

Nigeria Livelihood Profiles

North east Millet, Cowpea, & Sesame (NG10) ¹



September 2015

¹Data Credits:

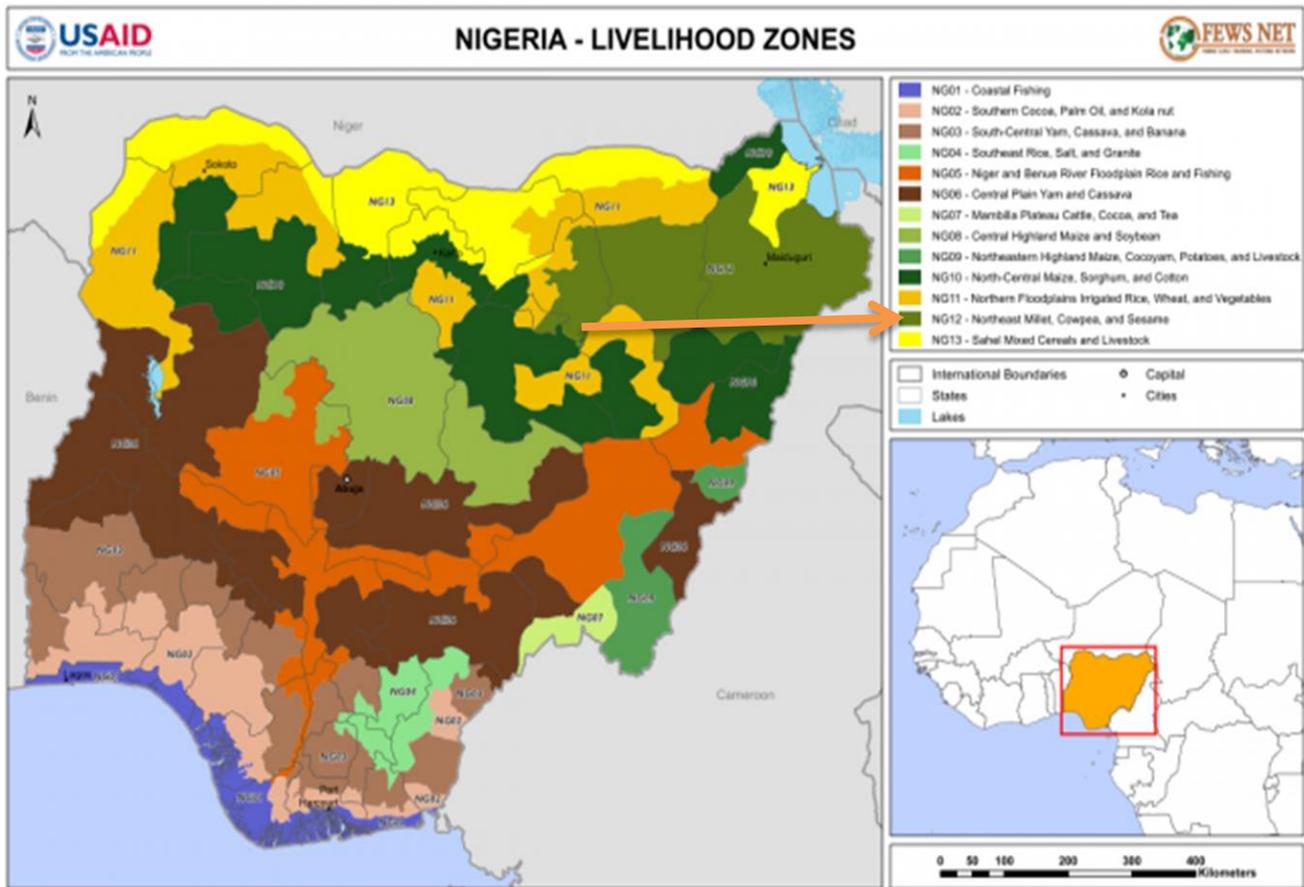
The production data is from Bauchi state agriculture development project (ADP). All the food, income and expenditure data graphed in the report is from primary field work. Price data is from primary data collection at Darazo, Giade, Misau, Madakiri, and Chinade markets reflecting the location of the zone across the far northeast of Nigeria.

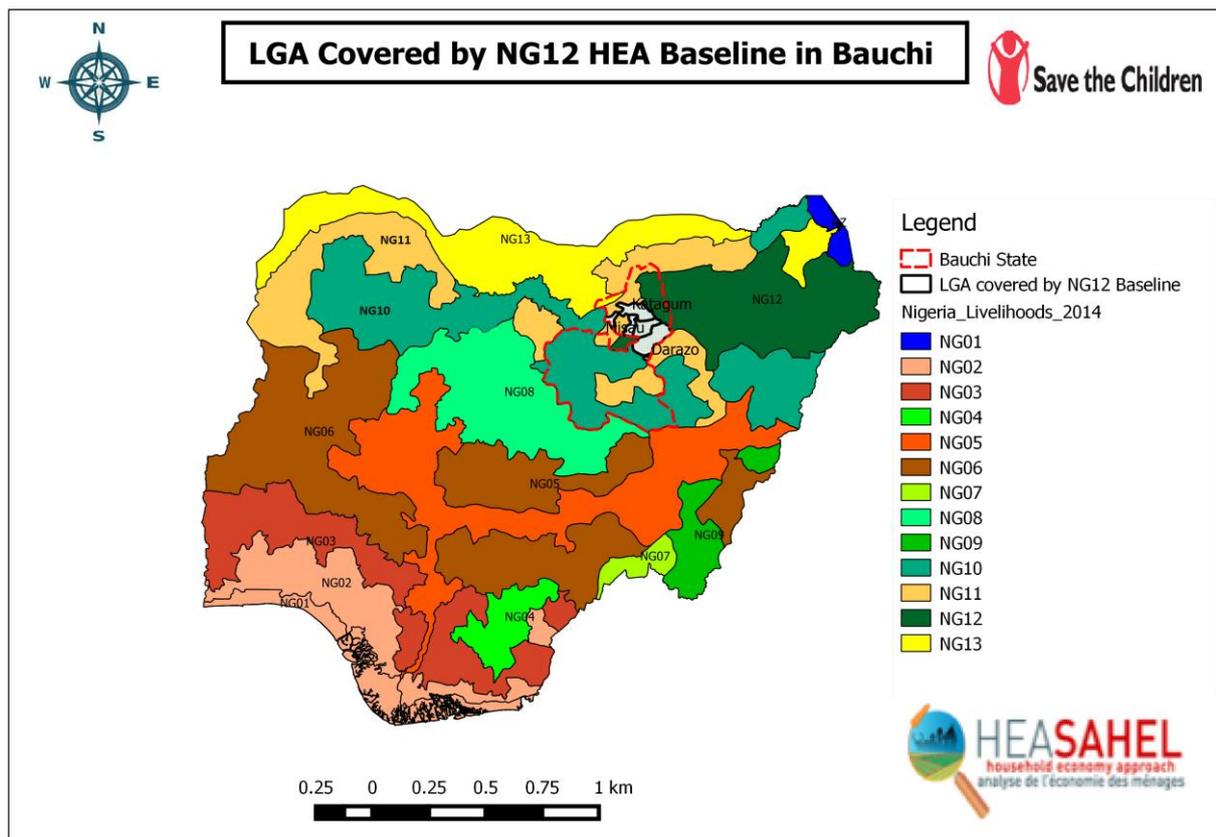
The Currency Rate: At the time of fieldwork, in May to July 2015, the value of the Nigerian Naira was NGN 198 = USD \$1.

Context

The North east millet, cowpea and sorghum Livelihood Zone is one of 13 livelihood zones identified across the 37 states of Nigeria in a FEWS NET zoning exercise in 2012. Livelihood zones are geographical areas in which households essentially share the same production and income options, as well as similar market access.

Livelihood Zones map of Nigeria (FEWS NET 2012)





The objective of the HEA exercise is to generate two more baselines that would be added to the previous five baselines in northern Nigeria. The approach is strategic in supporting humanitarian actors to understand the food security and livelihood situation in the north east Nigeria. The present HEA exercise focused on the food security and livelihood situation of the population in the North eastern state of Bauchi. The problem of insurgency which led to internally displaced persons to be camped in the neighbouring states of Bauchi and Gombe. There is need to study the food access of the livelihood and other situation which would, add to the store of baseline data on livelihoods and food security in northern Nigeria. It also aimed at increasing the capacity of government officers and the staff of partner NGOs to understand and use the HEA analytical framework, in order to institutionalize the approach and analysis within the Nigerian government's food and nutrition policy, and to contribute to the Early Warning System and to emergency response.

The exercise started with a six-day classroom training conducted from 18th to 23rd May 2015, followed by field level data collection and analysis from the 22nd June to 11th July 2015. The field level assessment started with the selection of four LGAs at the state level, then eight villages were selected by the representatives of the four LGA, using the criteria of proximity of village to market and town; purposively to represent the livelihood pattern of the zone. The HEA baseline focuses on household food and cash income access as well as expenditure patterns according to wealth groups. These three elements, together with an asset profile, provide a rounded view of household food and livelihood status.

There are three main steps in the HEA baseline assessment. First, at the State and LGA level, secondary data on production, prices, population and hazards are collected and local units of measure are verified. A minimum set of 8 villages' representative of the zone is purposively selected. The villages include; Yalbejam, Dafatuwo, Doguwa, Zindin, Buskuri, Kujuru, Lafiyaro and Zabi villages were selected in four LGA; that is Darazo, Giade, Misau and Katagum. Then at the village level a meeting with key informants is held to develop a seasonal calendar and a five year timeline of major events affecting food production and food security, as well as a

summary of the characteristics of very poor, poor, middle income and better-off households in the village (as defined locally).

This wealth breakdown exercise allows the third step to be organised, in which eight household representatives from each wealth group are selected as focus groups and interviews are conducted separately for each focus group. As far as possible, equal numbers of male and female household representatives are chosen for each focus group. During the three to four hour interview, household representatives are asked to provide quantified information about the amounts of food typically secured during the reference year by households in their wealth group from the different sources: in this case from own crop production, from own livestock (meat and milk), from market purchase, and from payment for work directly in the form of grain ('payment in kind'). They are asked about the sources and amounts of cash obtained during the year (from produce sales, paid work etc.) and about the pattern and amounts of expenditure. This data is entered in a baseline storage spreadsheet. In future, it can be used in conjunction with a livelihood impact Analysis spreadsheet (LIAS) to predict the impact of given shocks or changes (Outcome Analysis).

The baseline data is linked directly with the Livelihood Impact Assessment Spreadsheet (LIAS) that allows planners to make a quantified prediction of the magnitude of seasonal and/or annual food and income gaps measured against defined survival and livelihood protection thresholds. This type of analysis is useful in determining how much support is needed and when, to meet what type of need.

The reference year selected for this study was the 2012-2013 'consumption' year beginning with the harvest in September 2012 and ending in August 2013. This was an average rain-fed production year but marked by fairly low dry season production.

Overview of the Livelihood Zone

The plains and shores on the Nigerian side of Lake Chad are semiarid (300-800 mm of rainfall between April and September), but are particularly well suited to rain-fed millet and cowpea production, which, as it happens, also provides fodder for large cattle markets in Maiduguri. The cattle trade is supplied primarily by cattle from eastern Niger and western Chad and mainly supplies urban markets of Onitsha, Ibadan, and Lagos. Though livestock production is an important secondary activity in this zone, as in zone I3, small ruminant production is relatively more important here than cattle. Sorghum and maize are also produced. As in most semiarid agricultural zones, land is the most significant determinant of wealth. Unskilled labor, self-employment, and crop sales income are insufficient for poor households to be able to finance animal traction or machinery to be able to cultivate more land. The lean season is from June through August.

The Sahel type of savannah, also known as semi-desert vegetation, becomes manifest from the middle of the state as one moves from the state's south to its north. This type of vegetation comprises isolated stands of thorny shrubs. On the other hand, the southwestern part of the state is mountainous as a result of the continuation of the Jos Plateau, while the northern part is generally sandy.

The vegetation types as described above are conditioned by the climatic factors, which in turn determine the amount of rainfall received in the area. For instance, the rainfall in Bauchi state ranges between 1300 mm per annum in the south and only 700 mm per annum in the extreme north, *according to Nigeria Meteorological Agency (NiMET) seasonal rainfall prediction 2014*. This pattern is because in the West Africa sub-region, rains generally come from the south as they are carried by the southwesterly. There is therefore a progressive dryness towards the north, culminating in the desert condition in the far north. So also is the case in Bauchi state.

Consequently, rains start earlier in the southern part of the state, where rain is heaviest and lasts longer. Here the rains start in April with the highest record amount of 1300 mm per annum. In contrast, the northern part of the state receives the rains late, usually around June or July, and records the highest amount of 700 mm per annum. Rainfall official data was not available at the state level so the secondary data is sourced online from NiMET website (www.nimet.gov.ng).

In the same vein, the weather (weather is hottest in the month of April, with temperature rising up to 40.55°C and coolest in the months of December and January when the temperature may fall as low as 09.11°C) experienced in the south and the north varies considerably. While it is humidly hot during the early part of the rainy season in the south, the hot, dry and dusty weather lingers up north. In addition to rainfall, Bauchi state is watered by a number of rivers. They include the Gongola and Jama'are rivers.

The Gongola River crosses Bauchi state in Tafawa Balewa Local Government Area in the south and in Kirfi and Alkaleri Local Government Areas in the eastern part of the state, while the Jama'are River cuts across a number of Local Government Areas in the northern part of the state. Moreover, a substantial part of the Hadeja-Jama'are River basin lies in Bauchi state, which along with various fadama (floodplain) areas in the state provides suitable land for agricultural activities. These are further supported by the number of dams meant for irrigation and other purposes. These include the Gubi and Tilde-Fulani dams. There also lakes such as the Maladumba Lake in Misau Local Government Area that further provide the necessary conditions to support agriculture.

Crop Production

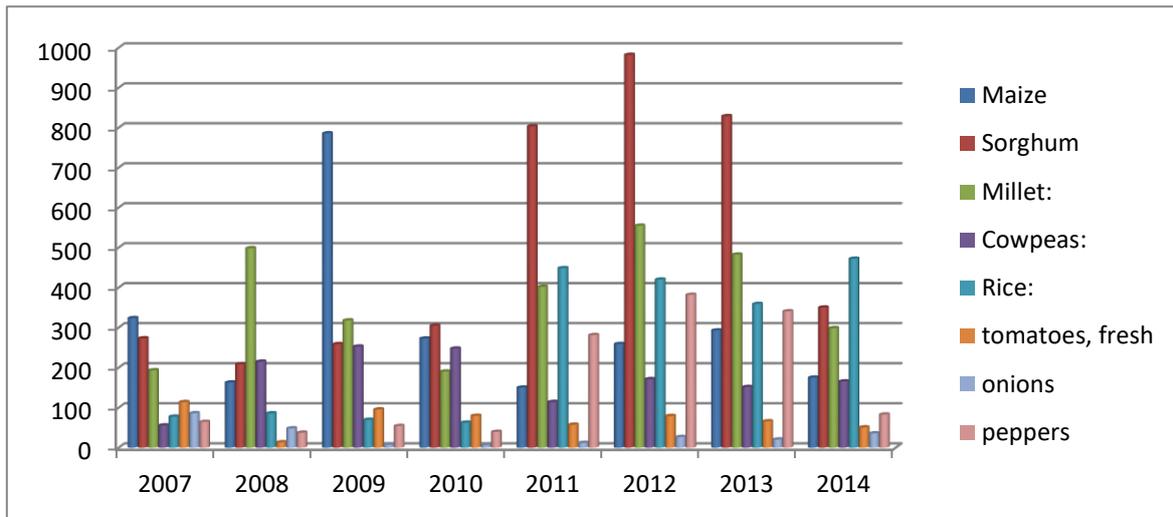
The cropping season involves the dry season farming and rain fed agriculture, though named as; north east Millet, Cowpeas and Sesame, there seem to be no trace of Sesame farm around the selected villages. The reason is because the zone stretches up to some Sesame producing state. The present study take into consideration access to the villages and risk of encountering insurgent in north east Nigeria by focusing on Bauchi state which has no sesame farm but is named under the sesame zone by the consolidated livelihood zone map of Nigeria. In this zone, land is measured in *hectares and acres* of 0.75m by 100m. Approximately 2.5 acres equal one hectare. Plots of land are acquired as family land both husbands and wives inherit land. Land can also be rented in or out or purchased. As a result, most farmers cultivate plots of land that are scattered rather than consolidated.

The land holding in this zone is relatively large as the very poor and poor households own about 1.5 – 4.4 ha and can cultivate 1-3.7 ha for food crops. The land portion used by the very poor and households for cash crop is 0.3-0.8, that is they usually don't grow cash crops, they may occasionally be involved in dry season production of rice and vegetables. The middle income and better-off households own an estimated land size of about 16 – 26 ha and cultivated about 15 – 24 ha for food crops and 12.5 – 18 ha for cash crops. Production is overwhelmingly of food crops, but quantities are sold by farmers, so that they could also be considered as cash crops – especially rice, cowpeas. Dry season rice and vegetables are mainly grown for cash.

Local units of measure were verified both in the market as well as in each village to ensure accurate calculations of output and consumption in kilogrammes (kgs). Crop output is measured in *mudu* (1.2 -1.4kg) for food crops ad cash crops. Once threshed, grain and pulses are measured in *mudu*.

The graph below shows yields of major crops in metric tonnes from 2007 -2014. The production pattern for grains, pulses and vegetables is uniform with an increase in production of Millet and Cowpeas in 2012 farming season as compared to the other seasons. The year was a typical year and rainfall was normal couple with the stable prices of food in the market. The variety of grains grown is an advantage for farmers in the zone because it allows for risk spreading.

Yields of Major Crops (in MT), Bauchi State, 2007-2014: Source BSADP (Bauchi state agriculture development Programme)



The production pattern for food crops and irrigated market vegetables is similar to the production trend for rice; this is because the rice is produced in both dry and raining season. The graph above shows rice production rose in 2011 and remained stable up to 2013 then increased in 2014 significantly above food crops and irrigated vegetables. The agricultural transformation agenda of the government in formulating rice policy to revolutionize the sector, contributed in the increase in rice production where inputs like fertilizers and seeds are made available to farmers on time and at a subsidized price.

Livestock Production

The livestock production pattern in the part of the state selected is not uniform for all villages. The villages are a mixture of pastoralist and crop producers; therefore the herd size shows a huge disparity from one village to another within the same zone. The zone is an area relatively rich in livestock. The floodplains provide good grazing although there are competing land use demands between farmers and herders. During the wet season, cattle are usually taken to pastures outside of the intensively farmed areas. In the dry season, post-harvest (i.e. from around January) cattle are brought back to feed on crop residues and to graze locally.

Livestock have many functions. Milk is both consumed and sold; livestock are sold for cash income; rams are slaughtered for meat during certain religious festivals, and new animals are purchased as a safety net against harvest failure or simply as a way to ‘bank’ savings. Manure is used to fertilise fields and oxen provide draught power to pull a plough or to transport goods.

In the wet season, dairy cows produce about 1.5 -2 L per day per cow over a 4-month period. Yields drop in the dry season to about 1 L per day per cow over a 3-4 month period. In the reference year, the better-off and middle-income owners sold some 25-41% of the milk produced.

Cattle are rarely slaughtered for meat which contributed 3-4% Kcal of the better-off and middle-income household, but they are sold to meet pressing, major cash needs. In the reference year, better-off and middle-income households typically sold about 18-30% of the cattle herd. The very poor and poor households own sheep and goats. Small stock and poultry are kept as an investment to be sold when cash needs arise. However shoats are sold by the very poor and poor households, usually to meet pressing household’s needs such as paying for health bills and for festivals.

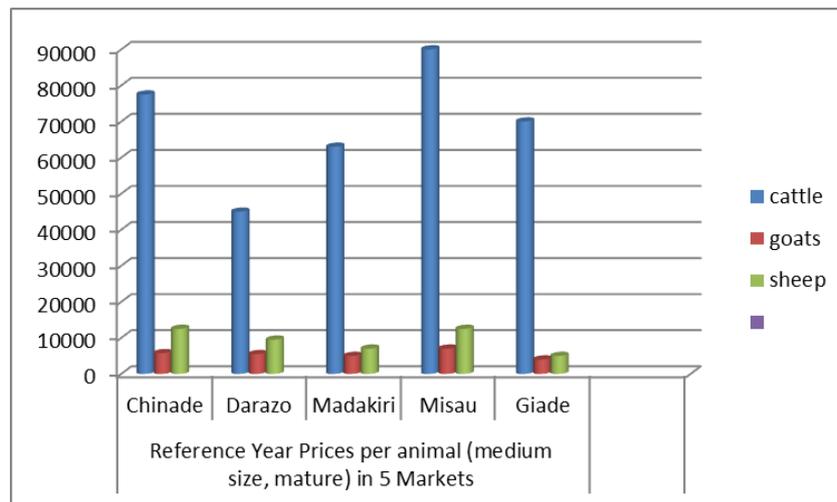
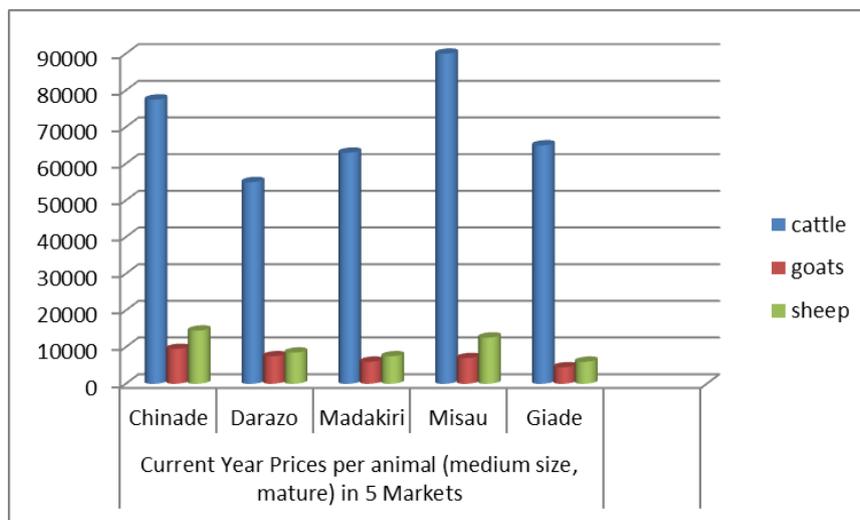
Livestock Price Trends

The graph below compares the livestock prices in five strategic markets in the zone. Prices also have seasonal highs and lows which reflect seasonal trends in demand as well as trends in animal health and condition. Prices peak during religious festivals in November / December when demand is highest. Sales are also high and prices

are low in April/May at the start of the growing season when farmers need to pay for inputs. Over the last two years, prices have risen slightly and remained stable in the zone due favourable condition such as availability of pasture and fodders to feed livestock.

Comparing the current and the reference prices of livestock, the result shows variation in different markets. This could be as a result of proximity to market and based on livestock sizes. The current analysis uses medium sizes for cattle and shoats, although there was no standard weighing scale to determine the weight of the cattle and the shoats; the livestock traders uses both age and physical observation in determining the selling price of livestock.

The current and reference year price analysis shows high price of cattle and shoats in Dass market as compare to other markets. The market is where cattle is sold for 88,000 Naira (\$ 444), goat sold for 7,500 Naira (\$ 38), sheep sold for 15,000 (\$ 78) Naira in the current year and sheep sold for 17,000 (\$ 86) in the reference. The prices of livestock in this zone remained stable both in the reference year and in the current year, considering the average for both the peak and the low price.



Markets

Market Routes, Demand and Supply

Local markets are connected in the zone and structured in such a way that there are specific days that a market would function. The market actors largely the grain traders and livestock traders' sells their commodity based

on the national and international demand. Market routes depend on the item sold. In general, the market flow for livestock is from north to south. The livestock trade in the zone originates in Chad, northeast states of Nigeria as well as from Niger then travels south to meet demand in the major urban centres of central and southern Nigeria (including Plateau, Benue, Enugu, Abuja, Lagos, Port Harcourt, and so on). See Annex I.

Market flow for grains and legumes are typically exported north to Niger and Chad. In 2012, the government put a temporary ban on cross-border exports of grains due to concerns about prices rising locally after a poor production year. Notwithstanding occasional trade restrictions, Niger and other neighbouring sahelian countries are a major destination market for Nigerian grain, including crops from the livelihood zone. Typically, grains are exported first to Kano State (Dawanau market) or to Yobe, Katsina, Borno, Zamfara and Sokoto States where wholesalers amass the grain for onward export to Niger and Chad.

During the hunger season, millet and maize are bought by local farmers for home consumption. This grain is local, originating from markets within the zone.

Seasonal Calendar

The calendar below presents the production activities and other factors that are dominated by seasonality. It is seen from the point of view of poorer households in such matters as when food purchase begins and the months of the lean season.

Source of food / Income generating activity	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Rainfall months												
Agriculture												
Millet					Land Preparation	Seeding	Weeding			Green Harvest		
Sorghum				Land Preparation	Seeding	Seeding	Weeding					Harvest
Cowpeas							Land Preparation	Seeding	Weeding	Green	Harvest	
Groundnuts	Sales						Seeding			Green Harvest		
Maize							Seeding					
Upland rice												
Cotton												
Yams												
Livestock												
Cattle - milk production												
Grazing migration of cattle			departure									
Animal diseases										livestock diseases		
Purchase of animal feed / inputs												
Sales of livestock										livestock sales		
Collection from the bush												
Items collected (specify)										Boaba leaves for soup		
Other												
Local agricultural paid work												
Other local paid work												
Handicraft sales												
Work migration												
Lean season months												
Loans taken and reimbursement			reimbursement							loans taken		
Malaria / other illnesses										malaria		
Purchase of staple food										purchase of staple food		
Festivals, social engagements etc.												

LP = land preparation; P = planting; W = weeding; GH = green harvest; H = harvest

Agricultural activities are mostly rain fed. The agricultural season gets underway with land preparation in February/March because the zone enjoys similar weather around Jos Plateau. Farmers plant their crops when the first rains begin in April/ May. June-July-August marks the period of weeding while crops are growing. By mid to late August, maize can be eaten fresh, or 'green', from the field, but this does not entirely break the lean season, when stocks from the last harvest have long gone, food prices are at their annual peak, and poorer people, now almost entirely dependent on the market or payment-in-kind for basic food, live by what can be earned from casual employment, self-employment (e.g. selling firewood) and petty trade. From September through to October, maize, millet and cowpeas are harvested. The sorghum harvest follows in October-November (and into December). Rainfed (upland) rice is harvested during this same period.

Dry season irrigated production for those with *fadama* land begin once the rain-fed harvest has been threshed and stored. The produce is mainly vegetables and some paddy rice, mostly destined for the market. Land preparation and planting are carried out in late December-January, followed by weeding in February. Crops are harvested in March-April-May. This season may be anticipated by flood-retreat planting between October and December where conditions are conducive. Fishing is also a minority activity during these months.

Milk production from dairy cows peaks during the rainy season when good pasture is more commonly available. However, this is the time when planted crops are in danger of damage by cattle, and so cattle are often taken to rainy season pastures away from the farms. As a result, access to milk by the cattle owners, as opposed to the contracted herders, can be a problem.

Apart from the modest amount of *fadama* cultivation, dry season activities for poorer people include brick-making, house construction and domestic work in local towns, and then from March employment on land preparation for the coming rainy season. Poorer people may obtain casual work in these various forms intermittently over a period of up to eight months.

Household expenditures have seasonal peaks and lows. Farm input expenses tend to be highest in January when workers are paid off for harvest work and in April when fertiliser is purchased. School uniforms and writing etc. materials are due in January, and the other school terms begin in April and September. Better-off and middle-income households typically sell cattle to pay for these major farm inputs. Health and education costs are other key seasonal expenses. Treatment drugs – if they can be afforded – are often paid for through small stock sales. Malaria is highest during the rainy season but the cooler dry season brings coughs and colds too.

Wealth Breakdown

The table below shows the first step in the field methodology, which is to discuss with the villages representatives on their definition of the characteristics wealth group. Within the same village, with the same basic livelihood factors, there are great differences between one household and another as regards the number of members 'eating from the same pot', the amount of land cultivated, the assets in livestock, and the possession of ploughs or other productive assets. As the livelihoods are based on primary production, these are considered by villagers the prime elements which dictate wealth status.

Further discussion then brings out details: the number of wives tends strongly to increase with wealth and so the size of households too; poorer people may have more dependents, mainly younger children, as a proportion of the household whatever its size, and by the same token fewer working adults to support the family – sometimes too few even to be able to cultivate their land properly. We note that the limited amounts of flood retreat/irrigated *fadama* land belong to the wealthier households, especially the better off. Wealth and education are also related, at least in that the children of the wealthier will not only complete primary school but go through secondary school too, while amongst the poorer some children do not complete even primary school and indeed some do not go to school at all.

	Proportion of households	Proportion of the total population	Household size	Total area cultivated (hectares)	Area under staple crops (hectares)	Area under cash-crops (hectares)	Livestock possessed	Other productive assets
Very Poor	VP 47%	28%	7	1.3	1	0.3	0 sheep ; 0 goats ; 2 poultry ;	
Poor	P 27%	29%	13	3.7	2.7	0.8	3 cattle; 4 sheep; 8 goats; 20 poultry	
Middle	M 17%	26%	18	15	12.5	3	10 cattle; 11 sheep; 18 goats; 30 poultry	2 plough-oxen, 1 donkey, 2 plough, 1 ox-cart
Better Off	BO 9%	17%	23	24	18	6	52 cattle; 43 sheep; 60 goats; 40 poultry	10 plough-oxen, 4 donkey, 4plough, 2 ox-cart

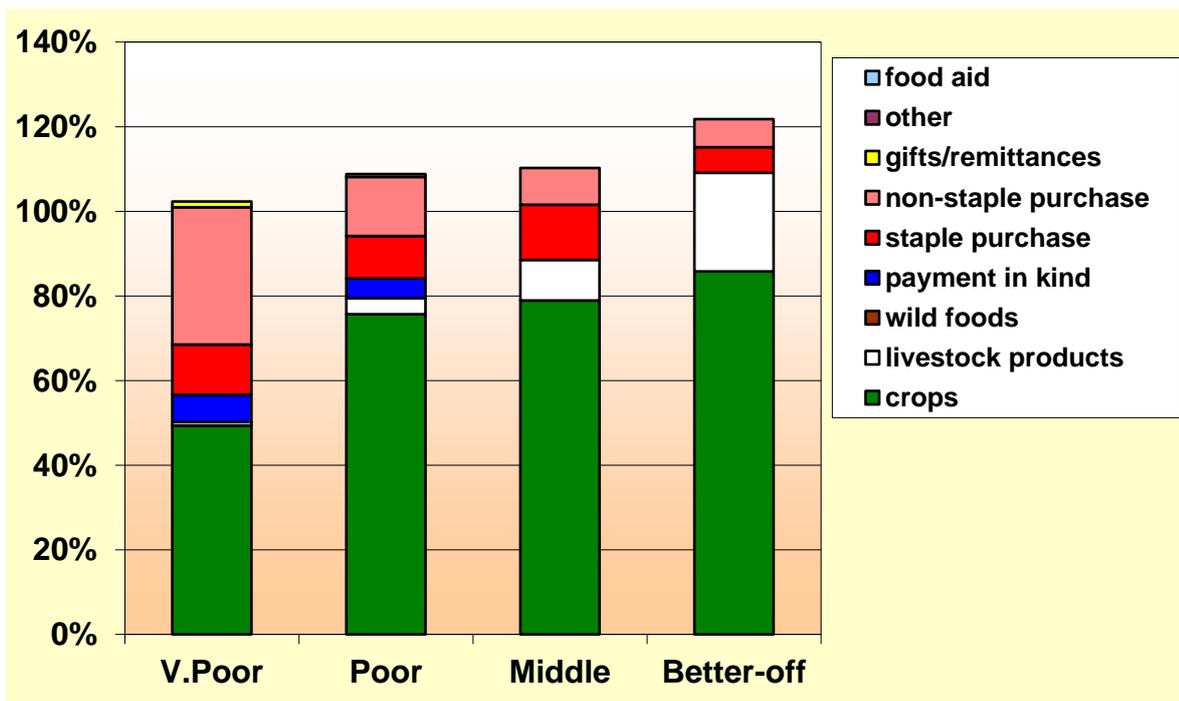
Notes: Values are centres of ranges. Land is locally measured in acres and hectares, 2.5 acres to 1 ha.

The percentage breakdown of wealth in the zone was found as follows:

Proportion of household in the zone shows that the very poor are the majority with about 47%, the poor 27%, the middle 17% and the better-off 9%. The proportion of the total population of the households in the zone also shows that all the wealth groups falls within the same range; the poor are higher than the rest of the households with about 29% having an average household size of 13 people, the very poor 28% with a household size of 7 people, the middle 26 with a household size of 18 people, while the better-off is 17% having an average household size of 23 people.

Sources of food

Annual Household Food Sources in the reference year as percentage of minimum energy requirement (2100 kcals pppd)



The overall result from the graph above depicted that there is no food shortage in the reference year for all the wealth groups in the zone. That is to say households were able to meet their minimum energy requirement per annum in kilocalories; therefore there is no initial survival deficit. Regarding the very poor, own crop consumed in green colour covers about 49%, payment in kind in blue colour added about 6%, staple purchase covers about 12%, non-staple 32%, and gift and remittance is less than 1% as well livestock product which is also less than 1%, while food aid is not significant in this zone. This is similar with poor households except that own crop consumed added about 76% of Kcal requirement, livestock products covers about 4%, while staple and non-staple purchases added about 10% and 14% Kcal.

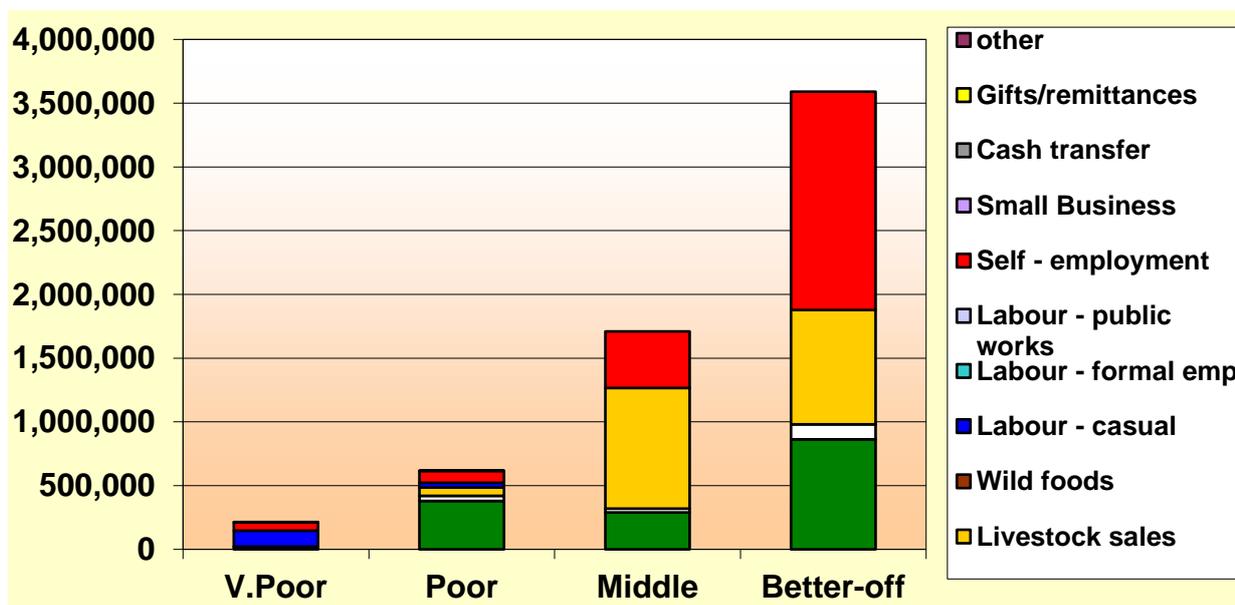
In contrast to very poor and poor households, middle and better-off households whose own crop consumed added about 79% and 86%, livestock product added about 10% and 23% of Kcals in the reference year as well non-staple consumed contributed significantly to their total kilocalories, which is about 9% and 7% for middle and better-off households respectively. It is noteworthy that the wealthier groups also purchased staple food in the reference year, though the quantity is low but contributed significantly to their total Kcal. The middle got about 13% kcal and the better 6%Kcal added to their energy requirement.

Majority of poorer households in this zone don't receive zakat or gift even though it added about 1% of the Kcal requirement for the very poor households, they sell little or none of their cereals harvest, they are only able to provide themselves with half or less of the calories they consume in the year, and nearly all the balance they purchase or receive as direct payment for labour. Their purchase of staple and non-staples is high, because they do not grow enough food and vegetables. Their diet – virtually totally lacking in milk too – is not varied or well-balanced nutritionally, because they do not own cattle only some small ruminant usually kept as asset. This clearly defines the poverty situation being faced by the poorer households in the zone.

For the middle and better off the story is different: they eat very largely from their own produce, including significant amounts of milk, and what they spend they spend on non-staple food, further varying their diet. The difference between the better-off and the middle households is not about potential self-sufficiency: both groups sell substantial amounts of grain, the middle far more than they purchase.

Sources of cash

Sources of household cash in the reference year by wealth group (Nigerian naira)



There is huge income gap between the better-off and the very poor households which is typical of rural northern Nigeria. The graph above shows that the better-off households earned an average income of about 3,590,586 naira (\$18,134) per annum, when compared with the average income earned by the very poor which was about 126,320 naira (\$638) per annum. The wealthier households earned about 28 times more than the very poor households. It is remarkable to note that all the wealth groups earn part of their income from crop sales. The very poor do not sell their own crops, most of the income comes from the casual labour. Comparing the sources of income within the wealth groups, we shall look at the very poor and better off households, since these are the extreme cases.

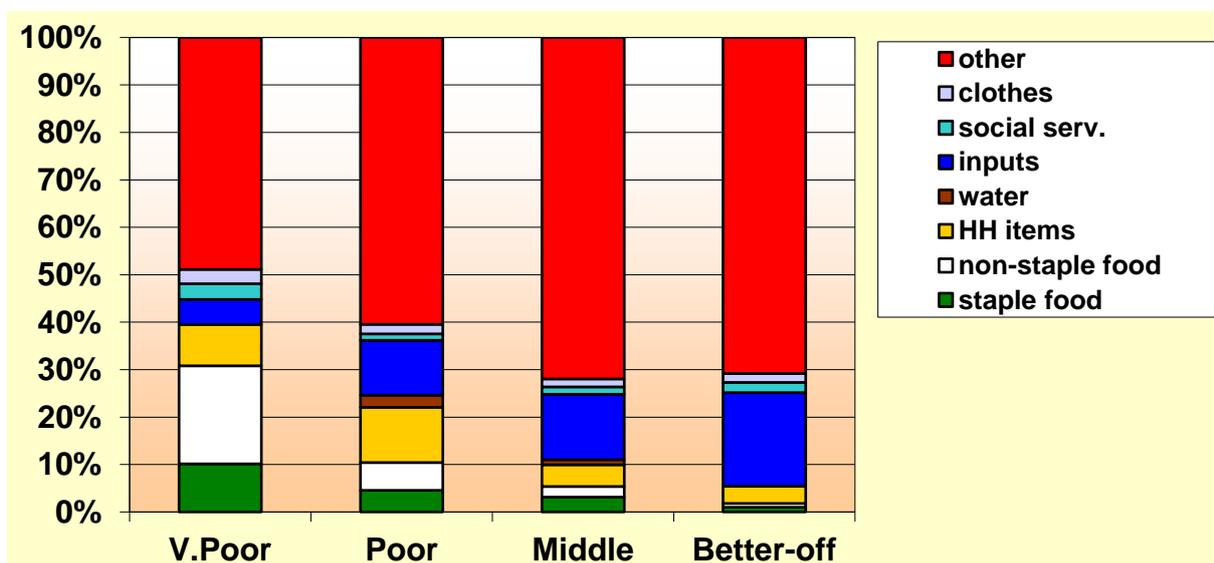
The main sources of income in this zone include crops sales, casual labour, self employment, livestock sales and livestock product sales. For the better-off household, crop sales value to about 863,865 naira (\$4,363) per annum showing that most of the better-off in the zone are crop traders who buy crops, store and later sell when the price is high. Income from livestock sales and livestock product is significant since the zone is a mixture of agro pastoralist and pastoral, the income from livestock sales average about 895,226 naira (\$4,521) and from livestock product 116,845 naira (\$590). Self-employment which consists of petty trade (sales of clothes, tailoring ...etc) also adds to the overall income of the better-off households which is about 1,714,650 naira (\$8,659). Income from self employment is significant because most of the better-off are business men buying and selling livestock in big markets in the city.

In contrast to the very poor and poor households, their main sources of income come from casual agriculture labour which is sourced from the farms of the middle and the better-off. The very poor average income earned from casual labour was about 125,320 naira (\$633). The poor and the very poor also engaged in self-employment in order to generate income; this self-employment is usually done by women who are usually involved in the sales of prepared food and managing small scale grocery shops. Income from self-employment in the reference year for the very poor households amount to about 66,856 naira (\$3378).

The difference between the middle and better off is that the latter have far more substantial income from selling livestock and livestock products and also depends hugely on trading crops. Taking all the wealth groups together, livestock sale and self-employment is the source of more absolute income than crops sales.

Expenditure

Proportionate Household expenditure in the reference year by wealth group



The proportion of money allocated to various items, depends on purchasing power and the pressing need of the household. A glance at the graph above shows that all the wealth groups spend their income on similar items, although it seems as if the very poor and the poor spend more than the middle and better-off on staple and non-staple, as well as household items. The very poor and poor wealth groups devote a large proportion of their incomes in buying non-staple as depicted on the white bar, this is in addition to staple purchased.

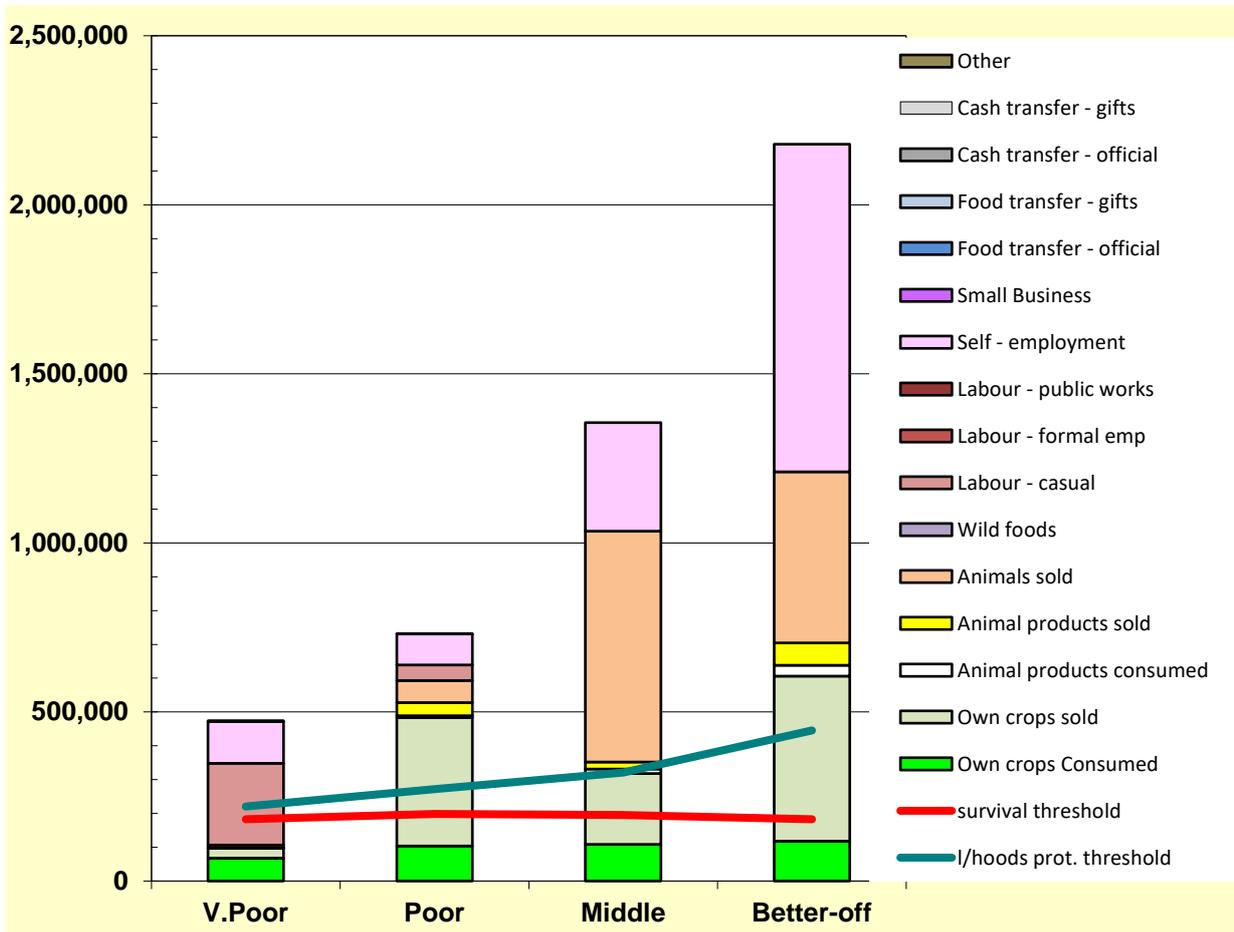
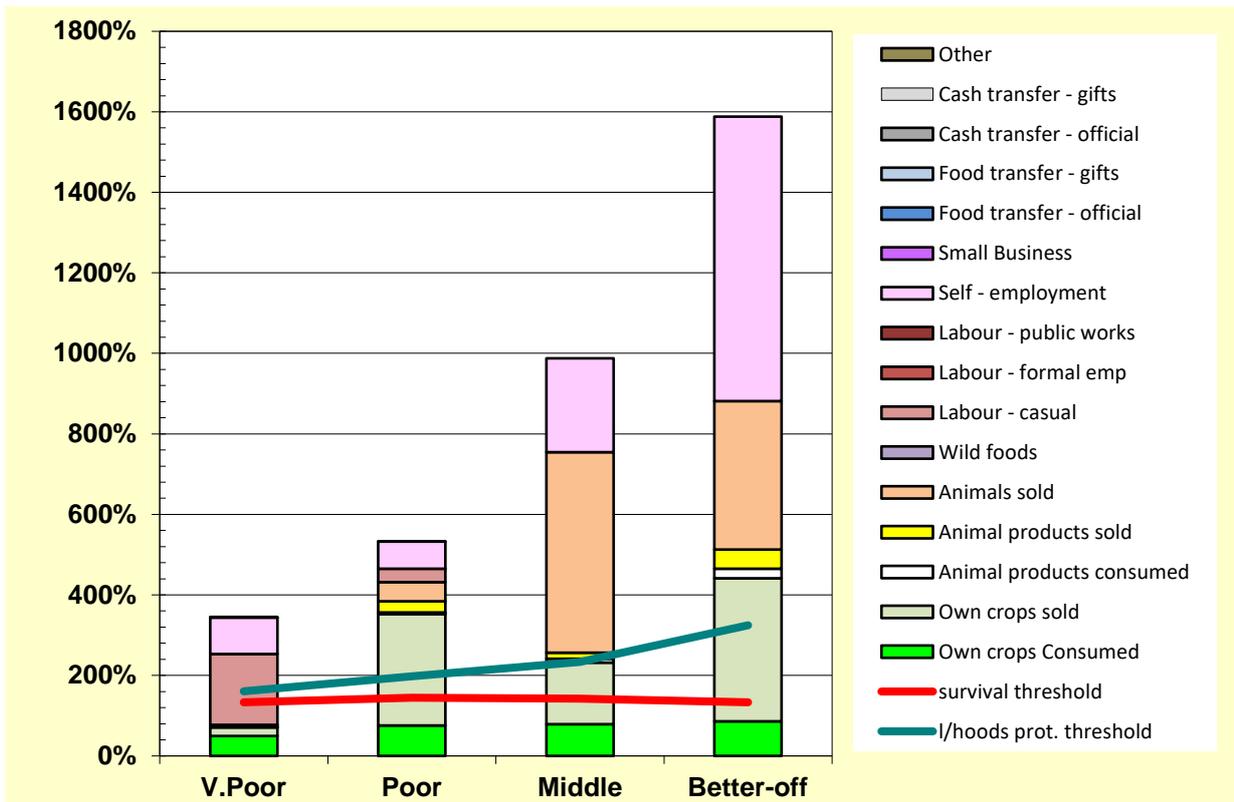
About 30% of the very poor income was spent on non-staple which amounted to 44,130 naira (\$223) and the poor which is less than 10% amounted to 35,820 naira (\$181) in the reference year. Staple purchases by the very poor amounted to about 10%, which is equivalent to 21,600 naira (\$109). Other expenditures for the very poor that took a large chunk of their income was household items (Utensils, bedding, furniture...etc), taking about 8% of the money which amounted to 18,509 naira (\$93) and for the poor about 12% which is equal to 72,112 naira (\$364). Expenditures on clothes, other items which include communication and transportation as well as for social services is very important for the poorer wealth group in this zone amounting to about 48% and valued at 104,318 naira (\$527).

In contrast with the poorer households expenditure, a large portion of the wealthier expenditure goes to 'other', which is about 70% for the middle and better-off. Expenditure on 'other' includes transport and cellphone communications, very important for trade, as well as payments for social obligations and festivals, both of which are costs for the poorer as well as the wealthier households. 'Household items' means such costs as milling, lighting, firewood, cooking utensils, and everyday condiments including, for instance, tea and Maggi cubes. Expenditure on social services means education and medical matters and is modest all round. Expenditure on clothes also seems rather modest for the wealthier, and there may be a degree of underestimation here. The total amount expended by the better-off household on 'other' was about 2,543,193 naira (\$12,844).

The wealthier households also devoted a considerable amount of their budget to buying inputs and household items, with a very small additional expenditure on non-staple foods. It looks as if the wealthier households have less need to buy staples than the poorer households; but in fact the green bar for the very poor would rise well above the 30% mark if we added the cash value of the grain that they receive directly as payment-in-kind for labour. The wealthier households spend little or nothing on staples, but more on non-staples.

The blue bars, representing production inputs, show how much more the wealthier spend in proportionate as well as absolute terms. In fact better off spend nearly 20% -30%, which is about 708,518 naira (\$3,578) of their income on agricultural inputs on total hectare of land cultivated; and the total budget on livestock inputs (on veterinary drugs), of which more money is devoted to purchasing new animals to increase their herds and flocks and/or to replace animals sold, slaughtered or lost to disease.

Total Income (Food +Cash)



The total income in terms of food and cash as expressed in terms of actual monetary value and the proportion in percentage and as expressed in kilocalories indicates; that the very poor and poor households depend more on casual labour and own crop sold and consumed. The total income for the very poor households is approximately 441,527 naira per annum (\$2,229). Casual labour and self-employment contribute significantly to the total income, own crop consumption also account for about 20% for the very poor and 40% of total energy requirement for the poor households. The very poor and poor households were able to meet their minimum energy requirement in the reference year. That is to say they were able to meet the survival and livelihood protection thresholds.

Apart from the contribution to their total income coming from casual labour and crops sales, self-employment like petty trades usually plays an important role when labour demand falls from December to March in addition to the total income of the very poor and poor households, though with changing situation and during the lean season, this income will drop considerably and households will resolve to coping strategy to survive.

When compared with the middle and better off households; who's bulk of total income comes from animal sold and self-employment. Own crop sold for middle income value at 209,473 naira (\$1,058) and for the better-off income value at about 488,272 naira (\$2,466), self-employment for the middle income value at 320,269 naira (\$1,618) and animal sold for better-off value at 505,997 naira (\$2,556) contribute significantly to the total income of the better-off, since they serve as markets intermediaries collecting crops and livestock and storing grains during harvest and to resale during scarcity or lean season.

Hazards and Coping

Year	Season	Rank	Events
2014	rains + harvest	3	Major drought which affected production increasing prices of staple food and pest infestation
	dry season	2	Drought in some areas affected the prices of livestock
2013	rains + harvest	4	Normal rains, good yield and stable prices of staple food, input fertilizer was available
	dry season	3	Flood retreat (fadama farming) was good and complimentary harvest was good, also livestock prices was stable
2012	rains + harvest	2	Excessive rainfall, fuel scarcity affected prices of commodities
	dry season	3	Flood retreat (fadama farming) was good and vegetable harvest was good, also livestock prices was stable
2011	rains + harvest	3	Mild dry spell causes low harvest increasing the price of staple food
	dry season	2	High prices of food and animal diseases such as poultry
2010	rains + harvest	5	Very good harvest, good staple prices
	dry season	1	low dry season farming due to water shortages

The above table outlines the intermittent hazards faced by all wealth groups in the zone as from 2010 to 2014, considering dry season and rains plus harvest. The main chronic constraints identified by households were access to basic education, the bad road network linking more remote villages to markets, and access to subsidised inputs or credit facilities to purchase seed, fertilizers, and water pumps for dry season farming.

The major hazards in this zone is seasonal dry spell which usually lead to increase in crops and livestock prices due to low productivity of both food and fodder for livestock. Excessive rainfall was also witnessed in 2012; leading up to the harvest that began the reference year, the zone joined much of the country in suffering floods and fuel scarcity. The result of these hazards led to increase in prices of commodity during the rainy season. Though some farmers, who have access to flood retreat plain took advantage to grow extra cowpeas, a prime cash-crop as well as food crop. Livestock migration and sales increased in 2012

but significantly reduced in 2013 as a result of early rains and the expectation of particularly good local grazing. The early rains also meant that migrant workers returned early to begin the agricultural cycle.

When there are major production shortfalls, households have three basic options: increase income; reduce non-essential expenditure and switch it to buying staple food; and reduced food intake as a last resort. However a reduced quality of diet comes sooner, through the switching of expenditure from non-staple foods to staple purchases.

The table below shows the major options for expenditure reduction reported by households for times of hazard to deal with threatened shortfalls in the capacity to pay for basic food and other essentials.

	Reduced	Increased
Very Poor	Food consumption, clothes	Manure usage, wild food consumption, firewood cutting
Poor	Fertilizer usage, food consumption, Clothes purchase	Manure usage, wild food consumption, firewood cutting
Middle	clothing, Festival and transportation, reduce the use of kerosine	Firewood for cooking
Better off	Festtival, clothng and communication, reduce kerosine usage	Firewood for cooking

Individual households faced by unusual economic hardship or misfortune may turn to better-off relatives to secure gifts of food or cash. Without such support, and under high stress, they may decide to pull children out of school, especially girls, to support the family by for instance selling processed food or cooked meals in the market centres, or collecting baobab leaves and fruits and other bush items for sale. Children may even be sent out begging. Poorer households may begin selling their productive assets, beginning with their handful of livestock but in the extreme going on to sell part of their inherited land.

Application of HEA in Understanding Early Warning, Coping Strategy and Intervention

If incorporated into Early Warning Systems (EWS), HEA result can provide household level information that complements other information, and gives an accurate picture of the household situation often a component lacking in EWS. This would enable a much more timely intervention, because most EWS information has to do with rainfall, crop production, prices, and markets all of which are related to food production, but don't directly reflect the issue of access to adequate food.

Incorporating HEA information into EW information has the added advantage of providing baseline information for the Coping Strategy so that programmers and Managers have a target level of household food security, as indicated by the HEA tool, which an emergency intervention should aim to restore. If enough information is collected, an analyst can get an idea of roughly what level of Coping Strategy Index score represents the norm for a given location, adjusted seasonally, so that there is some idea of the range of scores above which the situation is clearly deteriorating (note such a range should not be reduced to a "cut-off" point, and any range is probably situation-specific).

HEA can be used in conjunction with other methods to assess food insecurity and to estimate the requirement for Safety net i.e food aid and Cash Transfers and well as for prevention and management of

food crisis. However, HEA is not appropriate as a stand-alone tool for this purpose. Its main application in analysis is to provide triangulation or verification of other indicators that defines parameters like *food access, income, expenditures and coping strategy*, to get a more overall analysis of household food insecurity.

Because each HEA parameter is specific to its context, there is a designated threshold (Minimum Energy Requirement of HH) or Survival and livelihood protection thresholds in which a household would be considered “food secure” and below which it would be considered “food insecure.” But it can be used in cross-sectional analysis to determine which households are better off and which are worse off, and what is the correlation between these two kinds of households. This is important in assessment, and particularly in household targeting. If monitored overtime, the HEA- Outcome Analysis can also help to distinguish transitory and chronic food insecurity a necessary distinction in assessments.

Implication of HEA

The HEA baseline is useful as a stand-alone product to though complimentary to other useful tools in understanding how local farmers secure their food and income, and how food and income access differs depending on a household’s level of assets. The baseline becomes an even more powerful tool when combined with impact (or scenario) analysis. The HEA data and spreadsheet tools allow planners to run scenarios – predicted or real – in order to judge what is really needed to meet project goals as well as to protect livelihoods and prevent hunger in the event of a crisis.

The value of this calculation lies in using the data to assess what household resources are available for basic survival and livelihood protection when a shock occurs. This analysis can be combined with an assessment of the positive contribution of a project intervention (or interventions).

The total resources available from all food and income sources can be expressed as a percentage of annual food energy requirements. In this case, not only the food sources but also cash income is calculated in terms of how many household kilocalories that source secures. On first glance, the graph underlines previous observations: the value of agriculture for own consumption and for income generation for all wealth groups in the zone. The graph also visually reinforces the other findings, namely the importance of livestock production for most wealth groups, and of labour for the very poor.

Recommendations

- Infrastructural development: Irrigation, output market and road linkages.
- Safety net should be an option during lean season to allow very poor and poor households access to food and income for survival.
- Stable access to land and livestock by the poor for asset recovery
- Linkages between research and extension should be encouraged and diversification in the output market.
- Value chain: Reduced cost of production, stable price and credit service policy to enhance access to income and food by the poor.

Conclusions

The very poor and poor households with their one or two hectares could obtain food from their fields to give them respectively 49% and just over 76% of their annual calorie consumption. In both cases by far the main way they make up the gap, and also see to all their non-food needs, is by undertaking paid labour for their wealthier neighbours. This in turn allows their employers not only to produce enough food on their land to make them more or less self-sufficient but to concentrate their income earning efforts on other things, notably trade, and most notably the livestock trade. Meanwhile, if the very poor and poor did not earn substantial food as direct payment for labour they would have to spend over 12% and 10% of their household budget just on basic staple food. Because they depend on the market and have some kilocalories added from own crop produced and consumed, the very poor and poor household devote a substantial amount of money to non-staple purchase covering about 30% and 10%.

This and the fact that their total budget is extremely marginal, means that they must be considered food insecure; although they do make some money from crop sales. For both groups, a modest failure of their crops, and/or a dip in their employment, would put them in peril of hunger, and for the very poor in particular, selling their couple of goats would not tide them over for very long. But with their one or two hectares of land it is likely that for these groups any permanent improvement in their economic status, short of regular welfare payments, must come from further off-farm activities. In this respect the best help in adding value to their work might be in terms of improved skills, e.g. carpentry, masonry, or in capitalising certain activities: for instance, access to an ox-cart, even if the ox has to be hired, would give a man a significant capacity to earn more income from transporting goods and people.

ANNEX I: Markets

Trade routes of main products



Livestock trade route —————>

Grains and legumes trade route —————>

The Research Team

NAMES	SEX	ORGANIZATION	PHONE	EMAIL
Christiana Hassan	F	Gombe State Min. of Health	8067346858	Christianahassan40@gmail.com
Ibrahim Hamidah	F	Gombe State Min. of Finance	8068406293	ibrahimhamidah@gmail.com
Alkali Hassana Nna'ma	F	Gombe State Min. of Finance	8039245301	Hassanaalkali1004@gmail.com
Rabiu Suleiman	M	Borno State Judiciary	8094702509	Gdos@gmail.com
Muhammed Adamu	M	University of Maiduguri	8065398696	Mohammedadamu962@yahoo.com
Yabawa Ismaila	F	University of Maiduguri	8030103437	Yabis259@gmail.com
Musa Usman Dankoli	M	University of Maiduguri	8028637001	musadankoli@yahoo.com
Galaxy Thami	F	MCRDF Yola	8036754656	galithami@gmail.com
Shazali Ali Jibrin	M	University of Maiduguri	7062447232	aliushazali@gmail.com
Sheriff A. Adeyemi	M	University of Maiduguri	8034098992	Sheffski4u@gmail.com
Alh. Umaru Mohammed	M	FEWSNET	8036469593	Maishinku9@gmail.com
Jock Helen	F	NEMA, Abuja	8024134132	Hedato4sihe@yahoo.com
Haruna Abubakar	M	NEMA, Maiduguri	8066203961	Abubakarharuna163@gmail.com
Abbas Mustapha Umar	M	Fed. Min. of Agriculture	8035139857	Abbasun12@yahoo.com
Abubakar Rafiu	M	NEMA, Gombe	8036071648	nafiuabu@gmail.com
George Monyei	M	MCRDF, Abuja	8023391481	majestyfound@gmail.com
Suleiman Sheriff	M	Fed. Min. of Agriculture	8036245993	Sy_sherif@yahoo.com
Omoriege Sokolayai	F	NEMA, Abuja	8061647307	sokobaby@yahoo.co.uk
Aminu Inuwa	M	Fed. Min. of Agric.	8100094674	aminugodabe@gmail.com

COMMISSION EUROPÉENNE



Aide humanitaire



USAID
FROM THE AMERICAN PEOPLE

Funding :

This study was made possible thanks to the generous support of

- ECHO
- The American people through the United States Agency for International Development (USAID). The content is the responsibility of Save the Children and its partners and does not necessarily reflect the vision of USAID or the US government.

Further information:

Save the Children International, Bureau Régional Afrique de l'Ouest et du Centre ;

Save the Children International Niger;

www.hea-sahel.org



Save the Children