UNIJERPS
Unizik Journal of Educational Research and Policy Studies VOL.20 (1);
July-December, 2025 https://unijerps.org
2023 Impact Factor: **6.834;** 2022 ***Impact Factor***: 5.156; ***2021 Impact Factor: 5.641;***
2020 Impact Factor: 5.355. *Indexing and Impact Factor URL: http://sjifactor.com/passport.php?id=21363*

ASSESSMENT OF THE DIFFERENCE BETWEEN THE LIVELIHOOD OF RICE FARMERS BEFORE AND AFTER THE INTERVENTION OF THE AGRICULTURAL VALUE CHAIN DEVELOPMENT PROGRAMME IN ANAMBRA STATE

Obiora, Charles Chukwuma (PhD)
charlesobiora113@gmail.com
07032472530

Ikenga, Esther Ekpemikoghene (Ph. D)
08160725888
Department of Agric. Edu. Federal College of Education (Technical) Asaba
Nigeria

Mukoro, Juliana Eseoghene
08037371941
Southern Delta University, Ozoro, Delta State

ABSTRACT
The study assessed the difference in the livelihood of the beneficiary farmers of the value chain development programme before and after the intervention of the programme. Anambra State served as the study area of which 240 respondents were selected from the entire rice farmers population through the multistage sampling method. The primary sources of structured questionnaire and interview were used for data collection. The null hypothesis "there's no significant difference between the livelihood of beneficiaries before and after the intervention of the programme". The study reveals a significant change in their livelihood as there is increase in the total areas land cultivated, farm and farmers income. These revelations rejected the null hypothesis.

Keywords: Assessment, Livelihood, Rice Farmers, Intervention, Value Chain Development.

Introduction
The aim of most agricultural development intervention programmes is to improve the material and social welfare of the people or beneficiaries. Therefore, it is mostly seen as an integrated approach designed to improving the environment and wellbeing of the people of the community (Dooember, et al, 2020). The first step in the process of agricultural development is to abandon the view of agriculture in pre-modern or traditional societies as essential static. However, the problem of Agricultural development is not that of transforming a static agricultural sector into a modem, dynamic or progressive: sector, but of accelerating theater of increase in agricultural and productivity consistent with the growth of other sectors of a modernizing economy. For the purpose of this work the Value Chain Development Programme which is one of the agricultural programmes introduced by the

government of Nigeria to promote agricultural productivity, national economic development is considered.

Value chain comprises full range of activities and Services required to bring a particular product through the different phases of production and delivery., to the final consumers (International Fund for Agricultural Development (IFAD) 2018) The term value chain also refers to the importance, that value is added to products across one link to the next one in the chain through the combination of knowledge and resources (Dubey Rajeev Swatentra, Abhishek and Nikhil, 2020; Ovidijus, 2013). Value chain is a business model that describes full range of activities needed in creating a product or service (Tardi and Brock. 2020). It is a concept describing the full chain of a business's activities in the creation of a product ranging from the initial reception of materials all the way through its delivery to market, and everything in between (Chai, 2021).

From the organizational and institutional view, a value chain can be analyzed as the formal and informal arrangements that allows coordination and collaboration links across actors and at different points along the chain (IFAD, 2018).

United States Agency for International Development (2020) and Inter-American Development Bank (2013) described it as a full range of activities that are required to bring a product or service from its conception to its end use, including all the market channels available to all firms. A value chain in agriculture identifies the set of actors and activities that bring a basic agricultural product from production in the field to final consumption, where at each stage value is added to the product (Danish Refugee Council (DRC), 2020). It is a set of linked activities that work to add value to a product, and consists of actors and actions that can improve a product while linking commodity producers to processors and markets (Funmilola, Olawale and Nwadihi, 2018). It is an economic system around a particular commercial product with focus on value addition along sequence of activities of providing inputs, producing- transforming, marketing and consumption. A value chain focuses on the degree of coordination and collaboration between the value chain operators or actors and business model tor particular commercial product (FAO, 2014).

According to SANREM (2020), value chain can be a vertical linking or a network between various independent business organizations and can involve processing. packaging, storage, transport and distribution. It works better when the actors involved cooperate to produce higher-quality products and generate more income for all participants along the chain, as opposed to the simplest kinds of value chains, in which producers and buyers exchange only price information (Norton, 2014). It encompasses the flow of products, knowledge and information, finance, payments, and the social capital needed to organize the producers and communities. Example, for firms that produce goods and services, a value chain operation will comprise the steps that are involved in bringing a product from conception to distribution, and everything in between, such as procurement of raw materials, manufacturing, and marketing activities.

Information needed in value chain is especially important to all value chain actors, and flows in two directions: markets inform producers of price, quantity and quality needs, product handling and technology options, while producers inform processors and markets about quantity of production, locations, and timing and production issues (Norton, 2014),.

Agricultural value chain includes a wide range of activities such as development and dissemination of plant and animal genetic material, input distribution, farmer organization, farm production, post-harvest handling. processing. provision of technologies for production, grading facilities, cooling and packing technologies, post-harvest local processing, industrial processing, storage, transport, finance, and feedback from customers or markets (Norton, 2014). At the heart of the agricultural value chain concept, is the idea of actors connected along a chain producing and delivering goods to consumers through a sequence of processes (Henriksen, Riisgaard, Ponte, Hartwich and Kormawa 2010). However, "vertical" chain cannot function in isolation and an important aspect of the value approach is that it also considers “horizontal” impacts on the chain such as input supply, Finance provision, extension support and the general enabling environment. The approach t been found useful, particularly by donors, in that it has resulted in a consideration of a factors impacting on the ability of farmers to access markets profitably, leading to a range of chain interventions. It is used both for unbeardingexisting chains and for do identify market opportunities for small farmers (Wikipedia, 2021).

The value chain approach in agricultural development helps identify weak points in the chain and actions to add more value (Norton, 2014), The framework helps organizations identify and group their own business functions into primary and secondary activities (Chai, 2021). Value chain works best when operators cooperate to produce higher-quality products and generate more income for all participants along the chain, as opposed to the simplest kinds of value chain, in which producers and buyers exchange only price information. According to Rex (2013), the value chain approach considers the role of existing chain actors, supporting actors, and the policy environment. It allows the actors to look at current challenges in value chain, as well as the opportunities for improving the efficiency of the value chain and the benefits for everyone involved. Sometimes, participating in a well-functioning value chain brings farmers hot higher incomes alone, but attract young people to farming or persuade them not to leave rural areas by offering better ways to earn money and as well, help the farmer learn new skills and adopt improved practices (Chapota, 2013).

According to International Fund for Agricultural Development (IFAD) (2012), the Value Chain Development Programme (VCDP) is a six-vear agricultural development intervention programme initiated and implemented by the Federal Government of Nigeria (FGN) and International Fund for Agricultural Development (IFAD). The programme was designed to improve both cassava and rice value chains for small-scale farmers in six selected states of the Federation Anambra,

Benue, Ebonyi, Niger, Ogun and Taraba. The Value Chain Development Programme emerged from the International Fund for Agricultural Development (IFAD) with Country Strategic Opportunities Programme (COSOP) of between 2010 and 2015 periods (IFAD, 2012). The Development with Country Strategic Opportunities Programme which was established on the recommendations of the Country Programme Evaluation (CPE) was Carried out in 2008/2009 April, 2009 by the Federal Government of Nigeria (FGN) and International Fund for Agricultural Development. The Country Programme Evaluation (CPE) recommendations laid emphases on the future IFAD interventions on Agriculture, with emphasis on the enhancement of productivity and access to market (Fumilola, 2018),

The Value Chain Development Programme (VCDP) is anchored on Nigeria governments vision for Agricultural Transformation through commodity value chain approach which was an approach designed to tackle the challenges of smallholder farmers (Value Chain Development Programme (VCDP), 2020). The goal of the programme is to reduce rural poverty, increase food security and accelerate economic growth on a sustainable basis by proffering solutions to limited access to productive assets and inputs, low productivity, limited opportunities for value addition, inadequate support services such as extension services, inability to access rural financial services, inadequate market and infrastructure (Value Chain Development Programme (VCDP), 2020). According to Mgbenika and Mbah (2016), the primary target groups for the VCDP are the poor rural households engaged in cassava and rice value chains. This includes the 15,000 smallholder farmers cultivating up to five hectares of land devoted to cassava and rice, I,680 small-scale processors and 800 traders as direct beneficiaries with emphasis on women and youth; and 22,000 indirect beneficiaries, benefitting largely from the infrastructure improvements, amongst other things.

The Value Chain Development Prouramme is coordinated under the technical responsibility of the Federal Ministry of Agriculture and Rural Development (FMARD) and the State Ministries of Agriculture (MoAs) whilst implementation at the national level receives oversight and guidance from the Value Chain Steering Committee (VCSC), Federal Ministry of Agriculture Development (FMARD) as the lead implementing agency, delegates' the function and day-to-day implementation and coordination responsibilities to the National Programme management Unit (NPMU). In each of the selected states, the daily implementation of the programme is handled by the State Programme Management Unit, which ensures effective and efficient implementation of the programme activities at the state and Local Government Area level. The programmne which is domiciled in the Federal Ministry of Agricultures and Rural Development is implemented through the following components: Agricultural Market Development; Smallholder Productivity Enhancement and Programme Management and Coordination.

Rice is an important staple food in Nigeria and it is grown in all the States of the

Federation and Federal Capital Territory though production varies from State to State and the prevalent types of rice production systems in Nigeria include rain-fed upland, rain-fed lowland, irrigated lowland, deep water floating and mangrove swamp (Chukwudebelu, Igwe and Madukasi, 2015), As a cereal grain, it is the most widely consumed staple food for a large part of the world's human population, especially in Asia (Awika, 2011) and it is one of the commodities with the third-highest worldwide production, after sugarcane and maize. According to Shrestha (2012), rice is more than just a food, as it plays a key role in food security, while at the same time South-East Asian nations have become the leading rice exporting countries. In most Countries, rice cultivation has become the major activity and sources of income for millions of households around the globe. According to Kadiri, Eze, Orebiyi, Lemchi, Ohajianya and Nwaiwu (2014), rice is an increasingly important crop in Nigeria and it is relatively easy to produce for sale and home consumption. In some areas, there is a long tradition of rice growing but for many, it is considered a luxury food for special occasions only. In terms of comparative advantage, rice can be grown in flooded and not-flooded soils because it has both lowland and upland varieties that can adapt to different agro-climatic and soil conditions (Aja and Aja 2014).

According to Merem, Twumasi, Wesley, Isokpehi, shenge, et al (2017), rice in most of the African countries constitutes a bigger portion of the diet on a regular basis, Aside a handful of nations that enjoy self-sufficiency in rice cultivation, rice consumption surpasses its production and substantial amount of the crop are imported to sustain local demand at the expense of hard- earned foreign currency reserves. Rice is virtually cultivated in most of the agro-ecological zones of the country, as it constitutes one major cereal crop produced by an average Nigerian farmer. According to Food and Agriculture Organization (FAO) (2018), Nigeria is the continent's leading consumer of rice, one of the largest producers of rice in Africa and simultaneously one of the largest rice importers in the world.

According to Global Value Chain Initiative (GVCI) (2007) as cited in Ewuzie, Ifediora and Anctolh (2020), value chain is an arrangement that describes the linkages of participants and their value creating activities that enhance the movement of goods and services from production, processing, marketing to the end user. In agricultural parlance, the term "value chain" is used interchangeably with such terms as supply chain, market system, and agri-food chain, depending on what is being considered. Based on agri-food sector perspective, Drummond and Goodwin (2011), defined value chain as all activities and processes that occur between producers of food and ultimate consumers. According to Donovan, Franzel, Cunha, Gyau and Mithöfer (2015), donor agencies like USAID, FADAMA, and IFAD usage of value chain is in line with World Bank (2010) definition which describes value chain as full range of Value adding activities required to bring a product or service through different phases of Production including the procurement of raw materials and other input. The concept of value was introduced to improve productivity

and profitability of the actors in the agricultural sector (Ewuzie, Ifediora and Anctoh. 2020) The notion of agricultural value chain underscores system approach to value added activities where the action of one component in a system affects every other component within the system According to Ugwuonah (2017), the idea of the value chain is relatively new in agricultural sector it is however, resides at the core of high-impact and sustainable initiatives focused on improving productivity, competitiveness and growth of Small-Medium Enterprises (SMEs).

Recently, most of the agricultural intervention programmes, initiated and implemented in agricultural sectors by both government and non-government agencies (donors) take the value chain approach. The value chain approach has shifted focus and emphasis away from agricultural production to consumer demand, marketing and the coordination of product flow from producer to consumer (Ewuzie, et al, 2020) The value chain concept acknowledges that production must be linked to demand and the critical role of organizing the flow from farmer to consumer opportunities must be taken into consideration. A value chain links the steps a product takes from the producer to the consumer. It. therefore, includes research and development, input suppliers, production, processing, marketing and finance (Norton, 2014).

An agricultural value chain starts with the provision of farm inputs which include seed, fertilizer and other agro chemicals used in the cultivation of crops (Rex, 2013). All the inputs are provided by the agro input dealers to the farmer who uses them in the production of agricultural crops and livestock. Whereas, according to Ewuzie, et al, (2020), the production component entails the actual production activities which culminates in the usage of farm inputs in a way that it is prescribed by the agricultural technologies for a particular commodity to produce the required produce. Value chains are created for the better understanding of consumer needs to respond to these requirements in better and more strategic way. The trade components entail exchange and distribution activities that are carried on at the primary product level by marketing middlemen, Processing has to do with value addition activities which is concerned with the change in form of the produce. Besides these activities that are central to a value chain, the business environment and provision of allied services also affect the value chain and as such constitute part of the value chain. Activities of the various participants in the value chain are expected to increase the value that is added to the products and Shrestha (2012) further opined that participants' conduct along the chain determines the efficiency and return accruing to each participant.

Since the Value Chain Development Programme began the government has invested a relatively huge sum of money into it. For the fact that the programme is aimed mainly at ensuring food security, improving the standard of living of people by increasing agricultural productivity, it is however necessary to find out the Difference between beneficiaries' livelihood before and after the commencement of the programme.

Purpose of the study
The purpose of this study is to access the difference between beneficiaries' livelihood before and after the commencement in Anambra State.

Research Hypotheses
There is no significant difference between the livelihood of the programme beneficiaries before and after the programme intervention.

Population of the study
The population of the study comprised the rural farmers who were beneficiaries of Value Chain Development Programme (VCDP) in Anambra State, Nigeria. Multi-stage sampling procedure involving purposive and simple random sampling technique was used to select 240 respondents that were used for the study. Stage 1 involved a purposive selection of four Local Government Areas as against the eight Local Government Areas that participated on the programme. The selection was based on the concentration of the VCDP beneficiaries. The Local Government Area selected includes: Ayamelum, Awka North, Anambra East and Anambra West. Stage II involved a purposive selection of two dominant farmer's organization. Stage involved a random selection of 30 farmers who participated in the programme, giving a total of 240 respondents that were used for the study.

Method of data collection
The data for the study were collected from primary sources using structure questionnaire and interviews schedule whose items border on areas of land cultivated quantity of rice produce and annual income.

Hypotheses Testing
Paired sample t-test was used to test if there is significant difference in the livelihood of the project beneficiaries before and after the project intervention.

Difference between beneficiaries' livelihood before and after the commencement of the programme in the state (n = 240)

Rice farmers livelihood	Before (2015) mean x score	After (2019) mean (x) score	T-value
Total hectaage of rice cultivated (ha)	1.50	2.81	10.301
Quantity of rice produce (M/T)	11.23	16.07	13.353
Estimated annual income (₦)	131250	267500	-11.08

Result Interpretation
The Results Shows result of the analysis on the beneficiary's livelihood status before (2015) and after (2019) joining the value chain development progranume the livelihood status considered using t-test analysis includes: Hectarage of rice cultivated, quantity of rice produced and annual income realized from rice production by the beneficiaries.

The data shows the result of the paired sample t-test analysis on hectarages cultivated, quantity produced and annual income ealized from rice production by the programne beneficiaries. The result of the analysis in Table 4.4 shows that the mean total hectarage of rice land cultivated by the beneficiaries before and after the programme commencement. The mean total hectarage of rice land cultivated by the beneficiaries before the commencement of the programme in 2015 was 1:50 hectares while in 2019, the mean total hectarage of rice land cultivated by the farmers was 2.81 hectares. The findings shows that there are increments in mean total hectarage of rice land cultivated from 2015 to 2019, and the farmers in the study area are still small-scale holders. The findings reveals that there were significant changes (t= 10301. p<0.05) between the mean score of total hectarage of rice land cultivated by beneficiaries before and after the programme. The implication of the finding is that there was significant change in the total hectarage of rice land cultivated by the beneficiaries between 2015 and 2019. The increase in total hectarage of rice land cultivated can be attributable to the programme intervention in the study area. Hence. The programme intervention made an appreciable impact on the rice farmers in the area of total hectarage rice cultivated. The result aligns with the findings of Adi et al. (2020) who reported that the VCDP intervention had a positive impact on the livelihood of the beneficiaries. Entries of the result in Table 4A revealed that the mean scores of the quantity of rice produced by the programme beneficiaries in 2015 was 11.23 metric tones per 1.50 hectares while in the year 2019, the rice farmers produced 16.07 metric tones of rice per 2.81 hectures, The findings Implies that there was an increment in the average quantity of rice produced by the beneficiaries from 2015 to 2019. This improvement can be attributed to the rice farmers ability to participate and adopt most of the improved rice production technologies as introduced by the pragramme. The result shows that there was a significant difference (t 13.353. p0.05) between the mean scores of the quantity of tice produced before and after the commencement of the programme. The increase could be as a result of the increased number of hectares of land cultivated by the beneficiaries which can be attributed to the pragramme intervention. Therefore, it is concluded That the programme had an appreciable impact on the beneficiaries and their production output of the farmers the findings is in agreement with the findings of Ityokumbul, et al, (2020) who reported that the rice farmer's participation in the value chain development programme brought about increase in productivity in Ogun State The data shows that the mean scores of the estimated annual income by the progromme Beneficiaries in 2015 was ₦ J31,250. Whereas in 2019, the mean scores of the estimated annual income from the beneficiaries was ₦267,500. Also, the result shows that there were significant Chanees (te-11.08, ps 0,05) in the mean scores of the annual income of the beneficiaries before and after the programme intervention. The finding implies that there was a significant increase

In the revenue realized by the programme beneficiaries between 2015 and 2019.Therefore the programme made

appositive impact on the annual income of the programme beneficiaries This is attributable to the proactive measures adopted by the programme in supplying the necessary production inputs as needed by the programme beneficiaries. In addition, the result implies that the farmers benefited immensely from the inputs provided by the programme. The result agrees with the findings of Adi, et al (2020) who reported that through participation in the Value Chain Development Programme in Taraba State, farmers production output increased. Therefore, the value Chain Development Programme in Anambra State, Nigeria made an appreciable impact on the total hectarage of land cultivated, quantity of rice produced and estimated annual income from rice. Thus, the rejection of the null (Ho) hypothesis which stated that there is no significant difference in the impact of the programme on the rice farmers livelihood before and after the programme commencement.

Conclusion

The issue of massive rice production in the state is encouraging but may be hindered by increase in population which increases the alternative uses of land for agriculture. Also, the type of land tenure system which encourage family ownership of land does not allow farmers to acquire large expanse of land for farming. The government of the state should there acquire large expanse of land for farm settlement scheme mainly for rice farming. In addition, rice farmers cooperative societies should be formed to ensure case of rice farmers to be reached out to the access to information and other productive resources/inputs.

REFERENCES

Aja, J. & Aja, F.C (2014). Socio-economic determinants of small-scale rice farmers' output in Abuja, Nigeria. Asia Journal of Rural Development, 4(1), 16-24.

Awika, J.M (2011). Major cereal grains production and use around the world. ACS symposium series, 1089, 1-13.

Amaechina, EC & Eboh, EC (2017) Resource use efficiency in rice production in the lower Anamabra irrigation project, Nigeria: Jouranl of Development and Agricultural economics 9, no.8 (2017):234-242.

Babatunde, M.M., Abraham, F., Jubril, O.A., (2017). Effects of Fadama III programme on dry-session vegetable growers in Kwara State, Nigeria kasetsart Journal of Social Sciences. 38(2), 163-168.

Chapota, R (2013). The role of radio in the agricultural value chain approach: The case of the groundnut value chain in Malawi. Retrieved on August 29, 2021 from https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/52685/IDL-52685.pdf

Chia, W. (2021). What is value chain? Retrieved August 29, 2021 from httpss://searchcio.tech target.com/definition/value-chain

Danish Refuge Council (DRC) (2020). Analysis of key value chains in the agriculture and food-processing sector. Retrieved on August 23rd 2022 from https://reliefweb.int/sites/reliefweb.int/file/resources/DRC-Value-Chain-Analysis%20Diyala. Pdf

Donovan,J., Franzel, S., Cunha, M., Gyua, A., & Mithofer, D (2015). Guides for Value chain development: a comprarative review. Journal of agribusiness in development and emerging economics, 5(1), 2-23.

Dooember, V.I., Olawale, E.O & David, O. (2020). Effect of value chain development programme on income and food security of rice farmers in Yewa North and Ijebu North-East, Ogun State, Nigeria. International Fund for Agricultural Development (IFAD) Research Report submitted to centre for sustainable Development, University of Ibadan, Ibadan, Nigeria, pp1-34

Drummond, H.E & Goodwin, J.W., (2011), Agricultural Economics (3rd Edition): University of florida: Person limited

Dubey, S.K., Rajeev, S., Swatentra, P.S., Abhishek, M & Nikhil, V.S (2020). A brief study of value chain and supply chain. Retrieved on August 29,2021 from https://www.researchgate.net/publication/344374264_a_brief_study_of_value_chain_and_supply_chain

Elum, Z.A & Obiajunwa, U. (2020). Analysis of institutional credit accessibility among small holder poultry farmers in rivers state, Nigeria Journal of development and agricultural economics, 14(2), 30-40.

Ewuzie, C.O., Ifediora, C.U & anetoh, J.C. (2020). Profitability of actors in rice value chain in Nigeria: A comparative analysis. International journal of innovation research and advanced studies (IJIRAS), 7(7), 59-65.

Food and Agriculture organization (FAO) (2018). Nigeria at a glance. Retrieved on January 2021 from http://www.fao.org/nigeria/fao-in-nigeria/nigeria-at-a-glance/en/

Food and Agriculture Organization Statistical Databse (FAOSTAT) (2014). Developing a sustainable food value chain. Retrieved on 23rd August 2021 from http://www.fao.org/3/i3953e/i3953.pdf

Funmilola, O.T., Olawale, O. & Nwadihi, M (2018). Effect of IFED value chain development programme on economic welfare of smallholder rice and cassava producers in Anambra State, Nigeria. Retrieved from https://www.researchgate.net/publication/328282907

Global Value chain Chain Initiative (2007). Institute of development studies. Retrieved on August 21,2021 from: www.ids.ac.uk/global valuechains/index.html.

Grigg, D.B (2013). "The World Food problem." In pacione, M. (ed), progress in agricultural Geography, Croom Helm, London. Pp.239-263.

Henriksen, L.F., Riisgaard, L., Ponte, S.., Hartwich, F & Kormawa, P. (2010), Agro-food value chain interventions in Asia: a review and analysis of case studies. Retrieved on August 29, 2021 from https://www.unido.org/sites/default/files/2011-01/workomgpaper_vc_asiafinal_0pdf.

International fund for Agricultural Development (IFAD) (20166). Investing in rural people in Nigeria. Retrieved on 20th of July, 2020 from https://www.ifad.org/documents/38714170/39972302/investing+rural+people+Nigeria-e.pdf/d2c0bc12-5c46-4e92-9d95-1c4dd747fda.

International Fund for Agricultural Development (IFAD) (2018). Agricultural Value chains and its contribution to sustainable Development Goals: The case of high Value Chains on Hills and Mountain Area (HVAP) in Nepal. Retrieved on Augusut 29, 2021 from https://ic-sd.org/wp-content/uploads/2020/01/Antonio-wills-field-practicum-report-HVAP-Nepal-082018.pdf.

Isah, A.I. & Muhammad, S.M.J (2021). Impact of Fadma III Additional Financing (AF) on the yield and income of beneficiaries in some selected Local Government Areas of Sokoto State, Nigeria Journal of Agricultural Extension and Rural Development, 13(1),44-50.

Kadiri, F.A ,. Eze, C.C., Orebiyi, J.S., Lemchi, J.I.,Ohajianya, D.O & Nwaiwu, I.U. (2014). Technical efficiency in paddy rice production in Niger Delta region of Nigeria. Global Journal of Agricultural Research 2(2),33-43.

Merem, E.C., Twumasi, Y., Wesely, J., Isokpehi, P., Shenge, M., Fageir, S., Crisler M., Romorno, C., Hines, A., Hirse, G., Ochai, S., Leggett, S., Nwagboso, E. (2017). Analyzing rice production issues in the Niger State Area of Nigeria's middle belt. Food and public Health, 7(1), 7-22.

Mgbenka, R.N & Mbah, E.N (2016). A review of smallholder farming in Nigeria: Need for transformation. European Centre for Research and Development, 3(2) 43-54.

Norton, R. (2014). Agricultural value chains: A game changer for small holders. Retrieved on August 24th from https://www.devex.com/news/agricultural-value-chains-a-game-changer-for-small-holders-83981.

Ogbonna, M.O & Nwaobiala, C.U. (2015). Evaluation of participation and poverty level of National Fadama III development project among rural farm women in Gombe State, Nigeria. Journal of agriculture and food science, 3(6), 83-90.

Obiora Charles C. (2024) perception of beneficiary rice farmers on the changes brought about by the value chain programme in Anambra State. South Eastern Journal pf research and sustainable development. Vol15(1). April-June, 2024.

Obiora Charles C, Anele Kelvin N, Ohanu Victor C and Osuafor Ogonna O (2024). "Evaluation of the adoption level of recommended technologies by rice farmers beneficiaries of the value chain development programme in Anambra State. Unizik Journal of Educational Research and Policy studies Vol. 18(1): July-December, 2024.

Obiora Charles C, Ojogbane Joseph A, Eze Ogochukwu M, Okechukwu Frances O and Anene Kelvin N. (2024)" Rice farmers level of satisfaction on the implementation strategies of the value chain development programme in Anambra State". African Journal of Educational Mangement Teaching and Entrepreneurship Studies VOL. 12 (2) May-August, 2024.

Obiora Charles C, Anene Kelvin N & Ohanu Victor C (2014) "Perception of rice farmers beneficiaries on the impact of value-chain development programme on their livelihood" African Journal Management, Teaching and Entrepreneurship studies Vol. 12 (1), May-August, 2024.

Obiora Charles C & Ojogbane Joseph A (2014) "constraints to the effective implementation of the agricultural value-chain development programme in Anamabra State" African Journal Management, Teaching and Entrepreneurship studies Vol. 12 (1), May-August, 2024

Ovidijus, J. (2013) Value Chain analysis. Retrieved on August 29, 2021 from https://strategicmanagementinsight.com/tools/value-chain-analysis.html

Rex, C. (2013). Role of radio in the agricultural value chain approach: the case of the groundnut value chain in malawi . Retrieved on August 29,2021 from https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/52685/IDL-52685.pdf.

Sanrem (20200. Agriculture and value chain. Retrieved on 23rd August, from https://sanremafric a.org/agriculture-and-value-chains/

Tardi, C. & Brock, T. (2020). Value chain. Accessed on August 29,2021 from https://www.investopedia.com/terms/v/valuechain.asp#citation-1

Ugwuonah, G.E. (2017). Market-led approach to agricultural value chain development: issues in investment and wealth creation. University of Nigeria, Inaugural Lecture, Nsukka University of Nigeria press Ltd.

Utiang , P.U. (2017). Agricultural value chain development knowledge management and communication. Retrieved on October 18, 2022 from file:///C://Users/master/appdata/Local/Temp/Agricultural Value Chain Development Knowledge Management communication by utiangp.ugbe.pdf

Value Chain Development Programme (VCDP) (2020). Who we are. Retrieved on August 30th, 2021 from https://vcdpnigeria.org/who-we-are/

Wikipedia (2021). Agricultural value chain. Retrieved on August 29, 2021 from https://en.wikiped ia.org/wiki/Agricultural-value-chain#Value-Chain-methodologies.

World Bank (2010). Building competitiveness in Africa's Agriculture: A guide to value chain concepts and applications: Discussion paper. Washington. D.C