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ANALYSIS OF INCOME INEQUALITY AMONGST RICE FARMERS IN OHAOZARA LOCAL GOVERNMENT AREA, EBONYI STATE.

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ABSTRACT

The study analyzed income inequality amongst rice farmers in Ohaozara Local Government Area of Ebonyi State Nigeria. The specific objectives were to describe the socio-economic features of the rice farmers, analyze income inequality of the rice farmers, estimate costs and return of rice, determine the effect of socio-economic characteristics of rice farmer on output, determine the factors affecting income inequality and identify the constraint to rice production in the study area. A sample size of 60 respondents were selected through multistage and random sampling techniques. Data were collected using a well-structured questionnaires and scheduled visit. Data were analyzed using descriptive statistics, gini coefficient model, costs model, Ordinary Least Square multiple regression analysis and multi-linear regression analysis. The results showed that the mean age of the respondents was 45.2 years, mostly male, mostly unmarried, having mean household size of 3.9 persons per household, mean farm size of 3.7 hectares and mean farm experience of 9.3 years. The results further showed that the respondents have other sources of income which such as trading, agro processing, transporters and security work. The results of the income inequality showed that a coefficient of 0.51 income inequality for low income earned respondents and 0.71 income inequality for high income earned respondents. The further showed that income inequality of the entire respondents was 1.22. The study recommended that. Enterprise development training particularly for rural farmers especially in value added activities and value chain activities such as, input suppliers, food processing and packaging will help to reduce income inequality. Secondly, government policies targeted at improving farmers' welfare should be strengthened in order to boost farmers' income and thus closing up the gap of income inequality.

Keywords: Income inequality, gini coefficient, analysis of rice farmer

INTRODUCTION

Agriculture is regarded as the mainstay of every nation economy, it plays an important role in economic development of Nigeria. It is also regarded as the most prominent livelihood activity of most rural dwellers. The sector is known to employ more than 70 % of the rural population and is a major absorber of labor during period of economic recession to reduce the level of poverty during the period (Akpan, & Udoh, 2016). Given the present level of poverty and income inequality common among farming population in the country; in attempt to diversify sources of revenue generation among farmers, considering the crude oil price volatility, agricultural sector is the preferred area of intervention (Duniya, & Rekwot, 2015).

Despite several incentives and interventions of the governments at various levels to expanding markets potentials for agricultural commodities in the country especially rice production; the poverty status of rural farmers has steadily declined in recent years as evidenced by increasing involvement of farmers in off farm income generating activities to generate additional income to meet the financial demand of their households (Akpan, Inimfon, Samuel, & Damian, 2015). Despite years of commitments in

agricultural researches and development through enunciation of poverty alleviation programs and institutions with evidences of achievements; hunger and income inequality have triumph over majority of farmers in Nigerians making them vulnerable to poverty and food insecurity (Duniya, & Rekwot, 2015).

These have raised a great concern as majority of farmers in the rural areas are poor, experiencing low production output and their income not equally distributed because of their level of production. Income inequality has been a problem affecting every nation of the world including Nigeria and her States in general and it has become a part of the greatest challenge facing mankind today all over the world (Akinlade, Adeyonu, and Carim-Sanni, 2015). The world today faces problems of inequality; one of such problems is income inequality (Pratysto, and Panjaitan, 2019).

Income inequality refers to the size of the gap between the richest and poorest members of society; lower-income consumers within rich nations consume lower-quality diets than do higher-income consumers, buying more lower-cost items with spending a greater proportion of their food (Dennis, 2015). This resulted to the reason why low income rice farmers consume

most of their production and have little or nothing to improve their income while the high income rice farmers expand their production to generate high income; uneven distribution of household or individual income from various economy activities is called income inequality (Ling, Osman, Muhammad, Yeng, & Jin, 2016).

According to (Nnamdi and Ewubare, 2020), income inequality has been described as the difference in per capita income of household across populations within or across a country. The income inequality is closely related to economic efficiency in the use of resource, which is limited based on economic efficiency criteria; while this may benefit some people, it may also harm some people (Militaru & Stanila, 2015). The issue of a fair income distribution has always been, and is at the heart of, scientific research, owing to the fact that fair income distribution in the economy is a motivating factor for its legalization, effective employment and business activities, and, consequently, for the social and economic development of the state and regions. The issue of income distribution across households, Nigeria also faces a problem of income distribution among the factors of production (Mishchuk, Yurchyk, and Bilan, 2018). A growing body of evidence suggests that rising influence of the rich and stagnant incomes of the poor and middle class have a causal effect on income inequality crises, and thus directly detrimental to short and long-term growth. In particular, studies have argued that a prolonged period of higher inequality in advanced economies was associated with the global financial crisis by intensifying leverage, overextension of credit, and a relaxation in mortgage-underwriting standards, and allowing lobbyists to push for financial deregulation (International Monetary Fund, 2015).

The increasing level of income inequality has been a concern to policy makers for a long time in Nigeria. This relationship is not surprising since income inequality is positively related to poverty, as the rate of inequality rises; poverty rate also increases (Makoudjou, Levang, and Chupezi Tieguhong, 2017). In an effort to improve the income of farmers through agricultural activities, rice being a critical sector and among agricultural commodities under Agricultural Transformation Agenda can serve as a means of conserving foreign exchange of the majority of rice farmers, improve their income distribution and also improve the nation's economy. Several micro-enterprises, especially, those involve in pre and post-harvest handling of rice can become major component of reducing income inequality and contribute to economic development of countries such as Nigeria (Isaac, Gerald, Etonam, and Ernest, 2016).

Rice has been a key focal commodity, as consumption is estimated to be rising at 5.1% annually and production is expected to reach 36 million metric tons (MT) by 2050 (Federal Ministry of Agriculture and Rural Development (FMARD) 2011; Johnson &

Masias, 2017). In the last few years, the production of rice has witnessed some remarkable developments especially in Ebonyi State, this is due to Federal Government interventions. This culminated to the drop in rice importation by 300,000 tons in 2016 (United States Department of Agriculture, 2017).

Despite all these programs and policy, the quality of rice has become an important issue among Nigerian consumers who clearly show strong concern for imported rice, because of its quality in terms of cleanliness (West Africa Rice Development Association, (WARDA), 2015). The competitiveness of the local rice and the foreign rice has dwindled the income generation of most rice farmers in Ebonyi State thereby worsening income inequality of the rice farmers even in Ohaozara Local Government Area of Ebonyi State, Nigeria. As one of the local Government Areas in Ebony State that produces rice, despite the level of rice production, the farmers in the L.G.A., the farmers are characterized with income inequality low productivity and poor post-harvest handling of the product. Most of the farmers have limited knowledge on post-harvest handling; and this has affected their productivity leading to lack of access to market and dwindling income. According to Obasi and Enyia, (2016) lack of knowledge on post- harvest handling, technology and infrastructure are identified as constraint to improving agricultural productivity. In recent time, government through her effort to encourage locally produced rice through ban on imported foreign rice, the price of locally produced rice in Ebonyi skyrocketed, this however has not reflected on the income of the rice farmer in the State as income inequality and poverty still persist among the rice farmers. Several studies have been carried out by (Anigbogu and Uzodu, 2019; Nwaobiala, 2016; Kware, 2015; Agu and Ogbuide, 2015; Ayiinde *et al* 2012) and many more to address the ugly situation of this inequality; constructive suggestions have been raised but not have been able to full address the disparity in income distribution among farmers especially in Ohaozara L.G.A. In trying to resolve these problems and close the gap that existed in income inequality among rice farmers in Ohaozara Local Government Area of Ebonyi State, Nigeria, the following objectives will be considered to achieve the aim of this study; to describe the socio-economic characteristics of rice farmers in the study area, to analyze the income inequality of the rice farmers in the study area, to estimate the costs and return of rice production in the study area.

METHODOLOGY

This study was conducted in Ohaozara Local Government Area of Ebonyi State, Nigeria. Ohaozara is a [Local Government Area of Ebonyi State, Nigeria](#). Its headquarters is in the town of Obiozara Uburu. It lies within Longitudes 7°30' E and 8°30' E and Latitudes 5°40' N and 6°45' N (Okereke, 2012). It has an area of 312 km² and a population of 148,626 (National Population Commission, 2006); and

estimated population of 401,300 (NPC, 2012). The Local Government has three autonomous communities namely; Okposi, Uburu and Ugwulangwu (EBADEP, 2005).

Ohaozara LGA is richly endowed with salt deposits and the mining and refining of the mineral are key economic activities in the LGA. Farming is also a critical economic engagement of the dwellers with crops such as yam, cassava, rice, and maize which are grown in appreciable quantities within the LGA. The people also engage other activities such as trade and hunting.

Multi-stage survey and random sampling technique was adopted for this study. Firstly, two communities were randomly selected from the three autonomous communities. Secondly, three villages each were selected randomly from the two communities, making a total of six villages.

Lastly, ten rice farmers will be randomly selected from the lists of registered rice farmers making a total of sixty rice farmers. However, the sixty rice farmers selected formed the sample size for this study.

This study made use of primary data for its analysis. Data were collected through a well-structured

questionnaire and face to face interview. Data collected include the socio economic characteristics of the rice farm, quantity of rice produced, and quantity sold and net income generated.

Data were analyzed using descriptive statistics such as frequency, mean, percentage. Gini- coefficient model. The gini coefficient model as used by Azeez *et al*, (2018). The model is specified as follows;

$$G.C = \frac{2}{n^2} \mu \sum_{i=1}^n (I - \frac{n+2}{2}) Y_i \quad \text{Equ 1}$$

Where:

GC = Gini coefficient

n = number of sample size

μ = mean of distribution

Y_i = income of the rice farmers

I = corresponding rank of sources of income

Decision rule

If G.C < 0.2; implies perfect income equality

If G.C is within 0.2 – 0.3; implies relative income equality,

If G.C is within 0.4 – 0.5; implies big income gap or inequality,

If G.C > 0.5; implies severe income gap or inequality.

RESULTS AND DISCUSSION

Socio-economic Characteristics of Food Crops Farmers

Table 1: Distribution of food crops farmers according to socio-economic characteristics

Variables	Frequency	Percentage (%)
Age		
20 – 39	14	23.3
40 – 59	45	75.0
69 – 69	1	1.7
Mean	45.2	
Gender		
Male	42	70
Female	18	30
Marital status		
Single	49	81.7
Married	8	13.3
Divorced	3	5
Widowed	0	0
Household size		
0 – 2	11	18.3
3 – 5	40	66.7
6 – 8	9	15
Mean	3.9 persons	
Farming experience		
0 – 5	17	28.3
6 – 11	9	15
12 – 17	34	56.7
18 – 23	0	0
Mean	9.3 years	
Farm size		
1 – 2	6	10
3 – 4	41	68.3
5 – 6	13	21.7
Mean	3.7	
Total	60	100

Source: Field Survey Data, 2021

Table 1 showed that in the study area the mean age of the respondents was 45.2 years. This implies that the respondents were in their useful and youthful age, agile and still very active in rice farming in the study area. Age is an important factor in agricultural production. Agricultural activities are associated with stress, use of physical strength and requires farmers with youthful age who can apply their strength in production activities especially rice production. This result collaborates the finding of (Anyiam, Nwaiwu. Obi-Nwandikom and Ibeagwa, 2021) that farmers between the ages of 40 years to 50 years are still active to produce the needed farm output because they possess the necessary strength needed for crop production.

The table further showed that 70% of the respondents were male while 30% were female. This implies that in the study area, rice farming is male dominated. This agreed with the findings of (Aromolaran et al., 2017), who reported that male farmers have access to land more than the female farmers. That was the reason why the percentage of male that cultivate rice in the study area are higher than the female.

Table also showed that 13.3% of the respondents were married, 81.7% were single and 5% were either widowed or widower. This implies that majority of

rice farmers in the study area were mostly unmarried farmers. This results is in contrast to the result of (Anyiam *et.al*, 2019), which they reported that farming activities in the rural communities were mostly dominated by married persons, which they involved to improve the well-being of their households.

Moreso, the table also showed that the mean household size was 3.9 persons per household. This implies that the respondents have small household size of approximately 4 persons per household. Households with large number of persons spend less in the cost of hiring labor for production activities.

The mean farm size of the respondents was 3.7 hectares. This implies the respondents were operating on a medium scale of approximately 4 hectares of farm land. This shows that the respondents in the study area have gone beyond subsistence level of production.

The mean farming experience of the respondents was 9.3 years. This implies that the respondents in the study area were well experienced in rice farming having spent approximately 9 years in rice farming. Experience help the farmers to effectively allocate resources in order to achieve optimum output.

Sources of Income

Table 2: Distribution according to sources of income

Source of income	Mean Income/month (₦)	Rank
Rice farming	930,853	11*****
Food vendor	25,000	5
Security	30,000	7*
Civil service	25,000	5
Motorcycle riding	25,000	5
Agric. Marketing	20,000	2.5
Trading	155,000	10****
Transporter	50,000	8**
Hunting	15,000	1
Carpentry	20,000	2.5
Agro. processing	85,000	9***

Source: Field Survey Data, 2021, *****= Highest rank, ****=second highest rank, ***= third highest rank, ** fourth rank and * = fifth ranked source of income.

Table 2 showed sources of income of the respondents according to their rank. Income from rice ranked highest, trading second highest, agro processing third highest, transporters ranked fourth highest and security ranked the fifth highest in income of the respondents in the study area. This implies that the

respondents have other sources of income to support their family, instead of depending on only one source of income. This implies that the respondents in the study area earned most of their income through rice production.

Analysis of Income Inequality

Table 3: Distribution according to analysis of income inequality

Level of Farm Income	Gini Coefficient	Frequency	Percentage
Low Income Rice Farmer	0.51	22	36.7
High Income Rice Farmer	0.71	38	63.3
Total	1.22	60	100

Source: Field Survey Data, 2021

The results of income inequality of the respondents in the study area were grouped into low and high income earned rice farmers. The results showed that the income inequality of the high income earned farmers were higher than low income earned farmers in the study area. The gini coefficient of the low income rice farmer was 0.51 which showed a severe income inequality also the gini coefficient of the high income rice farmer showed also a severe income inequality. The total income inequality of the respondents in the study area was 1.22, this implies that, income was unequally distributed in the study area. This is attributed to show that in the study area, the respondents do not operate in the same rice production capacity, hence do not earn the same income.

CONCLUSION

It was concluded in this study that the respondents were in their useful age, agile and still very active in rice farming, male dominated, and mostly unmarried youths participating in rice farming, having small household size of 4 persons per household, medium scale rice farmers, well experienced in rice farming, have other sources of income to support their family. The finding further showed that income inequality of high income earned farmers was greater than the low income farmer, showing that the respondents do not operate in the same level and do not earn the same income.

RECOMMENDATIONS

In line with the findings of this study, the following recommendation is made;

Enterprise development training particularly for rural farmers especially in value added activities and value chain activities such as, input suppliers, food processing and packaging will help to reduce income inequality.

Secondly, government policies targeted at improving farmers' welfare should be strengthened in order to boost farmers' income and thus closing up the gap of income inequality.

REFERENCE

International Monetary Fund, (IMF, 2015). Inequality: Causes and Consequences, A Report on Inequality, 2015 p 55 – 104.

Mishchuk, H.; Yurchyk, H.; Bilan, Y.(2018) Shadow incomes and real inequality within the framework of leadership and social change. In Leadership for the Future Sustainable Development of Business and Education; Springer Proceedings in Business and Economics; Strielkowski, W., Chigisheva, O., Eds.; Springer: Cham, Switzerland, 2018.

Militaru, E., & Stanila, L. (2015). Income Variability in Romania: Decomposing Income Inequality by Household Characteristics. *Procedia Economics and Finance*, 26(15), 227–233.

Kware, A. A. (2015). "Unemployment, Income Inequality and Poverty: The Hallmarks of the Africa's Largest and Strongest Economy: Nigeria," *Asian Economic and Financial Review*, 5(11): 1239-1250

Nwaobiala, C.U. (2016) Determinants of Rice Output Among ADP Contact Farmers in Mining and Non Mining Locations of IVO L.G.A of Ebonyi State, Nigeria

Agu, D. O. and Ogbeide, E. N. O. (2015). "Poverty and Income Inequality in Nigeria: Any Causality?" *Asian Economic and Financial Review*, 5(3), pp. 439-452

Azeez, F. A., Ojo O. B., Olatunji B. T. and Adebayo A. S.(2018).Sources and Impact of Income Inequalities among Rura Households: A Case Study of Forest Related Entrepreneurs in South-Western Nigeria. *International Journal of Agriculture and Forestry* 2018, 8(5): 186-196

Anigbogu, T. U. and Uzundu, C.S.(2019) Determinants of Income Inequality Among Cooperative Farmers in Anambra State. *International Journal of Trend in Scientific Research and Development (IJTSRD)* Volume: 3 | Issue: 3 page 51 -58

Anyiam. K.H.; Nwaiwu, I.U.O.; Obi-Nwandikom, C.O. and Ibeagwa, O.B.,(2021) Determinants of Farmland Value in Imo State, Nigeria. *International Journal of Life Sciences Vol. 10. No.1. 21-27*

Anyiam, K.H., Igwe, K.C., Henri-Ukoha, A., Ibeagwa, O.B., Isaiah, I.G and Obi-Nwandikom, C.(2019), Determinants of Productivity of Food Crop Farmers in Ideato South Local Government Area of Imo State, Nigeria. *Delta Agriculturist* volume 11, No 2/3, Pp 81 – 88.

Akpan, S., & E. Udoh (2016). Farmers' Decision to Participate in Government Agricultural Programmes in a Volatile Political Environment: A Case study of Famers in the South-South region of Nigeria. *Russian Journal of Agriculture and Socio-Economic Sciences*, 5(53), 135–148.

Aromolaran, A.K., Alarima, C.I., Akerele, D., Soetan, O.J. and Alao, A.O.,(2017). Assessment of Food Security Among Farming Households in Agrarian Communities of Oluyole Area Oyo State, Nigeria. *Nigeria Journal of Rural Sociology* Volume 17(2), 1 – 8.

Duniya, K., & Rekwot, G. (2015). Determinants of Poverty among Groundnut Farming Households in Jigawa State, Nigeria. *Asian Journal of Agricultural Extension, Economics & Sociology*, 4(3), 224– 230

Akinlade, R. J., Adeyonu, A. G. and Carim-Sanni, A.(2015) Income inequality and poverty

- among farming households in Southwest, Nigeria. *International Journal of Agricultural Economics and Rural Development*, Volume 7(2), p 59 - 63
- Pratysto, T., & Panjaitan, I. (2019). Eradicating Income Inequality in Lower Middle- Income Countries. *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi dan Pembangunan*, 20(2). 222-231.
- Akpan, S., Inimfon, V., Samuel, U., & Damian, I. (2015). Determinants of decision and participaitlltion of rural youth in agricultural production: a case study of youth in southern region of Nigeria. *Russian Journal of Agriculture and Socio-Economic Sciences*, 7(43), 35–48.
- Dennis Gilbert(2015), in *International Encyclopedia of the Social & Behavioral Sciences (Second Edition)*, 2015
- Ling, S. C., Osman, A., Muhammad, S., Yeng, S. K., & Jin, L. Y. (2016). Goods and Services Tax (GST) Compliance among Malaysian Consumers: The Influence of Price, Government Subsidies and Income Inequality. *Procedia Economics and Finance*.
- Nnamdi, K. C . and Ewubare, D. B., (2020).Unemployment and Income Inequality in Nigeria. *Journal of Social Science and Humanities Research* Volume-5 (11); 3-25
- Militaru, E., & Stanila, L. (2015). Income Variability in Romania: Decomposing Income Inequality by Household Characteristics. *Procedia Economics and Finance*, 26(15), 227–233.
- Makoudjou, A., Levang, P. and Chupezi Tieguhong, J., (2017). The role of forest resources in income inequality in Cameroon. *Forests, Trees and Livelihoods*, pp.1-15.
- Isaac A., Gerald, A., Etonam, K. A. and Ernest, K.(2016) Postharvest handling practices and treatment methods for tomato handlers in developing Countries: A mini review *International Journal of Agronomy* 6:1-6.
- Johnson, M. & Masias, I. (2017). Assessing the state of the Rice Milling Sector in Nigeria: the Role of Policy for Growth and Modernization, Feed the Future Innovation lab for Food Security policy. *Nigeria Agricultural Policy Project Research Paper* 59
- Federal Ministry of Agriculture and Rural Development, (2011). “Agricultural Transformation Agenda: We Will Grow Nigeria’s Agricultural Sector.” Abuja: Presentation by Minister of Agriculture, Federal Government of Nigeria publication.
- WARDA. (2015). Essence of WARDA, the reason why Nigerians are hooked to rice women’s involvement in the agro-processing enterprise of the national special programme for food security in Imo State, Nigeria. *Report and Opinion*, 2(7): 69-73.
- Obasi, P. C. & Enyia, C. O. (2016). Analysis of Value Addition and Livelihood Diversification Among Fadama Users in Imo State, Nigeria. *Federal University Technology Owerri Journal* 2(2), 236 – 251.
- WARDA. (2015). Essence of WARDA, the reason why Nigerians are hooked to rice women’s involvement in the agro-processing enterprise of the national special programme for food security in Imo State, Nigeria. *Report and Opinion*, 2(7): 69-73.
- National Population Commission, NPC (2006) National population commission 2012
- Okereke, C.O.(2012) Sedimentary and Facies Analysis of Amasiri Sandstone, Lower Benue Trough, South Eastern Nigeria. Master’s Thesis, Nnamdi Azikiwe University Awka, Anambra State, Nigeria.
- Federal Ministry of Agriculture and Rural Development, (2011). “Agricultural Transformation Agenda: We Will Grow Nigeria’s Agricultural Sector.” Abuja: Presentation by Minister of Agriculture, Federal Government of Nigeria publication.