Rice Production And Food Security In Nigeria: A Synoptic History Of The Ikwo Brand

Kelechi J. Ani, Ph.D (In view)

Department of History and Strategic Studies, Federal University Ndufu-Alike, Ikwo, Ebonyi State, Nigeria. kani4christ@gmail.com

Gift Maxwell, B. A. (Hons.)

Alumnus, Department of History and Strategic Studies, Federal University Ndufu-Alike, Ikwo, Ebonyi State, Nigeria. maxyuche4991@gmail.com

Chinyere S. Ecoma, Ph.D (Corresponding Author)
Department of History and International Relations,
Veritas University, Abuja, Nigeria.

ecomachinyere@yahoo.com

ABSTRACT

Rice is a fundamental edible crop that is widely cultivated in different parts of Nigeria. It is a major source of carbohydrate. It is widely consumed by the rich and the poor in the country. This study presents a synoptic history of Ikwo people and their rice production experiences. It highlights the types of rice planted in the area and the changing patterns of rice production amongst the people. The study documents the role of Norwegian Church Agricultural Project (NORCAP) in promoting rice production in the clan. It also examines the challenges confronting rice production in Ikwo. The evolution of rice de-stoning, bagging of rice and change from the production of short species of rice to long species were also discussed in the study. Such problems as poverty, environmental dependency, especially on rainfall and lack of technical know-how were highlighted as challenges militating against the rise of a robust farming culture. The study recommends mechanised agriculture, adoption of modern irrigation strategies, agricultural seminars and workshops by agricultural extension as a way of improving food security in Nigeria.

INTRODUCTION

Rice production is one of the major economic activities of farmers in Ebonyi State, Nigeria. Farmers in the state engage in massive rice production and sales. In fact, just as agriculture is the main stay of the rural economy in Nigeria, rice production in Ebonyi commands significant position in the farming life of several communities within the state. The people of Ezza, Isu, Izhi, Edda and Ikwo are major rice producing communities in the state. That largely explains the decision of the Ebonyi State Government to build three major industrial clusters for Ebonyi rice repackaging in Edda, Izhi and Ikwo. Ikwo locality is endowed with fertile soil that makes cultivation of crops encouraging and the harvest bounteous in many cases. However, they like many other Nigerian communities face one or two problems associated with farming. Some of the problems that affect agricultural activities in Nigeria include flooding, which often destroys farmlands, absence of proper irrigation system and absence of incentives to farmers as well as lack of technical know-how.

Rice as it is known is cultivated in both swampy and upland areas. The cultivation of rice in the swampy area usually encounters serious challenges during the rainy season, especially when the farm is in close proximity to a river. Whenever the river overflows its bank, it washes away these rice farms. This has led to food insecurity amongst the Nigerian populace and that has negatively affected the income of farmers, especially as the people of Ikwo Local Government Area (LGA) largely depend on rice for both food and revenue generation. A central factor which influenced the quest for local rice was the geometric rise in the cost of foreign rice from seven thousand to twenty five thousand naira in many parts of the country, especially Ebonyi State, leading to scarcity of rice. Ironically, within the period of this rice scarcity and massive national hunger that was worsened by the impoverishing ideology of the change mantra introduced by President Buhari's government, traders from major cities of Lagos, Port Harcourt and Abuja came to Abakaliki rice mill to purchase trailer-loads of rice at any amount they could buy. It placed the cost of rice on the path of continuous inflation, leaving millions of impoverished Nigerians out of the game for proper diet.

It is noteworthy that another problem facing rice production in Ikwo LGA is that of the negative impact of global warming. In some seasons, when there is inadequate rainfall as at when due, the farmers usually experience poor rice yield, which creates shortage of food in the society. Therefore, the absence of irrigation has always been a major problem. Another problem facing rice production in Ikwo LGA is inadequate incentives from government, who are yet to live up to expectation. In fact, government at all levels has exhibited nonchalant attitudes towards rice producers. They only talk of grants, improved seeds and fertilizer supply while neglecting the rood to mechanised rice production in the country. There is also the problem of lack of technical know-how as many farmers lack the professional knowledge of mechanisation as well as the modern methods of enhancing productivity. The situation is worsened by the fact that government at all levels hardly finance agricultural extension officers to go to the interior areas and educate farmers on the latest strategies of improving their crop quality. This has drastically reduced the quantity of rice produced in the area and Nigeria at large, especially as most of the farmers engage in subsistence agriculture. The equipments needed for mechanisation cannot be found in many state capitals within Nigeria, let alone in the rural areas. The cost of purchasing them is completely beyond the reach of the average rural farmer. This study focuses on the changing patterns in rice production in Ikwo since 1960 and its relation to food security in the area in particular and Nigeria in general. The problems outlined above have overtime affected the growth of rice production in Ikwo, thereby making farmers to lose hope in rice production in the local government area.

METHODOLOGY

This study adopted the qualitative research approach. It used both primary and secondary materials in the course of its data collection and analysis. Oral interviews and focus group discussions were conducted using non-probability random sampling style. Under secondary sources, journals, monographs and secondary internet materials were utilised. The presentation of the study was carried out chronologically using descriptive method of historical narrative.

BRIEF HISTORY OF IKWO

Ikwo is one of the clans that make up the legendary enclave called Abankeleke, which is geographically located in the Northeastern part of Igboland. It occupies the South-eastern flank, sharing boundaries with Izhi in the North, North-East and North-West, Ezza in the West, Abaomege (Onicha Local Government Area) in the South-West, and Cross River State in the South-West, South-South and South-East. Ikwo land area is relatively smaller than those of its sister clans namely Ezza and Izhi. Judging from its physical features which include arable lands, flood plains and forests, it is estimated that about three-quarters of the entire land mass is uninhabited. The arable land that exist in upland and the swamp are considerably fertile and are used for cultivating food crops like rice, yam, cassava, cocoyam, potato as well as vegetables. They are generally called *egu*, which means farmland. The farmland, *egu*, is vast in the sense that the entire community can farm extensively and inexhaustibly on them.²

It is worthy to note that until recently, there had been little documented evidence about where and how the Ikwo clan came to be. Echiegu (1998) in his work observed similar flaw when he stated that "scanty availability of documentary sources and colonial intelligence have made the history of Ikwo which is also referred to as Ikwo Noyo to base more on oral tradition"³. There are three versions of tradition of origin of the Ikwo Noyo clan. The first narrates how a man called Envi Nwegu moved down to Amegu Izhi to settle. This man was said to have left no legacy except his only begotten son named Ekuma who later begot three sons namely Ezekuna, Noyo and Nodo. These sons of Ekuma dispersed and found their own villages with Noyo migrating to Ekpeli where he found the Ikwo clan. The second version traced the origin of Ikwo back to the same Ekuma but added that Novo and Nodo came from a separate mother than Ezekuna the first son. The third version of the origin of Ikwo has it that "the great ancestral father, Enyi Nwegu and his wife descended from heaven through a rope at Amegu Izhi" 4. There, they dwelt and begot Ekuma Enyi who in turn had three sons namely Ezekuna, Noyo and Nodo. "All the versions presented show that Ezza, Ikwo and Izhi belong to one father while Ngbo (Ngbolizhia) originated from Izhi. Each of the founding fathers migrated to a place which eventually became the ancestral home of the resulting clan. Hence, we have Ezza Ezekuna, Ikwo Novo and Izhi Nodo. Novo on his own side settled at Ekpeli. Being the first point of settlement, Ekpeli remains the ancestral home of Ikwo.

RICE PRODUCTION AND FOOD SECURITY

Rice which is also known as *Oryza sativa* or *oryzaspp* is the seed of a monocot plant and one of the major sources of carbohydrate. This all important crop has changed from being a ceremonial food to a staple food in many Nigerian homes. The place of rice in the food security consciousness of Nigerians cannot be over-emphasized. It would be recalled that when the President Muhammadu Buhari's administration banned the importation of foreign rice into Nigeria, it created a heavy multiplier effect on the cost of other food items. The price of a bushel of local (Nigerian) rice galloped geometrically from \$\frac{\text{N}}{2}\$,500 to \$\frac{\text{N}}{10}\$,000 while foreign rice was sold for as high as \$#25,000 per bag. The resultant effect was the

journeying of traders from Lagos, Abuja, Port Harcourt and other cities into the nooks and crannies of every remote place in Nigeria in search of local rice. There was widespread rice scarcity and it generated massive criticism on the governance and body politics of the Nigerian State. The fact that rice was nowhere to be found increased the overall national malnutrition level.

Apart from the ban placed on rice importation by President Muhammadu Buhari, his political disposition and policies led to the massive exodus of foreign investors, which created massive financial difficulty, price-hike and unlimited level of hunger and food insecurity in Nigeria. In less than two years of his administration, rice which was hitherto a staple food became food for only the rich class. It practically disappeared largely from the local and major markets in the country. There was high search for anything called rice leading to the massive search for and resort to local rice. Okonkwo (2016) revealed how the divisive and tempestuous politics in Nigeria neglected food production and thereby intensified food insecurity. The consequence according to him is food crisis aggravated since the year 2007. The government has been unable to save her nationals from imminent hunger and food shortages. It sought the solution in the importation of rice to cushion the effect of global crisis for which reason it entered into bilateral agreements with the reluctant Asian governments of India, Indonesia and Malaysia, placing an order of \text{\$\text{\text{\$\text{M}}}80\$ billion for the commodity⁵. Unfortunately, the rise in dollar in relation to the naira in the international market, and the increasing drowning of Nigeria into recession made a mess of the waiver that was given to the rice importers as the price of foreign rice continued to rise. The implication was that importers sought every kind of deal with smugglers and all those operating in the informal international markets, especially those within the international border areas. In addition, Abubakar Mohammed, Chairman, Rice Processors Association of Nigeria (RIPAN) and some members of the organisation raised alarm in 2016 over the heavy rate of rice smuggling from the Republic of Benin, Niger and Cameroon into Nigeria. He maintained that investigations revealed that parboiled rice is imported at little or no duty rate into the above countries and then pushed-down to Nigeria, hence, Abubakar states that "1 million Mt of parboiled rice are berthed at Republic of Benin"⁶. The group (RIPAN) further maintains:

We have it on good authority that the governments of those countries provide the smugglers with necessary assistance such as warehousing facilities, local transporting logistics among others, because of the import duties accruing to the treasuries. However, the combined investment of (Nigerian) local rice producers of over \$\frac{1}{2}00\$ million (worth) is threatened because of smuggling activities and if the menace is not checked, it would kill off the huge investments made by the federal government in the various rice intervention programmes. It would also kill the huge investment of the private sector stakeholders in the rice value chain and undermine the zeal and efforts of over 25 million Nigerian farmers across the country.

The demand for rice has increased at a much faster rate in Nigeria than in other West African countries. For example, in the 1960s, Nigeria had the lowest per capita annual consumption of rice in the sub region, averaging 3kg. Per capita consumption levels grew significantly at 7.3% per annum, averaging 18kg in the 1980s and 22kg between 1995 and 1999. By 2008, it rose to 32kg with per capita consumption in the urban area averaging 47kg⁸. This is not a different case in Ikwo and Ebonyi State in general. There is a significant increase in rice consumption in Ikwo. With such increase in the rate of its consumption, it became expedient for the increase in the cultivation of rice so as to meet up with its demand. This development

heralded the scenario of rice cultivation being a strong economic activity in Ikwo in which there is now massive engagement of the people in the production process. A number of youngsters do not further their education anymore as a result of their commitment to rice production but majority of them shun rice farming, seeing it as dirty and herculean in nature. Some give assistance to their parents, while some others are independent cultivators but majority prefer to engage in *Okada* as well as *Keke* businesses in semi-urban cities.

Ikwo is one of the largest producers of rice in Ebonyi State⁹. In Ikwo, rice mills are located in different villages, while the Ebonyi State Government built a major rice company that produces the Ebony Rice in the area. Following the data received from interviews and focus group discussions, it could be argued that over 60-70% of the inhabitants of the Nwakpu and Onu Ebonyi Okpira areas of Ikwo engage in rice production. It is pertinent to note that there are also consultants in rice farming in the local government area. Most times, consumers eat rice not knowing that they are not the same species. Rice species abound. Some species thrive in swampy farms while others thrive in upland farms. There are over 40,000 species of rice cultivated in the outside world but not all are cultivated in the Ikwo. The following are some of the species cultivated in Ikwo Local Government Area:

- ITA 306–3 months duration
- ITA 151–3 months duration
- ITA 1–3months duration
- FARRO (Federal Agricultural Rice Research Oryza) 15–4 months duration
- FARRO 13–4 months duration
- FARRO 11 (dual purpose variety from China both swamp and upland)
- Tox 8–4 months duration
- Tgina– 5-6 months duration
- Mas 2041–5-6 months duration
- SML– 5-6 months duration
- BG 79– (British Guiana- British rice)
- BG 90-1 old variety for swampy area
- BG 90-2 old variety for swampy area
- IRRI (Irish Rice Research institute) 8 old variety for swampy area
- IRRI 5 is the last of the brand of rice currently cultivated in Ikwo¹⁰.

With the knowledge of all these species of rice that thrive in Ikwo, one can authoritatively say that Ikwo can be called "Nigeria's Thailand". This is because of their expertise and dedication to rice production. The processes involved in rice production differ according to the species of rice, choice and tools within the reach of the farmer. The rice farmers also engage themselves in selling their product. This has overtime served as a viable business because of its profitability. For instance, during the Nwakpu market days, rice sellers come in large numbers to sell the products they have produced in the previous farming season(s).

NORCAP AND ITS CONTRIBUTION TO RICE PRODUCTION IN IKWO

One factor that highly favoured the growth of rice production in Ikwo was the coming of the Norwegian Church Agricultural Project (NORCAP) to Ikwo Local Government Area¹¹. NORCAP was a Presbyterian Missionary Organisation that came from Norway in 1902 to establish a base in Ikwo. One aim of the organisation was to educate the people on modern methods of agriculture and better living standard¹². Eze (2011) outlined the main purpose of NORCAP to include promotion of scientific and technological agricultural strategies through

research, training and extension work, setting of young farmer's groups or supporting individuals to access permanent-leased lands as well as starting temporal farming schemes within sectors that were necessary for agricultural development and promotion, which will lead to good health conditions of the citizenry¹³. Also, they introduced new and improved species of crops and animals for the people to grow. In addition to these, they offered agricultural extension services for the people to learn better farming techniques in rice and other crop cultivation. These really helped the farmers a great deal in the years that followed. Farmers benefited and are still benefiting from these techniques. Furthermore, they opened up farm settlements in Ikwo villages, where young men engaged in modern ways of farming. From the above, one can rationally argue that NORCAP left a great legacy for the Ikwo people in the area of rice production and agricultural development. It is worthy to note that NORCAP produced rice in large quantities. Therefore, the history of rice production in Ikwo could not have been complete without the mention of the impacts created by NORCAP. It is the same land given to NORCAP for their agricultural activities that turned into the College of Agriculture, which later graduated into the current Ebonyi State College of Education, Ikwo, where their structure and facilities are not only used by students of the College of Agriculture but also students from other colleges of tertiary institution.

CHANGING PATTERNS OF RICE PRODUCTION

Indeed, rice production has thrived in the Ikwo clan and the people have over time enjoyed its dividends. For rice production to have thrived for so long deeply implies that changes have occurred in its production patterns. In other words, these changes have really helped to ensure better yield and also more efficient ways of producing this important staple crop. There are also changes in the types of implements being used by these producers. Since the 1960s, there have been changes in the pattern of rice production in the area. These changes fall into a number of aspects to be discussed. From the onset, famers in Ikwo made use of local implements which amongst others include machetes for clearing bushes as well as hoes for tilling the soil which require heavy manpower, sickle and spade. They also engaged in bush burning during the clearing stage. However, by 1962 when the NORCAP came, they (NORCAP) introduced tractor method of farming to these farmers. There was also a mechanised system of tilling the soil, making rice farming easier and faster using a number of tractors available¹⁴. This implies change from manual to a mechanised system of rice production at least by the NORCAP. Also between 1960 and 1980, rice farmers in Ikwo were dependent on swamp rice as the only species of rice that was cultivated. At that time, most of the planting was done in swampy areas. But as time went on, there was change from this swampy rice cultivation to upland rice planting. Thus, rice planting was done everywhere not necessarily in the swampy areas using species of rice that could easily survive in such dry locations.

Originally, when the people of this locality started rice faming, they were not using fertilizers. When the soil began to lose its fertility, they moved to another portion of land. This system is commonly known as shifting cultivation. It was possible as there were vast areas of land uninhabited. However, there were factors behind the non-usage of fertilizer. For instance, since the cultivation of rice was not in vogue as it is this day, land was scarcely cultivated, thereby making the soil to be very rich in nutrient. The second factor behind the non-usage of fertilizer then was as a result of the fact that the famers were bereft of the knowledge of how to use fertilizers. Here, the impacts of NORCAP were felt as the people were taught how to use fertilizers. In addition, they also provided fertilizers to these rural farmers in Ikwo. Furthermore, it is apt to note that there were further changes in the style of weeding and harvesting. In every farming activity, the ill effects of weed can never be over-

estimated. Also, in Ikwo, weeds posed serious challenges to the rice farmers. They manually removed the weed using their hands and knives or hoes. However, when the wind of change reached Ikwo, there was a shift from hand-picking of weeds to the use of herbicides. The use of herbicides saved the farmers from many damages because most famers who were impatient in diligently picking off those weeds ended up burning the whole grass to hasten the work. It is well known that bush burning appears to be the strongest factors leading to the loss of soil fertility. Also, manual picking of weed turned out to be monotonous and tedious. Therefore, the change to the use of herbicides served them better notwithstanding the fact that it also affected the nutrient level of the soil. As well, harvesting was done by hand as farmers used knives to cut the rice plant. But as time went on, there was a shift or rather, a change to the use of machines. Like it is widely known, after harvesting, rice is usually left in the plain land where it was planted for the sun to dry it. In the 'farm-field', the rice is hipped and a big stick used to continuously hit it which will end up separating the rice grains from the stem. However, as time went on, there was need for a change to the use of a "thresher" in which when rice has been harvested, it is taken to the threshing floor; then, the thresher will separate the rice grains from the chaff after it has rotated incessantly on it. Therefore, the separation that will take about ten hours to be done manually will be threshed within a space of about 20 minutes¹⁵.

Another change in the pattern of rice production in Ikwo is in the area of pest control. In the past, when pests attacked rice farms in Ikwo, the farmer either hand-picked them or left them to providence. With time, there was a change in the pattern of pest control as pesticides were introduced to combat pests that often caused poor yield. Again, farmers mostly harvested rice and sold it locally, which buyers from other places like Enugu, Abakaliki among others came to buy cheap rates because they were sold raw. At a time, they started the process of parboiling the rice, as well as removing the chaff and then selling it at a more viable price. The act of processing the rice made the business more lucrative which also helped people to realise the need for rice cultivation. As this method soared, it metamorphosed and brought in the culture of packaging the rice in bags that had the brand name "Abakaliki Rice" boldly written on them. The first form of bagging was the use of a bag called the John Holt bag. A bag of John Holt rice was sold for just one pound. This method worked well and later, a bag of John Holt parboiled rice was sold for 6 pounds ¹⁶. This bagging process continued until this modern time when the Abakaliki Rice bagging was introduced.

ACHIEVEMENTS AND CHALLENGES

Broadly speaking, numerous achievements have been made in the area of rice production in Ikwo. The change from manual to mechanised rice farming ensured that less human power was exerted. This helped in making the farmers age well. Also, the aged farmers were no longer put-out from rice farming owing to the fact that cultivating and harvesting large portion of rice farm land no longer depended on exerted strength; rather, almost every process was carried out by miniature level of technological implements¹⁷. Furthermore, the afore mentioned changes like the introduction of pesticides for pest management, herbicides for weed reduction and other technological models are good examples of achievements recorded. Also, the bagging of rice after it has been processed made rice to be sold at a higher price, which made the business to be more lucrative. As well, the use of tractors, furrows and threshing machines by a number of farmers brought employment to the people of the locality. The use of these mechanical tools coupled with the introduction of other changes revolutionised rice production in Ikwo Local Government Area of Ebonyi State. Rice production in Ikwo as earlier noted has created and is still creating employment for the

teeming population. Both old and young now engage in rice production. Apart from being one of the major sources of revenue generation, rice is also one of the most consumed crops in the area. In other words, rice production in Ikwo has greatly helped the people in ensuring food security¹⁸. It can be said that the changing patterns in rice production have helped in increasing the quantity of rice produced in the area in particular and Nigeria in general. Buyers now frequent Ikwo in order to purchase the commodity at cheaper price. Be that as it may, it is essential to note that the changing patterns in rice production in Ikwo, particularly the changes in bagging, made the produce more attractive to the buyers and consumers alike.

There are several challenges facing rice farmers in Ikwo. These challenges to a large extent have succeeded in hindering rice production in the area. The series of changes that have occurred in recent times in the area of rice production have succeeded in addressing some of these challenges, while others are still lingering up till this present moment. A central challenge that has hampered rice production in Ikwo is the absence of an irrigation system. Irrigation is the artificial application of water to the land or soil. It is used to assist in growing of agricultural crops, maintenance of landscapes, and re-vegetation of dry areas particularly during the periods of inadequate or absence of rainfall¹⁹. Due to the absence of an irrigation system, the rice farmers in Ikwo find it extremely difficult to cultivate rice all year round. Even the upland rice that does not need too much water, still need some quantity of water to thrive. Another major challenge facing rice farmers is inadequate funding. Many rice farmers in Ikwo are peasant farmers and so do not have what it takes to purchase the expensive mechanised implements. This has made rice production almost impracticable for them. Majority of these farmers have not been able to compete favourably with their colleagues who have source of raising capital²⁰.

Furthermore, another serious challenge facing rice producers in Ikwo is lack of technical know-how in the area of using the modern farm implements. NORCAP provided mechanised tools for the farmers but most of these farmers do not have the knowledge of how to operate them. The inadequate knowledge among the rice farmers on the usage of these implements usually results in loss of some nutritional values when wrongly utilised. A very good example of an implement that needs expert handling is the thresher, which when wrongly handled will result in the loss of nutrients and quality of the rice grain. Moreover, flooding has overtime presented itself as a major challenge to rice production in Ikwo. Due to the seasonal nature of rain, the much accumulated water in the air space that did not shower in its season turns out to fall in excess, thereby flooding rice farms²¹. Also, some rice farms that are located around rivers are prone to flood any time the river rises above its banks. The absence of a good drainage system in Ikwo has exacerbated the problem of flood. Flood also brings retrogression in rice farming as many farmers lose their crops any time it occurs²². This was the case in 2011, 2012 and 2013 when the farmers in Ikwo were badly hit by the wave of floods that affected their rice farms.

CONCLUSION AND RECOMMENDATIONS

Ikwo is known as one of the major rice producing areas in Nigeria. The production of rice is quite a good economic activity especially as it is a major source of revenue generation for nation building. This study has presented the changing dynamics of rice farming in Ikwo. It has revealed the role of NORCAP in the enhancement of agriculture in the area. The study maintains that rice production in Ikwo Local Government Area of Ebonyi State has experienced significant changes. Many of the changes occurred in the area of rice production which led to increase in farmers' revenue from rice farms. It also presented how the policy of the President Buhari administration worsened the problem of food security in the country,

leading to massive demand for, and increase in the price of Ikwo or Abakaliki rice, which in turn led to improved rice production. Indeed the lucrative nature of rice production in Ikwo can never be overemphasized. Almost every part of rice is useful to the producers. For instance, apart from the grain, the chaff is also useful as the farmers sell them to buyers who use them to replace firewood in cooking food.

However, for a more effective and comprehensive rice production to take place in Ikwo Local Government Area, the following recommendations are fundamental:

- a) There is great need for farmers to be enlightened on how to handle modern implements so that production will be more effective. This will also help farmers to produce rice in large quantity, thereby increasing their profits while making more food available to the populace, which will in turn reduce the level of hunger and malnutrition that has overtaken the country under the current administration;
- b) In addition, government at all levels should provide incentives to rice farmers as rice production is capital intensive and the farmers lack the wherewithal to engage in mechanised farming. Moreso, both Federal and State Ministries of Agriculture should endeavour to buy off excess products from the farmers so that they can be empowered to produce as much as they can. It will reduce the act of hoarding and the dangerous increment of the price of rice. This will also help in making food available in other parts of the country at a cheaper rate;
- c) Agricultural extensions should also be established by the government in rural areas, so that farmers in general will acquire the required knowledge in farming. Such knowledge should cover important areas such as cultivation, harvesting, use of pesticides, herbicides and the application of manure/fertilizers; and
- d) Finally, there is the need for good irrigation system so that rice farmers in Ikwo will no longer depend only on rainfall, but will be able to cultivate rice all year round.

End Notes

- 1. Echiegu, A. O. U., 1998. *Yesterday and Tomorrow in Ezza and Izhi's Today*. Ibadan: Loyola Book Centre, pp. 67-70.
- 2. Okeoworo, S. N., 2012. *Education in Ikwo Noyo clan Yesterday and Today*. Pearl Onesimus International, p. 2.
- 3. Echiegu, A. O. U., Yesterday and Tomorrow in Ezza and Izhi's Today, pp. 67-70.
- 4. Okeoworo, S. N., Education in Ikwo Noyo Clan, P. 9.
- 5. Okonkwo, U. U., 2016. "Africa and the Global Food Crisis" in U. U. Okonkwo (Ed.) *Food and Drinks in African History*. Enugu: Madonna University Press, p. 230.
- 6. Falaju, J., 2016. "Rice Producers Raise Alarm over Increased Smuggling", *The Guardian*, Saturday, November 12, p. 6.
- 7. Ibid.
- 8. Bamidel, F. S., *et al*, 2010. "Economic Analysis of Rice Consumption Patterns in Nigeria" *Journal of Agricultural Science Technology*, (12): 1-11.
- 9. http://www.ebonyionline.com/ikwo-local-governement-area/14-06-2015. Accessed April 20, 2015.
- 10. Interview with E.O. Nwakpu, 65 years old Civil Servant in Ndufu Okpira on June 12, 2015.
- 11. Okeoworo, S. N., Education in Ikwo Noyo Clan, p. 59.
- 12. Ibid, p. 60.
- 13. Eze, O.N., 2011. Cultural Identity of Ikwo Clan. Abakaliki: Citizens Advocate Press.
- 14. Interview with S.N. Okeoworo, 55 years, Ugbodo Echara Ikwo, Civil servant, April 12, 2015.
- 15. Ibid.
- 16. Ibid.
- 17. http://en.m.wikipedia.org/wiki/irigation 14-06-2015. Accessed April 20, 2015.
- 18. Interview with E.O .Nwakpu, 65 years old Rice Consultant and Head, Department of Agronomy, College of Education Ikwo in Ndufu Okpira on June 12, 2015.
- 19. Interview with Mark Nweke, 61 years old Rice Farmer in Nweze, Ndufu –Alike on April 14, 2015.
- 20. Interview with Mrs. Mary Nwanchor, 40 years old Rice merchant in Nwakpu on June 12, 2015
- 21. Interview with E.O .Nwakpu, 65 years old Rice Consultant and Head, Department of Agronomy, College of Education Ikwo on June 12, 2015.
- 22. Interview with John Otu, 39 years old Rice Farmer in Ikwo Novo on April 13, 2015.