

# Sorghum, Cowpeas and Groundnuts Livelihood Zone

**Northwest States, NIGERIA (Zamfara part)**

**Household Economy Analysis (HEA) Baseline Profile**



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## The Currency Rate:

At the time of field work, February 2014, the value of the Nigerian Naira was NGN 163 = USD \$1.

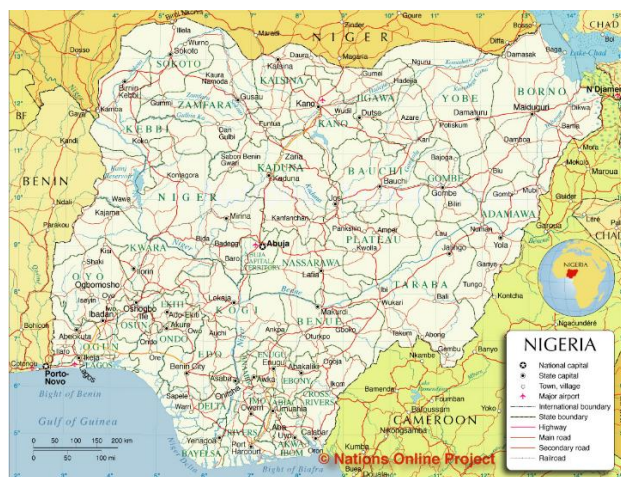
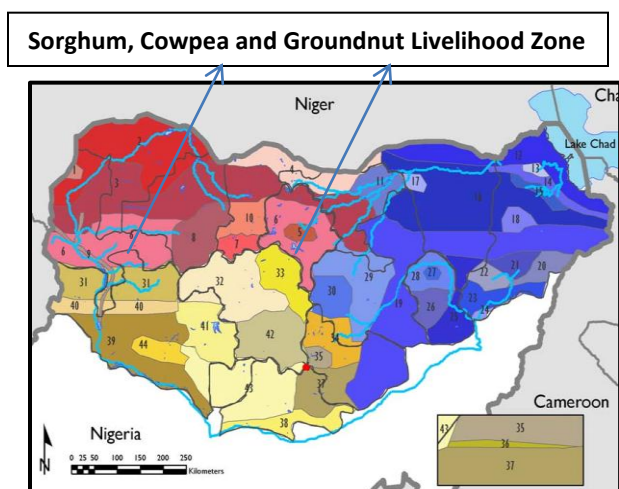
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Fieldwork for the current profile was undertaken in February 2014. The information presented in this profile refers to a single reference year starting in **September 2012** with the beginning of the main harvest and ending in **August 2013** just before the new harvest. Provided there are no fundamental shifts in the zone's economy, the baseline information in this profile is expected to remain valid for at least five years (i.e. until 2019).

## Background and Methodology

The HEA training exercise started with a Training of Trainers from 11-12 February 2014 involving four practitioners with previous Household Economy Analysis (HEA) baseline experience. The purpose was to increase the capacity of the Nigerian team to replicate the training on a large scale. Five-day classroom training was then conducted from 13-17 February 2014 and followed by intensive field level data collection until the 7<sup>th</sup> March 2014. For three weeks, SCI staff and their partners from Abuja, Zamfara and Jigawa States took part in an intensive HEA training and village baseline fieldwork and analysis.

HEA rural studies usually represent livelihood zones that have previously been defined. Livelihood zones are geographical areas in which households essentially share the same production and income options, as well as similar market access. A FEWS NET exercise in 2007 identified 44 livelihood zones across the 15 states of northern Nigeria. This study focuses on a single livelihood zone, the Sorghum, Cowpea and Groundnut Livelihood Zone (SGC - no. 6 on the left map below) which covers part of Kebbi, Zamfara, and Sokoto states and most of Kano state (see right map below). The SGC zone is located in five Local Government Authorities (LGAs) namely: Anka, Bukkuyum and Gummi in Zamfara as well two LGAs in Jigawa: Guri and Gagarawa. The present study was located in the Zamfara part of the zone, represented by 8 villages, four in Bukkuyum and two each in Anka and Gummi.



The zone is primarily agricultural, supporting a wide variety of rainfed crops including millet, sorghum, maize, cowpeas, cotton and groundnuts, as well as rice and (increasingly) soybeans. Some market vegetables are also grown during the dry season on low-lying flood plains which are called *fadama*.

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. 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

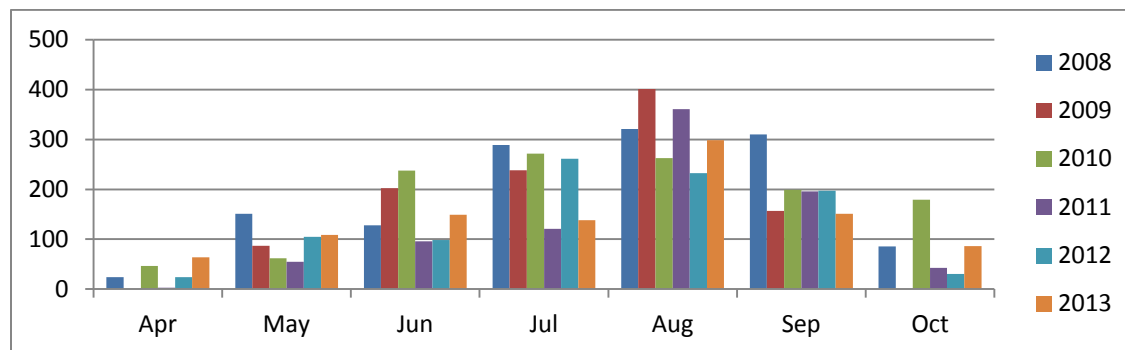
representatives are asked to provide quantified information about the amounts of food typically secured during the reference year by households in their wealth group from the different sources: in this case from own crop production, from own livestock (meat and milk), from market purchase, and from payment 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, and at the end of the fieldwork an analysis of all the data is performed by the team to arrive at a final, consolidated set of values. The spreadsheet may be used in conjunction with a livelihood impact assessment spreadsheet (LIAS) to predict the impact of given shocks or changes (Outcome Analysis).

The HEA baseline assessments will be used to help design hunger and poverty reduction programmes in SCI and partners operational areas. The baseline data and the LIAS allow planners to quantify the magnitude of seasonal and/or annual food and income gaps measured against set 'survival' and 'livelihood protection' thresholds. This kind of analysis is useful in determining how much support is required and when, to meet what type of need.

## Overview of the Livelihood Zone

The zone is located east of the main rice-producing area in the state (which lies along the Sokoto-Rima River Basin complex). The zone is in two separate parts, cutting across Kebbi and Zamfara states, and the southern tip of Sokoto and most of Kano state. The Zone belongs to the sudan-savannah agro-ecological belt, and rain-fed agriculture is carried out during the single rainy season which runs from April/May to October. The peak rainfall months are June to August. Cumulative total annual rainfall has varied considerably in the last 7 years, for instance in Zamfara between about 1,300 mm in 2008, 875 mm in 2011 and 920mm in 2012 (ADP Zamfara State). The main, rainfed growing season is from June to October. Those with access to flood plain land along the Rivers Ka, Zamfara and Sokoto have an extended growing season during the dry season for *fadama* cultivation of vegetables and paddy rice.

**2008-2013 Annual Rainfall (in MM), Gusau (Source: ADP Zamfara State)**



In the sudan-savannah agro-ecological belt, sorghum, millet and maize are the principal crops grown for food, with intercropped cowpeas that also join groundnuts as a principal cash crop. The flood plains and savannah grasslands also provide suitable grazing for livestock. A major advantage of this zone is that it is located in a belt free from the tsetse fly. The Fulani are known as nomadic professional cattle herders but settled Hausa farmers also rear mixed herds and flocks of cattle, sheep and goats. In the state's major centres, industrial development has centred around processing agriculture produce and livestock products, and there is some mining. Agro-based industries in the zone include cotton ginneries, tanneries, groundnut oil mills, flour mills, production of tinned beans, and a few textile enterprises.

In addition, there is some mining, mainly of granite but also some gold, chromite, talc, and tantalite columbite. Granite polishing industries are found in each of the four LGAs.

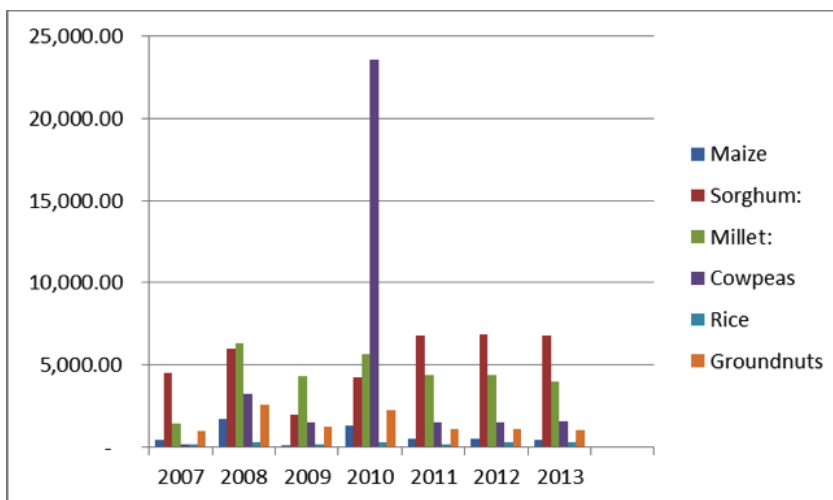
### Crop Production

In northern Nigeria, land is accessed in three ways: it is (i) inherited; (ii) rented-in or rented-out; and/or (iii) purchased. Both men and women inherit land from their parents. Most wealth groups also rent in or rent out land depending on their individual situation, paying a portion of the harvest to the land's owner in exchange. Only better-off farmers do not typically rent-in or rent-out land. Instead, they purchase additional land as needed.

Cultivated land is measured in *ridges*. Typically, 133 *ridges* (0.75m by 100m) comprise a hectare. Poor farmers (who cultivate 1.5 ha or less) do not cultivate food and cash crops on separate land but rely instead on intercropping. Groundnuts might be intercropped with millet or sorghum, for instance, and cotton with cowpeas. Middle-income and better-off farmers reserve 1-2 ha just for cash crops.

Crop output is measured in *bundles*. Once threshed, grain is measured in *tiers*, which is for instance 2.4 to 2.5 kg of sorghum. There are a different number of *tiers* in a *bundle* depending on the grain, e.g. 8 tiers for sorghum, with 40 tiers in a sack of 100 kg. These 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).

Cereal Yields (in MT), Zamfara State, 2008-2013



### Livestock Production

Livestock form an important part of the farming economy in the livelihood zone. They 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 place to bank money-value: rural people in general do not hold actual bank accounts; and livestock, so long as they survive, also provide 'interest' in the form of milk, progeny, and increased selling price as they mature. Manure is used to fertilise fields and oxen provide draught power to pull a plough or to transport goods.

Both the Fulani and Hausa farmers are cattle keepers although Fulani herds tend to be larger. Furthermore, milk sales are more common amongst Fulani herdsmen. Amongst the Hausa, cattle are kept for their draught power rather than for breeding (or milking). Amongst the Hausa, only the better-off typically consume and sell fresh milk. Milk production peaks for 3-4 months during the rainy season (June-September) then continues, with lower yields, for another 2-3 months. The rainy season is when livestock are near the villages. Milk yields (for human use) range from 1-2 litres per cow per day of which half is typically sold. Camels are not very common in the zone. Nonetheless, this situation is changing as camel rearing is beginning to spread south from the LGAs bordering Niger toward the central and southern LGAs of Zamfara State. This is because camel milk has been recently highly valued by the population for medicinal qualities.

In very poor households, the household head typically does not own any livestock. However, very poor women typically have a few sheep and goats of their own as well as poultry (hens, ducks or guinea fowl). These animals are kept to generate cash income when needed. During the reference year, in some areas of the zone there were reported incidents of animal rustling that prompted some owners to sell off their animals. Notwithstanding these sales, herd sizes stayed relatively stable over the year due to new births. Sahelian goats (a popular breed in the state) produce less milk than the Sokoto Red breed but are still favoured because a breeding female can give birth to 3-4 kids.

The state is notably free from tsetse flies (which affect cattle). However, the livelihood zone is prone to PPR, a disease that affects smallstock. Every year, according to the Zamfara State ADP, a single household will typically lose 2-3 goats from PPR. With support from IFAD, the state government implements an annual vaccination campaign to try to prevent outbreaks of the disease, but despite this effort the disease remains a significant problem. A second problem affecting livestock production, as reported, was access to fodder. Groundnut leaves (amongst others) are used as livestock fodder and leafy fodder was scarce in 2011-2012. Subsequently, goats gave birth once in the year, not the usual twice.

## Markets

### ***Market Routes, Demand and Supply***

Market days are important days in rural life and major towns, and are usually weekly. But markets are gradually becoming daily, due to population density that provides enough demand for more permanent opening. Market flows depend on the type of good (see Annex 1). In general, livestock come from the north (including Niger and the northern Nigerian states) and are sold south. Demand for meat comes from the large urban markets in central and southern Nigeria (including Kaduna, Zaria, Abuja, Lagos, Port Harcourt, and so on). In contrast to the south-bound livestock flow, grains and legumes are exported north to Niger. Overall, Zamfara State is a net exporter of grain.<sup>1</sup> However, during the year, there are seasonal imports. Specifically, during the rainy season, millet, maize and cowpeas are imported into the Mixed Crops Zone from the Niger Delta states. Local sorghum and local rice are generally sufficient to meet local demand and are not imported.

Zamfara's cash crops – groundnuts, cowpeas, soybeans and cotton – are generally sold to major buyers in Nigeria. Groundnuts are sold both to oil mills in the state as well as to larger markets such as Kano and Illela (Sokoto State). Cow peas are also sold to major urban markets in Nigeria as well as to neighbouring countries. Soybeans are exported (i.e. to Niger) and are also sold to major buyers within

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<sup>1</sup> Only in 2009 – which was a particularly poor production year for sorghum – were there no grain exports.

Nigeria for vegetable oil production or to use in supplementary protein mixes for malnourished children. Cotton sales are mainly within the livelihood zone as most local cotton is destined for ginneries within Zamfara State.

### **Cereal and Legume Price Trends**

Prices for staple grains are lowest in November-December directly after the harvest. Many farmers are forced to sell at a low price to re-pay debts taken during the growing season. Prices then rise from February onwards, reaching their peak price during the rainy season (i.e., June-August). During the reference year, prices for millet and sorghum were 30-50 percent higher in July than in November. In the last 4 years, prices for staple grains as well as prices for most produce have slowly increased these price increases can be attributed to the phasing out of fertiliser and fuel subsidies. The price rise continued as subsidies were fully phased out in 2013 and became stable from the end of the year 2013 until they started to rise from May 2014, which marked the beginning of normal price rise. This was as a result of seasonal price change, which coincided with the lean season in Northern Nigeria.

### **Livestock Price Trends**

Livestock prices also have seasonal highs and lows which reflect seasonal trends in demand as well as seasonal changes in animal health and condition. Prices peak during religious festivals in November-December when demand is highest. Sales are also high in April/May at the start of the growing season when farmers need to pay for inputs. Poorer farmers typically sell goats in July/August to pay for food while their crops are still growing in the field. During the reference year, the seasonal price changes were not extreme. For goats, prices increased by 20 percent from October (low price) to July (peak price); for sheep, prices increased by 30 percent; and for cattle, prices increased by 10 percent although there was also variability in prices (and seasonal price differences) between markets.

### **Seasonal Calendar**

In the zone, agricultural activities dominate the seasonal calendar for 8-9 months of the year. Just before the first rainfall in April/May, land preparation begins, followed by planting. The June to September period marks the peak rains. This is the growing season for crops when last season's stocks are scarce, food prices are higher, and many poor farmers look for additional farm employment to avoid hunger. Short-cycle millet and maize ripen first after 60-70 days. By late August, poor farmers begin to consume maize and millet fresh (or 'green') from the field. Millet and maize are harvested in September and October followed by the groundnut harvest. Sorghum ripens later (after 90 days) and is harvested with cowpeas in November. Cowpeas are also eaten fresh from the field, supplementing the millet harvest in October. Cotton is the other crop harvested in November. In favourable conditions, a second planting of vegetables provides an additional cash crop harvest in November/December. Farmers with access to irrigated *fadama* fields have a dry season harvest as well. For instance, irrigated rice is planted in December or January and harvested in April just prior to the onset of the rain-fed agricultural season.

Source of food / Income generating activity	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Rainfall months												
<b>Agriculture</b>												
Millet					Land Preparation	Seeding	Weeding			Green Harvest		
Sorghum						LP	Seeding	Weeding				
Cowpeas							Seeding			Green Harvest		
Groundnuts	Sales						Seeding			Green Harvest		
Maize							Seeding					
Upland rice												
Cotton												
Yams												
<b>Livestock</b>												
Cattle - milk production												
Grazing migration of cattle			departure									
Animal diseases									livestock diseases			
Purchase of animal feed / inputs												
Sales of livestock										livestock sales		
<b>Collection from the bush</b>												
Items collected (specify)							locust bean seeds, tamarind fruit, shea nuts					
<b>Other</b>												
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

Typically, once the harvest is in, older boys and young men leave their village in search of construction work in urban centres (such as Gusau, Sokoto, Kaduna and Abuja). Typical construction work includes brick making and/or brick laying; loading and pottering goods; and loading and delivering water. Boys are also hired as herders, especially when the cattle are taken to dry season pastures in Sokoto and the Niger delta states from February/March.

During the dry season, girls and young women also look for casual work. Typically, they earn income through firewood sales (this is mainly a dry season activity) or by selling prepared foods and local drink. Women also sell their own small stock and poultry as well as undertake daily work such as crushing rocks. Pounding grain into flour is a job that is in demand all year round. Some girls are also hired as domestic help.

For most poor households, the agricultural season means an intensification of work. Not only must they work on their own farms but they also need to look for daily employment to fill food gaps. Both women and men find on-farm work from May-December. Agricultural work has a defined gender division of labour. Women, in general, do not harvest millet, sorghum and maize. They do, however, harvest cowpeas and groundnuts. Women are also employed to thresh grain. Typically, young unmarried women, as well as women older than 45 years, are employed in farm work.

Household expenditures have seasonal peaks and lows. Food, health and input expenses are lowest during the harvest period (September-November) although poor farmers often have debt repayments to make. Input expenses are highest in April when fertiliser is purchased. April to August is the period when food expenses are highest. The poorest household typically begin buying staple food in February. By June, the majority of households have to purchase their staple food. The rainy season also brings



malaria and associated health expenses. Health costs have several peaks during the year. The first peak is during the rainy season. The second peak occurs during the cold windy harmattan season which is associated with coughs and colds. Prior to the rains, cholera outbreaks often occur. For livestock, the peak expenses occur in August/September during the rainy season.

Livestock production peaks with the rains as rain brings new pasture and new animal births. Access to own-milk is highest from June/July to December. After this period, beginning in January, livestock migrate away to dry season pastures. By March, most of the herd is gone, returning once good pasture is established again. Their migration route is generally south toward the Niger delta states as well as to neighbouring states (Kaduna, Katsina and Sokoto). In a dry year, cattle will be herded away to dry season grazing areas earlier (i.e from November) which reduces access to milk.

To bridge income gaps at times of the year when input or food expenses are high, poor households typically take loans. These loans are taken in a number of forms. One type of loan is for ploughing. There are various arrangements, but one option is for a worker to be partly paid in ploughing rather than directly in cash. Another type of loan is for fertiliser. During the reference year, the State government provided subsidised fertiliser (NGN 1,000/sack) to households in exchange for payment in grain post-harvest (the grain went to the Emergency Food Reserve). Another type of (very short-term) loan is prepared food. Women provide breakfast to workers who repay at the end of the day (or every other day) once they have received their daily wage.

## Wealth Breakdown

In this zone as elsewhere, the comparative wealth of a household is determined by local people in the first instance by how much land is owned and cultivated. Almost as important is then the ownership of livestock, particularly cattle. Amongst these, plough oxen are the basis for other assets which determine wealth because they determine production and earning capacity: ploughs, ox-carts; and other productive items also signify productive capacity, e.g. ownership of a water pump for irrigation. Then social factors enter the wealth picture: the size of the household, as the unit where people ‘eat from the same pot’, which in turn often reflects the number of wives; the educational level of the adults and whether children complete primary school and whether they go on to secondary education. Finally, related to household size and assets and educational level, crucial distinguishing factors are the ways the household earns its income off-farm, e.g. the difference between labouring for others and trading.

	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	<p>VP 50%</p>	33%	7	1	1	0	2 goats, 10 hens	
Poor	P 23%	20%	9	2	1.5	0.5	3 goats, 1 sheep, 10 hens	
Middle	MI 17%	23%	14	4.5	3	1.5	5 cattle (incl. 3 oxen), 8 goats, 7 sheep, 20 hens	2 ploughs
Better Off	BO 10%	24%	25	15	10	5	40 cattle (incl. 15 oxen), 28 goats, 28 sheep, 45 hens, 3 donkeys	4 ploughs, 1 ox-cart

Note: Values are centres of ranges. Land is locally measured in *ridges*: there are 133 ridges to 1 ha.

Land is inherited by both men and women. Both poorer and wealthier people sometimes rent in extra land from other villagers, and more rarely better off households may access additional land through purchase. Villagers often use the level of food self sufficiency as a rule-of-thumb measure of wealth: so here, very poor households with 6-8 members cultivating around 1 ha of land manage to feed only for about half the year, and that only without devoting any land to groundnuts as a cash-crop; poor households with 8-10 members, cultivating 2 hectares, feed themselves for two-thirds of the year but also grow some cash-crops. The wealthier households with far more members but also more land are self-sufficient or near to self-sufficiency while also selling cash-crops: the middle and better off devote some 30%-50% of their land to cash-crops.

The very poor and poor households own no cattle, including oxen. Middle households own a handful of cattle, partly for milk but mostly to maintain at least one pair of oxen. The better off have substantial cattle holdings and several pairs of oxen, making a profit from renting them out, and having the benefit also of substantial manure for their fields from the overall herd.

Poorer households do own two or three goats (often these animals are owned and managed by women). They also maintain around 10 hens, and sales from these and eggs together with possibly one goat, make up their livestock earnings. In middle households husbands and wives from middle-income households generally own mixed flocks around 15 goats and sheep, as well as 20 hens, while amongst better off households only women typically own smallstock including a flock of hens comprising about 60 head.

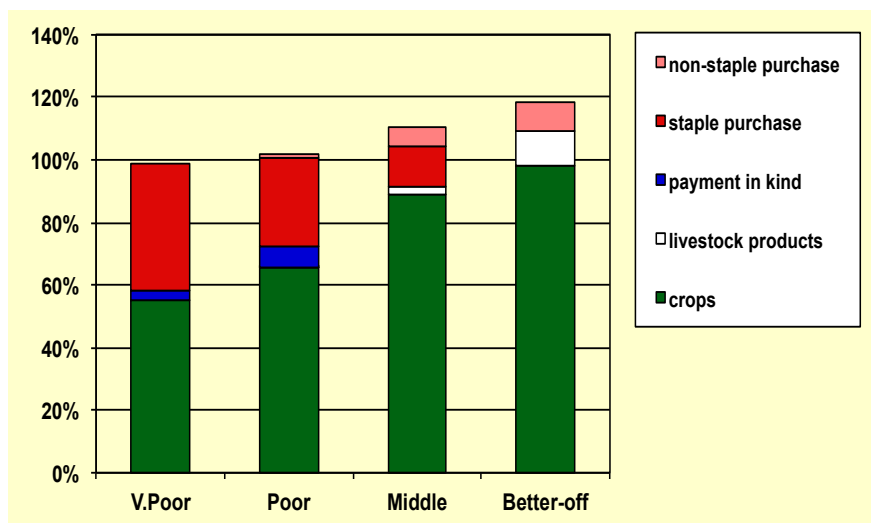
The poor and the very poor comprise the large majority (around 70% percent) of households. Thus around 30% of households fall in the middle-income and better-off wealth groups (some 10 percent better-off). But the difference in household sizes needs also to be taken into consideration. Household size typically varies greatly according to wealth status, from around 7 for the very poor to 25 for the better off. Larger households not only reflect polygamous arrangements but also tend to include a number of other dependents than own children, such as elderly parents or unmarried siblings.

Given different household sizes, the proportion of the wealth groups as a percentage of the total population, as opposed to households, is the following: very poor 33 percent; poor 20 percent; middle-income 23 percent; and better off 24 percent. Thus per capita there is a very much more balanced pattern between the different wealth groups, and this is relevant to the fact that the major part of the income of the poorer people is through working for the wealthier. Wealthier households are likely to contain several working adults whose income from trading and other activities helps to pay for the farm labour they employ.

## Sources of food

The first thing to say is that in this relatively normal year the very poor did not typically quite manage to meet their minimum calorie requirement. This means that they are both deeply poor and food insecure. The deficit of 1% for the very poor is an expression of the average over the year. But there is a seasonal dynamic by which after the harvest for a while consumption is more satisfactory, while in the agricultural season from April to August it hardly covers requirement, especially as this is a main period for hard agricultural work, and the lean season months may well be ones of hunger. In this season too, the poorer households depend heavily on labour income, and in years when poor harvest prospects reduce the labour demand, both the very poor and even the poor (only marginally above their minimum requirement in this normal year) might not meet their annual energy requirement by a wider margin.

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



The better off are self-sufficient in grain, and sell substantial amounts of surplus grain, and are likely to use their own stocks to make payments-in-kind for hired workers. With the middle households they vary their diet with purchased non-staple foods, something that the poorer households can hardly afford to do at all.

For the better households, food calories from livestock product adds up to 11%, which denotes especially a very substantial consumption of milk, while and non-staple purchases add up to 9% of calories, adding to dietary quality. Some 40% of the food consumed by the very poor was purchased, and one-third for the poor. Both groups also depended to a small extent on grain paid to them directly (in-kind) for casual labour on farms. In a middling year – such as the year following the 2012 harvest – food from their harvest lasts until February/March (the very poor) and April/May (the poor). In fact, most very poor households begin to supplement their own grain stocks with purchased food in January/February. By May-June, the poor rely solely on the market.

The middle households also purchased some grain, but this was not really a sign of a lack of potential food self-sufficiency as the result of commercial/budgetary decisions to sell some grain at harvest and to then buy some grain later for consumption, even though at a higher price than received for their harvest. The poorer households hardly sell any grain but do sell the better part of their cowpeas as well as groundnuts, thus reducing the variety and quality of their diet: essentially they are selling these to pay for staple grain.

Livestock are kept mainly as draught animals rather than for dairy. Milk is typically consumed only from cows. Milk from goats and sheep are left for their own offspring. This means that the poorer households consume virtually no dairy products at all. But in the reference year milk and meat (and some eggs) provided 2% and 11% of the annual calorie requirement of middle-income and better-off households – thus also a very substantial contribution to dietary quality for the latter, especially for their young children. Milk is also an important cash source. Better-off households sold about one-third (30-35 percent) of their milk.

Both the poor and very poor households eat very little of their legume crops, selling over 95 percent of their groundnuts as well as 35-70 percent of the cowpea harvest. These proportions are in fact similar for all wealth groups, but the wealthier do produce more legumes per capita of household members.

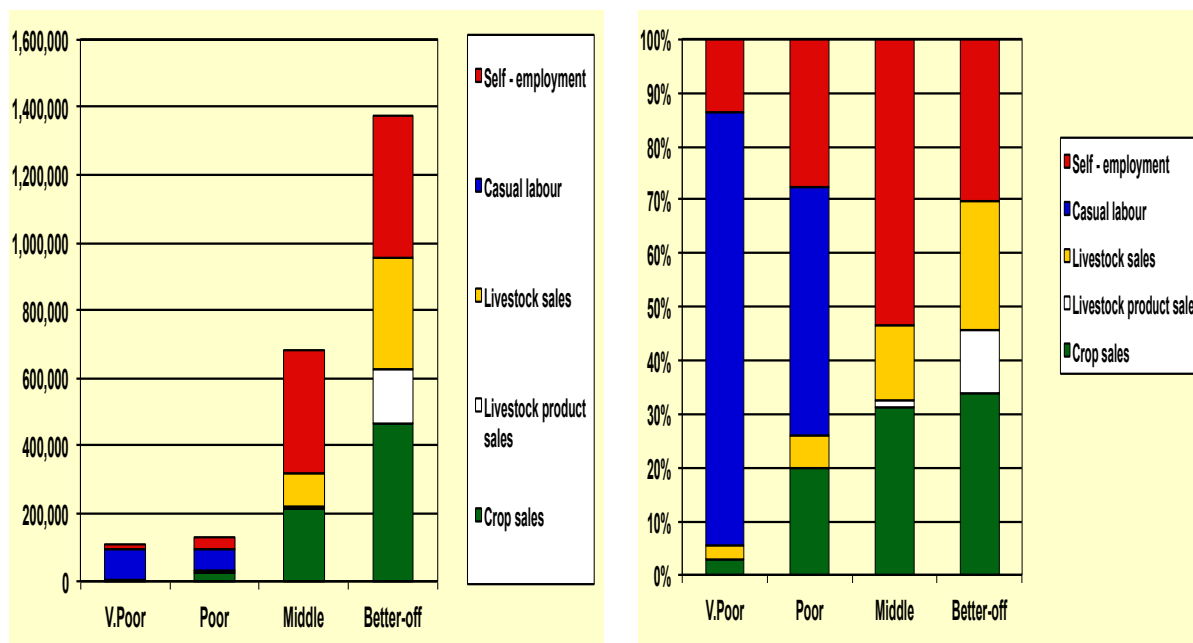
Hence, despite selling more than 80% of their legume crops, these two upper wealth groups nonetheless secured 8-10% of their annual food needs from cowpeas and groundnuts. This compares to 1% for poor households, and underlines the major difference in dietary variety and quality between poorer and wealthier households already glimpsed in relation to dairy products consumption. Whether grown or purchased, poor households principally eat sorghum and millet. They buy a little oil, collect wild leaf-greens and a little fruit, and used very small amounts of their own cowpeas and groundnuts. By contrast, middle-income and better-off households purchase more non-staple foods (such as oil, sugar, rice and sweet potato) and eat more of their own legumes and rice.

As regards gifts of food, with the reasonably satisfactory harvest of 2012 this was not a major phenomenon in the reference year, but it was recorded in a minority of villages (4 out of 12). Some of these gifts were from individual charity, some were through community *zakat*, post-harvest. Alternatively, gifts were given in the form of a meal during Ramadan. The State government also operates feeding centres for fasting Muslims from poor families during Ramadan. Another form of gifts is from begging when food at home was scarce.

## Sources of Cash

The livelihood zone shows a clear distinction in the pattern of cash earnings as between poorer and wealthier households. Middle-income and better-off households combine cash crop sales with trading activities and sales of livestock (as well as some milk) to raise cash. The poor and very poor, by contrast, add self-employment to the seasonal labour that gives them by far the greater part of their income. What particularly marks the poor from the very poor is the capacity to raise cash through cash cropping. Poor households cultivate more land which allows them to plant cotton as well as other legumes and grains for sale.

**Absolute and proportional cash income by wealth group in the reference year (Nigerian Naira)**



Typically, very poor and poor households earned fully 81% of their income from labour, and the poor 46%: agricultural, construction and domestic in descending order of contribution. On-farm labour opportunities begin in April. Casual farm work includes: land preparation, weeding, and harvesting. Cash rather than grain is the preferred payment. Daily wage rates during the reference year were NGN 400-500/day for local farm work; NGN 500-1000/day for urban work. Ploughing pays more; a hired labourer in the reference year earned NGN 700-800 to plough 100 ridges. Typical off-farm work for men includes brick firewood making, construction, loading, hauling water, and cutting.<sup>2</sup> Only men and older boys migrate away in search of casual work on construction sites (not women). The major labour markets include: Gusau, Sokoto, Kaduna and Abuja.

Own crop sales contributed 31% to the income of the typical middle income household and 34% for the better off. But livestock sales and livestock product sales (essentially dairy) contributed 37% of the income of the better off, and so were more important than crop sales even though this is an agriculturally-based community. This is a testament to the hh value of livestock, boosted especially by the demand from Nigeria's burgeoning city populations. For the middle households, with fewer livestock, the contribution is only 15%; and for the poor 6% and the very poor about 2.5%.

'Self-employment' means mainly petty trade for the poorer households, as well as small services like fetching water. For middle households trade – especially wholesaling of grain – is the biggest cash-earner, and they also run village shops, and sell higher value goods such as petrol or clothes and they also earn cash through blacksmith or carpentry trades. This is far above the petty trading (piecemeal retailing) activities of poorer people. For better off households it is middleman activity in the livestock market – mediating individual sales and collecting animals for traders to take to the southern, urban markets. This gives them fully 30% of their total annual income.

Women earn income by pounding grain, crushing rocks and selling firewood. They also sell prepared meals or snacks and local drinks. Women earn further cash by styling hair or working as a seamstress. Furthermore, they sell goats and sheep from their small holdings. Better-off women run small businesses such as lending grain (at interest) to salaried village residents. On-farm labour for cash or in-kind payment for women mainly involves threshing. Older women, as well as older unmarried girls, are also hired during the cash crop harvest (groundnuts and cowpeas). Although some poor women leave their compounds to engage in sales and petty trade, in many cases children do the marketing for their mothers.

It is striking that in these rural communities there should be such an apparently huge income gap between wealthier and poorer households. The typical better off household earned 13 times more than the typical very poor household in the reference year. But if we look at the figures per capita, then the gap reduces to 3.6 times; likewise the gap between middle and poor households per capita is 3.4 times. And there is virtually no difference in earnings per capita between the middle and better off.

Yet as was mentioned at the outset, these more modest ratios cover very distinctive differences in types of earnings. To be poor is to work for others because you do not have the land and other assets to generate enough food and cash on your own account. For the most part to be poor is also to be unable to save whatever small profit you may gain from various activities: if it isn't for sheer survival, as with most very poor people, you will if you are poor spend all your money from labouring in the year, and probably sell a goat and take some credit, because there is always a pressing expense waiting, whether

for an immediate medical need or social obligation, or for seeds, or clothing, or simple household items. Only the most careful and motivated poor person may, for instance, manage to keep back enough from chicken sales to eventually buy a female goat, and then keep from selling all the progeny and slowly build up a sufficient flock to even, one day, buy a cow.

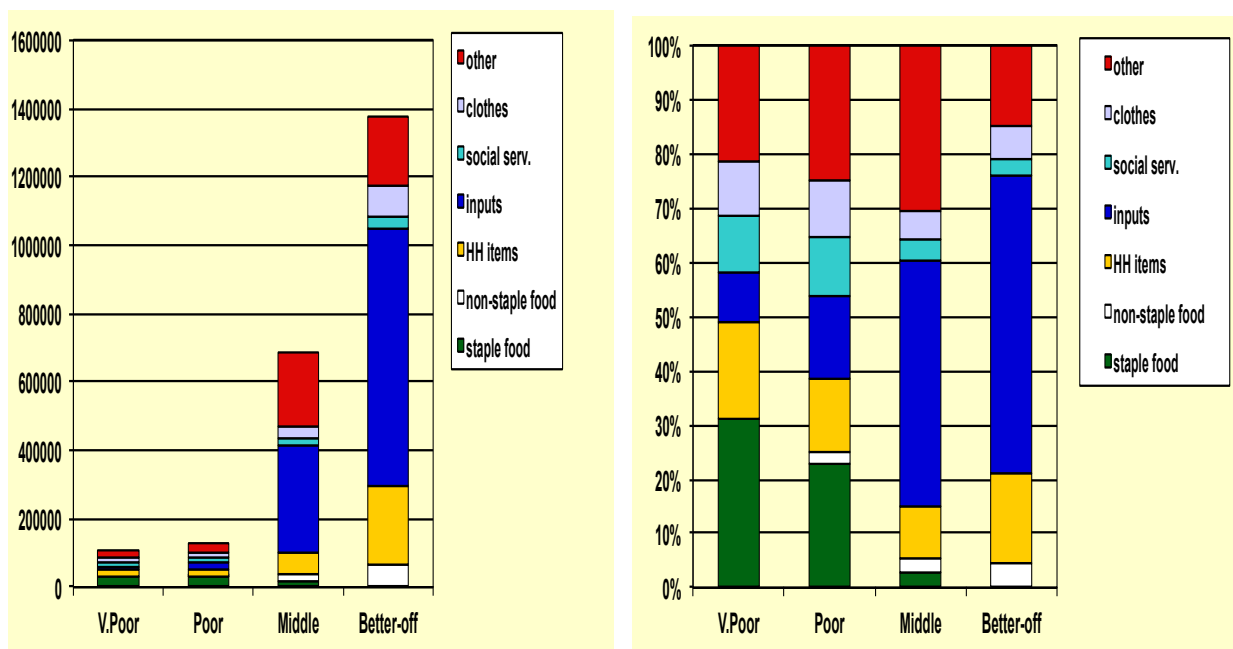
To be wealthy is, as we have seen, not only to be able to feed yourself from your land, but to sell cash crops and keep capital in livestock and invest it in trading as well as in hired labour and fertilisers to further maximise output from your land – a benign and possibly progressive cycle unless drought or personal misfortune interrupt it.

## Expenditure

Some 22-32 percent of spending during the reference year by the poor and the very poor households was on food. The green bar in the graph illustrates expenditure on staple food. Principally, poor and very poor households bought millet and sorghum. Poor households were able to diversify their food purchases a little, supplementing staple grains with some oil, rice and maize. Middle-income and better-off households did not need to buy staple grains. Instead, they bought non-staple foods to add dietary diversity, including oil, sugar, rice, yam, meat, fish and pasta.

More than 30% of the very poor HH expenditure goes to staples purchase. Household items also take a significant share in the expenditure of the very poor and poor HH, with some input purchase and expenditure on social services. Expenditure on clothing is very significant for the poorer households, considering their very marginal total budgets, due to the custom of purchase for the festive period. There was little or no expenditure on non-staple foods for the very poor, with poor purchasing root and tuber crops to vary the diet a little.

### Absolute and proportional expenditure by wealth group for the reference year (Nigerian Naira)



Bulk of expenditure for the middle and better off HH went to production inputs for crops and livestock. In fact the biggest single item here is purchase of livestock to add to their herds, in other words as a progressive way of banking their profits. The rest is mainly on labour hire and fertilisers. This part of the benign cycle mentioned above. In one part of the zone, in Jigawa, farm inputs were increased but was also increased as more land under cultivation was needed to cushion the effect of the 2012 floods. This led to employment of more labour on the farms and the poor and very poor could gain access to income for food purchase and for other expenditures, complementing other income generating activities.

Household items includes firewood, grinding fees, salt, soap and kerosene, and often amongst wealthier households payment for fetching water. The proportion of this spending is substantial for all wealth groups, but in absolute terms the wealthier spend greatly more than the poorer.

‘Other’ includes transportation costs (very important for trade as is expenditure on cellphone communications, and social obligations and festival expenditure which is a cost for poorer households as well as wealthier.

## Hazards and Coping

Timeline of Events 2009/10 – 2013/14 (projection from February 2014)

Year	Season	Score	Events
2013-14	rains harvest	5	A year with bumper harvest; food prices remain stable; livestock prices normal trend
	dry season		
2012-13	rains harvest	3	Excess rains resulted in some flooding; some wind damage on sorghum Flood retreat (fadama farming) was good and complementary harvest was good
	dry season		
2011-12	rains harvest	1	Excess rainfall leading to serious flooding and very poor harvest; fuel scarcity affected food prices and livestock sales Post election violence and fuel scarcity further affected access to food and income
	dry season		
2010-11	rains harvest	2	Late rains and drought in some areas affected incomes; sorghum prices doubled
	dry season		
2009-10	rains harvest	2	Drought led to poor production; some livestock disease outbreaks No production due to high prices of inputs and water shortages
	dry season		

When there are major production shortfalls, households have 3 basic options: (i) increase income; (2) reduce non-essential expenditures and instead buy staple food; and (3) reduce food intake.

### **Increase Income**

The ways that people increase their income when faced with an economic shock reflects their wealth status. Wealthier households have savings banked in livestock that can be sold. Poorer people have few assets. Instead, they must intensify their quest for paid labour in order to raise additional cash.

### **Coping Strategies to Increase Food and Income**

During economic hardship, the very poor turn to better-off relatives to secure gifts of food and cash. During any year poorer people may receive gifts from wealthier people in the form of the *zakat* contribution that is an obligation in Islam.

## **Reduce and/or Switch Expenditures**

Poor households do not normally spend much on non-essential goods or services. However, there are ways to cut spending. Households from all wealth groups limit spending on festivals when stressed. Spending on clothes is also reduced as people make do with their old clothes. Certain labour-intensive services that people pay for if there is additional cash – such as grinding grain or fetching water – are also reduced.

### **Very Poor, Poor**

Plant short cycle millet to ensure access to fresh grain in late August.

Migrate away for about 8 months rather than 4 months.

Increase firewood sales; sell firewood daily throughout the year, including in the rainy season.

Collect and sell bush foods such as baobab fruit when in season.

Increase daily labour twice per day, every day, up from 4 times /week

### **Middle, Better-off**

Increase livestock sales by 1-2 cattle and 2-5 shoats;

Sell other assets and household items;

Increase trade activity.

Plant short cycle millet.

Protect the herd by migrating earlier and for longer, for example, from March to August.

## **Conclusions and Recommendations**

The wealth breakdown shows a great accumulation of assets amongst the better off: leaving aside comparison with the poorer households, the better off cultivate three times as much land as the *middle* households and possess nearly eight times as much cattle, that is about 80% of all cattle (given the percentage of better off versus middle households, and the fact that the poorer households own no cattle at all. The fact that better off household sizes are around three times as big those of the poorer households and nearly twice as big as those of the middle, means that their production and income *per capita* do not show quite such a wide disparity. But in fact the very existence of a large household of this sort is a kind of wealth in itself, with its solidarity and social status and influence, and its varied income from the numerous adults. By the same token we seem to observe a deep *structural* poverty amongst the very poor and poor, who, with their very limited land and livestock and manpower, depend so much more for their income on working for others and on selling such items as collected firewood and on very small-scale retail trading.

We are confronted with the highly unacceptable situation where in a normal year such as the reference year, the very poor were plainly food insecure – that is, hungry - in the midst of a productive, substantially food-producing zone of Nigeria. With their production and their cash earnings on the one hand, and their essential food and non-food expenditure requirements on the other, they were unable to meet even the price of enough sorghum to reach their minimum calorie requirement. How can this be? On their very limited landholdings the degree of food production of the poorer households (the very poor households get about 55% of their calories from their fields and the poor two-thirds of their calories) is actually higher than in the other studied zones in northern Nigeria as well as further north in



the Sahel region. And it is impressive that the poor households are able to make 20% of their annual cash income from crop sales, notably groundnuts. At the same time what appears especially to be failing the poorer people is the availability or profitability of off-farm income-earning opportunities.

The production evidence allows some hope that even with their constrained assets the poorer households would benefit significantly from projects to increase the productivity of their farming, whether food or cash crops. In turn, improved earnings, and savings on food purchases because of their own production, might allow them to keep more than their small handful of sheep and goats and poultry, where today the progeny are constantly sold off in the face of the pressing financial pressures that define poverty. Even if we see no immediate hope that the poorer households will be able to maintain cattle, the value added to livestock by the demand of the southern populations, especially in the big cities, means that every goat that can be added to a poor household's annual sales items is a significant addition to their food security.

Consideration might therefore be given to aid assistance boosting activities in:

- Food and cash-crop production. There are in fact no non-food cash-crops, but even if we take cowpeas and groundnuts to be cash-crops, it is cereals that are by far the crops that bring in the most cash for the wealthier households. But poorer households sell virtually no cereals: that is their food security decision. So further questions need to be asked as to the relative investment for them in boosting cereals production or cowpeas and groundnuts production.

- Livestock production. If we recommend boosting livestock numbers for poorer people, we also have to understand better why they don't keep more animals, given their high value. Is it because they cannot feed even smallstock? Or is it because financial pressure to sell any extra animals keeps flocks at very small numbers? It is likely to be easier to subsidise animal feed and veterinary provision than to ease financial pressures on households. But in proposing the former, the latter needs to be taken into consideration: the very poor households have such marginal budgets that they cannot even quite allow themselves to eat to the minimum caloric requirement. It may be that the poor rather than the very poor are in a better position to retain the benefits of livestock interventions.

- Off-farm income. We record income from labouring for others on fields, on construction, or in domestic service; from 'self-employment' ranging from firewood and other bush-product sales to crafts to middle-man activities mostly by the wealthier in the livestock trade; and from petty trade (or sometimes wholesale grain trade by the wealthier). These are all less visible activities than crop and livestock production, but they are crucial to household incomes – which means also crucial to the very food security of the poorer. Are any subject to effective intervention? It is difficult to see quite what might be done to formally fix higher daily wage rates in a highly competitive, private market of millions of individual-to-individual agreements. It is more likely that wage rates will rise with the value of the products, and that is a matter for the economy at large. But from an individual point of view at least, adding value to work might begin with adding skills in a range from carpentry to dress-making, as well as judicious subsidy of associated equipment.

In the longer run, it is education that provides the platform to lift poorer children out of the poverty cycle; and one might suggest that for every dollar spent on anything else, a dollar must be spent on education, and not least on allowing poorer children access to secondary education when this incurs extra transport or living costs that effectively exclude them.

# ANNEX 1: Markets

## Trade routes of main goods



Livestock trade route →

Grains and legumes trade route →