HEA Outcome Analysis Technical Report

COUNTRY :	Nigeria

Date of the analysis: 10 – 12 March 2015
Period covered by the analysis : October 2014 – September 2015

SUMMARY

The period or consumption year covered by the current analysis is **September 2014 – August 2015** for the five livelihood zones, detailed below. Official data monitoring on crop production and prices was used for the definition of the current year problem. Assumptions for changes in production and prices were made in consensus amongst the workshop participants, based on their field experience.

HEA Outcome Analysis (OA) was conducted by the Nigeria HEA Working Group (WG) in 10-12 March, 2015 in Abuja for five rural livelihood zones of Northern Nigeria. Participants from Government (Federal Ministry of Agriculture through the Agricultural Development Program, Department for Food Security), NGOs under the technical lead of Save the Children. The March analysis is intended to update the November 2014 analysis with an aim to understand the changes in household economy prior to lean season period. Five livelihood zones were analyzed by the team;
(NW Millet & Sesame LZ (MAS), NW Cotton, Groundnuts & mixed Cereals LZ (CGC), Hadejia Valley Mixed Economy LZ (HVM)), NW Sorghum, Cowpeas and Groundnuts LZ (SCG) and NW Millet, Cowpeas and Groundnuts LZ (MCG).

The analysis shows that no wealth group will likely face any deficit in the five livelihood zones. This means that households in these five zones will be able to secure sufficient food and income to live above the basic survival and livelihood protection thresholds for the projected period of time.

Summary of Outcome Analysis Results: Wealth Groups/Livelihood Zones Facing Deficits					
	MAS	**CGC**	**HVM**	**SCG**	**MCG**
Very Poor	No deficits	No deficits	No deficit	No deficits	No deficits
Poor	No deficits	No deficits	No deficits	No deficits	No deficits
Middle	No deficits	No deficits	No deficits	No deficits	No deficits
Better Off	No deficits	No deficits	No deficits	No deficits	No deficits

I. LIVELIHOOD ZONES DESCRIPTION

The five livelihood zones are primarily agricultural based supporting a variety of rain-fed crops suited to drylands areas including millet, sorghum, maize, rice, cowpeas, groundnuts, sesame, cotton as well as increasingly soybeans. Rain-fed agriculture is carried out during the single rainy season which runs from April/May to October. The peak months of rainfall are June to August. In the dry season, food crops and market vegetables are grown on low lying river flood plains (or *fadama*) either through irrigation or flood retreated agriculture. The main period of harvest is from September to

November. The dry-season harvest is March. In all five zones, livestock production supplements agriculture.

The Northwest region accommodates two wide belts of dominant staple cereals, millet and sorghum, that grade into each other via varying mixes. The other common associated cash crops that further distinguish the local economy are cowpeas, which are grown in surplus; groundnuts; cotton; and sesame. The **NW Millet, Cowpeas and Groundnuts LZ (MCG)** and the **NW Sorghum, Cowpeas and Groundnuts LZ (SCG)** are a mix of food and cash crops, with associated husbandry of sheep, goats, and cattle. These areas are at the heart of the groundnut cultivation for which northern Nigeria used to be particularly known. The longstanding cash crops of the **NW Cotton, Groundnuts, and Mixed Cereals LZ (CGC)** are groundnuts, cotton and soya beans. Rain-fed crops are sorghum, millet, rice and maize.

In the **Hadejia Valley Mixed Economy LZ (HVM)** a variety of crops is grown in drylands as well as the irrigated areas. Rainy season cultivation of drylands centers on maize, millet, rice, sorghum, and cowpeas, while irrigation or residual moisture in the dry season allow extended cultivation of crops (rice and maize) and valuable market vegetables (peppers, onions and tomatoes) on low lying river flood plains (i.e., *fadama*). Fishing in the Hadejia Valley is a significant source of cash income.

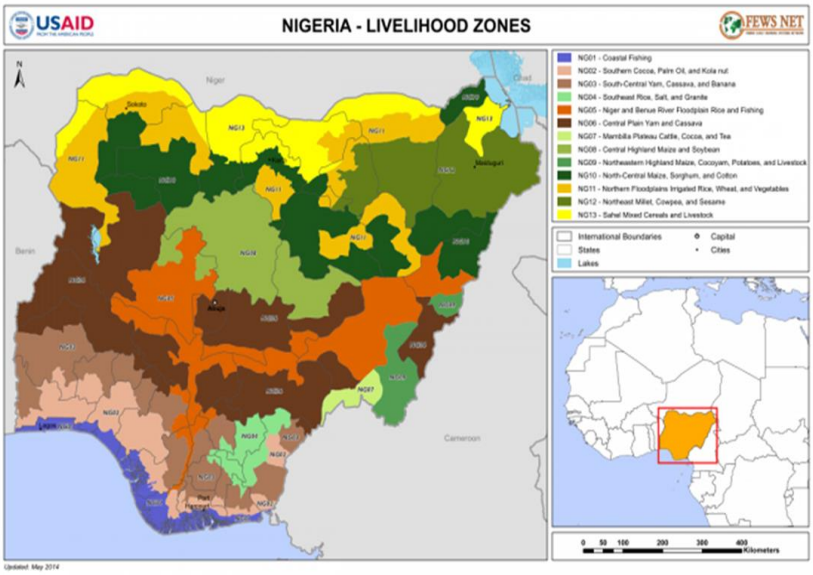
The far northern zone of **NW Millet & Sesame LZ (MAS),** in the Sahel savanna ecological belt, generally features good conditions for millet and sorghum, as in the Sudan savanna belt. In this relatively dry ecosystem, yields tend to be lower than further south. Cowpeas are universally important, and sesame is an especially successful cash crop, although many farms cultivate groundnuts more. Unlike many sorghum-based areas, there is very little *fadama* land here, and vegetables are not common cash earners.

The reference year was not the same for the five livelihood baselines as outlined in the table below:

Livelihood Baseline	Reference Year
Millet & Sesame LZ (MAS)	Sept 2009 – August 2010
Cotton, Groundnuts & mixed Cereals LZ (CGC)	Sept 2011 – August 2012
Hadejia Valley Mixed Economy LZ (HVM)	Sept 2010 – August 2011
Sorghum, Cowpeas and Groundnuts LZ (SCG)	Sept 2012 – August 2013
Millet, Cowpeas and Groundnuts LZ (MCG)	Sept 2012 – August 2013

[1] Refer to seasonal calendars in baseline reports for further details on seasonality.

Livelihood zone Map



New Livelihood Zone Map

II SCENARIO DEVELOPMENT/ PROBLEM SPECIFICATION

A problem specification is the translation of a shock or other change into economic consequences at household level. It allows one to mathematically link the change (positive or negative) to each relevant livelihood strategy. The process of developing problem specifications is one of critically examining the effects of each type of change on each source of food, income and expenditure. There can be quite a large number of these sources, not all of which are equally important, and it is therefore useful to identify the key sources for each wealth group and each livelihood zone. A key source (or 'key parameter') is here defined as one that contributes significantly to total food or cash income[1], so that a reduction in access to that one source may have a significant effect on total access.

The scenario developed uses official government monitoring data on crop production and prices for the definition of the current year problem specification. Where official data was not available, assumptions have been made based on a consensus amongst the workshop participants and their field experience. As part of the scenario in the five livelihood zones, it has been assumed that the 2015 rainy season will be normal and that agricultural labor opportunities for land preparation, planting and weeding will be stable for the remaining months of this year. The scenario developed is based on problem specification of key parameter data collected in the five zones. All coping strategies are excluded from the scenario. Each element of the scenario analyzed can be monitored and revised as additional information becomes available. In addition, other scenarios can be analyzed if decision makers would like to understand vulnerability to different types of shock. For more details on the key parameters and their changes since the reference years, see the key parameter problem specification table at the bottom of the report.

[1] A key parameter is here defined as a source of food or income that contributes at least 10% of one wealth group's total food or income or at least 5% for each of two wealth groups' total food or income.

III- PROJECTED FOOD SECURITY PROSPECTS

3.1- Period covered by the analysis

The period covered by the analysis is the current consumption year which is **September 2014 – August 2015** as projected. The analysis was done on the 10 to 12 March 2015.

3.2 Projected Outcomes by Livelihood Zone and by District

The results of the OA are presented in this section. These illustrate how scenario development and problem specification are expected to impact total income for households in different wealth groups in the five livelihoods zones. The graphs presented below show the results of the scenario development/problem specifications for very poor and poor households for one district within each livelihood zone.

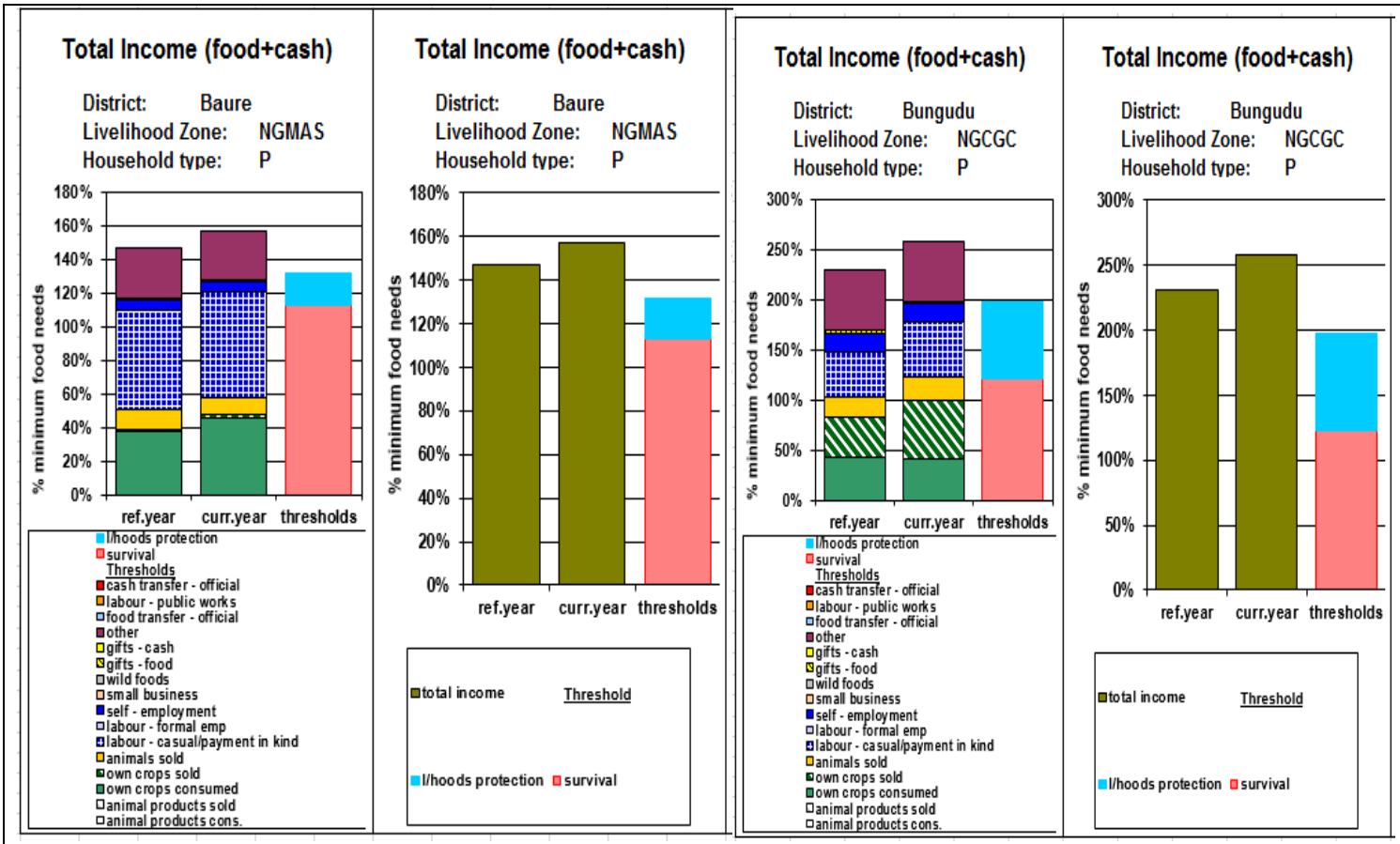
1- NG08: NW Cotton, Groundnuts and Mixed Cereals Livelihood Zone

The results for the OA show that there will be no emergency food or livelihood protection deficits in this zone. In theory, households could see their access to food and income improved this year. Food prices remain stable as a result of normal rains. There is an increase in livestock selling prices and wage rates (agricultural labor, firewood sales, and construction) remain the same as that of the reference year. The increase in price of livestock was due to animal rustling causing artificial shortages and low supply in the market and hence the increase in selling price. In addition, both cash crops and food crops selling prices remain below inflation rate except cowpea, groundnut and soya beans which increased above the inflation rate while overall crop production remained stable (see annex). The impact is more on the very poor and poor households, though with stable prices, labour is not always available. This might affect their access to food considering the lean season.

The production of rice remains at about 148% of the baseline value and that of cotton at 177%. The increase in these cash crops production can be attribution to the Agricultural transformation programs of the government. This increase of cash crops production can explain the relative stability of prices compared to the reference year because of the high volume of supply in the market. These cash crops are mostly produced by the Middle and Better-off households.

The net effect could be higher total income as compared to the reference year for both poor and the very poor. Since the analysis was done prior to lean season, sales of own production may not have a significant impact on their income. Cash earned from casual labor and foods earned as payment in kind were used to stabilize the households' food sources. This increase in income is attributed to high demand for labour and food prior to lean season.

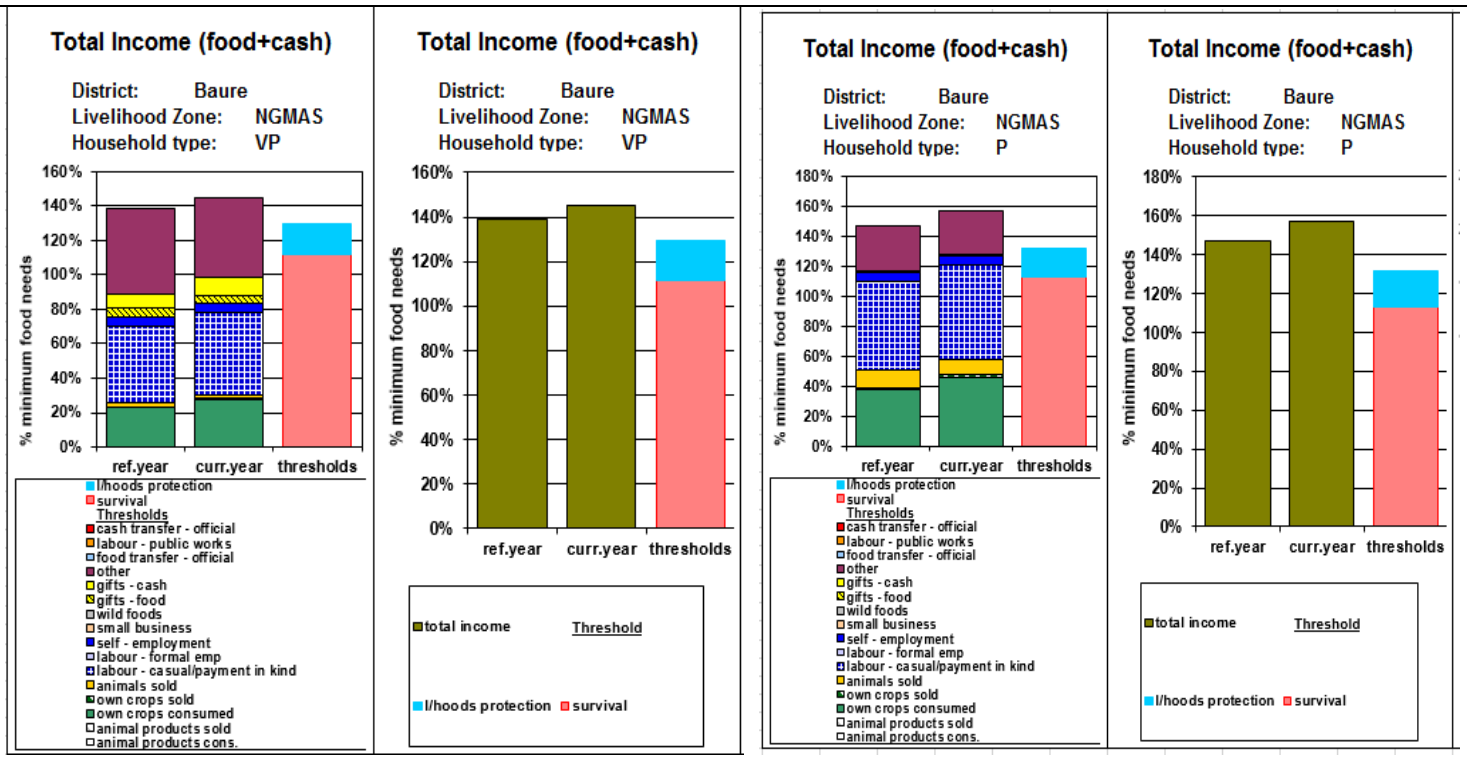
The current scenario, when compared with the reference year shows that the current year total income is better than the reference year total income for the very poor and poor households. Self-employment and others income sources such as petty trade and remittances remain stable at an average in the current year analysis as compared to reference year. The case is the same for the poor group as the current year scenario is better than the reference year. The OA result shows a significant increase in casual labor, the consumption of own crops by the poor, increase in self-employment and petty trade which impacted positively on their total income.



2- NG04: NW Millet & Sesame Livelihood Zone

The results for the OA show that households will not require emergency food or livelihood protection aid this year. Sesame production went up to 110% and selling price of this principal cash crop- sesame increased to 160% due to increase demand for the crops in the international market. In addition, the improvement of wage rates – agricultural labor, firewood sales and self-employment- will allow households to contain the moderate increase of the staple food price – millet which increase to 129% whereas production remain at 100%. The increase in price of the millet is normal when the lean season approaches.

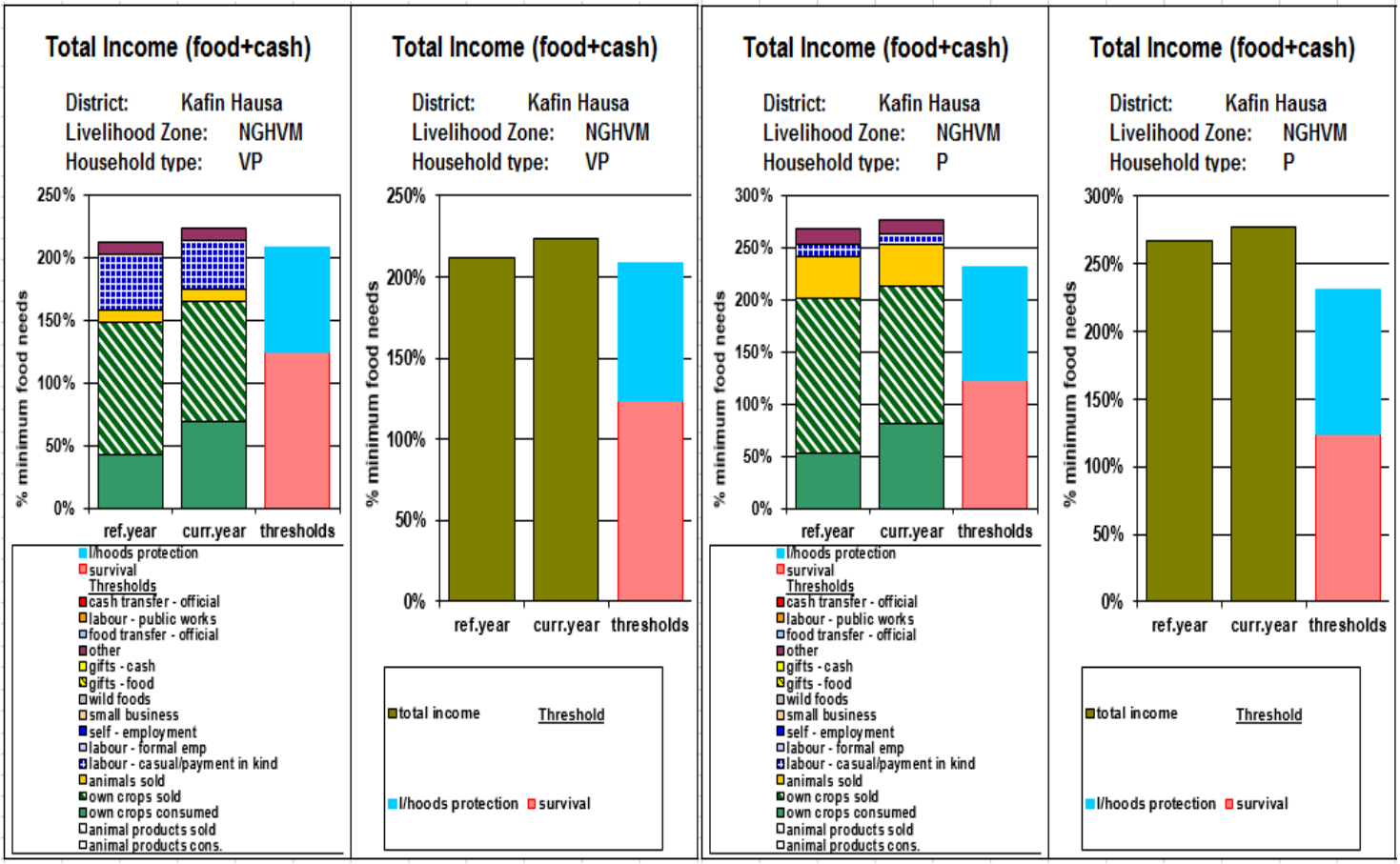
The current year scenario as compared to the reference shows a significant increase in the overall economic activity of the very poor households and the poor group who witnessed a significant increase of their overall economic activities though still a little above that of the reference year. Consumption of own crop by the poor increased and demand for casual labor, an important income source for poor and very poor increased. The wage increases is important as households are purchasing more food compared to the reference year.



3- NG11: Hadejia Valley Mixed Economy Livelihood Zone

The results for the outcome analysis (OA) show that very poor and poor households in the Hadeija Valley Mixed Economy LZ will face no deficit: normal rain means that production and prices are stable and demand for agriculture labour is high. In this LZ, in the current year, the combination of crop sales - mainly market vegetables – and consumption of own crop and casual labor opportunities provided more than a half of total income of very poor households and poor households. In the current year, market vegetable production and prices remains stable. Agricultural wage rates are slightly lower at 94% of that of the reference year. At the same time, the staple food price - maize - increased significantly. The net effect of all these changes would be a more total income for all wealth groups compared to the reference year. This change in the reference year is being balanced by the increase in wage in the current year for casual labor and payment in kind prior to the lean season.

The current year production activity for the poor and the very poor is better than the reference year analysis. The situation portrays a situation whereby people can meet their basic staple food needs and can save money for social obligations, but will likely not have enough to invest in income generation. The situation needs to be monitored as it may deteriorate with time especially during the lean season in July.

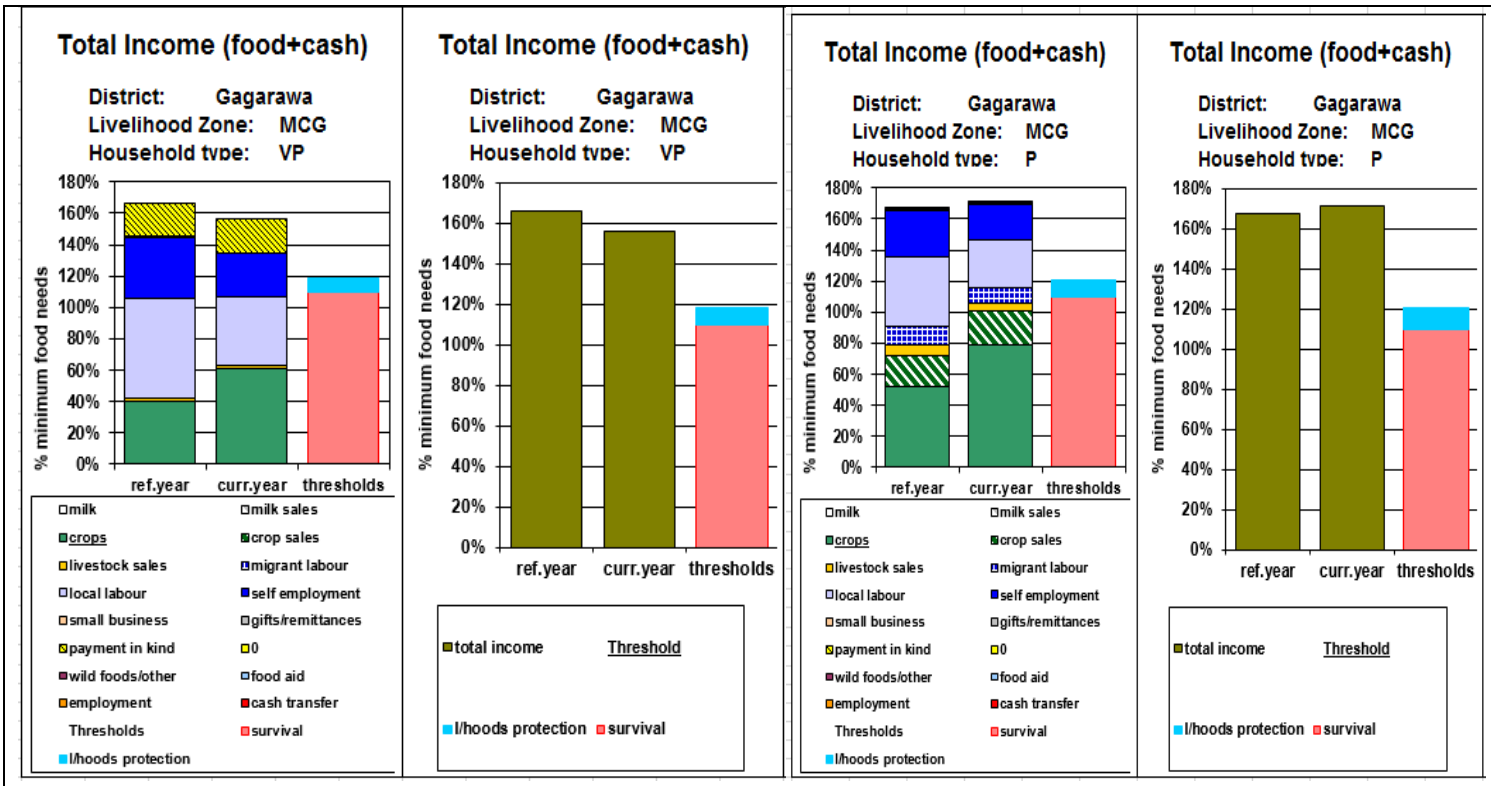


4- NG03: NW Millet, Cowpeas and Groundnuts Livelihood Zone

The results for the outcome analysis (OA) show that there will be no emergency food or livelihood protection deficits for any wealth group. In the reference year, very poor households obtained their income from crops sales, local labor, self-employment and payment in kind. For crops, the decrease in selling prices was balanced by an improvement of the production. The total income of casual labor and self-employment remained almost stable with the increase in staple food – millet – price and inflation rate was moderate.

The result as compared to the reference year shows an overall increase and stable production and prices in the current year for the poor households and a slight decrease in the overall total income of the very poor in the current year as compared to the reference year. This is as a result of fewer hazards witnessed in the zone for the last ten years as investigated using time events. In the current year for the very poor households, total income form self-employment decreased with a significant increase in own crop production and consumption by 20%.

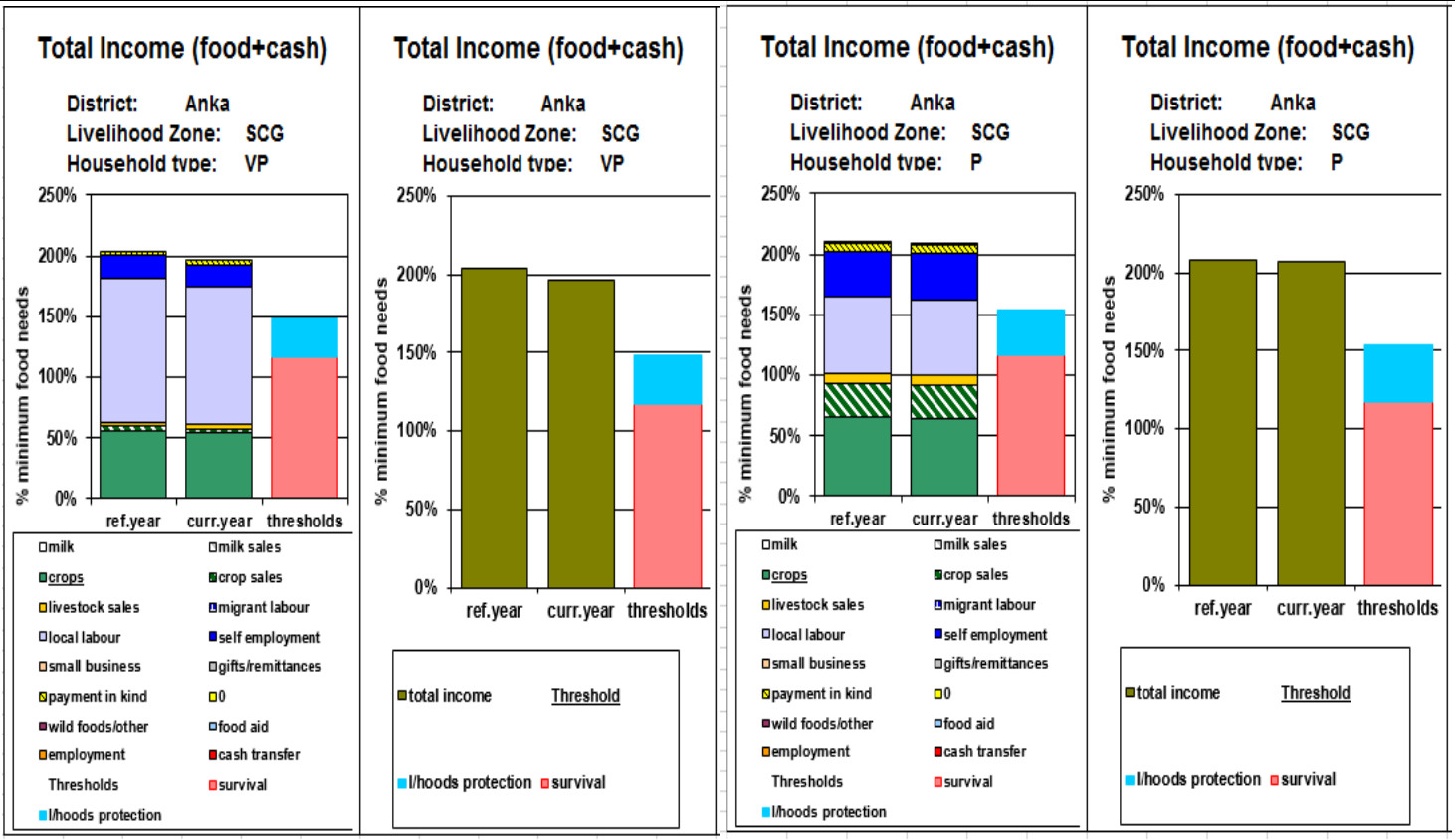
A slight decreased in income coming from self-employment also affected the total income of the very poor which is slightly below the reference year .The case for the poor shows a different result pattern with the current year scenario better than the reference year scenario. Increase in own crop produced and consumed added significantly to the total income, which balanced the shortfall of income from local labour.



4- NG06: NW Sorghum, Cowpeas and Groundnuts Livelihood Zone

The results for the scenario analysis show that there will be no emergency food or livelihood protection deficits for any wealth group, and that for all wealth groups, total food and income access will likely be above their level during the reference. In the reference year, very poor households obtained their income from local labor and crops sales and in a lesser extent from payment in kind. In the current year, staple food prices – sorghum – remain stable at 104%. Local labor wage which is the first income source of very poor households decreased significantly due to low demand prior to lean season which in turn decreased the total income of the very poor households in the current year as compared to the reference year.

For the poor households, the scenario remains unchanged for the current year as compared to the reference year scenario. Cattle production is at 95% and price at 86%. This decrease in cattle price is based on the low demand for cattle in the market due to the onset of the farming season in March when prices of livestock fall, because farmers need cash for crop inputs. Goat remained at 100% and sheep price increased in the current year to 155% due to high demand as a result of livestock rustling and requirement for sheep meat for celebration like naming ceremony. The price for cow milk also increased to 147% of the reference year value due to high demand and low supply during the dry season. The overall price of grains and staple crops remain stable in this zone with the staple food sorghum at 104% (which is below the inflation rate of 117%).



IV- SUMMARY OF THE RESULTS COMPARED WITH THE TWO THRESHOLDS

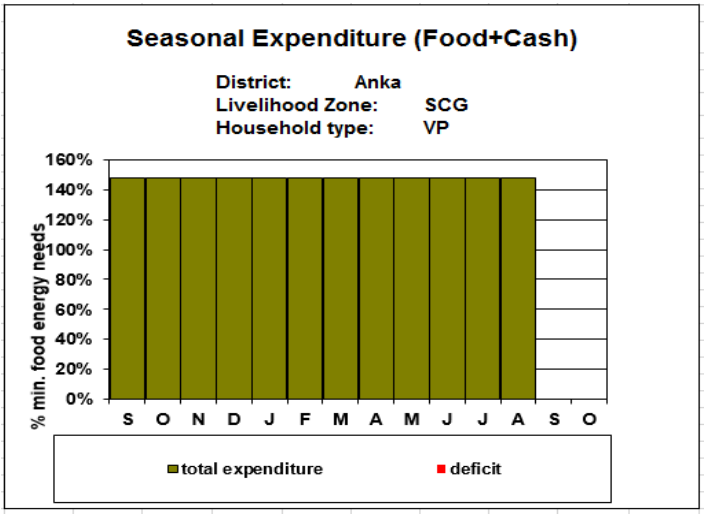
The analysis shows that no wealth group will likely face any deficit in the five livelihood zones (MAS, HVM, CGC, SCG & MCG) meaning that households in these five zones will be able to secure sufficient food and income to live above the basic survival and livelihood protection thresholds.

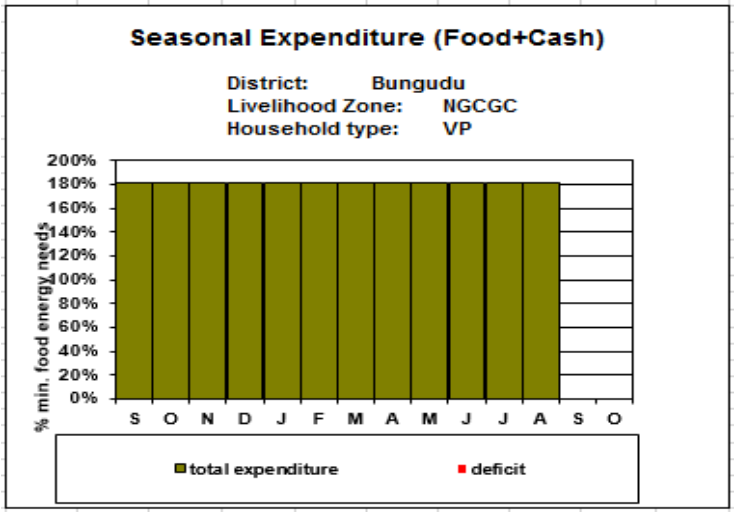
Summary of Outcome Analysis Results: Wealth Groups/Livelihood Zones Facing Deficits

	MAS	CGC	HVM	SCG	MCG
Very Poor	No deficits	No deficits	No deficit	No deficits	No deficits
Poor	No deficits	No deficits	No deficits	No deficits	No deficits
Middle	No deficits	No deficits	No deficits	No deficits	No deficits
Better Off	No deficits	No deficits	No deficits	No deficits	No deficits

V- TIMING OF DEFICITS

By combining information on total income with seasonal calendar data showing when different sources of food and cash become available, it is possible to generate projected pattern of consumption/ expenditure, by month, from **September 2014 – August 2015 as projected**. The period when households are unlikely to be able to cover their livelihood protection needs is shown in red on a seasonal calendar.





The seasonal expenditure graph depict the month and timing for any form of intervention that the very poor and poor households might likely require; which is significant enough to have direct impact on their livelihood protection.

VI- RESPONSE OPTIONS AND RECOMMENDATIONS

The workshop participants didn't formally discuss about possible response options as part of the March 2015 analysis Improvements on the Outcome Analysis were made, following recommendations agreed upon by the Nigeria HEA Working Group following March 2015 analysis which is still valid:

- A joint assessment with partners is being encouraged.
- Secondary data should be sourced from all relevant agencies and a more reliable data is used for analysis.
- All production and price data should be stored in a data base based on year and monthly collection for easy analysis by the Agriculture Development program (ADP) and co-managed by Save the Children.
- OA result should be presented into food and cash equivalent; the gap and the target population should be defined for easy programming.

CONCLUSION

The analysis shows that no wealth group will face any deficit in the five livelihood zones (MAS, CGC, SCG, HVM & MCG) meaning that households in these five zones will be able to secure sufficient food and income to live above the basic survival and livelihood protection thresholds.

In the longer term, development efforts should continue to focus on assisting the very poor and the poor to secure more stable sources of income to complement crop and livestock farming.

VII- ANNEX

7.1- Table summarizing key parameters figures (problem specification)

NG08: NW Cotton, Groundnuts and Mixed Cereals Livelihood Zone

Problem Specification for NW Cotton, Groundnuts and Mixed Cereals Livelihood Zone		
Key parameter	**Production Problem**	**Price Problem**
Cattle	85%	125%
Goats	95%	125%
Sheeps	95%	113%
Cow's Milk	100%	
Maize	99%	112%
Millet	92%	118%
Rice	148%	107%
Cowpeas	102%	132%
Soya beans	100%	150%
Sorghum	100%	84%
Groundnuts	90%	136%
Cotton	177%	117%
Agricultural labor	100%	127%
Construction	100%	100%
Fetching water	100%	100%
Firewood sales	100%	100%
Credit	100%	100%
Self-employment	100%	100%
Components of the Livelihood Protection Basket (LPB)		
Fertilizer: Urea		125%
Staple Food (Sorghum)		**102%**
Inflation		**127%**

Legend: ---- means that price problem specification for those items was left blank in the LIAS because data were not available during the analysis. In such cases, the spreadsheet will apply automatically the problem specification for inflation (127%) to those items.

NG04: NW Millet & Sesame Livelihood Zone

Problem Specification for NW Millet & Sesame Livelihood Zone		
Key parameter	**Production Problem**	**Price Problem**
Cattle	90%	119%
Goats	100%	89%
Sheeps	100%	103%
Cow's Milk	100%	104%
Millet	129%	
Cowpeas	122%	
Sorghum	118%	
Sesame	110%	160%
Agricultural labor	100%	113%
Construction	100%	100%
Firewood sales	100%	100%
Self-employment	100%	100%
Components of the Livelihood Protection Basket (LPB)		
Fertilizer: Urea		143%
Staple Food (Millet)		**120%**
Inflation		**148%**

Legend: ---- means that price problem specification for those items was left blank in the LIAS because data were not available during the analysis. In such cases, the spreadsheet will apply automatically the problem specification for inflation (148%) to those items.

NG11: Hadejia Valley Mixed Economy Livelihood Zone

Problem Specification for Hadejia Valley Mixed Economy Livelihood Zone		
Key parameter	**Production Problem**	**Price Problem**
Cattle	100%	102%
Goats	100%	107%
Sheep	100%	125%
Cow's Milk	100%	109%
Maize	102%	114%
Millet	286%	121%
Rice	104%	96%
Wheat	88%	122%
Cowpeas	74%	141%
Sorghum	150%	112%
Rice irrigated	100%	114%
Pepper	100%	100%
Onions	98%	100%
Tomatoes	102%	100%
Agricultural labor	100%	94%
Construction	100%	100%
Fish sales	100%	100%
Self-employment	100%	100%
Components of the Livelihood Protection Basket (LPB)		
Fertilizer		120%
Staple Food (Maize)		**112%**
Inflation		**137%**

Legend: ---- means that price problem specification for those items was left blank in the LIAS because data were not available during the analysis. In such cases, the spreadsheet will apply automatically the problem specification for inflation (137%) to those items.

NG03: NW Millet, Cowpeas and Groundnuts Livelihood Zone

Problem Specification for NW Millet, Cowpeas and Groundnuts Livelihood Zone		
Key parameter	**Production Problem**	**Price Problem**
Cattle	100%	86%
Goats	100%	100%
Sheeps	100%	108%
Cow's Milk	100%	107%
Sorghum	163%	111%
Millet	148%	148%
Rice	104%	113%
Cowpeas	150%	97%
Maize	139%	110%
Groundnuts	100%	144%
Pepper	100%	100%
Agricultural labor: pre-harvest	100%	100%
Construction	100%	100%
Firewood & Charcoal sales	100%	100%
Trade: livestock & dry goods	100%	100%
Components of the Livelihood Protection Basket (LPB)		
Fertilizer		120%
Labor		----
Animal drugs		----
Ploughing/Land rental		----
Transport		----
Education		----
Medicine		----
Tax		----
Staple Food (Millet)		**147%**
Inflation		**117%**

Legend: ---- means that price problem specification for those items was left blank in the LIAS because data were not available during the analysis. In such cases, the spreadsheet will apply automatically the problem specification for inflation (117%) to those items.

NG06: NW Sorghum, Cowpeas and Groundnuts Livelihood Zone

Problem Specification for NW Sorghum , Cowpeas and Groundnuts Livelihood Zone		
Key parameter	**Production Problem**	**Price Problem**
Cattle	95%	86%
Goats	100%	100%
Sheep	100%	155%
Cow's Milk	100%	147%
Sorghum	100%	104%
Millet	92%	118%
Rice	100%	112%
Cowpeas	100%	88%
Maize	97%	81%
Groundnuts	100%	121%
Pepper	100%	100%
Onions	100%	100%
Agricultural labor: pre-harvest	100%	100%
Construction	100%	100%
Fetching Water	100%	100%
Firewood & Charcoal sales	100%	100%
Trade: livestock & dry goods	100%	100%
Components of the Livelihood Protection Basket (LPB)		
Fertilizer		125%
Labor		----
Animal drugs		----
Ploughing/Land rental		----
Transport		----
Education		----
Medicine		----
Tax		----
Staple Food (Sorghum)		**104%**
Inflation		**117%**

Legend: ---- means that price problem specification for those items was left blank in the LIAS because data were not available during the analysis. In such cases, the spreadsheet will apply automatically the problem specification for inflation (117%) to those items.

7.2 Table summarizing the Outcome Analysis results

Country	LZ Baseline Code	LZ Name	Wealth Group	% Pop	Timing of Deficit	Survival Deficit	Livelihood Protection Deficit (%Kcal)
Nigeria (Northern)	**HVM**	NG11: Hadejia Valley Mixed Economy	V. Poor	38%	-----	----	----
			Poor	20%	----	----	----
			Middle	23%	----	----	----
			B/Off	19%	----	----	----
	CGC	NG08: North West Cotton, Groundnuts & mixed Cereals	V. Poor	26%	----	----	----
			Poor	26%	----	----	----
			Middle	26%	----	----	----
			B/Off	22%	----	----	----
	MAS	NG04: North West Millet & Sesame	V. Poor	34%	----	----	----
			Poor	32%	----	----	----
			Middle	19%	----	----	----
			B/Off	15%	----	----	----
	MCG	North West Millet, Cowpeas, Groundnuts and Cotton	V. Poor	34%	----	----	----
			Poor	21%	----	----	----
			Middle	20%	----	----	----
			B/Off	26%	----	----	----
	SCG	North West Sorghum, Cowpeas and Groundnuts	V. Poor	33%	----	----	----
			Poor	20%	----	----	----
			Middle	23%	----	----	----
			B/Off	24%	----	----	----

Legend: ---- means that there is no deficit

7.3 List of participants

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