle is consistent with some of the assumptions of that ZimVAC made in May 2014. Of these assumptions the following are still holding:

1. The 2014/15 maize prices will average at around US$0.39/kg nationally, US$0.39/kg in the staple cereal surplus districts and US$0.54 /kg in the cereal deficit districts.

2. National cotton, tobacco and soya bean producer prices will average out at US$0.35/kg, US$3.18/kg and US$0.50/kg for the whole 2014/15 marketing season respectively.

3. The national average livestock to maize terms of trade will remain relatively stable throughout the consumption year.

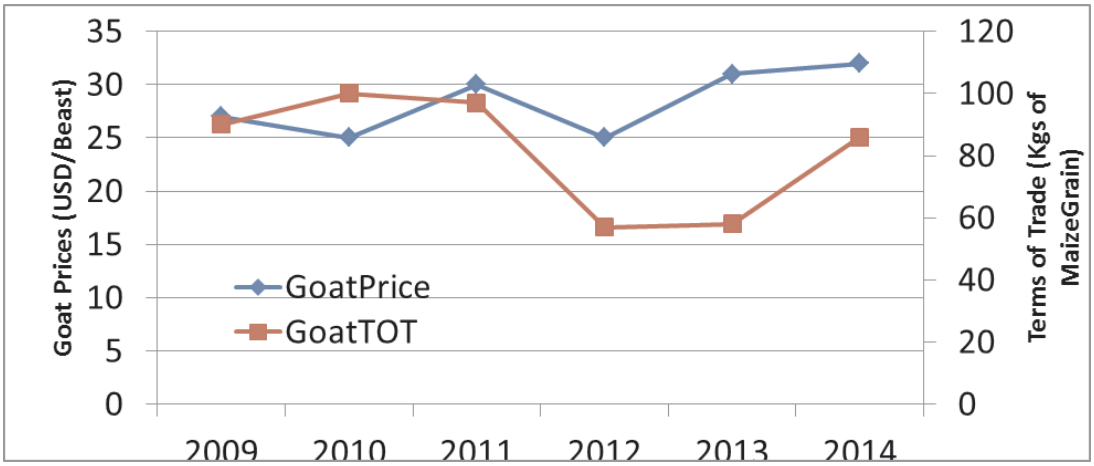
The October cattle prices and terms of trade from NEWU (2011 to 2014) also show how perculiar the consumption year 2014/15 was. Comparing the prices for the month of October, 2014 prices have seen an approximate 1 per cent increase and terms of trade have seen a 30 per cent increase compared to the year 2013. According (NEWU, 2011 to 2014) on average cattle prices during the month of October were approximately USD360 with terms of trade of approximately 1100kg per beast. In comparison to the average, October 2014 prices were approximately 5 per cent above average and terms of trade 11 per cent above average.

3.3.3.2.2 Goat Prices and Terms of Trade

As with the prices and terms of trade of cattle, the prices and terms of trade of goats have seen an increase over the past six years according to ZimVAC (2009 to 2014) and over the last four years in the month of October according to NEWU (2011 to 2014). Graph 3.3-1 overleaf shows the prices of goats being between USD30 and USD25 from 2009 to 2012 and above USD30 from 2013 onwards. The terms of trade for the 2014/15 consumption year have improved by 48 per cent in comparison with the previous year. According to NEWU (2011 to 2014) the terms of trade for the month of October 2014 have improved by 37 per cent compared to October 2013 (Graph 3.3-12)

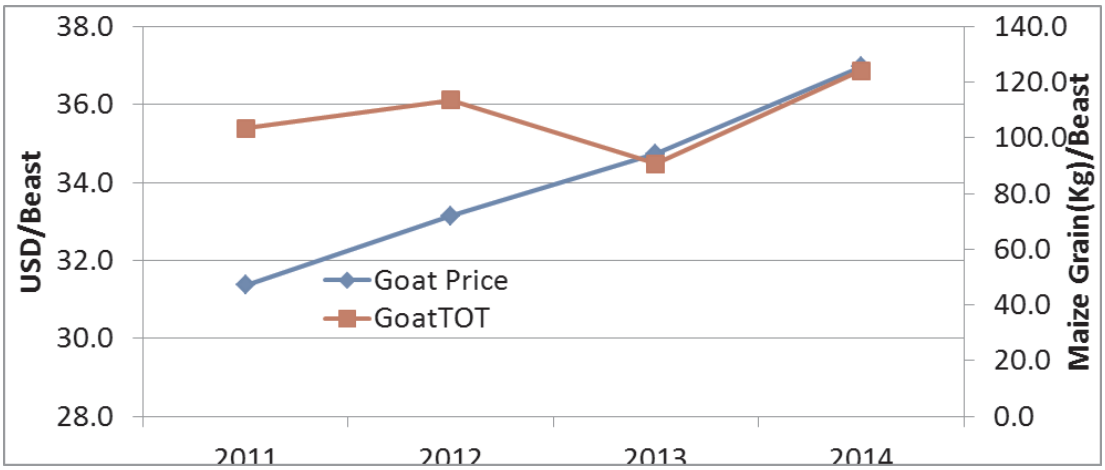
3. Food Security Situation

Graph 3.3-11 Goat Prices and Terms of Trade



Source: ZIMVAC, Rural Livelihoods Assessment, 2009 to 2014

Graph 3.3-12 October Goat Prices and Terms Of Trade



Source: NEWU (2011 to 2014)

3.3.4 Incomes and Expenditure Patterns

The grain purchasing power defined here shows the relationship between household monthly average income and average maize grain prices. 3.3-11 shows that household purchasing power in terms of maize grain has remained below 200kgs per month over the preceding five years averaging out at 184kgs per month. According to ZimVAC (2014) during the 2014/15 consumption year on average the purchasing power of a household would be 300kgs

per month which is a 67 per cent increase from the previous year and 63 per cent above the five year average. From Graph 3.3-13 it can be observed that an increase in incomes was matched by an increase in maize grain prices. The increase in maize grain prices was at a slightly faster rate compared to the increase in income as can be seen by observing the slopes of the two curves from 2010 to 2013 (Graph 3.3-13). This graph also brings to light the peculiarity of the 2014/15 consumption year in that the incomes increased by 17per cent from the previous consumption year and 65 per cent above the five year average whereas the maize grain prices decreased by 30 per cent from the previous consumption year and was 1 per cent above the five year average.

Graph 3.3-13 Average Household Incomes Trend

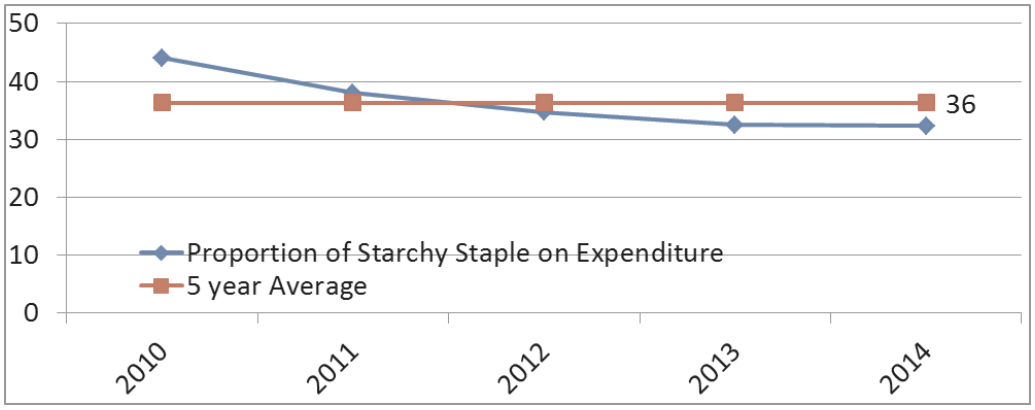
	2009	2010	2011	2012	2013	2014
Average HH Income	44	54	58	85	95	111
MaizeGrain Prices($/Kg)	0.3	0.25	0.31	0.44	0.53	0.37

Source: ZIMVAC, Rural Livelihoods Assessment, 2009 to 2014

At this point it should be noted that according to ZimVAC (2009 to 2014) the share of staple starchy on expenditure has been decreasing since 2009. In 2009, the share was 44 per cent whereas in 2014 it was 32 percent which is a 12 percentage points decrease (3.3-14). The five year average share of starchy staple on expenditure stands at 36 per cent. Henceforth one can conclude that expenditure on staple food as a proportion of income has decreased significantly over the last six years. This scenario might have obtained because expenditure on starchy staple has remained constant with incomes increasing over the six years in question (3.3-13) and (3.3 -13). One might also conclude that this is due to the effect of maize grain price decrease (3.3-6) .

3. Food Security Situation

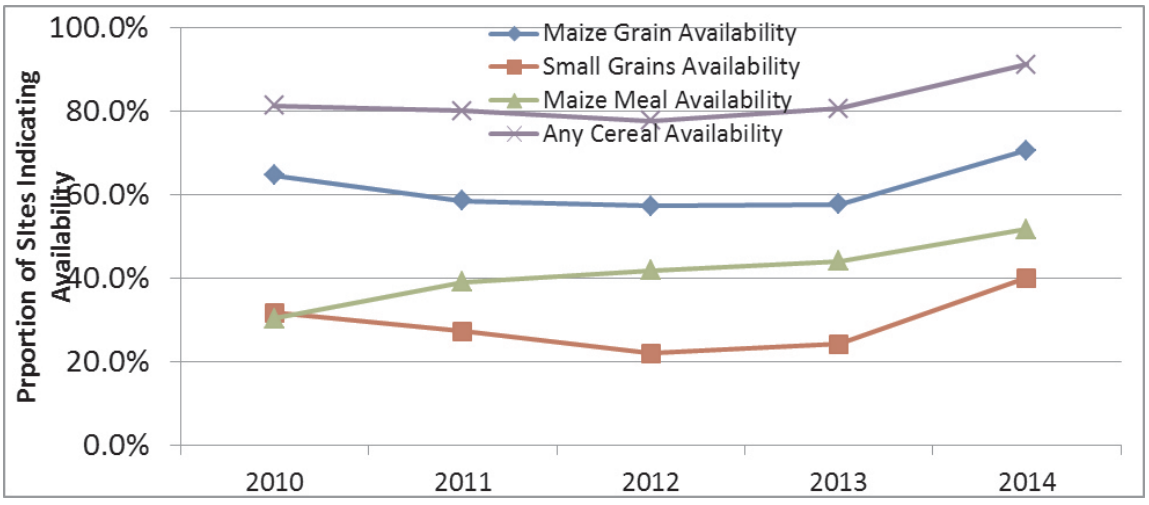
Graph 3.3-14 Proportion of Starchy Staple on Expenditure



Source: ZIMVAC, Rural Livelihoods Assessment, 2009 to 2014

With most households being able to potentially purchase enough cereals from their monthly income (Graph 3.3-7) access to enough cereals can only be determined by the availability for the 29 percent of households (NEWU, 2011 to 2014) which in October 2014 were found to be dependent on purchases for cereals consumed (Graph 3.3-8). According to (NEWU, 2011 to 2014) 70 percent of the monitored sites indicated maize grain for purchase being available with over 90 percent of the sites indicating that any of the three cereals i.e. maize grain, small grains and maize meal, were available for those who would want to purchase (Graph 3.3-4).

Graph 3.3-15 Cereals for Purchase Availability for October



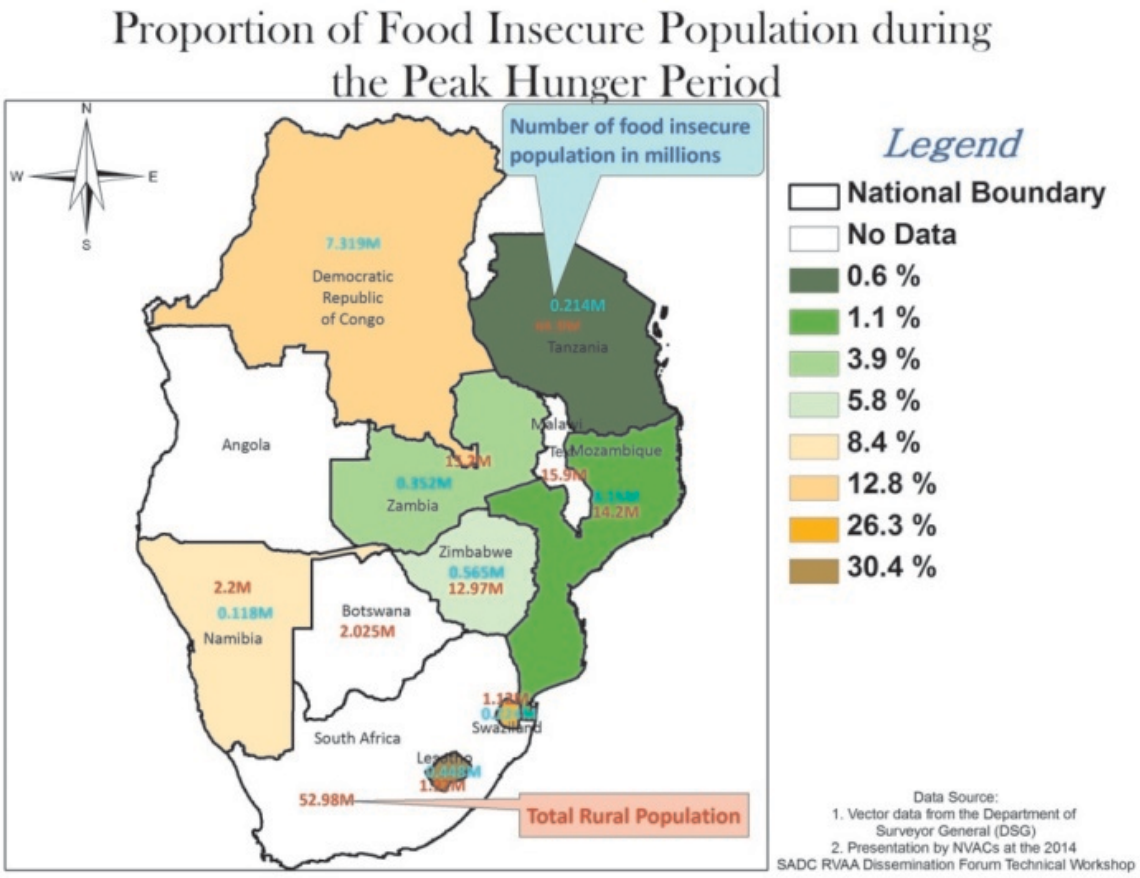
Source: NEWU (2011 to 2014)

3. Food Security Situation

3.4 Conclusion

According to SADC RVAA (2014) the food security situation that OBtained in Zimbabwe was not perculiar to Zimbabwe but the whole SADC region experienced low levels of food insecurity because of improved cereal production influenced by the good agricultural season the region experienced (Figure 3.4-1).

Figure 3.4-1 Proportion of the Food Insecure Population During the Peak Hunger Period



As demonstrated in Section 3.1.1, the 2013/14 agricultural season was exceptionally good in the SADC region but particularly in Zimbabwe. The rainfall that was received was here shown to have satisfied approximately 90 per cent of maize crop water requirement through the end of season WRSI (Figure 3.1-5). The WRSI at the end of the season is indicative of a season in which no crop failure was experienced hence the increased cereal production.

3. Food Security Situation

From the evidence gathered here it can be concluded that the assumptions that ZIMVAC (2014) made will hold up to the end of 2014 though in some parts of the country this might not be so. This means that during the last quarter of 2014, approximately 3 per cent of the rural population will require assistance to access enough food and in the first quarter of 2015 approximately 6 per cent will require assistance. The food security situation has remained relatively stable throughout the year mainly because of availability of staple cereals from own production. According to MAMID (2008 to 2014), the nation had surplus cereal production this consumption year, a notion that was supported by the ZimVAC (2014) findings that household average cereal production increased from 346kg per household during the 2013/14 consumption year to 530Kgs per household in the 2014/15 consumption year. It is also evident that the food security situation in the country is highly related to the cereal production as can be observed by the R^2 of 0.95.

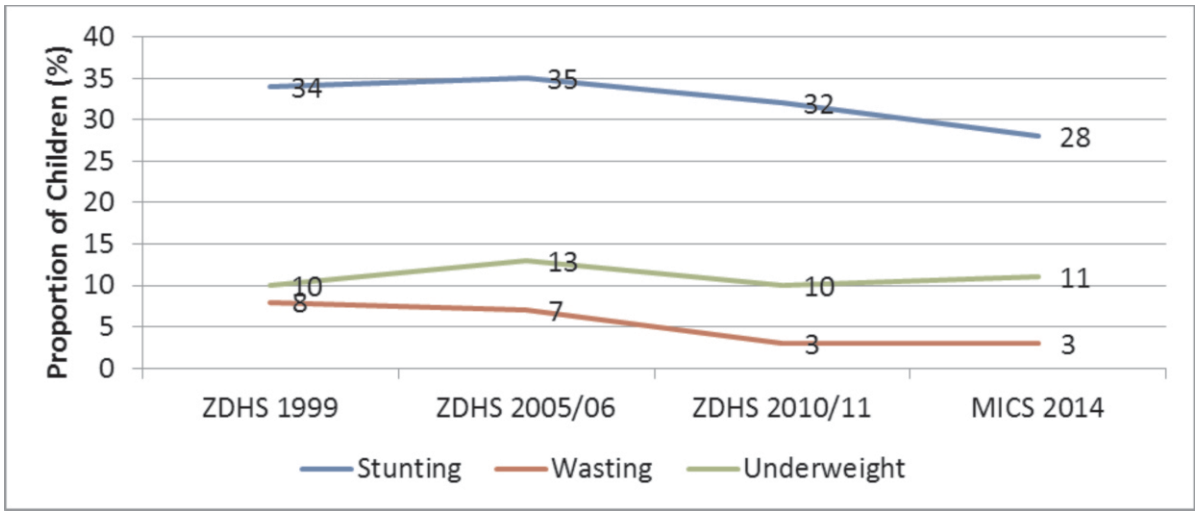
4. Nutritional Situation

4.1 Malnutrition

Chronic malnutrition (stunting) among the under-fives remains a major public health problem in Zimbabwe. Stunted growth reflects a process of failure to reach linear growth potential as a result of sub-optimal health and/or nutritional conditions. On a population basis, high levels of stunting are associated with poor socioeconomic conditions and increased risk of frequent and early exposure to adverse conditions such as illness and/or inappropriate feeding practices. Similarly, a decrease in the national stunting rate is usually indicative of improvements in overall socioeconomic conditions of a country.

ZIMSTAT (2014) preliminary results show 28 per cent children being stunted (4.1-1). This is a decrease from the 32 percent according ZIMSTAT & ICF Macro (2011).

Graph 4.1-1 Wasting, Underweight and Stunting



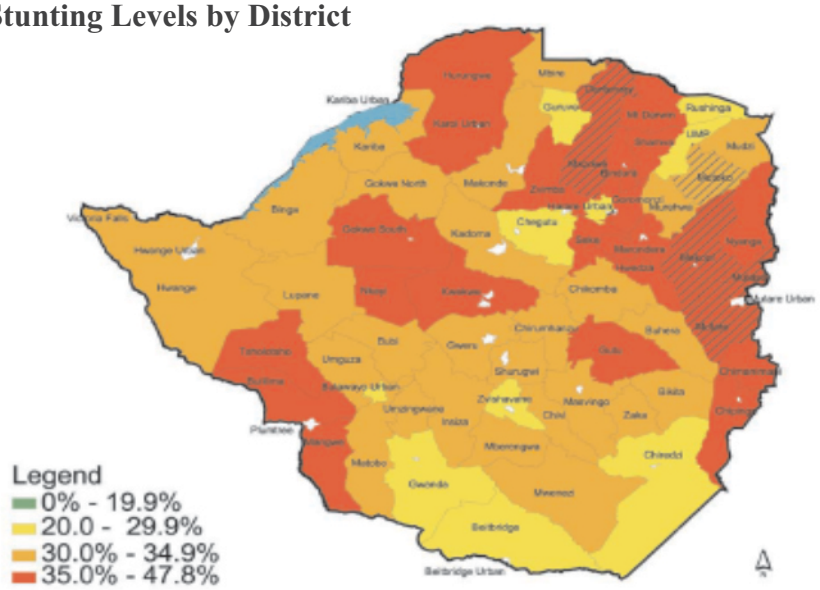
Source: CSO (1996 to 2006), ZIMSTAT (2011 and 2014)

According to MOHCC & FNC (2010), 24 districts had stunting prevalence above 35 percent. Most of these districts were found in Manicaland and Mashonaland Central province. Some districts to the south of the country (Beitbridge and Gwanda) had stunting levels ranging between 20 percent and 30 percent (Figure 4.1-1). Underweight (11 percent) and wasting[1] (3 per cent) remain below the public health significant levels.

[1]Wasting indicates in most cases a recent and severe process of weight loss, which is often associated with acute starvation and/or severe disease. However, wasting may also be the result of a chronic unfavourable condition. Weight-for-age reflects body mass relative to chronological age. However, in the absence of significant wasting in a community, similar information is provided by weight-for-age and height-for-age, in that both reflect the long-term health and nutritional experience of the individual or population. Provided there is no severe food shortage, the prevalence of wasting is usually below 5%, even in poor countries. A prevalence exceeding 5% is alarming given a parallel increase in mortality that soon becomes apparent. On the severity index, prevalence between 10-14% are regarded as serious, and above or equal 15% as critical.

4. Nutritional Situation

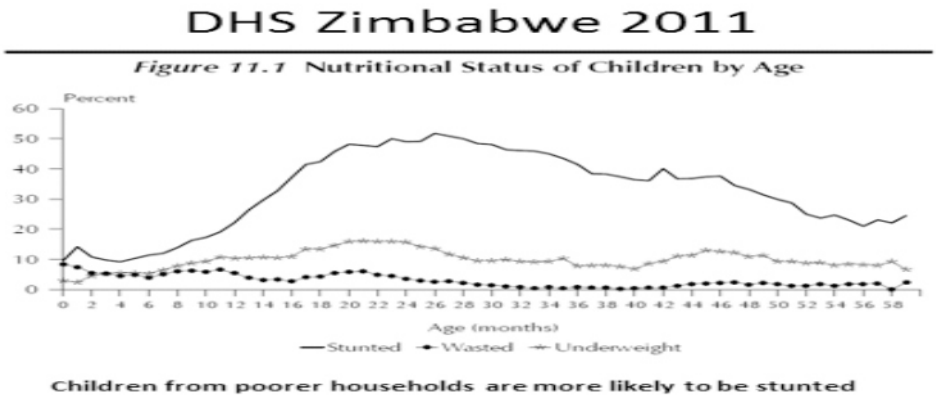
Figure 4.1-1 Stunting Levels by District



Source: MOHCC & FNC (2010

From the Graph 4.1-2, ZIMSTAT & ICF Macro (2011) indicated a 10 percent stunting prevalence at birth which indicates that some children are born stunted. Maternal malnutrition during pregnancy can have a devastating impact on the growth and development of a child. Babies who are malnourished in the womb have a higher risk of dying in infancy and are more likely to face lifelong cognitive and physical deficits and chronic health problems. This reflects a need for maternal, pre-pregnancy and adolescent nutrition interventions. The sharp increase in prevalence in stunting from 6 months is likely due to inappropriate complementary feeding and care practices for this age group (Graph 4.1-2).

Graph 4.1-2 Nutritional Status of Children by Age



Source: ZIMSTAT & ICF Macro (2011)

4. Nutritional Situation

Graph 4.1-2 shows that malnutrition in Zimbabwe begins in-utero and peaks at 24 months of age with little recovery thereafter. This clearly shows that the window of opportunity to prevent under nutrition should start well before pregnancy, in pregnancy and in the first 2 years of a child if a significant dent is to be made in tackling malnutrition. Globally, evidence has also suggested that maternal nutrition and health care during pregnancy are the strongest determinants of foetal growth and birth weight.

4.1.1 Micronutrient Deficiencies

Micronutrient deficiencies are often referred to as the silent killer; they are less obvious than stunting or acute malnutrition but the impact is equally devastating. The three micronutrients of public health importance in Zimbabwe are iron, iodine and vitamin A. Vitamin A deficiency causes xerophthalmia (eye disease), impairs the immune system and increases the severity and mortality risk of measles and diarrhoeal disease. Iodine deficiency disorders (IDD) are linked to health and developmental problems including goitre, stunting, mental retardation and cretinism. Iron is essential for the production of blood haemoglobin. Lack of iron eventually results in iron-deficiency anaemia. Typical signs of iron-deficiency anaemia are paleness, tiredness, headaches and breathlessness.

Table 4.1-1 Micronutrient Indicators Summary

Indicator	Status
Prevalence of iron deficiency anaemia (IDA) among children 6-59months	24%
Prevalence of vitamin A deficiency among children 6 -59 months	19%
Prevalence of vitamin A deficiency among pregnant women	20%
Prevalence of iron deficiency in women 15-49 years	61%
Prevalence of anaemia in women 15-49 years	26%
Household utilizing adequately Iodized Salt	91%

Source: MOHCC (2012)

4. Nutritional Situation

According to MOHCC (2012), 1 9per cent of the children 6-59 months and one in every 5 pregnant women have Vitamin A deficiency (Table 4.1-1). The current levels of Vitamin A deficiency are high and of public health concern as they are above global thresholds. This calls for the continuation of the current twice a year vitamin A supplementation programme targeted at under-fives. 24 per cent of children aged 6-59 months are anaemic while 26 per cent of the women aged 15 to 49 years are anaemic (Table 4.1-1). The rates of iron deficiency in women aged 15 to 49 years are at 61 per cent. The rates are high and above global threshold.

Zimbabwe has achieved universal salt iodisation. The fortification of salt with iodine is the most common method of preventing iodine deficiency. Fortified salt that contains 15 ppm[2] of iodine which is considered adequate for the prevention of iodine deficiency. According to MOHCC (2012) 91 per cent of households were utilizing adequately iodized salt. Zimbabwe imports all its salt requirements and has put a regulatory framework which ensures that all imported salt is checked for compliance with regulatory standards at ports of entry.

4.2 Infant and Young Child Feeding Practices

Optimal infant and young child feeding practices rank among the most effective interventions to improve child health. Breastfeeding and complementary feeding, known collectively as infant and young child feeding (IYCF), are important for child health, nutritional status and survival. The period between birth and 2 years is widely recognized as critical because of a rapid rate of physical growth and brain development which requires sufficient nutrients for tissue growth.

According to ZIMSTAT, (2014) 41 per cent of children less than 6 months of age are exclusively breastfed. This is an increase from the findings (ZIMSTAT & ICF Macro (2011)) of 32 per cent. There is need to continue encouraging women to exclusively breast feed during the first 6 months of life as it has been established to reduce morbidity and mortality among infants and young children. In addition, there are health benefits for breastfeeding mothers which include lactational amenorrhea, early involution of the uterus, enhanced bonding between the mother and the infant and reduction in the incidence of ovarian and breast cancer. Despite these known benefits, less than half of children who should benefit are missing out on this vital "free" intervention.

[2]Ppm stands for parts per million

4. Nutritional Situation

4.3 Low Birth Weight

Babies who weigh less than 2500grams at birth are considered to be at risk of childhood early death. According to ZIMSTAT (2014) one in ten live births in the last 2 years preceding the survey weighed below 2500 grams at birth. LBW[3] is a major determinant of mortality, morbidity and disability in infancy and childhood and also has a long term impact on health outcomes in adult life. While this would suggest that maternal under nutrition may be a problem, more direct assessment of the nutritional status of women in the country is greatly needed as is research on the true prevalence of LBW and its determinants. The consequence of poor nutritional status and inadequate nutritional intake for women during pregnancy does not only directly affects women's health, but may also have a negative impact on the birth weight and early development of the child. LBW has substantial costs to the health sector and imposes a significant burden on the society as a whole.

4.4 Child Mortality

A child's risk of dying is highest in the neonatal period, that is, the first month after birth. Safe childbirth and effective neonatal care are essential to prevent these deaths. According to ZIMSTAT (2014), the neonatal mortality[4] rate is at 29 deaths per 1000 live births. Post-neonatal mortality[5] was found to be 25 deaths per 1000 live births while infant mortality[6] was found to be 55 deaths per 1000 live births. Child mortality[7], was reported as 21 deaths per 1000 live births whilst under-5[8] mortality is high at 75 deaths per 1000 live births.

At birth, a child's chance of survival increases significantly with delivery in a health facility in the presence of a skilled birth attendant. The 48 hours immediately following birth is the most crucial period for new born child survival. The mother and child should receive follow up care to prevent and treat illness. Children are at greater risk of dying before age of five if they are born in poor living conditions and access to basic health services. Strengthening the health system to provide care to all children will save many young lives.

4.5 Conclusion

In conclusion, the country needs to improve on assessment, analysis and strategy development related to the social, political, and institutional processes that mediate, obstruct or underlie all causes, potential interventions and effects. An expansion in this direction will be important for the continued evolution to the science and practice of public health and nutrition.

[3]LBW = Low birth weight
[4]Neonatal mortality is the probability of dying within the first month of life.
[5]Post-neonatal mortality is the difference between infant and neonatal mortality.
[6]Infant mortality is the probability of dying between birth and the first birthday
[7]Child mortality is the probability of dying between exact age 1 and the fifth birthday.
[8]Under-5 mortality is the probability of dying between birth and the fifth birthday.

5. Conclusion

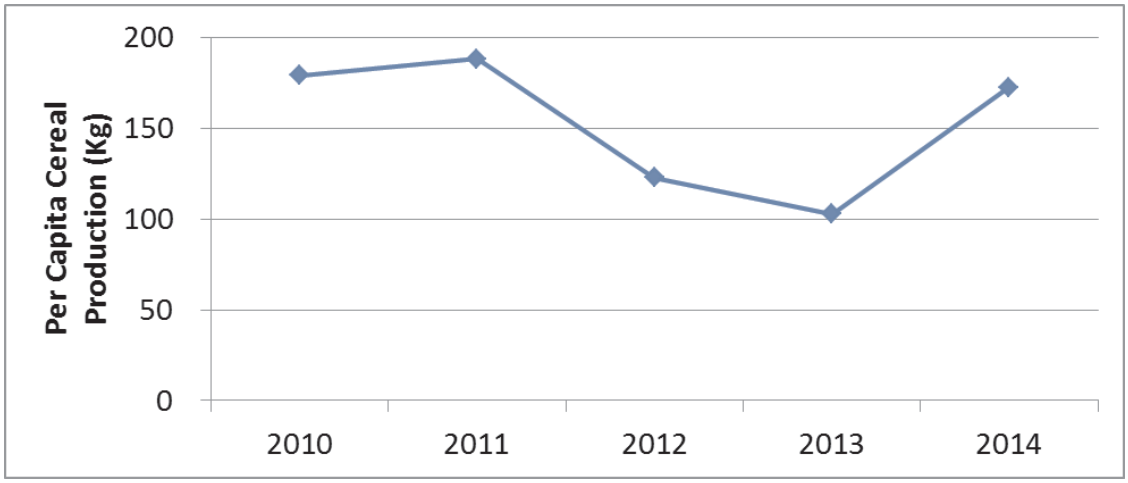
The analysis given in this paper is focused on the rural population, which constitutes 67 percent of the country's population (ZIMSTAT, 2013). The majority of the country's population is the economically active age group which is 55 percent of the population. Of these economically active, 55 percent, 37 percent are communal farmers or workers whilst 52 percent is employed in other sectors and the remaining 11 per cent are unemployed. Most surveys in Zimbabwe have reported that poverty is most prevalent in rural areas and most rural households are dependent on agriculture as their main source of livelihoods. This is indicative of high rural households' vulnerability to agriculture related shocks and hazards. Efforts should be made to improve agriculture productivity and access to agricultural services such as extension services and cheap financial services to smallholder farmers.

According to GoZ (2013) the country experienced positive economic growth since the introduction of the multi-currency regime in 2009 though the growth slowed down from 2011 to 2014. Inflation has remained low since 2009 and the GoZ has predicted that it will remain subdued in 2015 though in 2014 the country experienced negative growth which the GoZ attributed to effect of price correction in the country. According to ZIMSTAT (2013) 76 per cent of the rural population is poor with 79 per cent of the poor found in the communal areas.

Generally, the agriculture season had excellent crop production potential (Figure 3.1-5) which has seen an increase in production levels of both major food crops such as cereals and groundnuts and major cash crops such as tobacco. The increase in production entails an increased number of months of household consumption from own production and increased household incomes from cash crops. All things being equal this would point to an improved food security situation. Communities that were dependent on cotton production, such as Gokwe North and South, have suffered the impact of the depressed cotton prices and some farmers have switched to alternative cash crops such as tobacco. According to ZimVAC (2014) average household cereal production has increased from 346kgs the previous consumption year to 529.5kgs this current consumption, a finding that is butressed by the MAMID (2008 to 2014) rural population per capita cereal production which is currently at 173kgs compared to last season's 103kgs (Graph 4.1-3).

5. Conclusion

Graph 4.1-3 Per Capita Cereal Production



Source: MAMID, 2008 to 2014

Malnutrition is a major impediment to economic growth and development. It contributes to poverty by increasing mortality, increasing susceptibility to disease, impairing cognitive development and educational achievement, and reducing work capacity and productivity in adulthood. Under nutrition is one of the most serious but least/inadequately addressed health problems in Zimbabwe as can be seen in Graph 4.1-1 that the country's stunting levels remain relatively high compared to global thresholds. The prevention of maternal and child under nutrition is thus a long-term investment that will benefit the present generation and their children.

The main determinants of stunting in Zimbabwe have not yet been articulated but are thought to be linked to poor dietary diversity among children, repeated infections, poor water and sanitation conditions in the home, poor care from mothers and caregivers due to competing demands on women's time and a general lack of knowledge on optimal infant and young child feeding. The prevailing macro-economic situation in the country also contributes to the situation. Food insecurity and malnutrition are recurrent in Zimbabwe linked to perennial droughts and poor agriculture productivity. The improvement that has been realized in nutrition can be attributed to government’s commitment to improving health and education of the population.

5. Conclusion

With the relatively stable economic environment and an increase in cereal production the overall food security has improved compared to the last consumption year with the current consumption year having the lowest proportion of food insecure population (6 per cent at peak hunger) since 2009. The five year average for the peak hunger period is 18 per cent. The food security situation in Zimbabwe is highly related to cereal production with an approximate 95 per cent correlation. All the evidence gathered in this paper points to the fact that the food security situation have remained relatively stable following the path that ZimVAC(2014) predicted of 6 per cent of the rural population requiring assistance during the peak hunger period that is from January to March 2015. Also it points to the fact that the assumptions that ZimVAC (2014) made in May 2014 were still holding up to the end of the 2014/15 consumption year.

$$WRSI = \frac{AET}{WR} * 100$$

[i]The WRSI is an index originally developed by FAO that is based on a crop-specific water balance model. By keeping track of the relationship between available soil water and the amount of water the crop required throughout the growing season, the WRSI can help to show the extent to which the crop has been negatively affected by any water deficits it experiences. It is calculated as the ratio of seasonal actual evapotranspiration (AET) to the seasonal crop water requirement
(WR): WR = Crop Water Requirement from Penman-Monteith Equation (Shuttleworth, 1992)
PET = Potential Evapotranspiration
Kc = Crop coefficient (Doorenboos & Pruitt 1977, Gommes, 1993)
AET = Actual Evapotranspiration, representing the actual amount of water withdrawn from the soil water reservoir

5. Conclusion

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