



Living Condition at Bottom of the Pyramid: Case of Oil Palm Farmers around Presco Nucleus Estates in Edo State, Nigeria

Famous Baa Adade (PhD)

Cambridge Assessment International Education Programme, Word of Faith Schools, Benin City, Edo State, Nigeria

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***Corresponding Author**

Dr. Famous Adade

E-mail: fb_adade@yahoo.com

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ABSTRACT

The study examined the living condition of oil palm farmers at the base of the pyramid (BOP) located around Presco nucleus estates in Edo and Delta States, Nigeria. A two stage sampling procedure was used to sample 242 oil palm farmers. Using an absolute poverty line of \$2.00 per person per day, the BOP households were identified in the dataset of the respondents based on their income levels. Descriptive statistics were used to analyse the data. The findings indicated that about 55% of the respondents live at the bottom of the economic pyramid, earning per capita income less than \$2(N400) per day. About 76% did not have additional sources of income outside farming, and 15% accessed credit while only about 40% applied fertilizer on their farms. Those at first two income quintiles did not have savings; their per capita expenditures were in excess of per capita income by about 58% and 32% respectively. About 59% of the consumption was on food and non-alcoholic drinks. Moreover, about 58% the BOP oil palm farmers were food poor, with majority also poorly asset-endowed, implying that the cultivation of oil palm did not seriously improved the living condition of the growers despite its potential to enhance income and alleviate poverty. The findings have policy implications. First, BOP farmers not participating in the Presco out-grower scheme, not belonging to cooperative societies and/or not having accessed credit though such opportunities might have been available can be encouraged through their village heads to belong in order to access facilities capable of enhancing their productive capabilities and income. The large expenditure on food and non-alcoholic drinks provide marketing opportunity for products consumed by BOP farmers.

1. INTRODUCTION

The phrase bottom of the pyramid (or base of the pyramid) is used in economics to refer to the poorest two-thirds of the economic human pyramid. The concept "Bottom of the Pyramid" was credited to the US president, Franklin D. Roosevelt who used it in 1932, as he talked about the often neglected poor people, since they occupy the base of the economic pyramid. Prahalad (1999, 2002) popularized the idea of this unique segment as a profitable consumer base in his 2004 article, "The Fortune at the Bottom of the Pyramid," co-authored by Stuart Hart. Prahalad and Hart (2002) opined that including people at the base of the pyramid

in formal markets, as entrepreneurs, producers and consumers, is likely to generate income and improve living conditions sustainably while at the same time increasing sales volume of firms.

BOP segment in 2015 constitutes about 40 % of the population worldwide and about 48% of the adult population in Nigeria (Hodgson, 2017). Figure 1 shows that the projected number of adults at the BOP region will increase from about 45 million in 2016 to over 60 million people in 2030. The proportion of adults in the Nigerian population (2016-2030) in the BOP region will increase to over 50% and thereafter declines to about 48%.

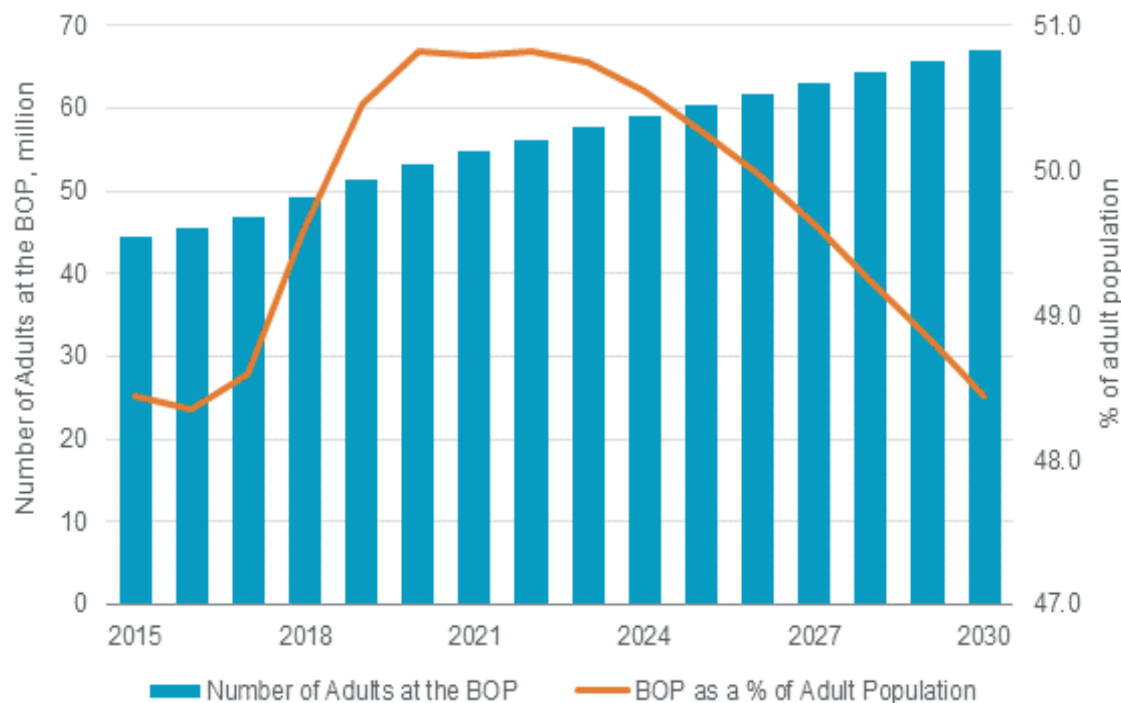


Figure 1

Nigeria's Bottom of the Pyramid: 2015-2030

Source: Euromonitor International's Income and Wealth Distribution Model

Development literature is replete with debates on the appropriate purchasing power parity (PPP) threshold that best captures the size of the BOP population in a community. Different BOP authors have articulated different PPP lines from \$1,500 or \$2,000 per annum to \$1 or \$2 per day (Mendoza & Thelen, 2007; Prahalad, 2005). This of course portrays an inconsistency which according to Karnani (2007) had not gone unnoticed.

Empirical evidences from researchers indicate that occupants of the bottom of the pyramid have some distinguishing characteristics: Food and non-alcoholic beverages form the largest share of household expenditure, 71.2% of decile 1's spending in 2015 in Nigeria (Euromonitor International, 2017 cited in Hodgson, 2017); the proportion of household income on alcohol and tobacco is high in most countries, ranging

from 6 % in Indonesia to 1% in Nicaragua (Banerjee, Duflo, 2007) and about 3% in India (Gangopadhyay, Wadhwa, 2004); do not have bank accounts and therefore finds it difficult to save, with the temptation to spend to keep up with their neighbours, thereby vulnerable to economic shocks (fluctuations in prices and production) and environmental shocks such as climate change as well as outbreak of pests and diseases (Banerjee & Duflo, 2007); spending on festivals also account for large part of the budget for many extremely poor households (Karnani, 2009; Piacentini, Hamilton, 2013). Furthermore, majority are in rural areas and live in relatively large households with little or no educational attainment, headed by individuals who are self-employed or work in agriculture as laborers or smallholder producers, and majority start life at a

disadvantage as they are often hooked by malnutrition and limited resources (Barnerjee, Deaton, Duflo, 2004).

Much of their goods are purchased at informal, open markets, and in Nigeria they lack access to key infrastructure like electricity and water (Hodgson, 2017). Using data from household consumption surveys, Hammond, *et al.*, (2007) estimates total annual household income at BOP at \$5billion PPP (or \$1.3 billion when adjusted for US dollars), and gave of one of the defining characteristics as non-integration into the formal global economy. Sharma, Nasreen and Kurma (2019) opined that including the BOP community as a subsistence marketplace in mainstream marketing could improve the standard of living of members of the segment.

Focusing on the poor, the bottom of the pyramid, is the concern of most development agencies. For instance, the mission statement of Grameen Foundation fully portrays focus on the poorest people: "Enabling the Poor, especially the poorest, to create a world without poverty." Some multinational companies supply goods and services that meet their needs while benefitting from the sales volume available in that sector. Aside from tapping into the marketing potential in that realm, some organizations have identified productive capacities that exist among them. They have, therefore, established linkages with them in the form of contract farming or out-grower scheme. Farmers who live around such organizations have benefited directly or indirectly from such synergy (Yunus *et al.*, 2010). Such BOP agribusinesses have been observed to improve the living conditions of farmers participating in their scheme as demonstrated by the BOP agribusiness developed by Grameen Foundation for growing Mung beans in Bangladesh. Grameen buys the product at rates set above market price, and farmers can also sell a portion of their own harvest locally. The business was reported to have led to a significant increase in yield of crops (from 160kg/bigha to 320kg/bigha) and sales price (from 40.50 BDT per kg to 60 BDT per kg), hence the farmers experienced a more than two fold increase in their income (Hart, Canaque, Shpak, Dasguph, 2013).

For oil palm estates engaged in out-grower schemes, the BOP becomes the new market to sell their seedlings and other inputs (not utilized in their farms) to get additional revenue and provides avenue to buy fresh fruit bunches (FFB) from out-grower farmers in order to keep their processing facilities running maximally. The farmers in turn get ready market and stable price for their products. This win-win situation is likely to improve the living conditions of participants as well as other farmers who may benefit from the spill-over effects of the scheme.

This study focuses on oil palm farmers because engagement in oil palm farming is one way to easily come out of poverty. Productivity per hectare is high compared with other oil-producing crops, thereby generating high income to producers (Oil World, 2013). There is also a stream of income from the produce throughout the year and for about 30 years covering the

economic life of the crop. Other things being equal, growers of the crop are expected at least to have average economic wellbeing and better living condition than a typical rural dweller.

However, available literature indicates that only few studies (Adade *et al.*, 2018; Adebayo, Ayodele & Olowokere, 2015) have addressed the poverty situation of oil palm farmers, especially in Nigeria. Even such studies failed to address the condition of the farmers at the bottom of the pyramid. Little or no empirical data are available concerning the potential of farmers, especially oil-palm cultivators at the base of economic pyramid. It is imperative to know their living conditions as well as potential as entrepreneurs and consumers. This will enable development agencies to address their peculiar needs that could help lift them out of poverty and improve their wellbeing. The total earnings and expenditures of the respondents reveal the BOP community as a segment where retail marketing can be promoted, with some of them serving as retail traders. Therefore, including the BOP community as a marketplace in the main stream marketing could improve their standard of living. The proportion of the BOP households involved in the activities of cooperative societies and out-grower scheme also portray their entrepreneurial spirit. As a result they can serve as change agents to promote inclusive pro-poor development in the vanguard for better living among BOP community in rural areas.

It is against this backdrop that this paper seeks to provide answers to the following research questions: 1. What are the socio-economic characteristics of BOP farmers in the study area? 2. What is the per capita income/expenditure as well as the aggregate income and expenditure at the BOP in the study area? 3. What is the level of savings among the farmers at BOP? 4. What is their living condition in terms of access to food (food security), health facilities, electricity, etc.? What are their coping strategies?

2. METHODOLOGY

Study Area and Sampling Technique

The study was carried out around the Presco oil palm estates in Edo and Delta States, Nigeria. The targeted respondents were oil palm farmers within 20-30 km radius of each of the oil palm estates in Obaretin (Edo State) and Ajagbodudu (Delta State) that operate out-grower scheme for some farmers. Reconnaissance survey indicated that smallholding oil palm farmers (cultivating two hectares and below) were located in 20 communities around the Presco oil palm estates.

A two stage sampling technique was used in selecting the respondents. The first stage involved the selection of communities with out-growers to Presco and independent oil palm farmers (that is the ones not supported by Presco). This was found to be twelve (12)

and the second stage involved sampling 60% of the population. This gave 242 oil palm farmers.

Data Analysis: Data were analyzed using descriptive statistics such as frequency, tables, mean and standard deviation.

Per Capita Income and Per Capita Expenditure were estimated based on the adult equivalence of household size as follows:

$$\text{Per Capita Income (or Expenditure)} = \frac{\text{Total Income(or Expenditure)}}{\text{Adult equivalence of household size}} \dots\dots\dots (1)$$

In estimating adult equivalence of household size, The EU-equivalent scale was used for this purpose in which the first adult in the household counted as 1 unit, the next adult 0.5 unit each and each child under the age of 17 counted as 0.3 units as adopted by Amaza, *et al.*(2009)

Following Cahyadi and Waibel (2012) poverty line was derived using absolute poverty based on average income or purchasing power parity of US\$2.00 per person per day. Those whose income per day falls below \$2.00 were considered belonging to the base of the economic pyramid (BOP). The conversion of the

Nigerian currency (Naira) to US Dollar was based on the nominal exchange rate at the time of the survey which was one US Dollar to ₦200.00. Thus the purchasing parity of US\$2 became ₦400.00.

Food security status of the respondents was estimated using Food Consumption Score (FCS) developed by the World Food Programme (WFP) in 1996. The FCS aggregated household level data on the diversity and frequency of food groups consumed over the previous seven days, which was then weighted based on the relative nutritional value of the consumed food groups shown in Table 1.

Table 1: Food Groups and Assigned weights

Food Group	Weight
Main Staples	2
Pulses	3
Vegetables	1
Fruits	1
Meat/Fish	4
Milk	4
Sugar	0.5
Oil	0.5

Source: World Food Programme, 2008

Household's food consumption status was then determined based on the following thresholds: 0-21, Poor; 21.5-35, Border line; > 35, Acceptable.

3. RESULTS AND DISCUSSION

Socio-economic Characteristics of Farmers at the BOP and Others

Table 2 shows that about 55% of the respondents live at the bottom of the economic pyramid, earning per capita income less than \$2 per day. The proportion of sampled males and females at the base of the pyramid were about 89% and 11% respectively, with about 90%

married. Only about 32% joined cooperative societies, and 38 % participated in the Presco out-grower scheme while the remainder of the base of the pyramid farmers were independent oil palm growers. The BOP farmers also had low access to credit (15.2%) and poor level of fertilizer application (40.2%).

Other social-economic characteristics of oil palm farmers at the bottom of the pyramid included – medium adult equivalence household size with a mean of 7, small-sized farms with an average of 1.02 hectares and medium level of education with mean schooling age of 9.7 years. Majority (75.8%) also did not have additional source of income outside farming.

Table 2 Socio-economic Characteristics of Farmers at the BOP and Others

Characteristic	BOP farmers (<\$2/day) N = 132(54.5%)	Others(>\$2/day) N = 110(45.5%)	All Groups N = 242(100%)
Male	118(89.4%)	96(87.3%)	214(88.4%)
Female	14(10.6%)	14(10.6%)	28(11.6%)
Married	120(90.9%)	96(87.3%)	216(89.3%)
Others(Single/widows)	12(9.1%)	14(12.7%)	36(14.9%)
Cooperative Membership	42(31.8%)	95(86.4%)	137(56.6%)
Non-membership	90(68.2%)	15(13.6%)	115(47.5%)
Scheme Participation	50(37.9%)	100(90.9%)	150(62.0%)
Non-participation	82(62.1%)	10(9.1%)	92(38.0%)
Fertiliser Application	53(40.2%)	96(87.3%)	149(61.6%)
Non-application	79(59.8%)	14(12.7%)	93(38.4%)
Access to Credit	20(15.2%)	76(69.1%)	96(39.7%)
Non-access to Credit	112(84.8%)	34(30.9%)	146(60.3%)
Household Size	7.02	6.21	6.52
Farm Size (Ha)	1.02	2.21	1.67
Years of Schooling	9.71	11.82	10.86
Age(Years)	56.00	50.60	53.00
Farming Experience	14.85	11.26	13.20
Off-farm Income Source	32(24.2%)	62(56.4%)	94(38.8%)
No Off-farm Income	100(75.8%)	48(43.6%)	148(61.2%)

Source: Computed from Survey Results, 2015

Mean Income (₦) of BOP Households and Others

Table 3 portrays the mean annual household income of oil palm farmers at the bottom of the pyramid (BOP) and others. An average BOP household had an annual income of about ₦ 684,000 (or per capita income of about ₦ 98,000). This translates to about ₦ 268 (\$1.34) per person per day. This is grossly inadequate for survival and falls short of the National monthly minimum wage of ₦ 18,000 (\$90.00) or ₦ 600 per day (\$3.00) in Nigeria at the time of the survey. For other households, on average, the daily per capita income was ₦ 470.99 (\$

2.35). This is about 76% higher than that of BOP dwellers.

The oil palm farmers had varied sources of income: oil palm farming, other farming enterprises, and non-farm activities (like paid employment, transportation, trading, etc.). But the greater share of the income of BOP farming households came from different farming activities (89%), while only about 11% was obtained from off-farm activities. On the other hand, other farming households had the greater part of their income derived from oil palm farming (57%) and non-farm activities (38%).

Table 3: Mean Income (₦) of BOP Households and Others

Income Sources	BOP farmer (<\$2/day) N = 132	% Share of Income	Others(>\$2/day) N = 110	% Share of Income
Oil Palm Farming	336,641.48(\$1,683.21)	49.23	603,819.32(\$3,019.10)	56.56
Other Farm Income	273,522.68(\$1,367.61)	40.00	53,377.97(\$ 266.89)	5.00
Non-Farm Income	73,642.54(\$ 368.21)	10.77	410,362.03(\$2,051.81)	38.44
Total	683,806.70(\$3,419.03)	100.00	1,067,559.32(\$5,337.80)	100.00
Capita Income/Annum	97,686.67(\$ 488.43)		171,909.71 (\$ 470.99)	
Capita Income/Day	267.63(\$ 1.34)		470.99 (\$ 2.35)	

Source: Computed from Survey Results, 2015; Official Exchange Rate at 2015: US\$1 = ₦ 200

Daily Per Capita Income and Expenditure of the Oil Palm Farmers

Table 4 shows the income and expenditure distribution among the respondents. The richest 20% accounted for about 35% of the respondents' total income while the

bottom of the pyramid farmers (Q1 to Q3 earning less than \$2 or ₦ 400 per day) accounted for about 40% of the total income. However, the poorest of the poor (bottom 20%), accounted for only about 9% of the total income.

A similar trend is observed in terms of their expenditure. While the richest 20% accounted for about 29% of the total expenditure, the BOP households accounted for about 48%. But the poorest of the poor accounted for only about 14% of the total expenditure.

The results also showed something interesting about the likely household's savings (income in excess of expenditure) across the quintile groups. The first two quintiles (Q1 and Q2), the core BOP households, did not have savings; their per capita expenditures were in excess of per capita income by about 58% and 32% respectively. This implies that the core BOP community was in debt crisis. This financial constraint was addressed through borrowing from credit unions/cooperative societies, relying on remittance from relatives/children living outside the farming communities as well as pledging part of their future farm produce for cash to meet immediate needs and getting assistance from subsistence retailers. Some of these strategies are

consistent with the views of Mukherjee, Jebarajakirthy and Datta (2020) on how BOP community members in subsistence marketplace in India address their financial constraints. However, per capita income was in excess of per capita expenditure for quintile groups 3, 4 and 5. This implies that there is the likelihood of having savings among the households in the segments, which could be as high as 8.3%, 11.3% and 17.5% of per capita income for Q3, Q4, Q5 farmers respectively.

The aggregate income of all households at BOP was estimated to be ₦90,262,483.08 (\$451,312.42) per annum while the aggregate expenditure was ₦86,244,127.20 (\$431,220.64). This is a huge sum that service providers can take an advantage of to share in the sales volume that exists at the segment. There is also an opportunity to make the farmers at the BOP and members of their households to enhance their income by engaging in more productive off-farm activities.

Table 4: Daily Per Capita Income and Expenditure of the Oil Palm Farmers

Quintile(Q) Group	Per Capita Income (₦)	Capita Share of Income (%)	PerCapita Expenditure (₦)	Expenditure Share (%)
Q1 (Bottom 20%)	139.27(\$0.70)	8.60	219.70(\$1.10)	13.80
Q2	190.17(\$0.95)	11.75	251.09(\$1.26)	15.81
Q3	323.27(\$1.62)	19.98	296.36(\$1.48)	18.66
Q4	402.15(\$2.01)	24.86	356.80(\$1.78)	22.46
Q5 (Highest 20%)	563.08(\$2.82)	34.80	464.45(\$2.32)	29.24

Source: Computed from Survey Results, 2015; Official Exchange Rate at 2015: US\$1 = ₦ 200

Oil Palm Farmers' Consumption Basket (per capita expenditure/annum): Rich versus Poor

The oil palm farmers' expenditure basket indicates that food consumption contributes most to the annual mean

household expenditure of both BOP (about 59%) and the top 20% farmers (48%). This is followed by education and clothing. For the BOP farmers, the share of total expenditure on health, transportation and alcoholic drinks/tobacco was 2.2%, 5.7% and 4.5% respectively.

Table 5: Oil Palm Farmers' Consumption Basket (Share of expenditure/annum): Rich versus Poor

Expenditure Item	% Share of BOP	% Share of top 20%
Food and non-alcoholic beverages	58.92	48.35
Non-food: Education	7.95	9.52
Health	2.21	2.73
Clothing	7.26	10.11
Alcoholic	4.54	5.91
Drinks/tobacco		
Home repairs	1.67	2.30
Firewood/Kerosene	2.76	2.50
Electricity	2.25	5.38
Transport	5.70	7.50
Donations/Gifts	2.56	3.58
Others	3.18	2.12
Total	100.00	100.00

Source: Computed from Survey Results, 2015; Official Exchange Rate at 2015: US\$1 = ₦ 200

Food Consumption status of the oil palm farmers

Table 6 shows the distribution of the respondents' food consumption status based on their income groups. About 35% of the respondents are food poor while those at border line and acceptable level constituted about 36% and 29 % respectively. About 79% of the core poor (Quintile 1) households were food poor and about 58% of all BOP farmers were food poor compared to only 13%

for the relatively rich households. About 32% are equally both at the base of the pyramid and at border food security level, while those with acceptable food security level constituted only about 6%. This implies that majority of the oil palm farmers at the base of the pyramid (about 6 in every ten) are food insecure. Generally, only about 3 in every ten of the respondents (Income groups Q1-Q5) have acceptable food security level.

Table 6: Food Consumption Status Based on Income Quintile Groups

Food Consumption Status/Score (FCS)	Income Groups					Total	
	Q1	Q2	Q3	BOP(Q1-3)	Q4		Q5
Poor(FCS = 0-21)	38	25	14	77	8	0	85
Within (%)	79.2	56.8	35.0	58.3	13.3	0.0	35.1
Border(FCS=21.5-35)	10	17	15	42	28	18	88
Within (%)	20.8	38.6	37.5	31.8	46.7	36.0	36.4
Acceptable(FCS>35)	0	2	11	13	24	32	69
Within (%)	0.0	4.6	27.5	5.9	40.0	64.0	28.5
Total	48	44	40	132	60	50	242
	100%	100%	100%	100%	100%	100%	100%

Source: Computed from Survey Results, 2015

Asset-Based Wellbeing of BOP Farmers and Others

The descriptive data on asset components (% of respondents owning certain assets) in Table 7 indicate that BOP farmers were poorly asset-endowed. Less than 50% of the BOP farmers did not have improved housing characteristics (roofs are with thatches or leaking zinc roofing sheets, walls are not painted and the floor is either of mud or poorly cemented). Only few (20%) lived in houses with improved wall quality (blocks plastered with cement mortar and/or painted), while about 20 % had improved floor (flooring with cement, additional covering or tiles). Furthermore, about 42 % occupied at least two rooms, and about 15 % had improved roofing sheets like aluminum and asbestos.

On the basis of infrastructure and services, BOP farmers with improved cooking source (kerosene, gas, etc.) constituted about 15%; majority made use of

firewood, saw dust and a combination of firewood and kerosene. About 40% had improved sanitary facilities such as ventilated covered latrines and flush to sewage, while majority made use of bush, own or shared pit toilet. In addition, about 57% of the BOP farmers had access to the use of improved water quality (covered wells and public/ private boreholes). Others have uncovered wells or obtain water from stream and river. The lack of access to improved sanitary facilities and safe water by majority of the BOP farmers has serious health implications since the households are likely liable to experience various types of water borne diseases common to those depending on stream water for drinking and cooking. Moreover, only about 43 % had access to electricity supply (own or shared connections obtained from the public supply and/or private generator).

Table 7: Asset Wellbeing Indicators of BOP farmers and others

Asset components	BOP Farmers % of Respondents	Others % of Respondents
<i>Housing Characteristics</i>		
Improved roof quality	15.00	54.60
Improved wall quality	20.40	69.30
Improved floor	45.30	72.00
Dwellings with 2 rooms and above	41.70	86.70
<i>Infrastructure and services</i>		
Improved cooking source	15.20	62.00
Improved sanitary facility	40.00	87.00
Improved water quality	57.30	87.30
Access to electricity	42.70	89.10
<i>Ownership of household consumer durable</i>		
Radio	47.70	62.20
TV	52.20	98.30
Upholstery furniture	50.00	88.00
Bicycle	33.30	13.00
Motor cycle /motor car	20.30	58.50
Livestock	18.70	25.00
Wheel barrow	55.30	95.30
Refrigerator	25.30	80.00

Source: Computed from Survey Data, April – July, 2015

With respect to ownership of household consumer durables, only a small proportion of the BOP farmers acquired assets (TV - 52.2%, upholstery furniture - 50.0%, bicycle - 33.3%, motor-cycle/motor cars - 20.3%, wheel barrow - 55.3%, refrigerator - 25.3% and radio - 48.0%).

Coping Strategies

The respondents, especially those at the bottom of the pyramid have different coping strategies.

Majority (95%) indicated that the shortfall in income was usually addressed by borrowing, with the expectation to pay back the loan during the peak oil palm harvest season in the following cropping year. They also get assistance from subsistence retailers by buying items on credit and settling the indebtedness at suitable intervals (weekly or monthly). Child labour was also encouraged to generate additional income for the home. Many also consumed unbalanced diet in order to cope with food insecurity as well as taking two meals or one per day and growing a variety of food crops on every available land within their vicinity.

4. CONCLUSION AND POLICY IMPLICATIONS

The study examined the living condition (in terms of income, consumption profile, food security status and asset-endowment) of oil palm farmers at the base of the pyramid (BOP) located around Presco nucleus estates in Edo and Delta States, Nigeria. The findings indicated that about 55% of the respondents live at the bottom of the economic pyramid, earning per capita income less

than \$2 per day, with majority being males (about 89%) and about 90% married. Few (32%) are members of cooperative societies, and only 38 % participated in the Presco out-grower scheme. The BOP farmers also had medium adult equivalence household size with a mean of 7, small-sized farms with an average of 1.02 hectares and medium level of education with mean schooling age of 9.7 years. Moreover, majority (75.8%) did not have additional source of income outside farming, and few accessed credit (15.2%) while only about 40% applied fertilizer on their farms.

On average, the BOP farmers had income mainly from oil palm and other farming activities. The first two income quintiles (Q1 and Q2), the core BOP households, did not have savings; their per capita expenditures were in excess of per capita income by about 58% and 32% respectively. However, the aggregate per annum income and expenditure of all households earning less than \$2 totaled ₦90,262,483.08(\$451,312.42) and ₦86,244,127.20(\$431,220.64) respectively, with about 59% of the consumption on food and non-alcoholic drinks. Moreover, about 58% the BOP oil palm farmers were food poor, with majority also poorly asset-endowed based on limited ownership of household durable goods, poor housing conditions and sanitary facilities as well as limited access to energy sources for cooking and lighting.

The findings have some serious policy implications. First, BOP farmers not participating in the Presco out-grower scheme, not belonging to cooperative societies and/or not having accessed credit when such opportunities might be available are likely to remain in poverty except encouraged through their village heads

to participate in order to access facilities capable of enhancing their productive capabilities and income. Second, since little or no savings exist at the base of the pyramid and therefore the farmers do not have resources to invest in off-farm activities, government and NGOs should assist with credit facilities to diversify their operations and depend less on the income from farming. Third, the low level of household durables acquisition among the BOP farmers provides marketing opportunity for marketers of products like television, radio and so on which can enhance the wellbeing of the farmers.

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