

A Historical Comparison of Food Production in the Pre-Petroleum and Petroleum Eras in Selected Communities of the Niger Delta Region, Nigeria, 1900-2025

***Tunde, Nicholas Eshiokhe., Nduonofit, Okon Isana., David, Odo Okon**

Department of History and Diplomatic Studies, University of Abuja, Abuja, Nigeria

***Corresponding Author**

DOI: <https://doi.org/10.47772/IJRISS.2026.100800064>

Received: 10 August 2026; Accepted: 17 August 2026; Published: 25 August 2026

ABSTRACT

The study examines the historical food production systems in selected communities (Oloibiri in Bayelsa state, Gbaramatu in Delta State and Egbema in Rivers State) in the Niger Delta region, Nigeria, from the pre-petroleum years (1900-1955) through a transition to the petroleum production era (1956-2025), a period spanning over ten decades. The aim and objective of the study, is to address the limited scholarly studies in the subject that traverse the two historical eras, by utilizing a multidisciplinary approach that integrates environmental history, agricultural history, political ecology and sustainable development, to examine the trajectory of communities that had robust traditional food production systems, which adequately catered for their livelihoods, to a system that relies mostly on imported processed foods. A qualitative historical research technique was employed to collect primary data collated from field work and responses from in-depth interviews obtained from community elders and leaders, farmers and fishers, government records and extracts of archival materials, which were synthesized with secondary data from academic resources and other relevant materials, to obtain key findings. Findings reveal that food production and supply have declined as a result of transitioning to an economy predominated by petroleum, with the attendant oil spillages, toxic emissions and deforestation, which effects have diminished soil fertility and food productivity; and created occupational aversion to agriculture in the selected communities. The study further discloses that administrative measures designed to address the situation have failed to meet the desired results and concludes that the destruction of farmlands, the lack of effective actionable policies and over reliance on petroleum at the expense of agriculture, have deprived the communities of their livelihoods. The study recommends actionable policies, such as remediations, restoration of the farmlands and incentives that will revive interest in agriculture and address the historical damages and disconnections in the communities.

Keywords: pre-petroleum, food production, livelihood, food security, Niger Delta region.

INTRODUCTION

Background of Study

Many petroleum production hosting Communities in the Niger Delta region, Nigeria, contend with shortage of supply of local food, which many studies have attributed to a longitudinal disconnection in agricultural and food production systems, resulting from decades of oil spills, gas flaring and land displacement that has degraded agricultural ecosystem. Long before the discovery of crude oil in 1956, the indigenous communities engaged in productive agricultural practices where they produce food crops that served as source of foods and livelihoods for the people. A plethora of existing studies show how households, comprising of immediate and extended families engaged in peasant and subsistence production of food crops, sea foods and hunting catches which were sources of food and local exchange for the local authorities and foreign exchange for the government at all levels, as asserted by Udo (in Ikime, 1980).

Studies by Akanmidu (2015) reveals that, as far back as 1558, crops were exported from communities in the Niger Delta region and by 1900, the region had become the major source of palm oil and other major cash and food crops, many of which dominated Nigeria's export list for more than 50 years till the discovery of petroleum, which came with its attendant good and bad, including the destruction of the erstwhile fertile soil, rich vegetation and forests, destruction of fishing routes and displacement of local farming settlements. In the present petroleum producing era, communities that were once reputed and known for production of foods and other crops, now largely depend on processed foods, which are imported and, in most cases, priced out of the rich of the population, who are mainly susceptible rural farmers.

It suffices to assert that human interactions with the natural environment are commonplace in resource-dependent economies like the Niger Deltan communities, but when such resource which should serve as a source of wealth and sanctuary for the livelihood of the people becomes a "resource curse" due to actions and inaction that revolve around the mining of the resource, it becomes a serious concern. This concern is a vital support to the urgent need for countries of the world to meet global agenda of Sustainable Development Goals (SDGs), which emphasizes increased food production and food security as significant goals that would benefit the communities (Sam et al, 2024). According to SDG number two (2), countries of the world are encouraged to deliberately deploy actionable policies that will promote sustainable agricultural production to minimize or eradicate hunger, achieve food security and improved nutrition by 2030 (UNICEF, 2023; Onoja, et al, 2024).

In the selected communities in the Niger Delta, Agriculture, which used to be the primary occupation, source of food and income for the people of the region, has become a secondary occupation, with negligible output. Since 1956 when petroleum and its "sweet wealth" (as export proceeds in 1958) took a preeminent position in Nigeria and the region, the exploration and production impacts have triggered operational oil spills, gas flaring and improper land use, which have resulted to significant damages to the environment and farmlands, by eroding soil quality, contamination of waterbodies and biodiversity, displacement of farmers, fishermen, hunters, loggers, tourists and other crafts, among the several effects suffered by the communities (Uyigue et al., 2025). The impact of the interactions with the environments, the disconnection of the people with farming over the years, appear to have altered food production practices and food security in the communities, from largely agrarian economies to oil dependent economies. This historical transition is worthy of interrogation, which has inspired this study to offer a comprehensive understanding of how the petroleum production era have reshaped the local food production *status quo* in the selected communities and to offer qualitatively action driven policy interventions.

Research questions

The study is bolstered by evidential and temporal gaps inherent in previous studies to deliver adequate nuances that will address the following research questions:

- i. What was the historical nature and patterns of food production in the selected communities, Niger Delta region, in the pre-petroleum era, 1900-1955?
- ii. What is the nature and patterns of food production in the petroleum era, in the communities, 1956-2025?
- iii. What is the comparison in the nature and patterns of food production in the pre-petroleum and petroleum eras, in the selected communities?
- iv. What are the impacts of petroleum production on food production and the implications for livelihoods in the selected communities?

Aim and Objectives

The broad objective of the study, is to carry out a historical comparative analysis of the nature, patterns and level of food production in the period before petroleum production and how the era of petroleum has reshaped the agricultural production systems in selected communities in the Niger Delta region. Specifically, the objectives of the study are:

- i. To examine the historical nature and patterns of food production in the selected communities in the Niger Delta region, in the pre-petroleum era, between 1900 to 1955.
- ii. To examine the nature and patterns of food production in the petroleum era (1956-2025)
- iii. To compare the level and patterns of food production in the pre-petroleum and petroleum production eras in the local communities.
- iv. To assess the impact of the petroleum era on food production and the implications for livelihoods in the selected communities

Significance of the Study

The study makes a significant theoretical contribution by establishing a historical qualitative foundation that will enhance the understanding of food production systems in the selected communities over a long period of time (1900-2025) and the intertwined variations from the pre-petroleum era to the petroleum era, a longitudinal era of research that has received limited historical attention. The study equally offers an invaluable resource or pool of knowledge for further studies by scholars and researchers in environmental history, agricultural history, the oil industry and sustainable development. In practical term, the study offers novel perspectives to the government and policy makers to design strategic actionable policies that are vital to the restoration of degraded environments and agricultural ecosystem, that will bring about the revitalization of food production systems, in order to achieve sustainable food security and livelihoods.

Scope and Study area

The study makes use of a historical narration covering the year 1900, to 2025, a period spanning over ten decades. The work carried out a reconstruction of experiences in food production systems before the discovery of petroleum and after the natural resource became a dominant factor in the socio-political and economic dynamics of the selected communities in the Niger Delta region. The geographical scope that underpins the study are Oloibiri community in Bayelsa State, Gbaramatu kingdom in Delta state and Egbema land in Rivers state, which were selected through a purposive sampling. The choice of these three communities is strategic, because Oloibiri, symbolic for being the first community where commercially viable petroleum was produced, offers an acceptable historical setting for the study, while Gbaramatu is a top petroleum community with extensive linkages to onshore and offshore petroleum productions. Its prominence in farming and fishing activities, makes it relevant to assess how its traditional food production systems have been transformed by petroleum production. Also, Egbema, an extensive community having a shared demographic trait with Egbema community in Imo State is renowned for inland agrarian occupation, which its environment has been degraded by petroleum production, yet with scanty historical research. The thematic scope is interdisciplinary, that spans across environmental and agricultural history, socio-economic history, political ecology and sustainable development.

Limitations and delimitations

The broad scope and chronological coverage of the study that spans over ten decades was deliberate, to offer a conscious and extensive assessment of the nature and patterns of agricultural systems, the colonial influence, emergence of oil politics and the economics of oil in the contemporary time. The constraints over genuine data were delimited by first-hand responses obtained from community elders, leader and farmers who have sufficient past experiences drawn from their involvement in the agricultural practices over the years. Also, the constraints around the difficult terrains of the study area were overcome by a deliberate sampling of Bayelsa, Delta and Rivers states, out of which the severely affected communities were used as case studies. This approach also helped in overcoming some concerns that touched on criss-crossing the region, as field observation was limited to the three selected communities, while in-depth-interviews were helpful in overcoming the constraints of resources required to move across the entire region. All the limitations were overcome by the sheer determination to break new grounds and produce a novel work by the researcher. The study was therefore carried out, detached of personal considerations or interests, in a well-organized data that thematically analyzed and explain results.

The likelihood of recall bias and chronological inaccuracies that could emanate from reliance on oral historical experiences of responses from the community elders, was mitigated by the triangulation of the oral data with secondary data that were obtained from archival materials, government reports, companies' disclosure, scholarly and other relevant resource. The possibility of respondents not sharing their true feelings or not providing exhaustive information was overcome by the need for field observation, after which both primary and secondary generated were synthesized to enhance the credibility and historical reliability of the findings.

Method

The method of the study was grounded on a historical qualitative design that compared food production systems in the pre-petroleum era (1900-1955) and the petroleum production period (1956-2025) in selected local communities of the Niger Delta region. This was intended to derive context-specific insights and comprehensive understanding of the complex interchanges between the two periods. A purposive sampling was employed to select a total of thirty (30) respondents from Oloibiri community in Bayelsa State, Gbaramatu, Delta state and Egbema in Rivers State, being areas that are historically strategic both in traditional agricultural activities and petroleum production operations. The choice of the three states is also factored in, on the strength of their historical standing as the "core states" of the Niger Delta region, because they have a historical affinity that is woven around demographic traits, origin, language and culture (Igoni, 2018).

Primary data were sourced from field observation and in-depth interviews of the 30 respondents selected from a pool of community elders and leaders, farmers, fishers, oil company representatives and other relevant stakeholders. The sample of respondents was selected based on their direct involvement and historical experiences in agricultural production, which had been the traditional and agelong occupation of the people. Ten respondents were selected from each of the three communities that ensured adequate representation across gender, age and occupational strata. The diversity in their ages, sex and occupation enabled the respondents to reconstruct and provide historic accounts of experiences in both the pre-petroleum era and the contemporary period of petroleum production. The key interview personalities were engaged in semi-structured interviews, using open-ended questions, conducted through face-to-face field contact and through other communication channels, that included phone conversations and online interactions, while observation checklist was employed as an instrument of data collection from the field work.

Secondary data were equally sourced from existing academic literature, government records and reports and disclosures from agricultural agencies and oil companies, etc. Both primary and secondary data were subjected to thematic and textual narrations, supplemented by visual presentation in the use of tables, graphs and figures. A Qualitative Comparative Analysis (QCA) Matrix was further used to organize, evaluate and compare food production patterns in both the pre-petroleum and contemporary petroleum eras to explain findings across the themes.



Figure 1.1 Map of Niger Delta region showing the three selected communities

Source: Image generated using the prompt “Niger Delta maps showing Oloibiri...” by Nano Banana 2 model, <https://share.gemini.google/8r60P2PY6kCC>

Figure 1.1 above shows the three selected communities- Oloibiri in Bayelsa state, Gbaramatu in Delta State and Egbema in Rivers State.

REVIEW OF RELATED LITERATURE AND THEORETICAL FRAMEWORK

Theoretical foundation

The body of literature on the longitudinal scope (1900-2025) of the study and the historical comparison of food production in the selected communities, in the Niger Delta region, is scanty. However, a plethora of studies have been carried on agricultural production and the socio-economic impacts on many other communities either separately or collectively as case studies. The existing literature are vital foundation that underpins this study. The work therefore leveraged on the existing research principles that literature on any part of a region is applicable to every other part, by adapting the inherent key factors for applicability in this case. Such factors border on demographic similarities, shared historic parallels, cultural ties, linguistic linkages and many more.

The principle of Historical Institutionalism developed by Hall and Taylor (1996) explains that past historical events, political decision and development paths create matching theme in the literature of neighbouring communities (Taylor and Francis Link, 2023; Steinmo, 2008). This aligns with the position of Ikime (1970), that a large number of the people of the Niger Delta region, with all their demographic traits and homogeneity, are believed to have migrated from Benin during the reign of Oba Olua, which, according to Egharevba (1960), dates back to around 1743. This informs the position of Igoni (2018), that the historical affinity of the communities is woven around demographic traits, origin, language, culture and life experiences. In agreement, the Homophily Principle formulated by Lazarsfeld and Merton (McPherson, 2001; LASU, 2023), asserts that groups with similar demographic traits, such as occupation and shared cultural ideas would naturally connect, making one group's literature highly relevant to the other. This study would therefore find solace and relevance in the existing literature that mirrors the work. This validates the relevance of Communities of Practice (CoP) theory to this research. The CoP, a theory by Jean Lave and Etienne Wenger (1991), suggests that people with a shared occupation do not only learn from each other, but form a collective cultural knowledge base, which directly influences traditional narratives and norms (Nazim & Mukhejee, 2016; Wegner & Jones, 2022; An & Jiang, 2023).

On the bases of this theoretical foundation drawn from the foregoing theories, a critical examination of related literature imposes a significant role and foundation upon which this study stands, to extract unanswered questions and offer fresh perspectives to literature and body of knowledge.

Review of related literature

Existing literature suggests that communities in the Niger Delta region were agriculturally productive areas, with rich vegetation, fertile lands, good climate and a resilient farming population. The positions largely assert that before the discovery of petroleum resources, food crop farming, fishing, gathering of wild food products, hunting and other crafts were the fulcrum of the economy in the communities, with crops such as cassava, yams, cocoyam, leafy vegetables, fruits, plantain, etc, cultivated and harvested in high yields, while abundant bodies of water and the swamps were significant for fishing, snail hunting and other aquacultural activities (Oboreh & Aghalino, 2010).

In every society, the citizenry relies on the sustainable provision and availability of food to live a good life. Food is needed as energy, which empowers man to engage in any productive activity that demands physicality. Food is also needed as nutritional value for humanity to live a sustainable life, hence no society can survive the essence of its existence without adequate provision of food. One of the most vital resources of any nation is the ability to make food available for the populace (Ukpe, 2016). In this sense, Osundare (1999) held that food security therefore becomes an important factor in any consideration of sustainable livelihood, because food is as old as a

man himself. Adequate provision of food for the population cannot be achieved in these changing times, which is the reason the United Nations enjoined nations of the world to work towards attainment of sustainable agriculture and food security for the citizenry. The significance of Sustainable Development Goal number two (2) agenda by the United Nation indicates that man largely survives on nutritious food, which is produced through sustainable farming and agricultural practices, a craft that outdates the present era of predominated by petroleum economics in the Niger Delta communities.

This position was enhanced by Enemugwem (2009), when he revealed that the communities had lived and maintained their food production and livelihoods even before the region was made an Oil Rivers Protectorate from 1885 till around 1900, when it was expanded and renamed the Niger Coast Protectorate by the British Colonialists, decisions that were predicated on the volume agricultural production from the communities in the region. He held that the inter communal trading of locally produced commodities between the people of the hinterland and the coastal areas flourished because communities traded with each other in food crops and commodities each had comparative production advantage and surpluses. This trading patterns and the production of cash crops became the driving fulcrum by the colonialists to begin mechanized production of cash crops, which would later become the major economic base in the region. In this period, there was no trace of petroleum and its wealth, yet food production was not affected(Tunde, 2026).

Robert & Anele (2019) agreed with the positions of Enetimi & Raimi (2025) and Adedeji & Adetunji (2011), that communities that were renowned for sufficient production to meet their food need and livelihoods before oil production can hardly produce adequate food crop to meet the needs of their immediate household. He held that the Niger Delta people now live below poverty line and face acute food insecurity due to decline in food production, which he blamed on the destruction of critical agricultural infrastructure in the region by oil spills, gas flaring and pollutions, which are largely operational creations of petroleum production.

Contrary to mainstream view of literature, a few studies contended that even before the discovery of oil, the communities had a land too poor for productive agriculture, due to the difficult terrain of its environment (Aghalino, 2009). This was supported by Udo (in Ikime, 1980), that communities of the Niger Delta had restricted productivity in agricultural practices due to the condition of the environment. In disagreement, Okonta and Douglas (2001) and Ike (2002) countered that the ecosystem of the Niger Delta, was viable, self-regulatory and resilient, but the land has been damaged beyond what can sustain food production and entrench food security and livelihoods, as was the case in the communities before the petroleum era.

While literature largely agrees to the primacy of agriculture in the pre-petroleum era, recent studies indicates that the state of food security in the Niger Delta, has exposed the multidimensional decline in food production in the selected communities, which according to Babatunde (2023) and Oyinbo (2024) represents a significant case of long term petroleum exploitation, environmental pollution and farmland degradation, which have undermined fertile soil, rich marine life and aquaculture, thereby decimating harvest of crops and fisheries, significantly.

Studies by Ogbebor and Aghoghovwia (2015), revealed that oil spills and gas flaring have destroyed over 2,500km of arable land in the communities. This assertion was buttressed by Babatunde, et al (2020) that 68% of farmers in Delta and Bayelsa States reported yield losses exceeding 50% after oil spills. Babatunde further argued that the decline in food production and exacerbating household food insecurity, is as a consequence of environmental pollution. This situation has forced the abandonment of fishing in the fishing communities, while the acidification of soil from oil has resulted to stunted growth of crops, with the population facing endemic hunger, malnutrition and health crises due to inadequacy of nutritional food (Raimi et al, 2022; Oweibia et al, 2024). The consequence of these, is that the people have become vulnerable to poor livelihoods, as they now depend on imported processed food that undermines cultural dietary or nutritious foods that are sourced locally (Oruonye & Ahmed, 2020; Odubo, 2021; Clinton-Ezekwe et al, 2024).

For Oruonye & Ahmed (2020), the transformation of the communities from a region that produced adequate nutritious foods for their daily food needs and means of livelihood can be hinged on the discovery of petroleum which has altered the occupational structures in the region, forcing the communities to transit from their

traditional crop production and fishing towards limited employment opportunities in the petroleum sector, which changed the occupational dynamics of the region, increased rural to urban migration and aversion to agriculture, while compounding food insecurity, malnutrition and health challenges, as well a communal strife and social insecurity (Ogbodo & Okoye, 2022).

Gaps in literature

Despite the extensive studies in the region, the challenge of food production decline and reliance on imported processed foods by the communities has continued. This is because the convergence of multidisciplinary literature lack consensus, which has exposed the limitations and gaps that necessitate an in-depth interrogation of the scopes that underpins the researches. This approach underscores the imperativeness of this study and challenges the perspectives in literature that re-echoes that the benefits of the petroleum era in the face of the present alteration of the foods production systems and livelihoods in the selected communities, outweighs its impact and implications for livelihoods.

The concentration of literature on environmental degradation and agricultural production mainly in the petroleum era exposes a gap that requires a historical comparative study on food production system in the period before the discovery of petroleum and in the petroleum era. The study would therefore beam research lens on historical studies by comparing the patterns and systems that transited between pre-petroleum (1900-1955) and the petroleum era (1956-2025). This approach is validated by the position Babatunde (2017) and supported by Chijioke (2025), that food production has received limited scholarly attention and called for studies that will examine the agricultural production and food security challenges that bedevil the communities.

Therefore, review on related literature justifies the need for a longitudinal historical comparative study, which this study seeks to settle, through a rigorous, yet ethical engagement of well-informed population across the communities and field observation to achieve its aim of contributing novel perspectives to scholarship and fill policy design gaps.

Presentation of Results and Discussion

The study engaged 30 participants that were purposively selected from the selected communities that cut across three states in the region. The participants comprised of indigenous community leaders and elderly farmers, fishers, local historians and scholars, male and female processors, researchers, agricultural and environmental experts, members of civil society groups, of diverse ages, sex and occupations. Ten (10) participants were selected from each of the local communities of the three focal states that constitute the study locations. (See table 3.1)

Table 3.1: Summary structure of in-depth interview participants

State	Selected Community	Number of Participants	Research interview themes in alignment with Research Objectives
			i. Historical nature and patterns of food production in the pre-petroleum era (1900-1955).
Bayelsa	Oloibiri	10	ii. Petroleum era and food production transformation (1956-2025)
Delta	Gbaramatu	10	
Rivers	Egbema	10	

Total	3 selected communities	30	iii. Comparison of food production patterns in the pre-petroleum and petroleum eras iv. Impact of the petroleum era on food production and implications for livelihoods in the selected communities
-------	---------------------------------------	-----------	--

Source: In-depth interview design by researcher, 2026.

The distribution of participants in the interview is as shown in Table 3.1, with 10 respondents, each from selected communities across three key states of the Niger Delta region. Purposive sampling was employed to avoid or minimize sampling bias, which would safeguard objectivity and validity of data accuracy that will yield reliable conclusions. Field work reports and responses from in-depth interviews were vital source of primary data, which were synthesized with relevant secondary data from existing literature, academic journal articles, textbooks, diaries, newspaper publications and websites, to formulate and substantiate findings for the study. Key findings were analytically structured and discussed in sequence of historical qualitative themes and subthemes to align with the research objectives. This results and discussion, are in details below:

Historical food production systems in the pre-petroleum era, 1900-1955.

Responses obtained from participants indicate that in the pre-petroleum era, food production was the main lever of food security and livelihoods of the selected local communities, as were in many other parts of the region. Responses consistently agreed with existing literature that farming of both cash and food crops, fishing and other aquatic catches, hunting and gathering of forests resources were largely the main source of livelihood, source of food and generation of residual income, recreational and cultural rituals for the communities, before the discovery of petroleum in commercial quantities, to its production and commercialization in 1958.

Although agricultural production was reported to be largely subsistence, yet it was sufficient for the livelihoods of the communities. Household food commodities like yams, plantains, cassava, cocoyam leafy vegetables and marine foods such as fishes, shellfish, crayfish, snail catch were common, while income was generated from the inter communal trading activities. The occupation of the traditional people of Gbaramatu in Delta State, is predominantly farming, fishing, forestry and its resources. The two agricultural activities are the production of food crops such as rice, yams, cassava, fruits and vegetables (mangoes, pawpaw, pineapples, bananas, pepper and tomatoes), which are produced over a wide range of ecological zones within the area. Also, the Oloibiri and Egbema communities are dominated by rural farmers and artisanal fishermen, with valuable sea foods such as crabs, oysters, shrimps and fishes, as well as mammals and birds hunting formed part of food production systems in the communities.

The responses further support current historical narratives that the production of food was in an organized traditional framework, with large expanses of lands partitioned along ancestral lineage and belonging to respective families or kindreds with distinct identities and cultural demarcations. Inter and intra communal mass labour was the traditional style of mechanized-modelled agricultural practice, where household labour was little to meet the production needs of any family. Women were vital in the production, processing and marketing the yields for consumption or sold within or to other communities. The traditional division of labour along gender line was highly effective in the pre-petroleum ear of agricultural production. The patterns of production were mainly seasonal in line with the climate variation, while the coastline and swampy areas were friendly for crops throughout the season with rotational farming, mixed cropping, food and fish conservation as key element of the traditional agricultural practices in the communities. They would produce enough to eat, preserve some and sell surplus either for cash or in exchange for produces that they lack comparative advantage to produce.

Another phase of the era of agricultural production in the Niger Delta communities was when the communities engaged in food production patterns had become more sophisticated due to the influence of the colonial masters, whose arrival and invasion of the communities with superior and advanced technology started to determine and a more modern and organized agricultural methods and techniques. Even though agriculture suffered from their

colonial influences, which largely favoured cash crop production over food crops, food crops such as fruits, grains and legumes were massively produced in a more modern and larger method, leading to food availability and surpluses. This local perspective aligns with the position of Akaakar (2019), that while food crops were available to meet the food needs of the people, cash crops were the focus of the agricultural export boom.

According to Elder Timi, a community leader from Gbaramatu, unlike in the petroleum era which heralded the Land Use Act, 1978 that mandates government to acquire or take over community land absolutely, lands were owned and strictly held by the families and individuals in trust for the communities. This means that there was no issue of land grabbing or compulsory acquisition of land by the government.

On this objective, finding suggests that food production systems in the pre-petroleum era were not only characterized by the resilience of the indigenous people and well-organized system, but was founded wholly on traditional knowledge, communal management and ecological adaptation, which is a distinct form of occupational activity that would later be redesigned and adapted in the communities by the dynamics of the petroleum era.

Food production patterns and transformation in the petroleum era, 1956-2025

Result revealed that the commencement of petroleum production in the communities became a milestone that historically reshaped the food production patterns and systems in the selected communities and by extension most parts of the Niger Delta region. All the respondents across the three communities agree that unlike the pre-petroleum era, the contemporary era of petroleum exploitation and production consistently impact on the health of the environments, which results to degradation of agricultural ecosystem, leading to recurring decline in food production outputs.

Respondents characterized the pre-petroleum era as a period of productive farming and fishing, with great harvest made out of hunting for wild crops, wildlife, mammals, nails, wine making, etc, but reverse is the case as operations in the petroleum sector has altered the environment, farmlands, rich swampy vegetation, forest and waterbodies. Timi, a community leader attributed this to oil spills and toxic emissions that have led to the degradation of fertile land and water bodies due to recurring contamination. This perception aligns with the view of Onojake & Osuji (2012) that pollution and contamination has made fishing and crop production unsustainable, while Keke-Iderikumo et al (2000) asserts that the situation has stripped many households in the communities of their adequate daily food needs and income.

Findings suggest that the era of petroleum production has reshaped the occupational partisanship of the able-bodied men and women who have abandoned farming in favour of paid employments in the petroleum and other non-agricultural occupations. Pa Abuloma, an Elder and community leader in Gbaramatu attributed this to frustrations by farmers who see nothing productive in farming anymore, but would rather migrate from farming settlements to urban areas for greener pastures.

Historical comparison of food production in the pre-petroleum and petroleum eras

Table 3.2: A Qualitative Comparative Analysis (QCA) Matrix across the pre-petroleum and petroleum eras

	Comparative factors	Pre-Petroleum era, 1900-1955	Petroleum era, 1956-2025
1.	Environment and Agricultural infrastructure i. Farmlands ii. Waterbodies iii. Vegetation and Forests	The environment, including vegetation, water bodies and biodiversity were productive. Farmlands were owned and managed by individuals, families and communities, as there were no	Pressure of oil pollution, contamination and land acquisition degraded the environment. Mandatory land acquisition, facilitated by the Land Use Act, 1978 took farmland ownership and management from communities,

	iv. Land accessibility	petroleum related encumbrances to land ownership and usage.	making compulsory acquisition of farmlands a recurrent issue.
2. Agricultural patterns	i. Food production ii. Fishing iii. Other agricultural activities	All forms of productions were resilient, with the desired and needed productive output.	Output has consistently declined over the years, with deteriorating output and yields
3. Indigenous capacity	i. Labour ii. Indigenous knowledge iii. Processing & storage systems	Household, family and communal labour was intense and boisterous, with traditional skills and knowledge used in farming, fishing, processing, storage and trading of produces. Also, the indigenous mixed cropping and rotational cropping were highly productive.	Occupational change, rural urban migration, gainful employment and changing lifestyle has altered and weakened labour base, undermined the indigenous knowledge. Mixed and rotational cropping have been made impossible due to the toxic nature of soils
4. Livelihoods	i. Food security ii. Income iii. Employment	Production diversification patterns that involved food farming, fishing, hunting and trading provided adequate food, income and employment for the people.	Production patterns have been altered, with limited output in food crops, fishing and hunting, which has reduced source of income and rendered many jobless. A handful of people have indeed been employed by the petroleum and related sectors, but not comparable to the massive labour involved in food production and fishing in the pre-petroleum era.

Source: Collated by the author during field work, 2025.

Table 3.2 shows a collation of responses from participants and field observation on historical comparison between the two petroleum eras. Findings demonstrate that structural changes have taken place between when the selected communities largely engaged in the production of food, fishing and hunting for their livelihoods and the intertwined transition to the era of petroleum production and its attendant dynamics.

Impact of the petroleum era on food production and implications for livelihoods in the selected communities

The experiences and perceptions of the selected communities consistently agree with existing literature, that before the advent of petroleum production in the communities, the people had established a livelihood system that revolved largely around food production, fishing, hunting, processing and trading of food crops until the colonialist arrived to emphasize more on cash crops, which revolved around the largescale production of palm oil, rubber, logging and associated products.

This pre-petroleum livelihood system adequately provided for their food needs and general livelihoods and their immediate neighbours in the hinterland and mainland communities, as well as other neighbouring communities out of the Niger Delta. The economic activities of the communities were characterized by trading and economic activities that involved the trading communities in Oloibiri in Bayelsa and the primordial trading communities of River state, which comprised of Egbema and Gbaramatu in Delta state. This position agrees with the view of

Bristol-Alagbariya (2022), that communities engaged in two patterns of socio-economic activities or trading relations that adequately met and sustained their livelihoods.

Finding agrees with the position of Keme-Iderikumo (2024), that fishing was the backbone of the economy of the riverine and coastal communities. While the fishing around home grounds and random bodies of water provided source of protein for immediate consumption, fishing in larger and distant waters and seas provided fish for commercial purposes. Palm oil was used locally to meet local needs, such as the production of local soap, cream, traditional wine, feeds to livestock, etc. The demand and usage for palm oil in Europe increased, as it was required for “the manufacturing of soap, candles, margarine, pharmaceutical products and as cooking fat”, all of which served as source of income and met the basic livelihood needs of the people of the region and source of income Ehiomogue et al. (2022). The local production and hunting for wild palm products was indigenous and gainful, because palm products served as food for people. For instance, palm kernel was eaten or taken with maize or soaked with cassava powder (garri) as daily snacks. The kernel was also fed to goats and chickens as feed, while the palm nut, after the kernel had been detached (Usoro, 1974). The palm oil was not only used for cooking, it served several purposes, including the preparation of special delicacies, such as the “banga” and “owo” soups. In addition to these various purposes of the palm trees, the palm oil trees were tapped to yield palm wine and other traditional wines were derived from its processing, which served as beverages for the people of the communities. Pomade or native cream were also obtained from processed palm oil for therapeutic and medicinal purposes (Okumagba, 2000; Dike, 1956; Aghalino, 2000).

On this objective, findings, as indicated in Table 3.3, suggest and align with the view of Nwankwo (1982), that the asymmetrical attention to the agricultural sector and the agrarian economy over the years in favour of the petroleum economy, has left “festering wounds” on the food security and general livelihoods of the communities.

These key findings are consistent with the propositions of the theoretical frameworks that underpinned this study. Findings are consistent with the provisions of the Historical Institutionalism and suggests that the emergence of the petroleum era created an institutional pathway that steadily and progressively transformed the traditional food production and fishing systems in the three communities. Also, mirroring the propositions of the Homophily Principle and Communities of Practice, findings demonstrate the importance of communal labour and networking as characteristic of the people’s engagements in agricultural production in the pre-petroleum era of the Niger Delta region. These historical interactions between the established institutions, lopsided control over natural resources, environmental alteration and distortion in communal networking and indigenous systems largely constitute the longitudinal interplay that have shaped the two petroleum eras, from 1900 to 2025.

Table 3.3: Key milestones of longitudinal transition of food production from the pre-petroleum era(1900-1955) to the petroleum era (1956-2025) in the selected communities of the Niger Delta region, Nigeria.

PRE-PETROLEUM ERA (1900-1955)		PETROLEUM ERA (1956-2025)				
1900-1944	1945-1955	1956-1958	1960-1970	1971-1990s	2011-2020	2021-2025
Traditional food production and livelihoods	Interventions by colonialists improved growth of cash crops and trading	Discovery of petroleum and first commercialization	Expansion of petroleum exploration and production	Noticeable Impacts on environment	Intensification of impacts on food security and livelihoods	Policy efforts and administrative shifts
Crop production was based on traditional systems and patterns, where communities	New policies impacted positively on traditional crop productions and fishing, improved local and external trading activities	Discovery of petroleum at Oloibiri, Bayelsa state and exports. The	The petroleum era expands, as more IOCs got involved in petroleum	The effective signs of environmental degradation started to show with the increased and recurring oil	Environmental degradation escalated, leading to increased destruction of agricultural infrastructure,	Efforts are intensified to deploy policies to reposition energy governance

rely on farming, fishing, hunting and gathering of natural forest resources, food sufficiency and communal trading for income		petroleum era began officially in this era	production. Petroleum wealth increased for the country, agricultural production faced neglect in the oil rich communities	spills, carbon emissions and pollution of farmlands and fishing routes.	resulting to low production output and erosion of traditional agricultural practices. Food supply and livelihoods decline. Campaigns for environmental remediation and restoration of farmlands increased. The UNEP clean up report, 2011, etc.	and environmental remediations. The birth of Petroleum Industry Act, 2021, etc.
This era witnessed ecological balance, dominance and reliance on traditional agriculture, fishing, hunting and gathering of forest-based resources. Food security and livelihood was adequate.		Discovery and production of petroleum resources altered the environment, reshaped production systems, economy, food supply systems and livelihoods in the communities.				

Source: Collated and adapted by the author from oral responses, historical and archival materials, government reports, UNEP reports and scholarly literature.

Table 3.3 shows the key longitudinal milestones of food production from the pre-petroleum era(1900-1955) to the petroleum era (1956-2025) in the selected communities of the Niger Delta region, Nigeria.

SUMMARY OF KEY FINDINGS

Based on responses from participants and field work data, which were integrated and founded on the research objectives and synthesized with extracts of data from secondary sources, the key findings of the study are recapped as follows:

i. Historical pre-petroleum food production patterns, 1900-1955

Food production systems were predominantly subsistent, with artisanal fishing and hunting practices, which were based on indigenous communal knowledge and the existence of a passionate and dedicated labour, fertile soils, abundant waterbodies, favourable ecological space, all intertwined to establish a resilient occupation that withstood the skewed economic policies of the colonialists before the petroleum era.

ii. Food production patterns and transformation in the petroleum era, 1956-2025

The era of petroleum production altered the effective historical food production systems, by transitioning to compulsory acquisition of farmlands, incidences of oil spillages and toxic gas flaring that caused damages to the environment, farmlands and aquatic ecosystems, which gradually resulted to declines in food production output, poor fish and hunting catches, as well as erosion of the people's interest for agricultural practices. Primary data aligns with the relevant existing studies that identified factors that reshaped the eras, to include the application of the Land Use Decree of 1978, which was founded on compulsory displacement of communities and their farmlands, incidences of environmental and land degradation, oil spills, toxic gas flaring, urbanization,

occupational rural urban migration, ineffective environmental governance, all associated to petroleum exploration and production in the selected communities.

iii. Historical comparison of the pre-petroleum and petroleum eras

Based on the available primary and secondary data, the study established that indeed, the era of petroleum production in the communities transformed the selected communities from agriculture driven economies to communities where petroleum activities drive and shape their socio-economic fabric. This indicates that the petroleum era did not only weaken food production systems, food security and livelihoods that were obtainable in the pre-petroleum era, it altered the hitherto friendly interactions between the people and their environment and fostered a situation of dependency on external food sources.

iv. Implication for livelihoods and food security in the selected communities

The recurring decline in food production and fishery significantly altered food security and livelihoods in the communities by reducing household foods supply and incomes, entrenched a system of increased dependence on purchased foods, most of which are imported, processed and priced out of the reach of the people. The adapted coping strategies used by the farmers to mitigate the impact of the petroleum production failed to achieve optimum result due to a shift in indigenous food production knowledge and erosion of interest in farming by the able-bodied rural farmers.

Implications of findings for food security and livelihoods in Nigeria

The wider implication of a shift in any sectoral or economic dynamics in communities of the Niger Delta region has the tendency to affect Nigeria, because the region is a significant literal place holder and generator of the country's petroleum wealth. Therefore, a persistent and uncontained shift in agricultural production can undermine the national efforts to attain sustainable food security for the country and inability to achieve Goal number two(2) of the Sustainable Development Goals (SDGs) agenda 2030. The findings of the study demonstrate that food production, food security and sustainable livelihoods in the Niger Delta cannot be divorced from national perspectives in environmental and energy governance, which calls for the restoration of the environments, supports for farmers and fishers, as well as institutionalization of the communal and traditional systems, without prejudice to the petroleum era models of agricultural mechanism and practices.

CONCLUSION

The study concludes that the era of petroleum production indeed altered farming and fishing, by causing a significant structural transformation. The change has altered food production systems, thereby impacting on food security and livelihoods of the selected communities. This shift has become an historical trajectory for the indigenous communities in the Niger Delta region and calls for a deliberate and strategic efforts by the governments at all levels and relevant stakeholders, to address the distortions.

RECOMMENDATIONS

From the findings of the study, the following recommendation are suggested for adoption for future actions:

- i. Strengthen and accelerate environmental remediation efforts to restore all abandoned oil wells and fields, clean up and recover sizable portions of degraded lands for mechanized farming within a strict and binding timeline.

- ii. Support livelihoods in the communities by establishing actionable programs, such as access to credit and agricultural incentives, sustainable skills acquisitions, training in processes in the agricultural value chain that would generate income for the people to reduce dependence on petroleum-driven economy.
- iii. Enhance food security by collaborating with the local communities to engage in mechanized agricultural settlements for the production of food crops and modernized storage mechanism for the produces.
- iv. Decentralize regulation and governance of the environments and involve the communities in policy formulations and checks on operational standards in the petroleum sector in the selected communities.
- v. Promote climate-resilient agricultural practices by deploying climate smart and enhanced technologies, provide the communities with improved seedlings that can withstand the effect of acidic contaminations on crops and fishes.
- vi. As a matter of actionable policy, institutionalize, teach and preserve the historical indigenous agricultural production knowledge and skills for sustainable engagement in the communities and integrate these policies to national policy making and governance.

ACKNOWLEDGEMENTS

All the people, including peer reviewers, authors and respondents, who in one way or the other contributed to the work are highly acknowledged.

Ethical considerations

The study is based entirely on available public data and does not involve human subjects, animals, sensitive or confidential data, that necessitated ethical clearance. All data sources were duly and properly cited and credited.

Disclosure of conflict of interest

There is no conflict of interest with any person or authority.

Funding

The authors did not receive any grant or financial support for the research, authorship and publication of this article.

REFERENCES

1. Adedeji, O.B. & Adetunji, V.E. (2011). Aquatic pollution in Nigeria: The way forward. *Adv Environ Biology*, 5 (8), 2024-2031.
2. Aghalino S.O. (2000). British Colonial Policies and the Oil palm industry in the Niger Delta region of Nigeria, 1900-1960. *African Study Monographs*, 21(1): 19-33.
3. Akaakar, A. (2019, May). Oil Dependency and National Food Security: A Case for Nigeria. A Thesis Submitted in Partial Fulfilment of the Requirements for the Master of Science Degree Department of Agribusiness Economics in the Graduate School Southern Illinois University Carbondale. pp. 1-37.
4. Akanmidu, P.I. (2015). A historical perspective of petroleum on Nigeria's economic crisis since independence. *Global Journal of Human Social Science: E-Economics*, Vol. 15(2), 17-24

5. An, Z., & Jiang, L. (2023). Academic literacy development and professional identity construction of novice language teachers: A community of practice perspective. *Frontiers in Psychology*, 14, Article 1190312, n.p.
6. Babatunde A.O. (2023). Oil Exploitation and food insecurity in Nigeria's Niger Delta. *Journal of Modern African Studies*, 61(1), 165-187.
7. Babatunde, A.O. and Adebayo, A. A. (2020). Local perspectives on food security in Nigeria's Niger Delta. *The Extractive Industries and Society*, 7(4), 1199-1209. <https://www.sciencedirect.com/science/article>
8. Babatunde, A.O. (2017, February 3). Challenges to Food Security in Nigeria's Oil-Rich Niger Delta Region. Accessed January 14, 2025, n.p. Available online at kujenga-amani.ssrc.org/2017/02/03/challenges-to-food-security-in-nigerias-oil-rich-niger-delta-region.
9. Babatunde, A.O. (2017, December 13). Life as an APN Alumnus: An Interview with Dr. Abosede Babatunde. African Peace Building Network, Social Science Research Council, n.p. Available online at: <https://kujenga-amani.ssrc.org/2017/12/13/life-as-an-apn-alumnus-an-interview-with-dr-abosede-babatunde/>.
10. Bristol-Alagbariya, E.T. (2022) Ancient Niger Delta Trading States, 1884/85 Negative Sovereignty Treaties, Positive International Law, British Colonization & Good Governance towards the Advancement of Civilization in Nigeria. *International Journal of Developing and Emerging Economies*, Vol.10, No.2, pp.34-61. Available at <https://www.eajournals.org/>.
11. Chijioke, N. M., Ozobialu, B. C., Peretomode, E., Nwosu, J. C., & Nwokoro, E. C. (2025). Causes and Effects of Environmental Degradation in the Niger Delta and the Mitigation Measures that can be Implemented. *Saudi Journal of Humanities and Social Sciences*. 10(2), 45-55. Available online at: <https://doi.org/10.36348/sjhss.2025>.
12. Clinton-Ezekwe, I., Raimi, M., Ezekwe, I., et al. (2024). From oil to health: Ground-water quality and its potential health effects in Mgbede oil fields of South-South Nigeria. *Open Journal of Yangtze Oil & Gas*, No. 9,95-118.
13. Dike, K.O. (1956). *Trade and Politics in the Niger Delta, 1830-1885: An Introduction to the Economic and Political History of Nigeria*. Oxford University Press.
14. Ehiomogue, P. O., Alonge, A. F., Udoumoh, U. I., Assian, U. E., & Okoko, J. U. (2022). Effect of crude oil exploration on global food security: A review. *Annals of Faculty Engineering Hunedoara – International Journal of Engineering*, 20(2), 65–72.
15. Enemugwem, J. H. (2009). The Development of the Niger Delta of Nigeria, 1900 – 1966. *Journal of Sustainable Development in Africa*, Volume 10, No.4. pp.162-164. Available online at: https://jsd-africa.com/Jsda/V10N4_Spring2009/PDF/DevelopmentNigerDeltA.pdf
16. Enetimi, I. S., & Raimi, M. O. (2025). Leveraging science, innovation and policy for climate resilience (Paper presentation). International Conference of the Faculty of Science, Federal University Otuoke, Bayelsa State, Nigeria.
17. Hall, P. A., & Taylor, R. C. (1996). Political science and the three new institutionalisms. *Political Studies*, 44(5), 936–957
18. Igoni, A.H. (2018). Understanding the Niger Delta Environment for Sustainable Agricultural Mechanization, An Annual Public Lecture Presented by Engr. Dr. Asinyetogha Hilkiah Igoni at the 13th Annual Lecture and Awards Ceremony of the Nigerian Society of Engineers, Port Harcourt Branch, Port Harcourt, Rivers State, Nigeria, n.p.
19. Keme-Iderikumo, K., Augustus E.A., Raimo M.O. (2024). Unveiling the impact: Gas flaring on artisanal fisheries in Taylor Greek, Bayelsa State, Nigeria. *International Journal of Hydrocarbons*, 8(6), 235-248.
20. LASU SDG Books Link (2023). *Agenda 2030 and the sustainable development goals: Regional perspectives on demographic equality*. LASU SDG Press.
21. Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.
22. McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27(1), 415-444.
23. Nazim, M and Mukherjee B. (2016). *Knowledge Management Tools for Libraries, Knowledge Management in Libraries*. Chandos Publishing, pp. 115-148. (<https://www.sciencedirect.com/science/article/pii/B9780081005644000065>)

24. Nwankwo, A.A. (1982). After Oil, What Next? (Oil and Multinationals in Nigeria), Enugu: Fourth Dimension Publishing Co. Ltd. In G.P. Ogboli, L.C. Ukwujiagu, S. Dagogo & W.I. Chukwuka (2024). Economic History and Environmental Degradation of the Niger Delta, Nigeria. International Journal of Research Publication and Reviews, pp. 2757-2758.
25. Oboreh, J.S. & Aghalino, S. O. (2010). Economic Activities of the Niger Delta People of Nigeria: A Historical Comparison and Lessons to Learn, Proceedings of the Northeast Business & Economics Association, Eastchester, p.223. <https://www.proquest.com/openview/8f8bc>
26. Odubo, T.R. (2021). Factors that inhibit the adaptive capacity of rural households to oil pollution in the Niger Delta region, Nigeria. Wilberforce Journal of Social Sciences, 6(1), 170-180.
27. Ogbobor, E. and Aghoghovwia, E. (2015). Environmental degradation in Nigeria's Niger Delta: implications for sustainable development. Int J Environ Sci Technol. 12(4), 1249–1260
28. Ogbodo, C.A. & Okoye, C.O. (2022). Environmental degradation and food security in Nigeria. International Journal of Energy & Economic Policy, 12(3), 1-11.
29. Okonta, I. and Douglas, O. (2001). Where Vultures Feast-Shell, Human Rights and Oil in the Niger Delta. Sierra Club Books, San Francisco, 1-286.
30. Okumagba, M. P. (2000). A Short History of Urhobo, Kris and Pat, Warri, 1980. In S.O. Aghalino, British Colonial Policies and the Oil Palm industry in the Niger Delta Region of Nigeria, 1900-1960. African Study Monographs, 21(1), p.22.
31. Onoja, A., Odumu, A., & Moses-Ojo, O. (2024). Food security challenges: An impediment to achieving sustainable development goals (SDGs 2) in Nigeria. Gusau Journal of Sociology, 4(2), 205-215
32. Onojake, M.C. & Osuji, L.C. (2012). Petroleum hydrocarbon contamination of surface water and sediment of Ekerekema Creek, Niger Delta, Nigeria: A case study. Journal of Environmental Protection, 3(5), 451-459.
33. Oruonye, E.D. & Ahmed, Y.M. (2020). Oil spillage and its impact on food security in the Niger Delta. Environ Dev Sustain, 22(3), 2387-2403.
34. Osundare, F. (1999) Analysis of the Demand for Certified maize seeds in Ondo State: Implications for food security. Poverty Alleviation and Food Security in Nigeria, Y.L Fabiyi and E.O. Idowu (Eds). NAAE pp.238-239.
35. Oweibia, M., Elemuwa, U. G., Akpan, E., Daniel, E. T., Oruikor, G. J., Tarimobowei, E., Okoho, E. E., Elemuwa, C. O., Raimi, M. O., & Babatunde, A. (2024). Analyzing Nigeria's journey towards Sustainable Development Goals: A comprehensive review from inception to present. F1000Research, 13, 984.
36. Raimi, M.O., Saliu, A.O., Babatunde, A., Okon, O.G., Taiwo, P. A., Ahmed, A., et al. (2022) The Challenges and Conservation Strategies of Biodiversity: The Role of Government and Non-Governmental Organization for Action and Results on the Ground. In: Chibueze Izah, S. (Eds.), Biodiversity in Africa: Potentials, Threats and Conservation, Springer, 473-504. https://doi.org/10.1007/978-981-19-3326-4_18
37. Robert, O.T. & Anele, K.A. (2019). Artisanal crude oil refining and livelihood adaptative strategies in the Niger Delta region. International Journal of Innovation, Human Ecology and Natural Studies, 7(4), 20-30.
38. Sam K., Zabbey, N., Vincent-Akpu, I.F., Komi, G., Onyagbodor, P.O. & Babatunde. (2024, March 14) Socio-economic baseline for oil-impacted communities in Ogoniland: towards a restoration framework in Niger Delta, Nigeria. Environmental Science Pollution Research Int, 31(17), 25671-25687
39. Steinmo, S. (2008). Historical institutionalism. In D. Della Porta & M. Keating (Eds.), Approaches and methodologies in the social sciences: A pluralist perspective (pp. 118–138). Cambridge University Press. Cambridge University Press Link
40. Taylor & Francis Link (2022). Historical institutionalism: A tool for researching the nonprofit sector. Innovation: The European Journal of Social Science Research, 36(3), 444–461.
41. Tunde, N.E. (2026, July). Impact of Shell and Exxonmobil's Operations on Agricultural Production and Food Security in the Niger Delta Region, Nigeria, 1958-2021. International Journal of Research and Innovation in Social Science (IJRISS), Vol.10 (7), pp.7091-1104. <https://doi.org/10.47772/IJRISS.2026.100700483>. [https://www.researchgate.net/journal/International-Journal-of-Research-and-Innovation-in-Social-Science-2454-6186?](https://www.researchgate.net/journal/International-Journal-of-Research-and-Innovation-in-Social-Science-2454-6186?from_view=article_list)

42. Tunde, N.E. (2021, June). The Green Diplomatic Summits and their Impacts on Nigerian Environment, 1972-2021 (Masters dissertation presented to the University of Abuja), 89.
43. Udo, R. K. (1980). Environments and Peoples of Nigeria: A geographical introduction to the history of Nigeria. In O. Ikime (Ed.), Ground work of Nigerian History, 8. Historical Society of Nigeria, HEBN Publisher
44. Ukpe, O.U., N.J. Nweze and C.J. Arene, Food Insecurity Vulnerability Status of Farm Households in Niger Delta, Nigeria. International Journal of Food and Agricultural Economics, Vol. 4 (1), 2149-3766. Special Issue, 2016, p. 110. Available online at: <http://ageconsearch.umn.edu/ageconsearch@umn.edu>. Accessed December 23, 2025.
45. UNICEF. (2023). 25 million Nigerians at high risk of food insecurity in 2023.
46. Usoro, E. J. (1974). The Nigerian Oil Palm Industry. Ibadan University Press.
47. Uyigue, E. & Agho, M. (2025). Environmental Degradation in the Niger Delta: Resource conflict or development crises? Global Majority E-Journal, 18(1), 58-72. In Chijioke N.M., Causes and Effects of Environmental Degradation in the Niger Delta and the Mitigation Measures that can be Implemented”, Saudi Journal of Humanities and Social Sciences. Available online at: <https://saudijournals.com>
48. Wegner, S., & Jones, J. L. (2022). Occupational identity in occupational therapy: A concept analysis. Scandinavian Journal of Occupational Therapy, 29(6), 445–456.