



RESEARCH ARTICLE

Socio-Economic Characteristics of Farmers and Community Food Resources Indices for Some Sampled Villages in Northern Nigeria

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ABSTRACT

This study looks at the socio-economic characteristics of the farming population in the northern Nigeria vis-à-vis the community food resources as basis for food security. Data were obtained from seven communities with the use of focus group discussions and 219 farmers were equally administered questionnaire. Data were analyzed using descriptive statistics and the result shows that the pooled average household size was 7.4. Average farm income earning of community residents was found to be between ₦158,615.38k (\$1,010) to ₦273,095.24k (\$1,740) and non-farm earning between ₦64,846.15k (\$413) to ₦182,333.33k (\$1,161) annually. The per capita income of an average farmer was observed to be ₦100.42 (\$0.64) per day, a 36% figure lower than the \$1 poverty line. Farming activities was found mostly indigenous as land acquisition, the most important food production resource, was generally by inheritance. The average total production in grain equivalent per household in the communities sampled was between 1,709.59kg and 3,601.93kg, while many of the communities sampled lacked adequate food resources to feed its residents. Recommendations were given in line with social and economic policies frame work to address institutional infrastructure and economic empowerment for the farmers.

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INTRODUCTION

Owing to continual focus on reduction of hunger and poverty by the international community, the last decade witnessed substantial progress. This progress is however been reversed in the face of recent global food and financial crises. The target of Millennium Development Goals (MDGs) by 2015 included reducing substantially, the proportion of people experiencing extreme hunger and poverty. While it can be said that a number of countries are on track in achieving this targets, many others are currently challenged. The rapid food price increase between 2005 and 2008 and recent economic recessions have further dampened global efforts to achieving the MDGs (International Food Policy Research Institute, 2010). High food prices and the economic slowdown have pushed 255-290 million more people into extreme poverty (Food and Agricultural Organization, 2009).

In Nigeria, recent estimates put the number of hungry people in the country at over 53 million, which is about 30% of the country's total population of roughly 150

million; and 52% live under the poverty line (Ajayeoba, 2010). These are matters of grave concern largely because Nigeria was self-sufficient in food production and was indeed a net exporter of food to other regions of the continent in the 1950s and 1960s. Things changed dramatically for the worse following the global economic crisis that hit developing countries beginning from the late 1970's onward. The discovery of crude oil and rising revenue from the country's petroleum sector encouraged official neglect of the agricultural sector and turned Nigeria into a net importer of food. By 2009 for example the federal ministry of agriculture estimated that Nigeria was spending over \$3billion annually on food imports (Ajayeoba, 2010). But food security is principally and certainly national security. The country needs to begin to look into self-sufficiency in food production in the face of the current global food crisis, which leaves the country imperiled to price fluctuations and other vices. Besides, it has been well documented that the country has a wealth of potentials to not only feed its populace but be a net exporter of agricultural commodities. Since the country's

agricultural base is indigenous contributing over 80% of the food needs of the country and employing about 70 of the labour force (Adegboye, 2004; NBS, 2012), it is becoming imperative to assess the food resources and indices at the national, regional and community level, so as to help policy makers in designing policies and programs implemented to improve national food security. Babatunde *et al.* (2007), has also opined that it is required that the socio-economic conditions of the farming population be known for a guided change to take place.

Community food resources assessment is a subset of community food security which is an expansion of the concept of household food security. Whereas household food security is concerned with the ability to acquire food at the household level, community food security concerns the underlying social, economic, and institutional factors within a community that affect the quantity and quality of available food and its affordability or price relative to the sufficiency of financial resources available to acquire it (Cohen, 2002 and Kantor, 2001). Community food security exists when all community residents obtain a safe, personally acceptable, nutritious diet through a sustainable food system that maximizes healthy choices, community self-reliance and equal access for everyone (MHSABC, 2004).

Cohen (2002) has suggested that, to understand the adequacy of community food resources, we begin by creating a profile of all existing food resources, both crop based and animal sources for protein needs of the community. The underlying principle is to focus on assessing and building up the community's food resources to meeting its own needs. If the community food resources are largely depleted, for the community to meet her food need, she will have to depend on another or other communities for the food needs. This dependence, as suggested by Cohen (2002) comes with its own merits and demerits. The best position is still for a community to be self-sustaining and independent of other communities for her food needs. When a community is dependent, she is more prone to community food insecurity than when she is independent. In other words, the less dependent a community is, the more food secured it tends. This study therefore aims at assessing community food resources of some sampled villages in the northern Nigeria so as to serve a diverse range of issues, including government intervention, economic opportunity and viability of rural communities, direct food marketing, and food related problems.

MATERIALS AND METHODS

This study was conducted in seven villages of northern Nigeria. The communities sampled are located in Kaduna state, Nigeria. These communities represent the Northern Guinea Savannah and agriculture is the main stay of the economy of largely Hausa tribe of the northern Nigerian people, with over 80% of the people actively engaged in farming. Food crops that are cultivated and produced include: maize, yam, groundnut, cowpea, guinea corn, millet, rice and cassava, while cash crops include gum arabic, cotton and ginger. The people also rear animals like cattle, goats and sheep.

Multi-stage sampling techniques were used for this study. The first stage involved the random sample of seven villages in the state namely, Gangara, Furana, Angwan Yari, Fadan Kaje, Ungwan Wakili, Gidan Tagwai, and Laduga. A three-split focus groups comprising of at least six (6) persons of men, women and youths for the three groups were used to acquire qualitative data from each of the sampled communities. Also a ten percent sample size was use to acquire data from farm household through the means of questionnaire to obtain demographic and socio-economic characteristics of the farmers resident in the communities, thus 219 farmers were randomly sampled for questionnaire administration.

Statistical analysis

Descriptive statistic was used mainly for this study to analyze the socio-economic characteristics of the communities farming residents and also used for the analysis of data obtained from the focus group discussions. As mentioned earlier, a three-split focus groups comprising of at least six persons of men, women and youths for the three groups were used to acquire qualitative data from each of the sampled communities. This is churned from Morgan (1992a) as quoted in SAGE Research Methods' (2013) rules of thumb that, focus group projects most often; (a) use homogeneous strangers as participants, (b) rely on a relatively structured interview with high moderator involvement, (c) have 6 to 10 participants per group, and (d) have a total of three to five groups per project. Also, qualitative approach to research as suggested by Kothari (2004) is concerned with subjective assessment of attitudes, opinions and behaviours. Research in such a situation is a function of researcher's insights and impression. Such an approach to research generates results either in non-quantitative form or in the form which are not subjected to rigorous quantitative analysis. The data are presented in tables.

RESULTS AND DISCUSSION

Community socioeconomic and demographic characteristics

The socio-economic characteristic and resources of individual farm household have been identified as basic factors influencing the food security status of households (Sanusi *et al.*, 2006). Babatunde *et al.* (2007) have also opined that it is required that the socio-economic conditions of the farming population be known for a guided change to take place, as mentioned earlier. The results of the socio-economic characteristics of the farming population of the sampled communities are presented in Table 1. Demographically, the general experience is that we have more male household heads than female household heads. This is expected to positively influence the food security status of the families, and even the communities in general. The gender of household head could limit the type of farming activities and even the amount of energy that could be put into the activities. It was noted however that, Ungwan Wakili has more female household heads. The result shows that 19.35% of the farmers in Ungwan Wakili are women. This is similar to that of the respondents in Gidan

Table 1: Profile of community socioeconomic and demographic characteristics

| Socio-economic/demographic characteristics (Average) | Gangara | Furana | Angwan yari | Fadan kaje | Ungwan wakili | Gidan tagwai | Laduga | Pooled |
|--|------------|------------|-------------|------------|---------------|--------------|------------|------------|
| Gender of household heads (%) | | | | | | | | |
| Male | 96.15 | 95.83 | 89.47 | 81.82 | 80.65 | 80.95 | 93.75 | 87.70 |
| Female | 3.85 | 4.17 | 10.53 | 18.18 | 19.35 | 19.05 | 6.25 | 12.30 |
| Level of education (%) | | | | | | | | |
| No formal education | 3.85 | 33.33 | 26.32 | 3.03 | 19.35 | 0.0 | 0.0 | 10.25 |
| Arabic education | 53.85 | 16.67 | 42.10 | 0.0 | 3.23 | 0.0 | 62.5 | 23.77 |
| Adult education | 7.69 | 12.50 | 10.53 | 3.03 | 16.13 | 0.0 | 3.13 | 7.38 |
| Primary education | 19.23 | 29.17 | 21.05 | 24.24 | 32.26 | 38.10 | 9.37 | 24.18 |
| Secondary education | 15.38 | 8.33 | 0.0 | 57.58 | 29.03 | 42.86 | 12.5 | 27.87 |
| Tertiary education | 0.0 | 0.0 | 0.0 | 12.12 | 0.0 | 19.04 | 0.0 | 6.56 |
| Years of farming experience | 22.12 | 29.08 | 27.32 | 21.56 | 22.90 | 19.76 | 21.91 | 22.9 |
| Household size | 9.42 | 9.13 | 10.11 | 8.09 | 6.71 | 7.52 | 8.87 | 7.50 |
| H. Head medical expenditure (₦) | 5,920.83 | 7,982.61 | 9,744.44 | 5,182.54 | 4,307.14 | 7,895.00 | 8,750.00 | 6818.70 |
| Household medical expenditure (₦) | 16,045.45 | 15,204.55 | 12,650 | 13,666.67 | 10,560.71 | 20,375.00 | 25,171.86 | 15833.63 |
| Farm Income (₦) | 158,615.38 | 197,708.00 | 192,736.84 | 160,625.00 | 165,046.77 | 273,095.24 | 190,779.69 | 180,914.50 |
| Non-Farm income (₦) | 92,562.50 | 80,071.43 | 64,846.15 | 170,444.44 | 89,017.68 | 132,625.00 | 182,333.33 | 130,407.10 |
| Total Income (₦) | 215,576.92 | 244,416.67 | 237,105.26 | 300,079.55 | 219,606.00 | 374,142.86 | 327,529.69 | 271,238.88 |
| Institution Presence | | | | | | | | |
| Federal Institution | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| State institution | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Educational Institution | | | | | | | | |
| Primary schools | 2 | 1 | 1 | 4 | 5 | 6 | 4 | 24 |
| Secondary schools | 1 | 0 | 0 | 2 | 1 | 2 | 1 | 8 |
| Tertiary schools | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Healthcare services | | | | | | | | |
| Primary health care centre | 1 | 0 | 0 | 2 | 2 | 1 | 0 | 7 |
| Clinic and maternity | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 4 |
| Co-operative societies | 7 | 5 | 3 | 2 | 2 | 3 | 4 | 27 |

Table 2: Profile of Community Food Resources (Crop based)

| Food crop resources | Gangara | Furana | Angwan yari | Fadan kaje | Ungwan wakili | Gidan tagwai | Laduga |
|---------------------|----------------|----------------|-------------|----------------|---------------|----------------|----------------|
| Cereals | | | | | | | |
| Maize | Maize | Maize | Maize | Maize | Maize | Maize | Maize |
| Sorghum | Sorghum | Sorghum | Sorghum | Sorghum | Sorghum | Sorghum | Sorghum |
| Millet | Millet | Millet | Rice | Millet | Rice | | Millet |
| Rice | Rice | Rice | | Rice | Acha | | Rice |
| Wheat | | | | | Sugar cane | | |
| Acha | | | | | | | |
| Other(s) | | | | | | | |
| Pulses | | | | | | | |
| Cowpea | Cowpea | Cowpea | Cowpea | Cowpea | Cowpea | Cowpea | Cowpea |
| Soybean | Soybean | Soybean | Soybean | Soybean | Soybean | Soybean | Soybean |
| Ground nut | | Ground nut | Ground nut | Ground nut | Ground nut | Ground nut | Ground nut |
| Mellon | | | | | | | |
| Other(s) | | | | | | | |
| Vegetables | | | | | | | |
| Tomato | Tomato | Tomato | Tomato | Tomato | Tomato | Tomato | Tomato |
| Pepper | Pepper | Pepper | Pepper | Pepper | Pepper | Pepper | Pepper |
| Onion | Onion | Onion | | Onion | | | Onion |
| Carrot | Spinach | Spinach | | Spinach | | | Egg plant |
| Spinarch | | | | Egg plant | | | |
| Egg plant | | | | | | | |
| Others | | | | | | | |
| Root Tubers | | | | | | | |
| Yam | Sweet potatoes | Cassava | | Yam | Yam | Yam | Yam |
| Cassava | | Sweet potatoes | | Cassava | Cassava | Cassava | Cassava |
| Sweet potatoes | | Cocoyam | | Sweet potatoes | Cocoyam | Sweet potatoes | Sweet potatoes |
| Cocoyam | | | | Cocoyam | Ginger | potatoes | potatoes |
| Irish potatoes | | | | | | Ginger | |
| Other(s) | | | | | | | |

Tagwai (19.05%), but the communities that had the least female household heads are Gangara and Furana.

Farmers in Angwan Yari and Furana are the least educated. In Angwan Yari community, 78.95% of the farmers have less than primary school educations as

Furana community farmers have 62.5%. In fact, in Angwan Yari, it is to be noted that no singular respondents had up to either secondary or tertiary education. In Furana however, just 8.33% of the respondent had secondary education. Fadan Kaje and

Gidan Tagwai communities are the most educated farming communities. In Fadan Kaje community, 69.7% had between secondary to tertiary education, while in Gidan Tagwai, 61.9% of the farming community have education up to secondary school and above. It is to be noted that the singular community that had the highest number of Arabic educated farming members of the community is Laduga, a largely nomadic populace of Fulani herdsmen, followed by Gangara community with 62.5% and 53.85% respectively.

In years of farming experience, it is expected that with increasing years of farming, farmers gain experience in the art of farming to the advantage of gaining understanding and increasing productivity and consequently food security. The community that has the highest mean years of farming experience is Furana with 29.08 years, closely followed by Angwan Yari (27.32) community. The least community is Gidan Tagwai with 19.76 years as average years of respondents' farming experience.

Household size affects family labour, productivity, dependency ratio and invariably food security status. Households with higher sizes tends to be less food secured particularly when the number of dependents is higher, straining the family economy. The communities that have the highest household sizes are Angwan Yari and Gangara with 10.11 and 9.42 average household sizes respectively. Ungwan Wakili has the lowest average household size of 6.71 (Table 1).

The health status of the household heads is also very imperative to food security status. Ill-health is directly detrimental to productivity. It also affects the family economy as income that would have been used for consumption purposes are diverted for medical bills. Generally, the communities sampled spend averagely between ₦5,182.54k (\$33) to ₦9,744.44k (\$62) on household heads annually as medical bills. On family members, an average of ₦12,650.00k (\$81) to ₦25,171.86k (\$160) is expended annually as medical expenses. The Laduga community came highest on family medical expenses while Angwan Yari came lowest. Using the pooled result as a base, the total annual medical expense was found to be 8.35% of total income.

Profiling the Socio-economic characteristics of communities in Community Food Security assessment also entails the assessment of the economic status of farm families in the community. Farm and non-incomes are good measures of economic status (NBS, 2012), and these are equally presented in Table 1. The income sources for farm income included all sales made from farm produce, while for non-farm income, income from civil service, trading, commercial motorcycling, artisanship, milling, tailoring, carpentry and others like clergy, are other rural farm activities, form the sources that constitute non-farm income. The two sampled communities with the highest average total income of ₦374,142.86k (\$2,383) and ₦327,529.69k (\$2,086) are Gidan Tagwai and Laduga communities respectively. Gangara community farmers have the lowest average farm income of ₦158,615.38k (\$1,010) and Angwan Yari community equally has the lowest non-farm income of ₦64,846.15k (\$413). The pooled average total income per household is given as ₦271,238.88k (\$1,728) per annum for households of average size of 7.5. Further breakdown however puts the

average income per capita as ₦100.42 (\$0.64) per day, a 36% value lower than the \$1 poverty line.

Further demographic and socio-economic characteristics of a community include the presence or otherwise of federal and state institutions, educational institutions, co-operative societies and healthcare service centers. The result for these community characteristics are equally presented in Table 1.

Profile of community food resources

To understand the availability and adequacy of community food resources, we begin by creating a profile of all existing food resources, both crop based and animal sources for protein needs of the community. The underlying principle is to focus on assessing and building up the community's food resources to meeting its own needs. If the community food resources are largely depleted, for the community to meet her food need, she will have to depend on another or other communities for the food needs as mentioned earlier. This dependence comes with its own merits and demerits. The sampled communities' food resources are presented in Table 2. Virtually all the communities sampled produce substantial amount of the cereals for their community's need. Maize and sorghum are the major cereals culturally required and consumed in the communities. These crops are well cultivated and readily available in the communities. One community however does not cultivate rice. This is Gidan Tagwai. Equally, two other communities are not readily involved in the cultivation of millet, and they are Angwan Yari and Gidan Tagwai. Ungwan Wakili is however noted for sugar cane and acha cultivation in addition to the other cereals.

Cowpea and soybean are cultivated and readily available in all the communities sampled. Also available is ground nut, a good vegetable oil and protein source for man and for animal feed. However, for vegetable crops like tomato, pepper, onions, spinach and eggplant, fewer communities like Gangara, Furana, Fadan Kaje and Laduga cultivate other vegetable crops like onions and spinach. Tomato and pepper seem to be the mostly cultivated vegetables (See Table 2). From the results as presented in Table 2, root tubers are not popularly cultivated crops in Gangara and Angwan Yari. In Furana community, cassava, sweet potatoes and cocoyam are cultivated and in Gangara, only sweet potatoes are cultivated. However, in the others, yam, cassava, sweet potatoes and cocoyam are largely cultivated in the communities sampled and a readily available food resource. In addition, ginger, used largely as energy drinks and cultivated primarily as a cash crop, is also mostly cultivated in Fadan Kaje, Ungwan Wakili and Gidan Tagwai.

Animal protein sources

Community food resources assessment also involves the assessment of the community resource for animal protein. Protein intake is very vital for a virile and healthy living. The result of the communities' sources of animal protein is as presented in Table 3. Virtually all the communities sampled reared goats and these are readily available as source of animal protein. Mutton which is meat from sheep is also available in most of the

Table 3: Profile of community food resources (animal protein Sources)

| Animal food resources | Gangara | Furana | Angwan yari | Fadan kaje | Ungwan wakili | Gidan tagwai | Laduga |
|----------------------------------|---------------|---------------|---------------|------------------|------------------|------------------|---------------|
| Ruminant | | | | | | | |
| Goats | Goats | Goats | Goats | Goats | Goats | Goats | Goats |
| Sheep | Sheep | Sheep | Sheep | Pigs | Pigs | Pigs | Sheep |
| Rabbit | Cattle | Cattle | | Dogs | Dogs | | Cattle |
| Cattle | | | | | | | |
| Other(s) | | | | | | | |
| Poultry | | | | | | | |
| Local chicken | Local chicken | Local chicken | Local chicken | Local chicken | Local chicken | Local chicken | Local chicken |
| Guinea fowl | Ducks | | | Broilers | Guinea fowl | Broilers | Guinea fowl |
| Duck | Guinea fowl | | | Layers | Ducks | Layers | Ducks |
| Broilers | | | | Broilers | Broilers | | |
| Layers | | | | Layers | Layers | | |
| Other(s) | | | | | | | |
| Fishery | | | | | | | |
| Fish farming (ponds) | | | | Fishing (stream) | Fishing (stream) | Fishing (stream) | |
| Fishing (river/stream) | | | | | | | |
| Other(s) | | | | | | | |
| Hunting of Games | | | | | | | |
| Small games (rats, grass cutter) | Small games | | | Small games | Small games | Small games | |
| Large games (antelope...) | | | | | | | |

communities sampled except for Fadan Kaje, Ugwan Wakili and Gidan Tagwai communities. Beef is also readily available in Gangara, Furana and Laduga communities. Pork and dog meat is available in Fadan Kaje and Ugwan Wakili communities while goats' meat and pork are one of the readily available sources of animal protein in the Gidan Tagwai community. Some of these animal food resources are religiously influenced in production and consumption.

All the communities rear local chicken. Exotic breeds of broilers and layers are available in Fadan Kaje, Ugwan Wakili and Gidan Tagwai. Protein source from guinea fowls are available in Gangara, Ugwan Wakili and Laduga. Ducks are also raised for meat in the sampled communities except Furana, Angwan Yari, Fadan Kaje and Gidan Tagwai communities.

Fishing (wild) is done only in Fadan Kaje, Ugwan Wakili and Gidan Tagwai communities and likewise small game hunting in these communities, and Gangara (See Table 3). It is to be noted that none of these community source its animal protein from large games and fish farming (pond).

Assessment of community food production resources

Local agricultural and food production resources play a very important role in community food security. Its dynamics work to strengthen community's agricultural system over the long term, offering small farmers an opportunity to maintain economic viability by supplying the local and probably regional markets, and gaining understanding of the structure of demand for food within their own community in relation to others and the nation at large.

The assessment of community food production resources survey is presented in Table 4. The average total production figure for all the communities and the most important factor of production of food, land-suitability and access forms are presented in the table. Processing opportunities for locally produced food, various marketing integration of these food, and the food items the communities are dependent upon, produced outside their own communities are also presented in the table (Table 4).

Access to land and forms of access are very important determinants of food production. It determines level of production of farm household. From the survey conducted as presented from the table, most access to land for food production in the communities is by inheritance. The implication of this result indicating majority farmland acquisition through inheritance is that, the right to use land is more indigenous for farm household. Access in this way have impediments to increasing production especially for households who do not inherit lands and have little or no money to acquire one. Also, the general responses from the three focus group discussions from each of the communities sampled produced what the members of the communities perceive is the general soil condition of their farmlands.

Gangara community residents noted that they cannot do reasonable crop cultivation without using fertilizer, and so their land is not so fertile in itself. Similar to this is the responses from the two other communities sampled, that is, Angwan Yari and Furana. Their land is characterized with rocky granules and hard soil. This is however different from the responses from the four other communities namely Fadan Kaje, Ugwan Wakili, Gidan Tagwai and Laduga. The community residents are of the opinion that their farmlands are relatively suitable for agricultural production, as the farmlands can be considered fertile.

Profiling processing opportunities available in the communities, milling of cereals happens to be common to all the communities. It is essential to describe the processing form of milling observed. The type noted is actually for small quantities of cereal to be used for family consumption, not as if the communities have large mills were cereal products are milled, bagged transported and sold to consumers. The processing forms observed from the survey conducted are just that that farm families organize for their own consumption only, using petrol or diesel powered engine mills. Three other communities however have cassava processing facilities in addition to cereal milling in their communities. These communities are Fadan Kaje, Ugwan Wakili and Laduga. Cassava

Table 4: Community Food Production Indicators

| Food Production Resources | Gangara | Furana | Angwan Yari | Fadan Kaje | Ungwan Wakili | Gidan Tagwai | Laduga |
|--|----------------|------------|--------------|------------|---------------|--------------|------------|
| Total Average Production in Grain Equiv. | 1816.26 | 2129.27 | 2083.58 | 2122.17 | 1709.59 | 3601.93 | 2099.06 |
| Land Fertility | Not so fertile | Rocky land | Rocky land | Fertile | Fertile | Fertile | Fertile |
| Land Accessibility/Acquisition | | | | | | | |
| By inheritance | 84.61* | 79.17* | 73.68* | 66.67* | 77.42* | 80.95* | 78.12* |
| By purchase | 3.85* | 4.17* | 0.0 | 4.55* | 6.45* | 4.76* | 6.25* |
| By gift | 15.38* | 16.67* | 15.79* | 18.18* | 22.58* | 38.09* | 18.75* |
| By rent | 11.54* | 8.33* | 15.79* | 22.73* | 22.58* | 9.52* | 18.75* |
| Food Processing Opportunity | | | | | | | |
| For Cereals | Milling | Milling | Milling | Milling | Milling | Milling | Milling |
| For Pulses | | | | Cassava | Cassava | | Cassava |
| For Vegetables | | | | processing | processing | | processing |
| For Local milk products | | | | (Gari) | (Gari) | | (Gari) |
| For root tubers | | | | | | | |
| Food 'exported' from community | Maize | Maize | Maize | Maize | Maize | Maize | Maize |
| Cereals | Sorghum | Sorghum | Sorghum | Ginger | Sugar cane | Pepper | Goats |
| Pulses | Cowpea | Cowpea | Cowpea | Cocoyam | Ginger | Yam | Cattle |
| Vegetables | Tomatoes | Tomatoes | Tomatoes | Gari | Cocoyam | Ginger | |
| Root Tubers | Pepper Goats | Pepper | Pepper Goats | Pigs | Goats | | |
| Animal products | Sheep | Onion | Sheep | | Pigs | | |
| Fish products | | Goats | | | | | |
| Other(s) | | Sheep | | | | | |
| Food 'imported' into community | Cassava | Rice | Rice | Rice | Rice | Rice | Rice |
| Cereals | Yam | Soybeans | Soybean | Tomato | Tomato | Soybeans | Cowpea |
| Pulses | Ice fish | Cassava | Cassava | Onions | Onions | Cassava | Tomato |
| Vegetables | | Tomato | Tomato | Cattle | Cattle | Cattle | Onions |
| Root Tubers | | Ice fish | Ice fish | Ice fish | Ice fish | Ice fish | Ice fish |
| Animal products | | | | | | | |
| Fish products | | | | | | | |

*Multiple responses

processing involves adding value to raw Cassava tubers, turning them into cassava flakes otherwise known as Gari.

Fadan Kaje, Ugwan Wakili and Gidan Tagwai communities, ginger seem to be the major cash crop largely marketed to other the communities even exported outside the country. Cocoyam cultivation appears common to Fadan Kaje and Ugwan Wakili communities, and equally, pigs from these communities are transported and sold to as far as eastern part of Nigeria. Laduga community, being a Fulani (nomadic) settlement deals readily in cattle trading.

The communities however happen to depend on rice brought in from other communities for their consumption. Only Gangara and Angwan Kanawa seem not to so depend on rice outside their communities among the seven sampled communities. These communities are however dependent on other communities for their root tubers food needs. Also, a common food item that all the communities source outside of their own production is ice fish (See Table 4). Understandably, this is not locally available as this product comes in into the country itself only by importation. This may mean that the farmers are not immune to fluctuations and changes resulting from market indices either to the negative or otherwise. It might be important also to mention that these communities can feel the effect of trade globalization's merit or demerit.

Conclusion and recommendations

This paper shows that the socio-economic characteristics of the farming population in the

communities sampled present mostly less educated farmers with income earning from farm and non-farm activities to be low. Even when food resources are available in the community, low household income and earnings will limit farmers' access to food. Health care facilities are also inadequate and annual expenditure on health was found relatively high in comparison to total income. Some communities considerably lack adequate food resources to meet its own food needs without recourse to "importation" from other communities. Community food security however relies on the support of all within a local regional food system, producers, consumers, community agencies and co-operative groups, government organizations, businesses and marketing integrations to build a community food system where access to enough, safe, nutritious, culturally appropriate food can be available to all. Recommendation is therefore given as a call is made for sound social and economic policies to address institutional frame work and economic empowerment for the farmers in the study area. Expansion and deepening of the rural economic infrastructure, including roads, markets, peasants' health and veterinary facilities are welcomed policy frames.

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