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ASSESSMENT OF INCOME AND POVERTY STATUS OF RURAL AGRIPRENUERSHIP INVESTORS IN SOUTHEAST, NIGERIA

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ABSTRACT

The study assessed income and poverty status of rural agripreneurs in Southeast, Nigeria using 200 respondents selected through random sampling procedure. Data were collected using questionnaire administered in the form of interview schedule. Data collected were analysed using descriptive statistics such as frequencies percentages and FGT model. Results indicated that agriprenuership investors were mainly male with females accounted for 73%. Again, the investors were on average 42 years who were married with average household size of 7 persons. Furthermore, the agriprenuers investors have stayed in the agripreneurship for 11 years on average experience earning an average annual household income of ₦576,176.00. Result also showed that the incidence of poverty among male and female investors were 0.4222 and 0.1806 respectively with overall index of poverty incidence as 0.6027. The poverty depths were 0.2137 and for male and female rural agripreneurs. With the overall poverty depth index of 0.3443, the severity of poverty index was 0.1519 for male headed households and 0.1022 for female headed households with overall severe poverty index of 0.2541. The estimated Gini coefficient showed that income inequality existed among male and female rural agripreneurial investors with the index of 0.493 and 0.475 for female and male agriprenuers respectively. The study therefore concluded that rural agripreneurship investments have positively and significantly influenced agriprenuers income generation and poverty reduction in Southeast, Nigeria. The study recommended that policies designed to reduce the incidence of poverty must be hinged on creating favourable environment for investment in the agricultural sector.

Keywords: Poverty, Agriprenuership, Investment, Severity, Income, Inequality

INTRODUCTION

The role of rural agripreneurship in eradication of poverty and income generation cannot be undermined in any society. This is because agri-businesses create millions of jobs for citizens, returns for the business owners and government revenues for economic growth and development. Due to continuous rise in unemployment and poverty in Sub-Saharan Africa and Nigeria in particular, there have been several advocacies to promote agripreneurship in these countries in the recent times with a view of reducing rural poverty. Nigeria is primarily an agriculturally based economy, with about 70% of the population living in

rural area depending on agriculture and allied sectors for their livelihood. The reduction of poverty and income generation through agripreneurship will help Nigeria in developing the rural economy (Ogunleye, Aderibigbe, Lucas, Ishola, and Aderemi, 2020).

Agripreneurship entails the entire value chain from the input of raw materials to the final output wherein the finished products reach the ultimate consumers (Agbaeze, 2017). Agripreneurship operates on a new shape, scope, platform, and direction. It involves not just crop cultivation but incorporates the combination of agriculture and agripreneurship which converts agriculture into an enterprise, therefore, making it appeal to the modern and technologically developed stakeholders. Agripreneurship creates a business opportunity (such as value addition, global marketing, and high tech agriculture) that can be exploited to boost job creation, increase productivity and become a foreign income earner, thus its poverty reduction and income enhancement of the farm families (Ikenwa, 2017).

Southeast is dominated by people with high achievement, motivation and naturally endowed with agripreneurial opportunities. About 80% of farmers are smallholder farmers and are the main producers of 98% of the food consumed (Mgbenka and Mba, 2015). They are involved in the production, processing, storage and marketing of several agricultural products in varying degrees and have contributed to employment creation, poverty and hunger alleviation among rural household. Eze (2011) acknowledged the existence of agripreneurship opportunities in rural areas, stating that production, processing and marketing of yams, cassava and livestock are the common agricultural activities observed in most of the local government areas.

Existing studies on rural agriprenuership investment in Nigeria and southeast in particular are not only limited and restrictive but also have focused mostly on general knowledge about agriprenuership development. Consequently, upon the empirical evidences from previous studies, none seems to have investigated directly or linked their findings to income and poverty status of rural agriprenuership investors in Southeast Nigeria. This therefore create information gap that need to be filled, hence the study.

To successfully address the problem, the study: described the socio-economic characteristics of agripreneurs in the study area; and measured the income and poverty status of the agripreneurs.

METHODOLOGY

Study area: This study was conducted in Southeast Nigeria. The area is one of the six geopolitical zones of Nigeria and it comprises of five States, namely; Abia, Anambra, Enugu, Ebonyi and Imo. The area has a total population of about 22 million people, around 10% of the total population of the country who are mainly of Igbo extraction (Population of Cities in Nigeria, 2022). With an approximated landmass of 58,214.7 square kilometres, the area lies between longitude 60^0 50^I and 80 30^I E latitude 40^0 30^I and 70^0 5^I N.

Sampling Technique: A simple random sampling technique was adopted in the selection of the two hundred (200) agriprenuerial investors out of 400 registered agriprenuerial investors with Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) in Southeast, Nigeria.

Data Collection: Data used for this study were from primary source only and were collected using questionnaire administered in the form of interview schedule. This was successfully done with the aid of research assistants who were resident at the locations of the selected agriprenuers in Southeast Nigeria.

Data Analysis: Data collected were analysed in line with the stated specific objectives of the study. Thus, objectives I was achieved using descriptive statistics such as table, percentages, mean while objectives II was achieved using poverty index of Foster, Greer, Thorbecke (FGT) poverty model.

Model specification

Foster, Greer, Thorbecke Poverty index model

Empirical Model of Poverty index as applied by Foster, Greer, Thorbecke (1984). The Foster-Greer-Thorbecke (FGT) model was used to analyze poverty status of the rural agriprenuers. The FGT poverty index is generally expressed as thus (Akinbode, 2013):

$$(P)_{\propto} = \frac{1}{\mathrm{n}} \sum_{n=1}^{q} \left(\frac{\mathrm{Z} - \mathrm{Yi}}{\mathrm{Z}} \right)$$

Where

n – total number of households in population;

q – the number of poor households;

Z – the poverty line for the household;

Yi– per capita household income for ith farmer; i Y

α – poverty aversion parameter and takes on value 0, 1 and 2;

$\frac{Z-Yi}{Z}$ = proportion shortfall in income below the poverty line.

Decomposition of poverty index

Following Foster-Greer-Thorbecke (FGT) model, household poverty was decomposed into the following sub-units:

i **When α = 0, then FGT index was expressed as:**

$$(P)_0 = \frac{1}{n}\sum_{I=1}^{q}\left(\frac{Z-Yi}{Z}\right)^0 = \frac{1}{n}\sum_{I=1}^{q}\left(\frac{Z-Yi}{Z}\right)^0 = \frac{q}{n}$$

This is called the Incidence of poverty or head-count index, which measures the proportion of farmers that is poor or falls below the poverty line. This gives the head count ratio or the incidence of poverty which is the percentage of respondents that are poor or whose per capita household income is below the poverty line.

ii **When α = 1, then FGT index is expressed as:**

$$(P)_0 = \frac{1}{n}\sum_{I=1}^{q}\left(\frac{Z-Yi}{Z}\right)^1 = \frac{1}{n}\sum_{I=1}^{q}\left(\frac{Z-Yi}{Z}\right)^1$$

This is called Poverty depth or Poverty gap index, which measures the extent to which individuals fall below the poverty line as a proportion of the poverty line. It reflects both incidence and depth of poverty or the proportion of the poverty line that the average poor required to attain to the poverty line.

iii **When α = 2, then FGT index is expressed as:**

$$(P)_0 = \frac{1}{n}\sum_{I=1}^{q}\left(\frac{Z-Yi}{Z}\right)^2 = \frac{1}{n}\sum_{I=1}^{q}\left(\frac{Z-Yi}{Z}\right)^2$$

This is called Poverty severity index which measures the squares of the poverty gaps relative to the poverty line. The index measures the severity of poverty which is the mean of square proportion of the poverty gap. When multiplied by 100, it gives the percentage by which a poor household's per capita income should increase to push them out of poverty.

Measurement of Poverty Line

This was done to separate farming households into poor and non-poor groups. As a benchmark, two-third of the mean per-capita income was used as a threshold. Households whose mean per-capita income fall below the poverty line are regarded as being poor while those with their per-capita income is on or above the benchmark are non-poor.

$$\text{Household PerCapita Income(HPCI)} = \frac{Household\ Income}{Household\ Size}$$

$$\text{Total Household PerCapita Income(THPCI)} = \sum \text{HPCI}$$

$$\text{Mean Total Household PerCapita Income(MTHPCI)} = \frac{\text{THPCI}}{n}$$

$$\text{Poverty line (PL)} = \left(\frac{2}{3}\right)\ \text{(MTHPCI)}$$

RESULTS AND DISCUSSION

Socioeconomic Characteristics of Rural Agriprenuership Investors

Results indicated that agriprenuership investors were mainly male (73%) with 27% being female. This showed that men were more active in agriprenuership investment and therefore dominated agriprenuership investment than their female counterparts. The high dominance of males in the agriprenuership investment could be attributed to the dominance of males in the control of agricultural production resources such as greater access to investment capital than the females who have greater role in agricultural processing and household domestic activities. This agreed with the findings of Nwaigburu and Eneogwe (2020) who reported that agriprenuership investments were dominated by male due to their greater access to investment capital and agricultural production resources as a result of variation in culture and tradition which favoured the male investor compared to the female investors

The average age of the investors was 42 years. This implied that the investors were in their active age which implied that the age of the agripreneurs investor would influence their attitudes, motivation and behavioural pattern which in turn influence innovation adoption and sensitivity to risk (investment behaviour). Therefore, the age of an investor has been identified to have influence on the type of agribusiness invested by agripreneurs in Southeast. This agreed with Ebitu *et al.*, (2018) who reported that age of the agripreneuers is a factor the influences his or her investment decisions especially agricultural investment decision which is dominated by risks and uncertainties.

The marital status of agriprenuers would also contribute to the investment decisions of the household and the level of household income generation and poverty reduction. Thus, married agripreneurial investors have been identified to be principal investors in the key areas of agricultural subsectors The

preponderance of investors whose father/mother were agricultural investors has been identified to have had influence in the choice of their investment hence, such investors invested more in farm input supply and processing than any other subsector as, agricultural investors without agricultural investment history were more in marketing/distribution of agricultural products. Ebitu *et al.*, (2018) who reported that married agricultural investors were principal investors as they always pass investment ideas unto their children.

The mean household size 7 persons as observed in this study showed that agripreneurial investors in the study area have moderate household size. The moderate household size could mean diversified income sources from members of the household which would translate to incomes generation of the household and poverty reduction. The moderate household size observed in this study agreed with the finding of Adenutsi (2023) who reported that moderate household size ensures availability of labour for investors to address their labour challenges.

The agriprenuers investment experience was investigated and result showed an average of 11 years. This implied that the investors have sufficient experience thus, justifying the *a priori* that individuals with high experience in the industry may have a better understanding of market trends, risks, and opportunities, allowing them to make more informed and strategic investment decisions. Experienced individuals might have also developed specialized skills and knowledge that can help them identify profitable investment opportunities and effectively manage their investments in agricultural industry. On the other hand, individuals with limited or no experience in agribusiness investment may need to rely on external advice and support, potentially leading to more cautious or conservative investment decisions. This corroborated with the finding of Maiti and Bhattacharyya (2020), who reported that agricultural investors with more experience in agricultural business would be more efficient, have better knowledge of climatic conditions, better knowledge of efficient allocation of resources and market situation and are thus, expected to run a more efficient and profitable enterprise.

Income level of an individual is a key determinant of investment. Individuals with higher incomes have more financial resources available to invest in agricultural enterprises, whether it is for the purchase or rent of land, equipment, or expanding operations. On the other hand, individuals

with lower incomes may have limited resources and may need to start small or seek external financing options to make investments in agriculture. This is consistent with the findings of Asamoah (2020) who reported that agricultural investors with higher farm income would easily be involved in entrepreneur activities than those of their counterpart who have poor farm income. On this, the average annual household income was ₦576, 176.00k. This is relatively low considering the economic situation of the country Nigeria.

Membership of cooperative society has been identified as one of the key factors in investment especially investment in agricultural subsectors. This could be attributed to the fact that resources of the co-operators are pooled together to achieve business objectives at minimum cost through bulk discount. This corroborated with the finding of Idowu *et al.* (2020) who reported that membership of cooperative society affords agricultural investors the opportunities of sharing information on modern production practices and project a collective demand.

Table 1: Socio-economic Characteristics of Agriprenuership Investors

Socio-economic Characteristics	Freq. (N=200)	Percentage (%)	Mean
Sex			
Male	145	72.50	
Female	55	27.50	
Age			
Less than 30	14	7.00	
30-40	67	33.50	
41-50	93	46.50	**42.00**
Above 50	26	13.00	
Marital Status			
Married	121	60.50	
Single	45	22.50	
Separated	24	12.00	
Divorced	10	5.00	
Household Size			
Less than 5	54	27.00	
5-10	135	67.50	7.00
Above 10	11	5.50	
Education Level			
No formal education	12	6.00	
FSLC	26	13.00	
WASC/SSC	42	21.00	
OND/NCE/ HND	104	52.00	
B.Sc and above	16	8.00	
Annual Income of the Household			
Less Than 500,000	60	30.00	
500,000-600,000	35	17.50	

601,000-700,000	17	8.50	₦576,176.00
Above700,000	88	44.00	
Experience in Agriprenuership Investment			
Less than10	113	56.50	
10-15	63	31.50	11.00
Above 15	24	12.00	
Membership of Cooperative			
Yes	169	84.50	
No	31	15.50	

Source: Field Survey, 2024

Income and Poverty Status of the Agriprenuership Investors

The income and poverty level of the rural agripreneurial investors were analysed using FGT model and Gini-coefficient as earlier stated and results were presented in Table 2, Figure 1 and Figure 2 using the following indicators – the incidence of poverty, poverty depth and severity of poverty. Result showed that, the index of prevalence or incidence of poverty among male and female investors were 0.4222 and 0.1806 respectively. This means that about 42% and 18% of male and female agripreneurial investors were poor or have their per capita income less than the poverty line. The result showed that, in the rural areas male agripreneurs were more vulnerable to poverty than their female counterparts in the study area. The findings were in agreement with the findings of Adetayo (2020), who reported that, the culture and the societal value prevailed in the study area could be the principal contributor to this result. The overall index of poverty incidence was 0.6027 which indicated that about 60% of rural agripreneurial investors are poor or have per capita income below the poverty line. This scenario is a threat to future agricultural entrepreneurship sustainability in the study.

The result also showed that the poverty depths were 0.2137 for male rural agripreneurial investors and 0.1306 for female rural agripreneurial investors. This implied that, about 21% and 13% of per capita income is needed to bring poor male and female rural agripreneurial investors from poverty, and that poverty incidence is

more among male agripreneurial investors compared to female agripreneurial investors in the study area. The overall population poverty depth index stood at 0.3443 which showed that about 34% of their per capita income is required to push poor rural poor agripreneurial investors from below poverty up to the threshold poverty line income in the study area.

The severity of poverty index was 0.1519 for male headed households and 0.1022 for female headed households in Southeast, Nigeria. This implied that male agripreneurial investors need about 15% quantum increase in per capita income to push them away from severe poverty. Similarly, the female agripreneurial investors needed about 10% quantum investment in their per capita income to push them from severe poverty.

An average severity poverty index of 0.2541 was observed for the sampled rural agripreneurial investors in the study area which implied that about 25% of their per capita income is required as minimum investment that would push rural agripreneurial investors' population trapped by severe poverty to the poverty line. This finding is in consonance with the findings of Akinbode, (2022) who reported that there was disparity in poverty status of male and female headed households in Southwest zone of Nigeria. The estimated Gini coefficient showed that income that inequality existed among male and female rural agripreneurial investors in Southeast. The result showed that income inequality is more conspicuous among female agripreneurial investors than the male agripreneurial investors. A Gini coefficient index of 49% for female agripreneurial investors was higher than 48% for the male agripreneurial investors in the study area implied that, farm income is more evenly distributed among the male agripreneurial investors than the female agripreneurial investors in Southeast Nigeria. This agreed with the findings of Alamgir, *et al.* (2021), and Muhammad *et al.* (2023) who reported that the income of male entrepreneurs are more evenly distributed compared to the female entrepreneurs especially in the agricultural sector due gender discrepancies in agricultural production.

Table 2: Poverty and Income Inequality Parameters of Rural Agripreneurship Investors

Indicators	Male	Female	Total
Incidence of poverty	0.4222	0.1806	0.6027
Poverty depth	0.2137	0.1306	0.3443
Poverty severity index	0.1519	0.1022	0.2541
Poverty line income	11428.57	11428.57	11428.57
Population Mean per capita income	17057.57	17057.57	17057.57
Total respondents	258	102	360
Farming households under poverty line	152	65	217
Farming household above poverty line	100	43	143
Gini Coefficient	0.475	0.493	0.968
Gini Coefficient index (%)	47.50	49.30	96.80
Mean per capita income of poor	13850.76	11157.09	25007.85

Source: Field Survey, 2024

Poverty and Income Inequality of Female Rural Agripreneurial Investors

The poverty and income inequality of female rural agripreneurial investors were graphically presented using the Lorenz curve as presented in Figure 1

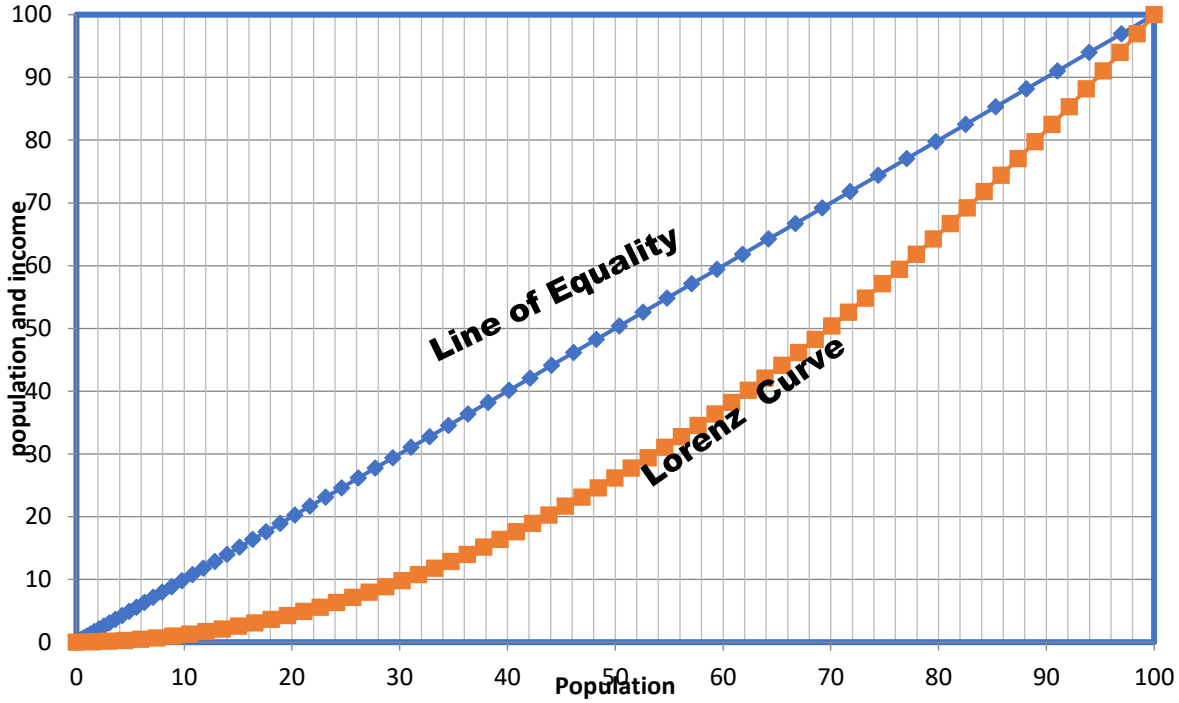

Figure 1: Poverty and Income Inequality of Female Rural Agripreneurial Investors

The analysis of the poverty and income inequality of female rural agripreneurial investors as shown in Figure 1 showed Lorenz curve was convex and far away from the line of equality. This show that the income distribution of female agripreneurial households in the study area was at high inequality. In the Lorenz curve of income distribution, income inequality is relatively high, though agripreneurial investors' households have different land areas and household size. This could be attributed to the dependency of Southeast on agriculture and entrepreneurial activities. The inequality gap could also imply the difference in agricultural resources control among gender and the discrepancies in gender productivity in agricultural productions that translated to high variation in income of household especially female headed household in the study area. From the curve, it was also observed that agripreneurial investors' with small household size had lower income, whereas those with higher household size had high income. Therefore, increase in household size would imply high income and the closer the Lorenz curve to the equality line (45^{o} line).

4.4.2 Poverty and Income Inequality of Male Rural Agriprenural Investors

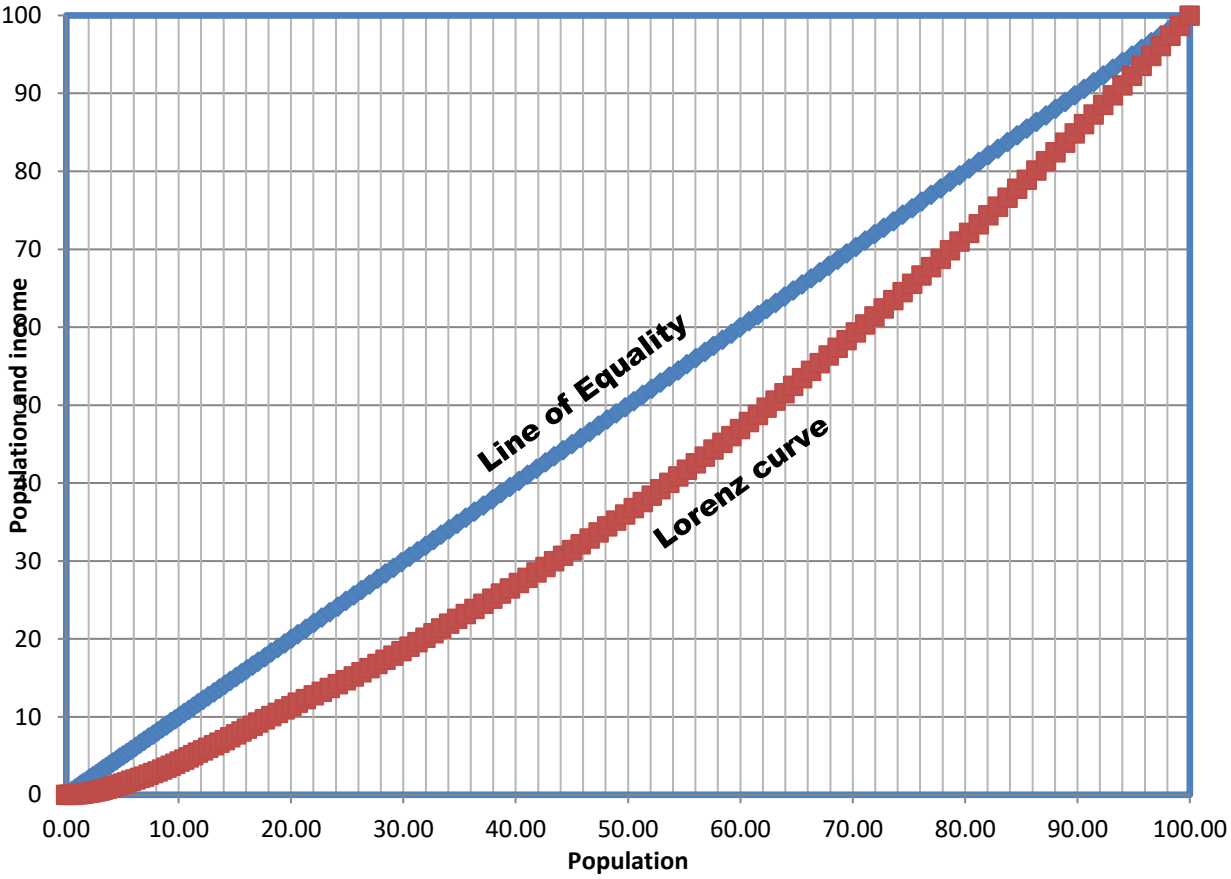

Figure 2: Poverty and Income Inequality of Male rural Agriprenural investors

In Figure 2, the Lorenz curve was almost parallel to the line of equality, this show that the income distribution of male headed agripreneurial households in the study area was low inequality. In the Lorenz curve of income distribution, income inequality is relatively low, even though agripreneurial investors have different household sizes. This could be due to the contribution of family labour and synergy in production due to high number of persons in their households. The male could also engage themselves in other off farm jobs in addition to income from wives, and children which play a major role in increasing the household income. This accounted for the closeness of the Lorenz cure to the equality line (45^{o}).

CONCLUSION

From the findings of the study on the assessment of income and poverty level of rural agripreneurial investors in Southeast,

Nigeria, it was concluded that there is high prevalence of poverty and income inequality among agripreneurial investors in Southeast, Nigeria

Recommendations

Based on the findings, the following recommendations were made:

i Empowering and strengthening of agripreneurial investors groups/social capital formation in the rural communities will help to reduce poverty and in-come inequality among rural agripreneurial investors.

ii The agricultural extension system in Southeast should be strengthened to educate rural agripreneurial investors on nature of investment to embark on order to improve their income generation.

iii Government should increase programmes on poverty alleviation, especially those targeting agripreneurial investors and their area of engagement in the agricultural entrepreneurship.

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