

Outcome Analysis Results

Nigeria

2013



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The Currency Rate:

At the time of the outcome analysis, value of the Nigerian Naira was NGN 150 = USD \$1.

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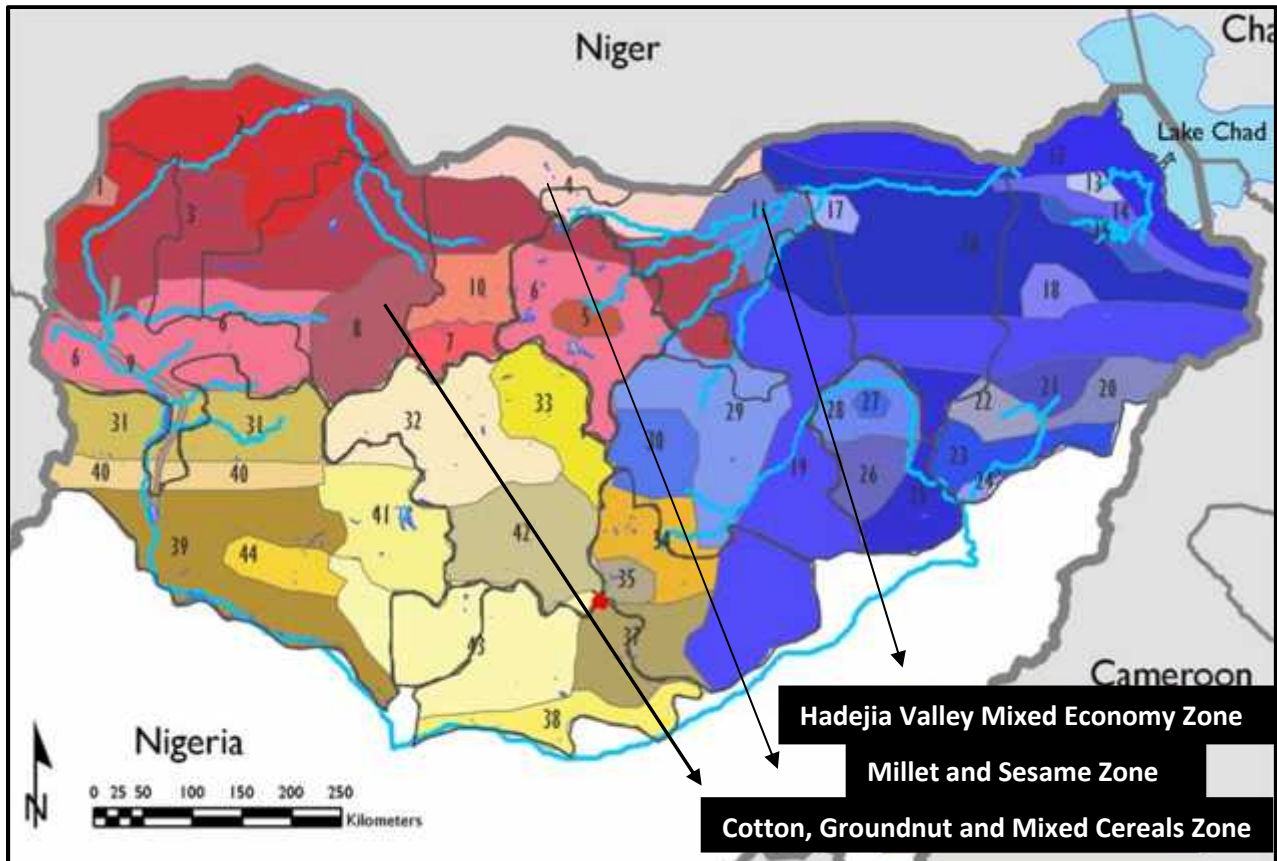
The photograph on the cover page was taken in Jigawa State @ by Auwalu Bello, December 2012.

Data Credits:

All the food, income and expenditure data graphed in the report is from primary field work carried out in November-December 2012. Production and price data used in the outcome analysis is from the Zamfara State ADP, Katsina State ADP and Jigawa State ADP (JARDA). Some price data was collected by the analysis team from Gusau (Zamfara), Daura (Katsina) and Hadejia (Jigawa) markets.

Livelihood Zone Map of Northern Nigeria

(Source: FEWS NET)



2013 Outcome Analysis Results, 3 Livelihood Zones, Nigeria

Summary of the Findings

Summary of Outcome Analysis Results by Wealth Group and by Livelihood Zone			
	CGC	HVM	MAS
V.Poor		Initial food deficit: 19%	
	No deficit	No final deficit	No deficit
Poor		Initial food deficit: 17%	
	No deficit	No final deficit	No deficit
Middle		Initial food deficit: 22%	
	No deficit	No final deficit	No deficit
Better-off	No deficit	No deficit	No deficit

The results from the outcome analysis show that there is **no need for emergency food or cash interventions to meet acute needs**. In the Hadejia Valley Mixed Economy (HVM) Zone, own crop consumption drops significantly due to flood impacts leaving an initial food deficit of 17-22% of annual food needs and affecting very poor, poor and middle-income households. Note that the very poor and poor households alone comprise an estimated 58% of the population in the livelihood zone (which comprises 7 LGAs of Jigawa State). However, price dynamics will benefit farmers who choose to sell their crops. Hence, by switching all rice, wheat, pulses and market vegetables from consumption to sale, and by using that income to purchase cheaper grains, households will be able to cover the initial food deficit created from harvest shortfalls and flood damage.

Recommendations:

1. Jointly run a second analysis in April with government staff from the ADP in each state using updated prices for staple food and labour wage rates. In Zamfara, the staple is sorghum.

In Katsina, the staple is millet. In Jigawa, the staple is maize.

2. The April analysis should also apply updated dry season production figures in the Hadejia Valley (Jigawa) Zone.

3. With ADP partners, jointly develop a schedule to run an outcome analysis twice a year using annual ADP production and price data. The goal is to use the analysis for early warning and preparedness. The first analysis should be post-harvest in December (or as soon as the data is available). The revised analysis should be in April once the rainy season is underway and the dry season crops are harvested.

4. Update population estimates disaggregated by rural / urban population. These figures are required to accurately calculate assistance needs in the event of a survival or livelihood protection deficit.

What are the survival and livelihood protection thresholds? Measuring food and income deficits in HEA.

HEA analysis is designed to measure whether households in a certain area fall below survival or livelihood protection thresholds. The survival threshold represents a survival food minimum (2100 kcals per person per day) as well as the basic non-food costs of preparing food. The livelihood protection threshold represents the cost required to maintain livelihoods at the baseline level. As the livelihood status of the very poor and the poor falls below USD 1 pppd, this is clearly not a development goal. Instead, it is meant to help planners decide whether there is need for an emergency intervention and if so, how much food or cash is needed for how many people and for how long.

Background and Methodology

From 25 February to 1 March, SCI organised an HEA Outcome Analysis Training for relevant staff in their Zamfara and Katsina State programmes. They were joined by partner staff from ACF International in Jigawa State as well as by two government counterparts from ADP Zamfara and the Budget & Economic Planning Directorate, Jigawa State. All the workshop participants had undergone the HEA Baseline Assessment training in November 2012. The baseline training event was followed by practical field work to collect household food, income and expenditure data by wealth group. These three elements, together with an asset profile, form the basis of the HEA baseline assessment. The baseline data was used in the outcome analysis training as the reference year data against which to measure current year changes. Note that the reference year was not the same year in each zone (see page 8).

Data for this study focuses on three livelihood zones. A FEWS NET exercise in 2007 identified 44 livelihood zones across the 15 states of northern Nigeria. Livelihood zones themselves are geographical areas in which households roughly share the same production and income options, as well as similar market access. The outcome analysis covers the following three zones: (1) Cotton, Groundnut, and Mixed Cereals (**CGC**) Livelihood Zone in Zamfara State; (2) Millet and Sesame (**MAS**) Zone in Katsina State; and (3) Hadejia Valley Mixed Economy (**HVM**) Zone in Jigawa State.¹ See the livelihood zone map on page 3.

¹ LGAs in the Zamfara CGC Zone include: Bungudu, Gusau, Maru and Tsafe. In Katsina MAS Zone, only Daura LGA was covered during field work.

There are four main steps in an HEA outcome analysis. (1) **Problem Specification**: quantify the change in production and prices from the reference year to the current year. (2) Define the **Expandability Factors**: quantify (i.e., as a percentage of the baseline level) to what extent households can cope with a shock by expanding certain food or income sources. “Expandability” also includes the option of switching high value crops out of consumption and into sale. (3) Define the **Intervention Thresholds**. This step involves deciding which items go into the survival non-food basket and which items go into the livelihood protection basket (and at what level of baseline expenditure). (4) Run the **Outcome Analysis**.

The HEA Outcome Analysis is designed to assess both an initial deficit as well as a final deficit. (1) The **Initial Deficit** is the impact of the hazard on household food and income without accounting for household coping. (2) The **Final Deficit or Outcome** is the impact of the hazard on household food and income with coping. This deficit is measured either as a survival deficit or as a livelihood protection deficit. A **survival deficit** means that total household resources (food + income) are insufficient to meet annual household survival needs. This means that households do not have the resources to meet their staple food costs in the current year nor prepare the food. A **livelihood protection deficit** means that total resources are insufficient to cover both livelihood expenditures and survival costs. Households may have enough to meet their survival needs but income is insufficient to pay for necessary livelihood inputs as well as school fees and medicine. The thresholds are meant to prevent

LGAs in Jigawa HVM Zone include: Kafin Hausa; Guri, Kiri Kasamma, Auyo, Malam Madori, Kaugama, and Biriniwa.

households from becoming worse off in the current year compared to the reference year. They represent emergency thresholds, not development goals

The **current year** for this outcome analysis is the period covering September 2012 to August 2013. As such, it comprises the “consumption” year for rain-fed crop-based economies which in northern Nigeria begin with the harvest in September and end in August at the end of the “lean season”. As the current year is not yet over, the outcome analysis is a projection of emergency needs for the coming year and, in particular, the upcoming lean season (June-August). If there were a food gap, it would typically emerge during that period.

Overview of the Livelihood Zones

The three livelihood zones are primarily agricultural supporting a wide variety of rain-fed crops suited to dryland areas including millet, sorghum, maize, cowpeas, groundnuts, sesame, cotton as well as (increasingly) soybeans.² 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, rice, wheat and market vegetables are grown on low lying river flood plains (i.e., *fadama*) either through irrigation or flood retreat agriculture. *Fadama* agriculture is limited in the Zamfara Cotton & Groundnut (**CGC**) Zone and the Katsina Millet & Sesame (**MAS**) Zone but is extensive in the Hadejia Valley (Jigawa) (**HVM**) zone. The main period of harvest is from September to November. The dry-season

² The region falls in the sudan-savannah agro-ecological belt. Cumulative total annual rainfall varies by year and by zone but is typically between 400-800mm per annum.

harvest is March. In all three zones, livestock production supplements agriculture.

The main elements of the three zones’ economies are summarised below.

Cotton, Groundnuts and Mixed Cereals ZAMFARA State	
Livestock	Cattle, goats, sheep, poultry
Crops	<i>Rain-fed:</i> sorghum, millet, maize, groundnuts, soybeans, cowpeash
	<i>Dry-season:</i> rice, market vegetables
Cash Crops	Cotton
Income	Livestock sales, crop sales, casual labour, firewood sales, petty trade, milk sales
Other	Sales of baobab leaves, moringa, hibiscus, shea nut

Millet and Sesame KATSINA State	
Livestock	Cattle, goats, sheep, poultry
Food crops	Millet, sorghum, cowpeas
Cash crops	sesame
Income	Livestock sales, milk sales, crops sales, agricultural labour, construction labour, petty trade, firewood sales

Hadejia Valley Mixed Economy JIGAWA State	
Livestock	Cattle, goats, sheep, poultry
Food crops	<i>Rain-fed:</i> maize, millet, sorghum, rice, cowpeas
	<i>Dry-season:</i> wheat, rice, maize, market vegetables
Income	Livestock sales, milk sales, crop sales, agricultural labour, construction labour
Other	Fish sales

Key Parameters

Only those food and income sources that make a significant contribution to household food and livelihood security are monitored. A food or income source is considered a key parameter if it contributes 10% of more to the annual food energy of one wealth group or at least 5% of the annual food energy of two or more wealth groups. Once the key parameters are identified, then monitoring data is collected from the relevant state agencies. In this instance, the Zamfara ADP, the Katsina ADP and JARDA (Jigawa ADP) provided the production and price data needed for the outcome analysis.

The table at right lists all the food and income sources that are found in the three different livelihood zones. Those that are key parameters for a particular zone are shaded grey and marked with an `x`. The table below lists the major components of the survival non-food and the livelihood protection baskets – or at least those items for which prices that can be reliably tracked. For a complete list of the items that comprise these two “baskets” see Annex 1.

survival non-food		price
firewood		x
water (fees, labour)		x
kerosene		x
livelihood protection		purchase price
pulses		x
milk		x
fertiliser		x
seeds		x
labour		x

Key Parameters by Livelihood Zone						
Food and Income Source	CGC		HVM		MAS	
	yield	price	yield	price	yield	price
milk	x		x	x	x	x
cattle sales	x	x	x	x	x	x
goat sales	x	x	x	x	x	x
sheep sales	x	x	x	x	x	x
sorghum	x	x	x	x	x	x
millet	x	x	x	x	x	x
rain-fed maize	x	x	x	x		
dry season maize			x	x		
rain-fed rice			x	x		
dry season rice	x	x	x	x		
cowpeas	x	x	x	x	x	x
soybeans	x	x				
groundnuts	x	x				
sesame					x	x
tomatoes, fresh			x	x		
peppers, dry			x	x		
onions			x	x		
cotton	x	x				
fishing				x		
ag labour paid in food		x				x
labour-agricultural		x		x		x
labour-construction		x		x		x
fetching water		x				x
firewood sales		x				x
petty trade		x		x		x
purchase						
staple grain		x		x		x
survival non-food		x		x		x
livelihood prot		x		x		x

a cell left blank mean that the source is not a key parameter

The Current Year: An Overview

One reason for undertaking the outcome analysis was to estimate the impact of current events, notably **flooding**, on household food and livelihood security. **The Nigeria Food Security Alert** published by FEWS NET on 20 February 2013 warns of elevated acute food insecurity likely to follow flooding and civil insecurity in the affected areas. The Hadejia Valley is one of those areas identified as affected by flooding. In addition, much of the north is affected to some extent by civil insecurity. The Food Security Alert identifies a number of potential causes of reduced access to food and income including direct crop losses from flood or displacement and possible reduced access to agricultural labour if better-off households decreased labour hire during weeding, harvesting and threshing. On a national scale, overall crop production was 2% higher than 2011 which was considered a bumper year for the country. However, rice output was down from 2011 levels by 10% in the affected areas and this was cause for concern. Outside of the flood affected areas, the main concerns in the north are the effect of civil insecurity on production due to household displacement as well as the effect of civil insecurity on prices from market disruptions and higher transport costs due to road checks. These were also important factors to consider when running the HEA analysis. One advantage of the HEA analysis is that the focus is on sub-state level livelihood zones. This more localised analysis takes into consideration the specific livelihood context of each area as well as different production outcomes in 2012-2013.

In order to assess the impact of a hazard on people's food and income access, the initial effects of the hazard on production and prices

must be quantified. These production and price changes are measured by calculating the difference between current year and baseline year values. In the case of Nigeria, the reference year was different for each of the three livelihood zones as seen in the table below.

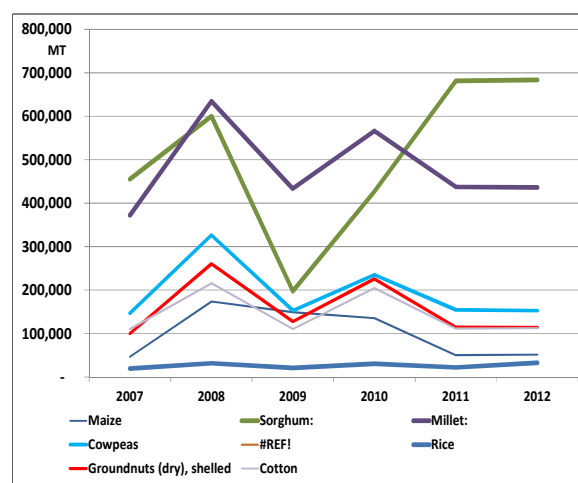
Reference Year (RY)		
Katsina MAS Zone	Sept 2009 -	Aug 2010
Jigawa HVM Zone	Sept 2010 -	Aug 2011
Zamfara CGC Zone	Sept 2011 -	Aug 2012

Zamfara CGC Results

Crop Production Scenario

Sorghum and millet are the two principal crops grown in the zone. In 2012, production trends were remarkably similar to 2011. Sorghum did very well but output was below average for all other crops. In the last 6 years, 2009 and 2007 were very poor production years. 2008 was a very good year for all crops.

Cereal Yields (in MT), Zamfara State, 2007-2012



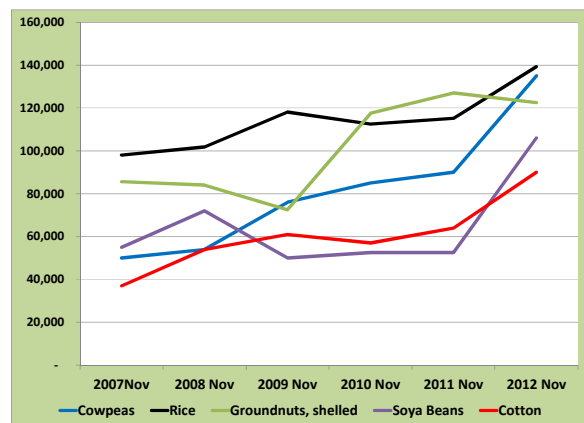
Price Scenario

Post-harvest Crop Prices: Prices for staple grains are lowest in November-December directly after the harvest. Many farmers sell

crops to re-pay debts taken during the growing season. Grain prices then rise from February onwards, reaching their peak price during the rainy season (i.e., June-August). It is common for prices to rise 30-50% from their lowest post-harvest value to their peak, pre-harvest price.

In each zone, and for each crop, price trends differed. In Zamfara Cotton & Groundnut Zone, a variety of crops are sold. The highest cash earners are groundnuts and soybeans as well as cotton. Prices for cash crops rose from 2011 to 2012 with the exception of groundnuts (see graph below). Sorghum prices, post-harvest, stayed almost level with 2011 prices.

Post-harvest Crop Price Trends, Naira per KG, 2007-2012, Gusau, Zamfara



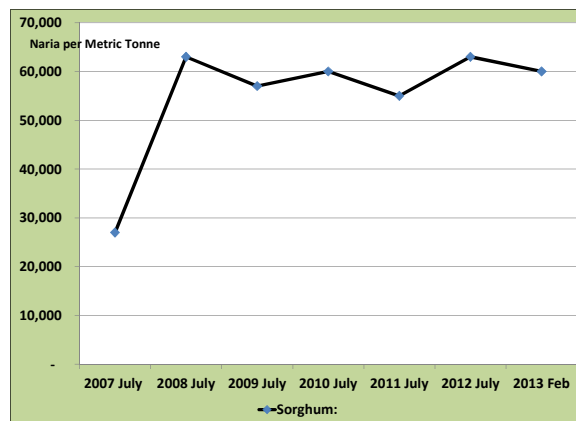
Pre-Harvest Staple Grain Prices: Higher crop prices benefit farmers when they sell their crops post-harvest. However, very poor and poor households purchase staple grains for much of the year beginning in February or March. Staple grain purchases peak from June-August. High prices at this time mean that poor farmers are able to buy less food unless their income expands.

For the current year analysis, the price used to analyse the cost of staple grain expenditures was based on a projected July 2013 price for the

staple grain in each zone. Over the next few months, staple grain prices should be monitored closely and the price assumption verified.

In each zone, the staple grain is different. The staple grain refers to the grain that was purchased in the highest quantity by most wealth groups. In Zamfara Cotton & Groundnut Zone, the staple grain is sorghum. In the current year, sorghum prices fell slightly. This will benefit the poor who purchase staple food.

Pre-harvest Sorghum Purchase Price Trends, Naira per MT, 2007-2012, Gusau, Zamfara



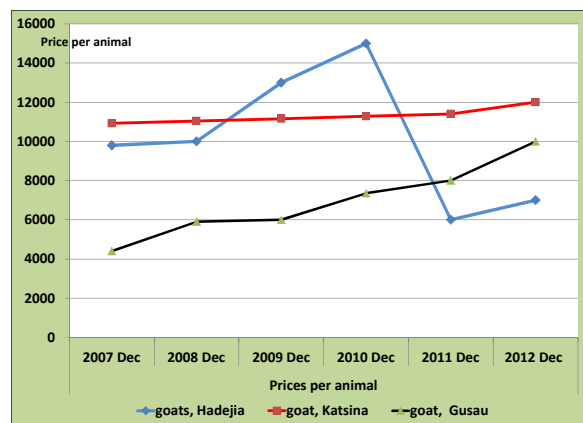
Livestock Production Scenario

Milk and meat are sources of food and income for many households particularly the middle-income and better-off. These food sources are more difficult to monitor as a reliable estimate must address herd size changes as well as changes in the number of breeding females, and finally any changes in milk yields. For the current analysis, only a simple estimation of milk access was calculated using estimates of changes in milk yield.

Livestock sales also provide a source of income for households during the year which can be expanded in years of crop shortfalls. Monitoring livestock prices helps to assess potential income

in a given year. There are seasonal highs and lows but not on the scale of seasonal price swings for staple grains. In general, the period of highest sales is November/December. The prices plotted in the graph below reflect prices from this period. The black line shows the selling price for goats in Gusau over the last 5 years. Prices have climbed steadily to the benefit of rural farmers who typically sell some livestock during the year.

Goat Price Trends, Naira per Animal, 2007-2012, Gusau, Katsina, Hadejia



Other Sources of Income

Households in the three livelihood zones earn cash (or food) income through a variety of other sources including fish, wild foods, gifts, in-kind payment for labour, petty trade, firewood sales and casual labour. Only some of these sources are key parameters and only a few of these sources can be reliably monitored. For the most part, there is data on wage rates (both for agricultural labour and for urban construction labour). Data can also be collected on firewood prices for instance. In the Zamfara Cotton & Groundnut Zone, wage rates increased in the current year compared to the reference year.

Inflation

In order to account for a general rise in prices, it is also important to monitor some of the key items in the survival non-food basket and the livelihood protection basket. Items such as kerosene, firewood, pulses, milk, fertiliser, seeds and agricultural labour are items that can be tracked for price changes. Such price changes reflect shifts in the cost of living that can then be compared to shifts in other parameters.

In the Zamfara Cotton & Groundnut Zone, price increases were estimated for the survival non-food basket as well as for the livelihood protection basket. Goods in the survival non-food basket include: salt, soap, kerosene, firewood and water. A price increase of 115% was applied. A price increase of 130% was applied to the livelihood protection basket reflecting price increases of pulses, milk, oil, fertiliser and agricultural labour.

Summary – Current Year Specification

In the following table, a detailed problem specification shows the percentage change in value from the reference year to the current year. A figure higher than 100 means that production or prices increased since the reference year. Conversely, a figure below 100 reflects a decrease in production or price.

The problem specification values were entered into a single zone analysis spreadsheet which already contained the baseline information. The analysis spreadsheet allowed a rapid calculation of food and income access given production and price changes in the current year compared to the reference year.

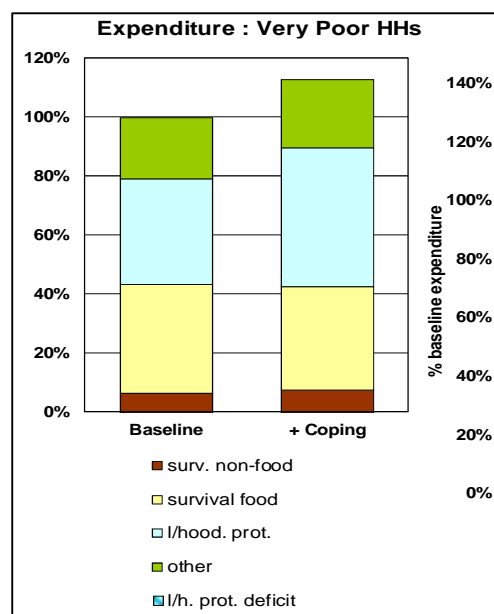
Current Yr. Scenarios CGC - Zamfara		
Source	Production problem	Price problem
milk	105%	150%
cattle sales		
goat sales		125%
sheep sales		113%
sorghum		99%
millet		129%
maize	102%	115%
rice	102%	121%
cowpeas	99%	150%
soybeans	102%	202%
groundnuts		96%
cotton	101%	141%
ag. labour		126%
construction		138%
firewood sales		
petty trade		
purchase		
staple		100%
survival non-food		115%
livelihood prot		130%
<i>cells left blank mean 100% of RY value</i>		

Outcome Analysis Results

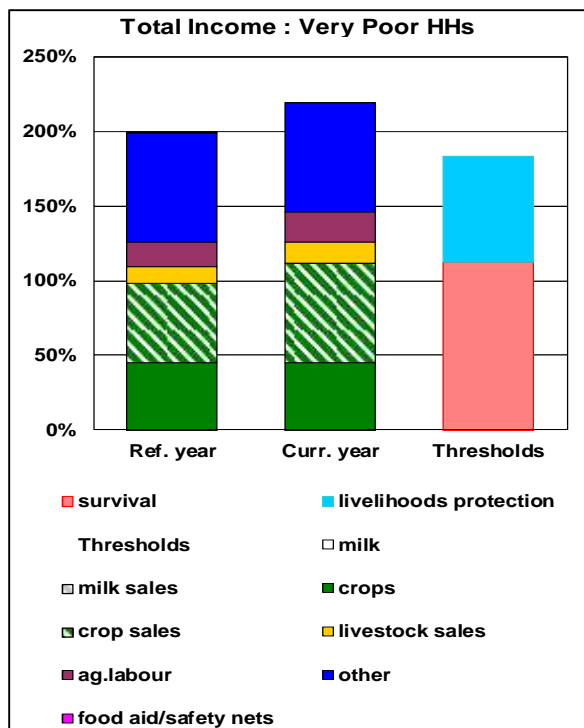
The results for the current year scenario analysis show that there will be no emergency food or livelihood protection deficits. In theory, households could see improved food and income access this year. The selling price for many crops (rice, cotton, cowpeas, soybeans) has increased since 2011. By contrast, the purchase price for the main staple food sorghum has remained stable to date. Production, moreover, was stable for all the principal crops. In addition, wage rates also increased in the current year. The net effect could be higher incomes.

The expenditure graph at right shows the effect of potentially higher income from crop sales and casual labour. Essentially, the higher earnings have kept pace with higher input costs.

This means that very poor households will be able to afford the same standard of living despite rising livelihood input prices.



The graph above shows the expenditure breakdown in the baseline year and in the current year given changes in the purchase price of basic goods. The graph (next page) shows whether the total (food + income) resources of very poor households are sufficient to cover survival and livelihood protection needs. The graph also shows what food or income sources expanded or contracted in the current year. Of note in the graph are the solid green and striped green sections of the bar. These green sections highlight the importance of crop sales in the Zamfara Cotton & Groundnut Zone. In the current year, food and income from own crop consumption and sales as well as construction labour increased. Graphically, this result is depicted by the **Current Year** bar which is higher than the Reference Year bar. It is also higher than the Thresholds bar, indicating no emergency assistance required.



Depending on the year, income secured from crop sales expands or contracts not only due to changes in production and prices but also as a result of households coping with other food (or income) gaps. For example, if there was a major harvest shortfall, it is assumed that farmers will sell all their high value crops (rice, cowpeas or groundnuts) and keep none aside for household consumption. The income earned can be used to purchase a lower cost staple grain. The importance of consumption switching in order to cope with initial deficits will become apparent in the example of the Hadejia Valley (Jigawa) Zone analysis.

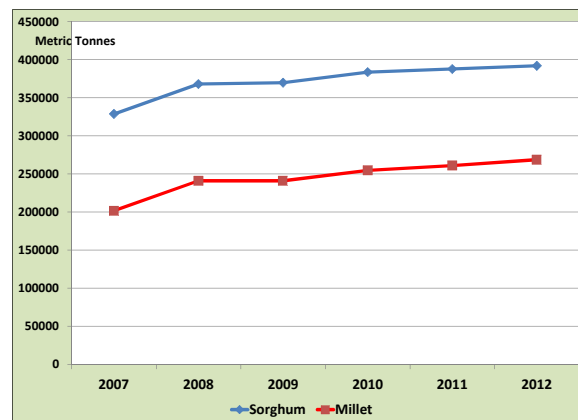
Katsina MAS Results

Crop Production Scenario

In Katsina State as a whole, sorghum is the principal cereal crop produced. However, in the Millet & Sesame Zone, millet is the most important crop. As seen in the graph at right, the current year (2012 harvest) was a good year

for both millet and sorghum. Note that in this zone, the reference year was based on the 2009 harvest. Compared to the last three years, 2009 was below-average.

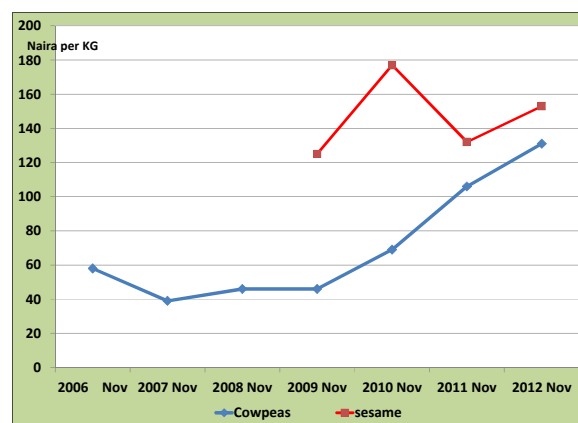
Millet & Sorghum Yields (in MT), Katsina State, 2007-20012



Price Scenario

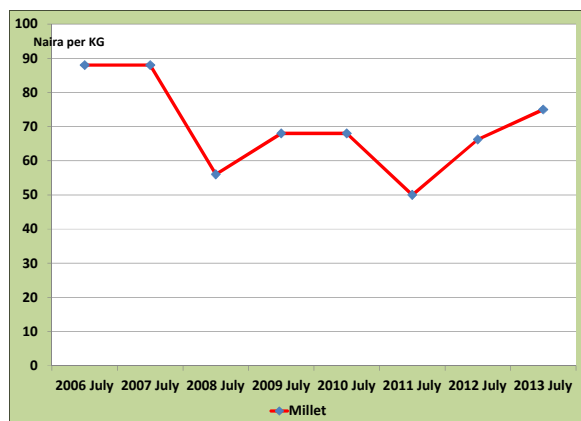
Post-harvest Crop Prices: In the Katsina Millet & Sesame Zone, the main crops sold during the year were sesame and cowpeas. Prices increased between 2009 and 2012 for both crops (see graph below). Cowpea prices in particular have increased significantly throughout northern Nigeria due to crop disease and reduced supply.

Post-harvest Sesame and Cowpea Price Trends, Naira per KG 2007-2012, Daura, Katsina



Pre-Harvest Staple Grain Prices: Since 2009, the purchase price for the staple grain millet rose to 110% of the baseline value (see graph below). This is not a major increase and is unlikely to affect household access to food in the current year.

Pre-harvest Millet Purchase Price Trends, Naira per KG, 2007-2012, Daura, Katsina



Livestock Production Scenario

In the Katsina Millet & Sesame Zone, the selling price for sheep, goats and cattle has slowly risen over the last 5 years (see graph page 10). This price rise benefits rural farmers who sell a few stock during the year and helps them to cope with other price rises during the year.

Other Sources of Income

Wage rates increased in the current year compared to the reference year as did the selling price for firewood. These price increases helped farmers cope with the price rise in other goods in the past few years.

Inflation

Prices for most goods in the survival non-food and livelihood protection baskets have increased since 2009. Goods such as firewood, pulses, milk, cooking oil, fertiliser and

agricultural labour increased in price from 115-284% of the baseline value. An average price increase for all goods of 130-140% was applied in the 2012-2013 scenario for this zone.

Summary – Current Year Specification

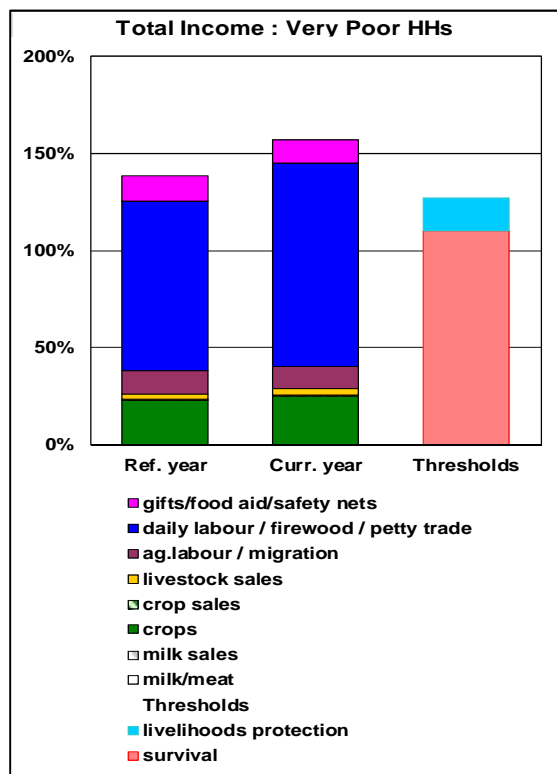
Current Yr. Scenarios MAS - Katsina		
Source	Production problem	Price problem
milk		115%
cattle sales		107%
goat sales		121%
sheep sales		118%
sorghum	106%	191%
millet	112%	99%
maize	110%	79%
rice		
cowpeas	129%	284%
sesame	97%	122%
tomatoes	105%	105%
peppers	71%	106%
ag. Labour		128%
construction		121%
firewood sales		141%
petty trade		
purchase		
staple		110%
survival non-food		130%
livelihood prot		140%
<i>cells left blank mean 100% of RY value</i>		

Outcome Analysis Results

The results for the Katsina Millet & Sesame Zone analysis show that households – even the very poor households – will not require emergency aid this year. Production outcomes have improved since 2009 (the baseline year) which means that food access will also improve.

In particular, the combination of higher cash crop prices and stable staple grain (i.e., millet) prices means that households will earn more income in 2012-2013 than in 2009-2010 from

crop sales. These earnings will cover the purchase of more staple grain. Other income sources have also risen in value and these price rises have helped to cover the rising costs of agricultural inputs and other essential items.



One important aspect of the Katsina Millet & Sesame analysis is that the 2009 harvest was a below-average production year. For this reason, it is not surprising to see total food and income resources increase in the current year compared to the reference year. Most years, hopefully, will be better than the baseline year. However, one issue is that the livelihood protection threshold is lower in this zone than in other zones. This reflects a lower level of spending on livelihood inputs in a poor harvest year.

Another difference between the Katsina Millet & Sesame Zone and the other two zones is that gifts make up 5-10% of very poor households' total annual income. In the other zones, gifts to

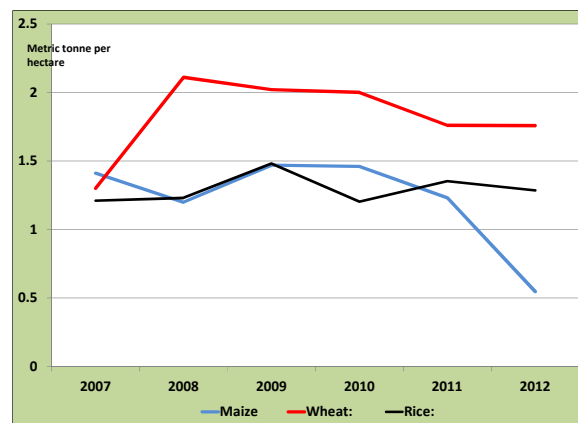
the working poor were less common. This finding may reflect below-average production in the baseline year. To that end, it signals that the very poor had adopted some coping strategies in order to make ends meet.

Jigawa HVM Results

Crop Production Scenario

In the Hadejia Valley (Jigawa) Zone, maize, millet, rice and wheat are produced in the highest quantity. In 2011 and 2012, maize and millet production fell drastically due to flood impacts (see graph below). Rice outcomes were different. Output rose in 2011 but fell in 2012.

Staple Grain Yields, MT/ha, 2007-2012, Jigawa State

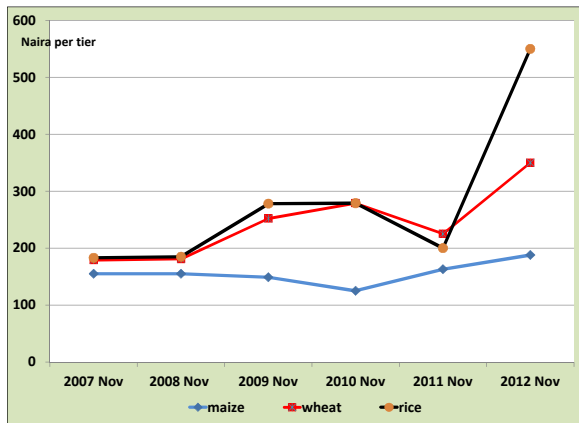


Price Scenario

Post-harvest Crop Prices: As in Zamfara State, the Hadejia Valley (Jigawa) Zone has a diverse crop economy. Households earn an income from a wide variety of food and cash crops. This helps to cushion the blow of negative price trends for one particular crop. In the 2012-2013 current year scenario, the post-harvest selling price of maize, wheat and rice - the three main income earners (together with market vegetables) – showed a distinct increase

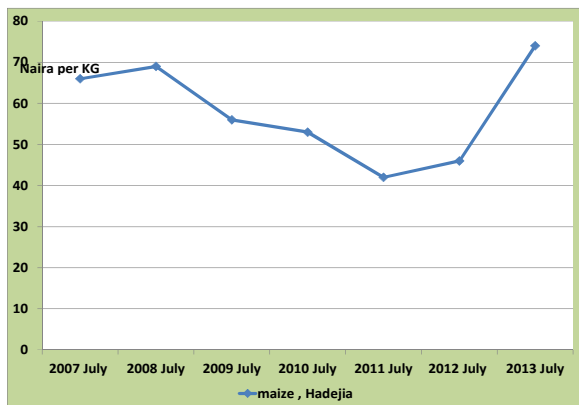
reflecting, in part, reduced supply (see graph below).

Post-Harvest Cereal Price Trends, Naira per tier, 2007-2012, Hadejia



Pre-harvest Staple Grain Price: For the current year analysis, the price used to analyse the purchase cost of the staple grain was based on a projected July 2013 price using data from February 2013. In the Hadejia Valley (Jigawa) Zone, the staple grain is maize. Due to reduced maize supply from flood-related crop shortfalls, the price of maize rose to 150% of the baseline value (see graph below). It may continue to rise, reaching a peak price in June-July-August.

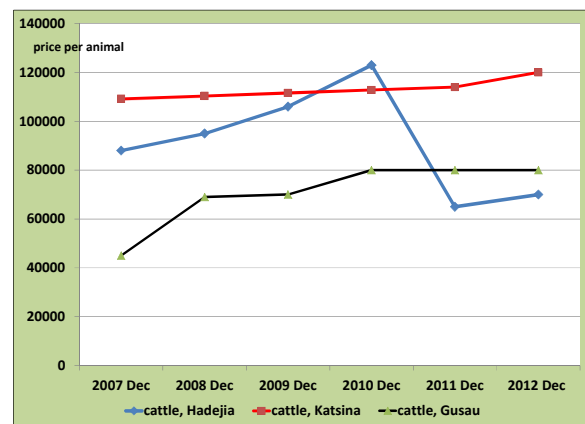
Pre-harvest Maize Purchase Price Trends, Naira per Tier, 2007-2012, Hadejia, Jigawa



Livestock Production Scenario

The selling price for livestock was taken from December 2012 monitoring data. In general, the period of highest sales is November/December although April is a second peak period of sales. The prices plotted in the graph below reflect cattle prices from this period for all three zones (see the Zamfara results for goat price trend data). In the Hadejia Valley (Jigawa) zone there was a significant drop in cattle prices compared to the December 2010 reference year (see the blue line in the graph below).

Cattle Price Trends, Naira per Animal, 2007-2012, Gusau, Katsina, Hadejia



Other Sources of Income

In the Hadejia Valley (Jigawa) zone, other sources of income include agricultural labour, construction labour, fish sales, and, to a lesser extent, firewood sales. Of these income sources, there is reliable data on wage rates (both for agricultural labour and for urban construction labour). In the Hadejia Valley (Jigawa) Zone, wage rates increased in the current year compared to the reference year.

Inflation

In the 2012-2013 current year analysis, small increases in the cost of the survival non-food

and livelihood protection basket were applied. These reflect the price increase for milk, cowpeas, and agricultural labour. Other items constitute the survival and livelihood protection baskets but price data is not available for all of the items. For this reason, the inflation problem specification is a rough estimate.

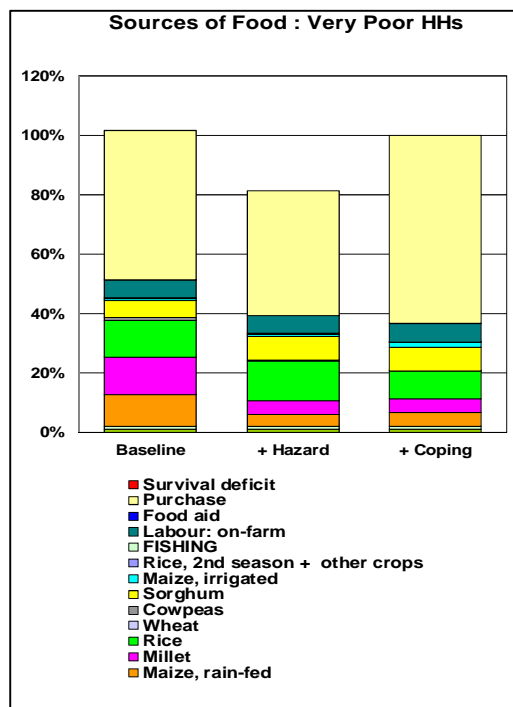
Summary – Current Year Scenario

The scenario for the Hadejia Valley (Jigawa) Zone uses the monitoring data from JARDA to assess production and price changes since the 2010-2011 reference year. The scenario also reflects that 2012-2013 was a second bad year and hence does not apply all coping strategies. In particular, the scenario assumes that agricultural labour cannot be expanded.

Current Yr. Scenario (reduced coping)		
HVM - Jigawa		
Source	Production problem	Price problem
milk		117%
cattle sales		57%
goat sales		47%
sheep sales		46%
sorghum	145%	81%
millet	37%	107%
maize	38%	150%
rice	107%	151%
cowpeas	34%	114%
wheat	88%	90%
onions	233%	129%
tomatoes	146%	132%
ag. labour		106%
construction		
fishing		
petty trade		
purchase		
staple		150%
survival non-food		115%
livelihood prot		115%
cells left blank mean 100% of RY value		

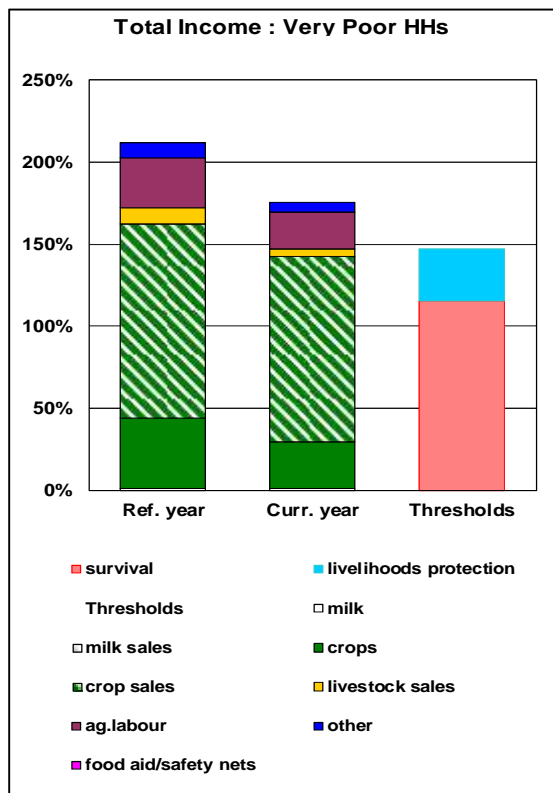
Outcome Analysis Results

Significant harvest shortfalls in 2012, particularly of maize and millet, mean that many farming households will face a huge drop in own crop consumption. Given the importance of crop production in the local food economy, very poor, poor and middle-income households will all face initial deficits of about 20% of their annual food needs. **In other words, compared to the baseline year, own crop consumption drops by 20% of annual food needs.** The question then becomes do the very poor, poor and middle-income households have the means to make up this gap?



The answer for each wealth group is yes. In all cases, the income earned from selling high value crops at a relatively high price (note the price increases for rice and vegetables) results in sufficient income to purchase more maize and make up the initial deficit, notwithstanding the higher purchase price of maize. Harvest shortfalls do mean an overall drop in total (food

+ cash) income for the year. However, it is estimated that household resources will still be sufficient to cover basic survival and livelihood protection needs. (See the graph below).



The graph above depicts the total (food + income) resources secured by the very poor in the baseline year as a percentage of their annual food needs (**Ref.year bar**). The graph highlights the significant drop in total resources in the current year due to flood impacts (**Curr.year bar**). However, even with limited coping, the poor and very poor will be able to meet their survival and livelihood protection needs. The two thresholds are shown in the bar at right.

How exactly can the very poor and the poor expand their income to purchase sufficient food given the potentially large food gap? In response to crop shortfalls, households will pursue three probable coping strategies. (i)

Switch all rice to sales rather than keeping some for home consumption. Even though rice production was down in the 2012 wet season, the higher selling price means that cash earned from rice sales can be used to purchase maize (a lower cost alternative grain). (ii) Switch all maize, millet and sorghum to consumption and do not sell any of the harvest; (iii) Use the income earned from an increased wet-season yield of tomatoes and other market vegetables to buy maize. As the selling price for tomatoes and onions increased in the current year, this additional income will pay for the much needed grain. Through these measures, households can make up the initial food deficit that resulted from harvest shortfalls due to flood damage.

For these reasons, an emergency intervention is not recommended. The analysis shows that by using all the income earned from cash crop sales (wheat, rice, and market vegetables) to purchase staple grain, the deficit can be resolved by affected households themselves without outside emergency intervention.

If the price assumptions change over the next few months then the need for emergency action should be re-evaluated. In particular, it would be wise to monitor staple grain prices as well as dry-season production and prices. Market vegetables are an important income earner for households in the zone so production and price trends for these commodities should be carefully monitored. In addition, wage rates in relation to maize, millet and sorghum prices should also be tracked.

If there was any re-evaluation of predicted prices (i.e., if the December 2012 selling price for rice, tomatoes or onions was re-assessed downwards) it is possible that the very poor or poor will not be able to resolve the initial deficit. In that case, a calculation of emergency

assistance will need to be made. The process of calculating emergency assistance is as follows. Basing the calculation on a food deficit of 19% of the annual food needs of the very poor and 17% of the annual food needs of the poor, the process begins by estimating the percentage of the population affected by the deficit. In this case, the calculation is based on a projected population of 1,385,151 in the 7 LGAs of the HVM zone.³ The very poor and poor comprise an estimated 76% of households which is equivalent to 58% of the population or 803,387 people given a household size of 8 people for the very poor and 10 people for the poor. Using maize as the staple grain for the calculation of food needs, the amount of maize required to meet the initial deficit of the very poor is 21,170 MT. The maize required by the poor is 9,970 MT for a combined total of 31,140 MT. At current year prices, this intervention would cost NGN 2,304,000 and could be provided as a cash or food transfer.

Cash transfers have the benefit of reducing aid transfer costs and allowing households to target money where most needed. It is unlikely that an deficit created from drops in own crop consumption will mean an absolute deficit in food access. Instead, households would likely use their income to buy more food and reduce expenditures on “discretionary” items. Cash transfers would help to pay for those discretionary expenses that in HEA are not part of the survival and livelihood protection baskets. These items include the following: cooking oil; meat; sugar; other non-staple foods; clothes; household utensils; transport;

³ The 7 LGAs in the zone are: Kafin Hausa; Auyo, Guri, Kiri Kasamma; Kaugama; Malam Madori; Biriniwa. Note that the population figures are total figures for each LGA and should be updated based on rural and urban estimates.

cell phone/communication; grinding fees; debt repayment; festivals; and livestock purchase.

Conclusion

Summary of the Findings

The current year is anticipated to be a relatively good year in the Zamfara Cotton & Groundnut and Katsina Millet & Sesame Zones. Despite flood damage in parts of each state, the particular zones were not badly affected. In the Zamfara Cotton & Groundnut Zone, there was a second consecutive bumper year for sorghum. Coupled with the higher selling prices for livestock and cash crops and higher wage rates, the outcome is sufficient food access for all wealth groups as well as sufficient income to pay for basic livelihood protection needs. In the Katsina Millet & Sesame Zone, steady increases in staple grain production since the 2009 reference year mean that households will have access to sufficient food and income to ensure their survival and pay for their basic livelihood expenses. However, it should be noted that those expenses reflect minimum spending levels as the 2009 reference year was a poor production year; hence income and expenses were consequently very low.

The situation in the Hadejia Valley (Jigawa) Zone is quite different. Flood impacts affected households in the zone directly. Wet-season production of cereals and pulses was much reduced from the reference year. The initial effect of the flood damage is a high food deficit from a big drop in own crop consumption. Very poor, poor and middle-income households are affected to the extent that they will face an initial deficit of about 20% of their annual food needs. However, the analysis points to the capacity of households to cope with these shortfalls through consumption switching and

selling all high-value crops including rice, wheat and market vegetables. In this way, they will benefit from the relatively high selling price of these products and be able to buy sufficient grain in exchange.

Recommendations

1. Jointly run a second analysis in April with government staff from the ADP in each state using updated prices for staple food. In Zamfara, the staple is sorghum. In Katsina, the staple is millet. In Jigawa, the staple is maize.
2. The April analysis should also apply updated dry season production figures in the Hadejia Valley (Jigawa) Zone.
3. With ADP partners, jointly develop a schedule to run an outcome analysis twice a year using updated ADP production and price data. The goal is to use the analysis for early warning and preparedness. The first analysis should be post-harvest in December (or as soon as the data is available). The revised analysis should be in April once the rainy season is underway and the dry season crops are harvested.
4. Update population estimates based on rural / urban figures. These figures are required to accurately calculate assistance needs in the event of a survival or livelihood protection deficit.

ANNEX 1:

THE HEA ANALYTICAL FRAMEWORK

Outcome analysis is the term used to describe the process of taking information on the current situation (the monitoring data) and combining it with information on the reference year (the baseline) to project total income for the current year. Three types of data are combined: data on baseline access, data on hazard (i.e. factors affecting access to food and cash this year, such as crop production or market prices) and data on coping strategies (i.e. the sources of food and income that people turn to when exposed to a hazard)⁴. The approach can be summarised as follows:

$$\textit{Baseline} + \textit{Hazard} + \textit{Coping} = \textit{Outcome}$$

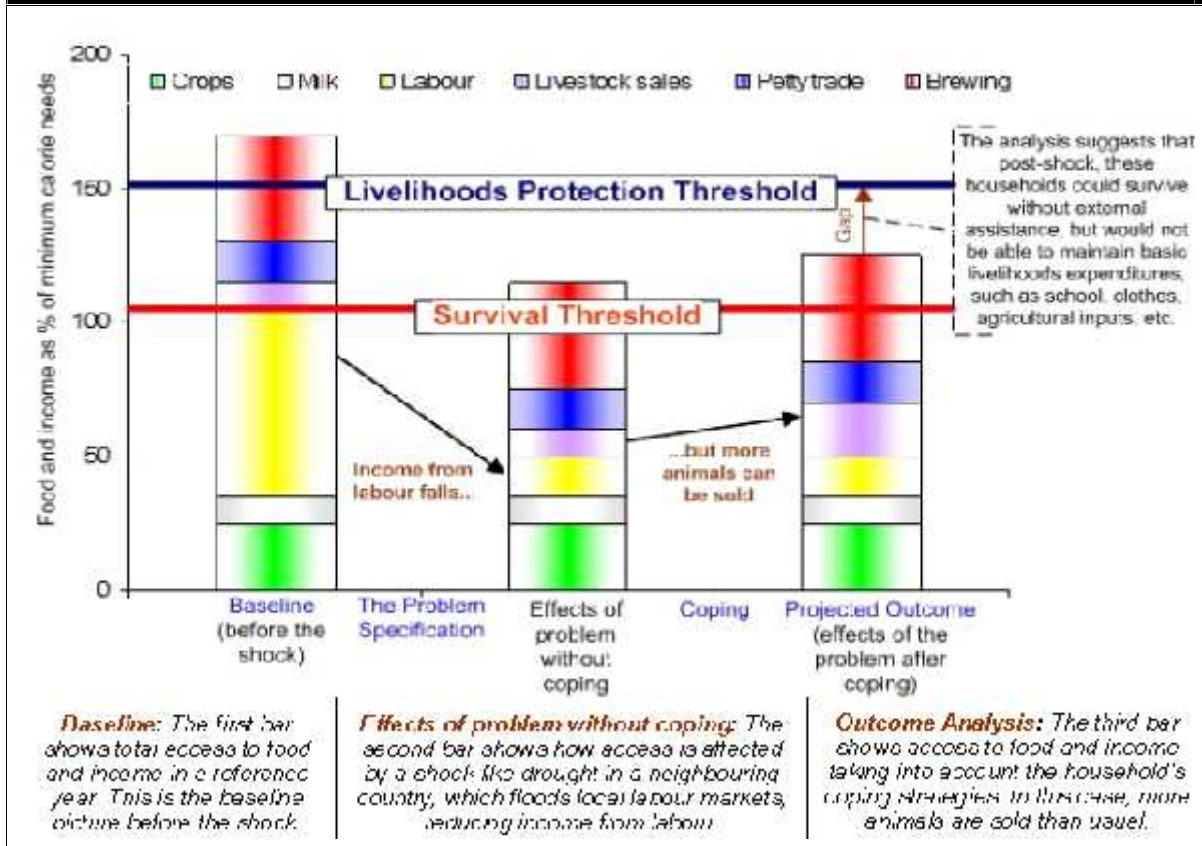
In this context, the purpose of this analysis is to utilise available information on current hazards and their likely effects on baseline sources of food and cash income. The output from an outcome analysis is an estimate of total food and cash income for the current year, once the effects of current hazards and income generated from coping strategies have been taken into account. No negative or damaging coping strategies are included in the analysis.

The next step is to compare projected total income against two clearly defined thresholds to determine whether an intervention of some kind is required. See graph next page. Total food income in the reference year is shown in the left-hand bar, while total food income in the analysis year after the inclusion of coping strategies is shown in the right-hand bar. This is then compared against two thresholds.

Where total income falls below the livelihoods protection threshold an emergency intervention is required to sustain livelihoods in the short and medium terms (so that people can continue to pay for health, education, productive inputs, etc.). Where total income falls below the survival threshold, intervention is required to maintain food intake at a minimum acceptable level (2100 kcals per person per day) in addition to sustaining livelihoods. Given the current emphasis on preserving livelihoods in addition to saving lives, deficits – and therefore intervention needs – are usually calculated in relation to the livelihoods protection threshold, not the survival threshold.

⁴ Information on coping strategies is collected as part of the baseline assessment.

Figure 2: The Household Economy Analytical framework: a simplified illustration



The Survival threshold: The income required to cover 100% of minimum food needs plus survival non-food.⁵

The Livelihoods Protection Threshold: The income required to cover additional expenditure on health, education, inputs, etc.⁶

⁵ The survival threshold is set at slightly above 100% of minimum food needs to allow for expenditure on survival non-food items. These are items associated with food preparation (e.g. salt, soap, cooking fuel) and water for human consumption, where these were paid for in the reference year.

⁶ The 'livelihood protection basket' includes 100% of expenditure by each wealth group on productive inputs for crop and livestock production, health and education costs. Other items (related to standard of living) have been included at 25-100% of the level of poor household expenditure (e.g. clothes, non-staple food items, basic non-food items etc).