

Determinants of Youths' Participation in Rice Cultivation in Bayelsa State, Nigeria

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Abstract

This study examines the potential, challenges and prospect of youth participation in rice cultivation in Bayelsa state. Rice production is one of the fastest growing agricultural sub-sectors, and rice has moved from being a ceremonial to a staple food and one with high commercial viability. Rice cultivation is not generic to all ecological regions and is generally labour intensive and, thus, requiring several manual operations and techniques to accomplish. This study examines the potential of youths' participation, as a vast corpus of untapped resources, in rice cultivation. The research adopts a case study design and focuses on Bayelsa state in the Niger Delta region of Nigeria. The study combines primary and secondary methods of data collection to gather data from a sample size drawn combining purposive and random sampling techniques. Four local governments areas were purposively selected, i.e. Ogbia, Sagbama, Southern Ijaw and Yenagoa, with one community drawn from each, i.e. Otuokpoti, Ofoni, Ondowari and Asagbene, respectively. With fifteen (15) respondents, farmers and youths, drawn from each community, the study uses a sample size of sixty (60) respondents. Data collected will be presented quantitatively where feasible, transcribed where necessary, and descriptively analysed. The study is expected to provide an empirical basis for harnessing the potential of the vast army of youth in the state in the cultivation of a crop that is both important for domestic consumption and high commercial viability, while simultaneously mitigating youth restiveness in Niger Delta.

Key words: Rice cultivation, Agriculture, Farming, Youths, Niger Delta, Bayelsa State

Introduction

Rice is the seed of the monocot plant *Oryza sativa* (Asian rice) or *Oryza glaberina* (African rice), and it belongs to the family *Poraceae*. It is an annual grass plant with a life cycle of 80-200 days from germination to maturity. Rice is one of the leading food crops in the world, and second most cultivated cereal crop after wheat. It provides (20%) twenty percent of the per capita energy and 13 percent of the protein consumed worldwide (IRRI, 2022). In Africa, rice is a critical staple, particularly in West Africa, where it has become one of the most important food crops in the region. West African countries such as Nigeria, Mali, and Senegal are significant consumers and

producers of rice. *Oryza glaberrima*, or African rice, has been cultivated for thousands of years in this region and is well adapted to local conditions, though it has largely been replaced by the more globally dominant *Oryza sativa*. According to the Food and Agriculture Organization (FAO), rice consumption in Africa has grown rapidly due to urbanization and changing dietary habits, leading to a dependence on both locally produced and imported rice. Despite efforts to boost local production, many West African countries still rely heavily on rice imports, especially from Asia, to meet demand, contributing to food insecurity and economic challenges. The increasing emphasis on rice production within initiatives such as the Comprehensive Africa Agriculture Development Programme (CAADP) highlights the region's focus on achieving self-sufficiency in rice production (Balasubramanian et al., 2007; Mohanty, 2013).

In Nigeria, rice production has emerged as one of the fastest growing agricultural sub-sectors, and has moved from a ceremonial to a staple food in many Nigerian homes, within the last two decades, such that some families cannot do without rice in a day. Rice is an important food crop and cash crop in Nigeria. Rice serves multipurpose role as it immensely contributes to internal and external sub-regional trade as well as food security for the nation. The contribution of rice to Nigeria's economy has been on the increase over the years (Akpokodje, Hancon and Eresntein, 2001; World Bank, 1996). Nwachukwu, Agwu and Ezeh (2008) reported that as a staple food in Nigeria, rice accounts for (40%) forty percent of the dietary needs of the country's population, however, production has been growing at a slow relative to consumption within the past years. Furthermore, apart from the economic significance of rice, it has also become an important plant for genetic and genomic studies. Rice is diploid with twenty-four (24) chromosomes which can be distinguished individually, using cytogenic techniques (Fukui and Lijima, 1991). Rice occupies a dominant position among different arable crops grown in the Agricultural zones of Bayelsa State. Rice cultivation generally is labour intensive and, as such, requires many manual operations and techniques which cannot be done successfully without the assistance of youths in clearing, ridging, weeding, transplanting, and many other activities that are involved in the cultivation and management of the crop. However, youths in agriculture has been described as a very vital part for agrarian and land reform which will aid in promoting the interest of youths in the agricultural sector of the economy (Gwanya 2008). Similarly, Jibowa (1998) has described youths as the primary constituent of a potential agricultural revolution on the continent.

According to the National Population Commission, NPC (2022), more than half of Nigeria's over 220 million populations are people under 30 years of age. Beyond Nigeria, youths all over the world are a major source both in human resource development in agriculture and technological innovation (Nwachukwu, 2008; Onuekwusi, 2003; Ovwigho and Ifie, 2004). It is to this end this study contends that vast resources of youthful population in Nigeria have not been put to use, especially given that fact that country still imports a large portion of its food despite its arable land and abundant human and natural resources (Adesina, 2018; Buhari et al., 2024). The study argues that youths is an invaluable component of improved agricultural development, specifically in the provision of food and fibre, as well as the overall transformation of the sub-sector. Thus, exploring how to enhance youths' involvement and participation in rice cultivation is not only important; more so, it poses the potential of realising sustainable agricultural development at the rural areas, as well as poverty alleviation in Bayelsa State in particular and, Nigeria in general (Folade, 2001). To explore the prospects of youths' involvement in rice cultivation, this paper is organised into five sections, with this introductory section which sets the background of the study inclusive. The

second section makes an overview of rice production while the third section addresses methodological issues. The fourth section presents and discusses the data and findings of the study, while the fifth section concludes the study.

Statement of Problem

In recent times, Bayelsa State and the Niger Delta region in general has been characterised by conflict of different proportion. In fact, the region has been identified as one with high degree of youth restiveness, crime, violence as well as perennial crisis (Zibima et al., 2024; Zibima, 2015; Ibaba, 2008). The incessant incidence of violence and agitation in the region is not unconnected to the army of unemployed youths in the region, over reliance on oil resource and revenue, what has been aptly described as ‘mono economy’ as opposed to diversified economy. This study seeks to explore the cultivation of rice as an alternative to the over reliance on petroleum resources. Specifically, it explores the increasing interest in rice cultivation in the Agricultural zones of Bayelsa State with focus on Ogbia, Sagbama, Southern Ijaw, and Yenagoa Local Government Areas which are already exploring this potential.

It is the contention here that, given the labour-intensive nature of rice cultivation, engaging youths in rice production will not only keep them productively engaged; it will significantly address the unprecedented rate of unemployment, reduce youth restiveness, and mitigate crime in Bayelsa State and the Niger Delta region in general. Also, the persistence shortage of food supply in the region vis-à-vis arable but under-cultivated land and teeming unemployment calls for critical attention. Thus, the need to address these issues while at the same time routing for sustainable agricultural development form the basis of this study.

Objectives of the Study

The general objective of this study is to examine youths’ participation in the cultivation of rice in the study area, namely, Ogbia, Sagbama, Southern Ijaw, and Yenagoa Local Government Areas of Bayelsa State. The specific objectives of the study are:

To examine youths’ participation and the challenges and prospects of youths in rice cultivation; and

To identify constraints/problems of youths’ participation in rice cultivation in the study area.

The concern is to explore the potential of harnessing the vast army of youths in the cultivation of crop that is both important for domestic consumption and with high commercial viability, with a to encouraging their involvement in rice cultivation both as a means of survival and as a professional calling.

Overview of Rice Production

Rice is one of the most critical staple foods globally, providing sustenance to more than half of the world's population. It is cultivated in more than 100 countries, with an estimated annual production of around 500 million tons of milled rice (FAO, 2020). Asia dominates global rice production, accounting for more than 90% of the total, with China and India being the top producers. These two countries, along with Indonesia, Vietnam, and Thailand, are not only leading producers but also major consumers of rice. In particular, China produces over 210 million metric tons annually, which constitutes about 28% of the world's total production (IRRI, 2022). Global consumption patterns indicate that rice is the primary source of calories for people in many developing countries, especially in Asia and parts of Africa. According to the International Rice Research Institute (IRRI), rice provides nearly 20% of the world's per capita energy intake. This is significant for countries where rice is a dietary staple and a significant economic commodity. Trade-wise,

Thailand and Vietnam are leading rice exporters, while countries like the Philippines and Nigeria are among the largest importers (OECD-FAO, 2023).

Rice Production and Consumption in Africa

Rice is an increasingly vital crop in Africa, particularly in West Africa, where rapid population growth and urbanisation have led to a surge in demand. While Africa accounts for just 4% of global rice production, the continent remains one of the largest importers of rice due to its growing consumption needs (Balasubramanian et al., 2007). West African nations such as Nigeria, Senegal, and Côte d'Ivoire have witnessed significant increases in rice consumption, leading to efforts by both governments and international organisations to enhance local production. The production of rice in Africa is often constrained by factors such as outdated farming methods, poor irrigation systems, and a lack of modern agricultural inputs. However, the introduction of improved rice varieties such as the New Rice for Africa (NERICA) has shown potential to significantly boost yields (Mohanty, 2013). Despite these efforts, many African countries continue to import large quantities of rice, primarily from Asia, to meet domestic demand. This dependency on imports has raised concerns about food security, particularly during periods of international market volatility. Balasubramanian et al. (2007) explained that due to population growth (4% per annum), rising income and shift in consumer preferences in favour of rice, especially in urban areas. Rice consumption in sub-Saharan Africa has increased due to the changing food preferences in urban and rural areas and compounded by high population growth rates and rapid urbanisation. Like Balasubramanian et al. (2007), WARDA (2005) report states that the relative growth in demand for rice is higher in urban regions of Africa than in anywhere else in the world.

Rice Production and Consumption in Nigeria

Nigeria is the largest rice-producing country in Africa, with production reaching around 8 million metric tons in 2021 (FAO, 2021). The crop is cultivated in several regions across the country, including Benue, Ebonyi, Kebbi, Kaduna, Enugu, Kano, Cross River, Taraba, and Niger states, which are known for their rice paddies (Buhari et al., 2024). However, despite being a significant producer, Nigeria still imports substantial quantities of rice to meet domestic demand, making it one of the largest rice-importing countries in the world. The Nigerian government has made various efforts to boost local rice production through policies like the Anchor Borrowers' Program, launched in 2015, which provided financial support to smallholder rice farmers. These initiatives have led to some progress in increasing production, but challenges such as poor infrastructure, inadequate processing facilities, and limited access to quality inputs continue to impede the achievement of self-sufficiency (Adesina, 2018).

Nigeria's rice consumption has been rising due to population growth and urbanization. Rice is now a staple food for many Nigerians, and the demand for locally grown rice has increased. The preference for locally produced rice has been bolstered by import restrictions and bans, although smuggling of foreign rice across the country's borders remains a significant issue (Ogundele et al., 2020). Rice is an important food and cash crop in Nigeria, and serves as a major component of internal and external trade in the sub-regional level as well as a major source of food security to the nation. Rice contribution to the nation's economy has been acknowledged and available data suggests it will be on the rise over the years (Akpokodje et al., 2001). Rice, *Oryza sativa*, is believed to be associated with wet humid climate for cultivation, even though it is not a tropical plant. It is known as a semi-aquatic annual grass plant and is found growing in a wide range of soil types and water regimes such as irrigated rain-fed field, lowland, upland, and flood-prone areas,

depending on where it is produced. In other words, it can be cultivated in a wide range of areas, from deeply flooded to dry flat fields or highly terraced or non-terraced slopes. Rice is a nutritional staple food which provides instant energy as its most important component is carbohydrate (starch). On the other hand, rice is poor in nitrogenous substances which average composition of these substances being only 8 percent and fat content or lipids only negligible; that is, only 1 percent and, it is considered edible for this reason.

Although, there are multiple types of rice production, the principles of land preparation, planting, management, harvesting, and finally processing are similar around the world, apart from the obvious difference between the wetland and dry land cultivation. Most cultivated rice is grown in flooded fields and rain-fed lowlands. The rain-fed wetland rice production occurs in areas of the world where standing water is expected and desired during the growing season, while irrigated rice is produced when water is added or supplemented with that of nature (natural processes). There are various types of rice cultivated around the world, based on grain's length, width, and chemical characteristics. Specifically, there are long grain, medium grain and short grain. Rice of different varieties is cultivated and grows in approximately 115 countries, across the continents, except Antarctica. Rice production practices ranges from very primitive to highly mechanised systems.

Rice Production in Nigeria

Nigeria is becoming one of the major importers of rice in the world market in the past five years, thus, being an important outlet for rice exporting countries. Nigeria imports rice of high-quality value (parboiled) as against rice of lower quality in other countries of the sub-region (WARDA, 2003). In Nigeria and, more importantly, in most developing countries, the demand for food products has outstripped supply, thereby creating a huge deficit. Although, importation of food products was used partially to fill the growing deficits in the past; presently, its continuation constitutes avoidable drain on Nigeria's source of foreign earnings, especially during this period of economic instability and dwindling oil prices (Oladimeji, Abdulsalam and Danusa, 2013). Nigeria, which is situated on the Gulf of Guinea, in sub-Saharan Africa, lies on Longitudes 2o49'E and 14o37'E and Latitudes 4o16'N 13o52'N, has a total land area of 923, 768, 622 km² and an estimated population of over 220 million. Its climate is tropical, characterised by high temperatures and humidity, with marked wet and dry seasons, though with variations between the South and the North. Total rainfall decreases from the coast northwards. The South, below latitude Latitudes 8oN has an annual rainfall ranging between 1,500 and 4,000mm and the extreme North, between 500 to 1,000mm.

Food production in Nigeria is virtually rain-fed. For example, Nigeria's irrigated area as a share of total cultivated area is estimated at about 2% (Svendsen, M., M. Ewing and Msangi S., 2009; Oladimeji and Abdulsalam, 2014) which is lower than average of Africa's 6%, compared to 14% for Latin America and 37% for Asia (Oladimeji and Abdulsalam, 2014). Rice is an increasingly important crop in Nigeria and its relative ease to produce accounts for its increasing growth for sale and domestic consumption. There is a long tradition of rice consumption growing, but for many hitherto, rice has been considered a luxury food, only for special occasions. However, with increasing cultivation and availability of rice, it has become part of everyday diet in many households in Nigeria.

There are many varieties of rice grown in Nigeria, some of which are considered traditional or local varieties, while others have also been introduced over time. New varieties are produced and

disseminated by research institutes, or are being imported. The spread of these strains is determined by their perceived success; and farmers multiply seeds for their plots when they see a variety doing well on someone else's farm, or if a variant is fetching good price in the market. Rice, which is grown in paddies or on upland fields, depends on the requirements of the particular variety even though there is limited mangrove cultivation (Buhari et al., 2024). The field for rice cultivation is ploughed after the rain. Once the fields have enough water, the rice grows quickly, with some varieties reaching maturity within three to four months. Most farmers cultivate the rice crop once a year, but some have made irrigation channels which allow them to reap two or even three harvests in a year. This allows them to plant seedlings when there is less danger for diseases or pests.

Since rice can grow in every ecological zone, Nigeria has such a tremendous potential for optimal production (Oladimeji, 2013; Buhari et al., 2024). This can be demonstrated easily as some rice growing systems such as upland hill has risen as a result of small-holder farmers' searching for more land to cultivate rice. In the light of a viable rice culture (even amongst communities which have only marginal land for rice cultivation due to socioeconomic factors) and availability of appropriate varieties, the crop illustrates that adoption of technologies will be faster if the key factors for each community can be identified and fulfilled. Farmers are consistent in their response that local rice with good processing (milling) characteristics actually attracts better prices. The production of appropriate technology and varieties will go a long way in keeping rice farmers in business, given the huge national and sub-regional markets (Oladimeji and Abdulsalam, 2014).

According to Hardcastle (), rice production started in Nigeria in 1500 BC, with the low-yielding indigenous red grain species, *Oryza glaberrima* Stend and it was widely grown in the Niger Delta area. WARDA reported about the high-yielding white grain *Oryza sativa* L. introduced in 1890 and, by 1960, it accounted for more than 60% of the rice grown in the country. Nigeria has a good climate for rice production and a favourable market to absorb its production as well. There is however need to improve on the quality of indigenous rice through technological innovation to ease labour in production, preserve nutritional qualities while undergoing processing and maximise production processes. Rice production in Nigeria has been on the increase over the years (Buhari et al., 2024; Akpokodje et al., 2001; World Bank 1996). As a result of urbanisation, rice constitutes a major proportion of the expenditure on cereal-based diets of most Nigerians and has remained inadequate to bridge the demand/supply gap, thereby causing the country to resort to imports.

Rice Production in Bayelsa State

Rice has become an important staple food in Nigeria and the tale is not different in most other parts of the world, and since Nigeria has become one of the major importers of rice in the world market, Bayelsa state cannot afford to be left out in the cultivation and production of rice. This is important not simply for the economic value in terms of its revenue generating potentials but, more so, because of food self-sufficiency for the people of the state and region as well as its potential for job generation to the teeming army of unemployed youths. Thus, Bayelsa state's keying into the initiative of rice cultivation and production is not merely serving the interest of the nation but also boosting the economy of the state and promoting its wellbeing.

The importance of cultivating and producing staple food such as rice has been on the increase in recent times. For instance, the Bayelsa State Chapter of Rice Farmers (RIFAN) observes that, several communities have offered lands, which have been cleared, for the purpose of rice

production. The lands are located in various communities, in the different local government areas of the state. These communities include Asagbene, in Yenagoa Local Government Area; Ondowari and Okpotuwari, in Southern Ijaw Local Government Area; and, Ofoni, in Sagbama Local Government Area, all in Bayelsa State.

According to the Tide Source of 15th May, (2017), 5,000 hectares of land were being cleared in each of the above-mentioned communities. The Report states that RIFAN Bayelsa Chapter is committed to boosting rice production in the state, with the tripartite mission of eradicating hunger, combat unemployment and boost internally generated revenue. According to the source, RIFAN projects the engagement of over 250 youths, with an initial target to produce over 180,000 tonnes of rice from these communities, in the first phase. In the same vein, an ex-Militant, Mr Paul Eris, popularly known as Ogun Boss, has established a rice farm in his home town, Peremabiri, with a view of creating employment for the youths and to combat youth restiveness and crime in the area, in particular and the state, in general.

Youth and Agriculture

Youth is a period of life characterised by vigour, growth, and the transition from childhood to adulthood, commonly defined as the age range between 15 and 40 years. This demography forms a significant portion of the population, especially in developing countries. In African societies, youth make up over 60% of the population, reflecting their vital role in economic and social development (UNFPA, 2014). In Nigeria, the National Youth Policy defines youth as individuals between the ages of 18 and 35, highlighting their importance as a major source of labour and innovation (Federal Ministry of Youth and Sports Development, 2019). According to Ovwigho and Ifie (2004), the socio-personal definition of youth involves observing individuals in society based on their vibrancy, physical strength, and mental capacity. Youth are viewed as being in the prime of their life, contributing significantly to various sectors, particularly agriculture. This view is supported by Nwachukwu (2008) and Onuekwuse (2003), who emphasize the critical role of youth in adopting new agricultural technologies, which are essential for food security and rural development.

Despite the demographic significance, youth engagement in agriculture faces challenges. As Okeowa, Agunbiade, and Odeyemi (1999) point out, Nigeria's agricultural sector remains labour-intensive, requiring physical strength that often declines with age. Therefore, youth are not only seen as the backbone of the agricultural workforce but also as essential drivers of national development. Oladimeji (2013) underscores this by stating that youths' physical capabilities and innovative potential make them a key asset for the nation's economic transformation. Additionally, while all age groups contribute to national development, youths are particularly crucial in sectors like agriculture, where physical effort and adaptability to innovation are paramount. Investing in youth engagement is thus vital for sustaining development across various sectors in Nigeria.

However, the potential of youths notwithstanding, youths' presence in agriculture has not been encouraging. Nigeria's agricultural sector has been bedevilled with several challenges such as lack of access to market and credit facility, low level of technology, especially mechanisation, inadequate post-harvest infrastructure (storage, processing and transport), low uptake of research findings by stakeholders or disconnection between researchers and extension workers, and limited availability of improved technological packages, especially planting material and certified seeds (Ministry of Agriculture, 2017). These challenges have made agriculture unattractive and non-lucrative, resulting in decline in the number of youth participation in agriculture (Muhammed-

Lawal, Omotoesho and Falola, 2009). According to Aphumu and Atoma (2010), in Nigeria, farming population is aging. They observe that it is practically impossible for the aging generation that has hitherto dominated the agricultural sector to deliver on expected productivity to meet the needs of the ever-growing population. They however argue that agriculture has huge and diverse opportunities to, not only, transform the national economy and tremendously impact on the personal lives of farmers, particularly the youths.

Youths' participation in rice production

The United States' National Commission on Resources for Youth defined youth participation as involving of youth in responsible, challenging action that meets genuine needs, with opportunities for planning and/or decision-making, affecting others in an activity whose impact or consequence is extended to others- i.e., outside or beyond the youth participants themselves (UNFPA, 2014). Other desirable features of youth participation are provision for critical reflection on the participatory activity and the opportunity for group effort towards a common goal. Participation is concerned with organised efforts to increase control over resources and regulative institutions in a given social situation, on the part of a group and involvement of those hitherto excluded from such control. It may be conceived as an active process by which beneficiary or client group influences the direction and execution of a development project, with a view to enhancing their wellbeing in terms of income, personal growth, self-reliance, or other values they cherish.

Participation can therefore be seen as contribution, organisation and empowerment. Participation as contribution refers to people making some form of input in predetermined programmes or projects. As organisation, it implies the involvement of an individual or group in the coordination of and giving direction to a project, and as empowerment, it recognises the innate abilities of people and encourages them to contribute in determining the needs and decide upon the task and course of action to take on a given subject matter. Participation as empowerment perceives people as partners in development. Thus, through participation, the potential in youths as active agents of development is made manifest. Nonetheless, youth participation, also often referred to as youth involvement, has been used by government agencies, researchers, educators, and others, to define and examine the active engagement of young people in school, sports, government, community development (such as rice cultivation), and economic activity. Researchers have long recognised the involvement of youth in agriculture, especially staple food production such as rice, as vital to facilitate the production of food and improvement of nutrition (Jibowa, 2005; Ovwigho and Ifie, 2004).

The roles of which rural youths can play in rice production include a mobilisation tool through which rural youths can be made productive both to themselves and to their communities. Buhari et al., (2024) argue that such rural mobilisation could enhance the orientation of the minds of young rural people by promoting positive attitude towards the worth and dignity in labour. It will also promote the status of farming by giving young people opportunities, profitable enterprises and improving the lot of the community through serviceable projects. Evidence has however shown that a number of factors militate against youth participation in rural community development efforts to ensure transformation in behaviour and in their involvement in rural community development activities (Adesina, 2018). Due to the enormous potential known to be considerably underutilised, it has become imperative to identify how youth involvement in rural development could be utilised for a desired change in the rural areas, in particular, and the country, at large. Youth with sound physical and mental health are the active population of any nation. Hence,

youths' involvement in agricultural activities will, no doubt, go a long way in shaping the developmental heights of the nation. Youth involvement in rice production will, therefore, not only bridged the increasing chasm of demand and supply of rice in the Nigerian market but also improves the socio-economic life of the rural people, as well as encourages development of vocational agriculture among the youths in rural areas (Adesina, 2018; Ovwigho and Ifie, 2004). However, youths in rural areas in Bayelsa State have not been fully involved in agricultural activities and in most development projects as their efforts and contribution are usually undervalued as well as opportunities scarcely given to them. Hence, the need for this study to be conducted; to determine the level at which the youths will, are willing to, and/or are involved in rice production in the study area. The study envisages the imperative to integrate physical and mentally active (youth) individuals in the revitalisation of agricultural sector and rice production in particular, if food self-sufficiency is to be achieved and foodstuff available to all and sundry. This, however, is in congruence with the rationality that the youth, a reservoir of valuable human and natural resource, has remained largely untapped (Adedoyin, 2005).

Study Area and Methodological Issues

Study Area

The study narrows down to four rice-producing communities within four Local Government Areas (LGAs) of Bayelsa State—Ogbia, Sagbama, Southern Ijaw, and Yenagoa. These communities, Otuokpoti, Ofoni, Ondowari, and Asagbene, have distinct geographical, cultural, and economic characteristics that contribute to their role in rice cultivation.

Otuokpoti is located at approximately 4.6200°N, 6.3150°E. Otuokpoti is part of the Ogbia LGA and has historically been known for its involvement in agriculture, particularly rice farming. The community's proximity to rivers and streams provides a reliable water source, essential for rice cultivation. The primary means of livelihood in Otuokpoti is farming, with fishing as a secondary activity due to its access to aquatic resources. The people of Otuokpoti predominantly speak the Ogbia language, which is closely related to the Ijo languages in the Niger Delta. Ofoni is situated within Sagbama LGA at coordinates 5.0826°N, 5.9289°E. The community thrives on farming, with rice being a major crop due to the fertile land along the banks of the River Niger. Fishing also plays an essential role in the local economy. Ofoni's population primarily communicates in the Ijaw language and a blend of Urhobo, reflecting its cultural ties with other ethnic groups in the Niger Delta. The community's natural environment supports wetland farming, which is ideal for rice cultivation.

Ondowari, located at approximately 4.5587°N, 5.8237°E, is part of Southern Ijaw LGA, one of the largest in Bayelsa State. The community primarily relies on rice farming and fishing for its livelihood. Surrounded by rivers and creeks, Ondowari is well-suited for rice cultivation, particularly using traditional methods. The community speaks Ijaw, the dominant language in the Southern Ijaw area. Farming and fishing continue to shape the economic landscape of Ondowari, with rice farming providing significant economic sustenance. Asagbene is situated in Yenagoa LGA at coordinates 4.9331°N, 6.2636°E. Like the other communities, it is predominantly agrarian, with rice cultivation being a major part of the local economy. The community benefits from the deltaic soil and easy access to water for irrigation. Fishing complements farming as a mode of livelihood. The inhabitants of Asagbene primarily speaks Ijaw and a blend of Epie-Atissa language, a dialect within the Ijaw language family. The community's rice farming activities play

a crucial role in the local food supply and economy. Taken together, these communities are integral to rice production in Bayelsa State, each drawing on their natural environment, cultural practices, and traditional methods to support their agricultural livelihood.

Sampling Technique and Sample Size

The research adopts a case study design. The setting of the study is Bayelsa state which has eight local government areas (LGAs) namely: Brass, Ekeremor, Kolokuma/Opokuma, Nembe, Ogbia, Sagbama, Southern Ijaw and Yenagoa. The study combines primary and secondary methods of data collection, from a sample size drawn combining purposive and random sampling techniques. Data collected will be presented quantitatively where feasible, transcribed where necessary, and descriptively analysed

Sampling Technique

This study combines purposive sampling and random sampling techniques. Purposive sampling is employed to select the LGAs, respective communities and respondents for scheduled interview, while random sampling is employed to distribute questionnaire among respondents. On the one hand, purposive enables the selection of respondents, in the study area, who are educated and versed in the subject matter of the study, with a view of collecting valuable information, which will be juxtapose with reviewed literature in order to draw out a comprehensive questionnaire for the second stage. On the other hand, random sampling is utilised to deploy the questionnaire, this time without resort to perceived ‘specialised’ knowledge, on the subject and not limited to the educated population since it will be self-administered.

Sample Size

The study narrows down to four LGAs namely: Ogbia, Sagbama, Southern Ijaw and Yenagoa, with one community drawn from each, i.e. Otuokpoti, Ofoni, Ondowari and Asagbene, respectively. These LGAs/communities have been selected using purposive sampling technique, not only because they have been identified as having great potentials but also given the fact that they have already embarked on massive rice cultivation. In these four communities, five (5) rice farmers will be selected for interview, while ten (10) youths will be selected to respond to the questionnaire, amounting to fifteen (15) respondents from each community and a total sample size of sixty (60) respondents. These, therefore, give the study the opportunity to explore the challenges and prospects of engaging youths in rice cultivation in Bayelsa state.

Data Collection and Analysis

The data used in this study was gathered from two sources: primary and secondary sources. The primary source is derived from the field through interviews conducted and questionnaires administered to the participants, while secondary data consists of existing information in the form of literature review; scholarly articles, journals, periodicals, reports, magazines, government bulletins, and other published materials as well as internet sources. The primary instrument for data collection in the course of this study is twofold: interview and questionnaire. The latter, consists of close-ended questions and, in some cases, multiple choice answer option, forms the basis of this part of the paper. The rationale for close-ended questions is for ease of translating the information into quantifiable data.

Data collected via interview were transcribed, while that of questionnaire are presented using statistical tools such as simple percentage, pie chart, ratio and mean. The latter enables the findings to be presented in quantifiable form, while the former helps with interpretation and provides room

for descriptive analysis. However, data for this part of the paper is primarily from the close-ended section of the questionnaire.

The core objectives of the study are designed into the questionnaire akin to 4-point Likert Scale with responses coded into four categories, namely, Always Involved (AI), Rarely Involved (RI), Partially Involved (PI), and Not Involved (NI) for objective I. For objective II, the 4-point Likert Scale is coded to reflect degrees of severity from Very Serious (VS), Serious (S), Moderately Serious (MS) to Not Serious (NS). Responses are then weighted against each category from which each Mean is then calculated and ranked. To achieve this, the process involves the following steps:

Number of Respondent X 100

Sample Size 1

Objective One: 4-Point Likert Scale

Always Involved = 4

Rarely Involved = 3

Partly Involved = 2

Not Involved = 1

i.e. $4 + 3 + 2 + 1 = 10$

4 4

$10/4 = 2.5 = \text{Mean}$, where the Mean is equal to the total score divided by the total respondents.

The response frequencies for each constraint are categorised into four. Each of these categories is assigned a corresponding weight. The frequency of responses for each category is multiplied by its assigned weight. Next, the total weighted score for each constraint is calculated by summing the products of the frequencies and their respective weights. This total score is then divided by the total number of respondents to derive the Mean Score. The final step involves ranking the mean scores, with higher means indicating more consensus among the respondents. This method enables the identification of the most pressing issues based on respondent feedback and, importantly, a structured way of analysing the responses.

Data Presentation and Discussion

This section presents the data obtained using close-ended questionnaires and discusses the responses from respondents. There are four tables, the first one showing with socioeconomic characteristics and distribution of the respondents, while the remaining three border on the objectives of the study.

Socio-economic characteristics of respondents

The socioeconomic characteristics of youths involved in rice cultivation show a near-equal gender distribution, with males slightly outnumbering females at 53% to 47%. The age distribution reveals that most participants are between 26-35 years (45%), followed by the 15-25 age group (33%), and 32% fall within the 36-40 age range, indicating that young adults predominantly drive rice cultivation. Educational attainment is skewed towards lower levels, with 60% having only primary education, while 25% completed secondary education, and a smaller proportion (15%) attained tertiary education. This suggests that the majority of youths engaged in rice farming have limited formal education, potentially affecting their access to advanced agricultural techniques and resources. The result in table 4.1 below shows that thirteen (13) of the respondents are within the age range of 15-25 years, and this represents 36.1% of the population; seventeen (17) of the respondents fall within the age range of 26-35 years which represent 47.2%, and six (6) of the respondents fall within the age range of 36-40 years. This shows that youth are actively involved

in rice production.

Table 4.1: Socioeconomic characteristics of respondents

Sex	Female	Male	
Frequency	28	32	
Percentage	47%	53%	
Age			
	15-25	26-35	36-40
Frequency	20	27	13
Percentage	33.00%	45%	32%
Education level			
	Primary	Secondary	Tertiary
Frequency	36	15	9
Percentage	60%	25%	15%

Source: Field data, 2024.

Youths' Participation in Rice Cultivation

This section presents common activities youths engage in rice cultivation and their associated challenges. The first table presents the activities and the second presents common challenges associated with those activities in rice cultivation.

Table 4.2 Distribution according to type of involvement

ACTIVITIES	AI	RI	PI	NI	MEAN	RANK
Land Clearing	60	0	0	0	4	1st
Planting (Transplanting)	60	0	0	0	4	1st
Soil Preparation (Tillage)	58	2	0	0	3.97	2nd
Weeding (Manual/Herbicide)	5	27	12	17	2.37	3rd
Nursery (Broadcasting)	10	23	17	10	2.55	4th
Fertilizer Application	2	8	3	45	1.38	5th

Source: Field data, 2024.

The table shows the response from respondents according to their level of involvement in rice cultivation process. The types of participation are coded into four categories always involved (AI), rarely involved (RI), partially involved (PI), and not involved (NI), and responses weighted against each category from which each is then ranked.

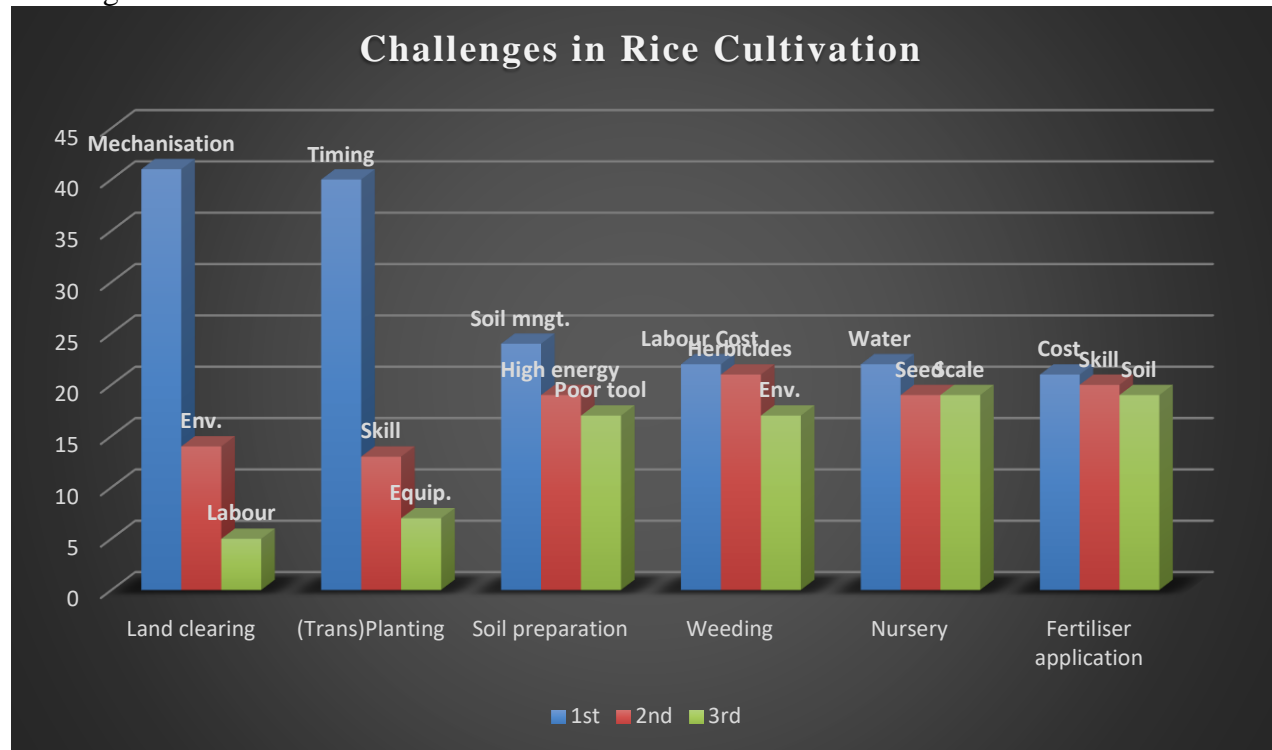
Clearing and transplanting – land clearing is labour-intensive and often requires manual effort or heavy machinery, which small-scale farmers such as youths or early starters might not be able to afford. The high mean (4.0) indicates that land clearing is seen as a critical task that farmers are always involved in but may face difficulties due to lack of access to proper equipment. Planting or transplanting rice requires precise timing and labor. Manual transplanting is common in small-scale farming, which increases the need for skilled labour and time. Like land clearing, this task has a mean score of 4.0, showing high involvement but likely challenges around labour requirements, skills and seasonality.

Tilling and weeding – like clearing, tilling is labour and resource-intensive, especially in areas lacking modern agricultural tools. Youths face difficulties in accessing plowing equipment, and manual tillage is physically demanding. The mean score of 3.97 suggests that farmers are heavily involved in this task but face limitations due to inadequate equipment. Manual weeding is time-consuming and labour-intensive. Youths often resort to herbicides, which can be costly and harmful to both the environment and human health. With a mean score of 2.37, this task is moderately serious, indicating that while it is necessary, youths struggle to keep up due to high labour demands, high costs, and or the costs of herbicides.

Nursery and nurturing – preparing and maintaining a rice nursery requires careful management of water and soil, which can be difficult without proper knowledge or resources. Additionally, broadcasting methods may result in uneven plant distribution. The mean score of 2.55 reflects that youths are moderately involved in this process, but face challenges in terms of efficient water use and seedling management. Many small-scale farmers lack access to chemical fertilisers or organic alternatives and youths are majorly affected here. Fertiliser mismanagement can also lead to reduced soil fertility or environmental harm. With a low mean score of 1.38, fertiliser application is a task that youths are less frequently involved in, likely due to financial constraints, lack of access to fertilisers, and inadequate knowledge about its use and application, or a combination of these factors.

Table 4.3: Common challenges associated with rice cultivation

The common challenges associated with rice cultivation based on the variables from the table you provided relate to labor intensity, technical know-how, resource availability, and infrastructure deficits. Below is a presentation of some of the challenges associated with each activity. challenges.



Source: Field data, 2024.

The graph above shows that in rice cultivation, several challenges arise across various stages of the production process, each with a distinct impact as attested to by the respondents. Land clearing faces the highest-ranked constraints, primarily due to the lack of mechanisation, which leads to reliance on manual labour, contributing to high labour costs and the environmental impacts of deforestation. Planting (transplanting) ranks second, hindered by poor timing, limited skilled labour, and the unavailability of proper equipment, all of which significantly affect yields. Soil preparation (tillage) which ranked third, is constrained by inefficient soil management techniques, the high energy demand for tillage, and the scarcity of modern ploughing tools. For weeding, the high cost of manual labour, health risks from herbicides, and environmental degradation place it fourth in terms of difficulty. Nursery broadcasting, a critical phase for seedling and seed distribution, is hampered by poor water management and uneven seed distribution, ranking fifth. Lastly, fertiliser application, though crucial, is constrained by the high cost of fertilisers, lack of knowledge on correct application, and the risk of soil degradation, earning it the sixth rank among the challenges. These rankings illustrate the complexity of rice cultivation among youth and the need for mechanisation, skilled labour, as well as deliberate engagement espousing environmental sustainability across all stages of its cultivation.

Constraints of Youths' Participation in Rice Cultivation

The section presents the data on and discusses the constraints of youths' participation in rice cultivation in the study area. It begins by presenting a table which reveals a range of challenges faced by the participants and then proceed to interpret and discuss each of the challenges. The scores in the table, reflecting various degrees of severity from Very Serious (VS), Serious (S), Moderately Serious (MS) to Not Serious (NS), help to highlight the key barriers to effective engagement of youths in rice farming.

Table 4.4: Distribution According to Constraints

CONSTRAINTS	VS	S	MS	NS	MEAN	RANK
Lack of Capital	60	-	-	-	3.86	1st
Lack of Suitable Land	6	18	24	12	2.25	7th
Access to Credit Facilities	43	17	-	-	3.72	3rd
Unavailability of Input	3	13	33	11	2.52	6th
Inadequate Provision of Incentives	20	36	4	-	3.25	4th
Labour Intensive	48	9	2	2	3.75	2nd
Lack of Storage Facilities	4	16	23	17	2.58	5th
Inaccessibility of Information	3	9	15	33	1.5	8th

Source: Field data, 2024.

The table highlights the major constraints faced by youths in participating in rice cultivation within the study area. Each score (VS, S, MS, NS) represents the level of seriousness of each constraint, with a corresponding mean value that signifies the overall perception of severity. The following is a detailed interpretation and discussion based on the scores; the discussion is ordered according to the mean score and rank of each variable.

Lack of Capital (Mean: 3.86; Ranked: 1st)

60 respondents (100%) identified this as a very serious (VS) constraint. This high score indicates

that the lack of financial resources is the most significant barrier to youth participation in rice cultivation. The absence of capital makes it difficult for youths to purchase essential inputs like seeds, fertilizers, equipment, and even land for cultivation. The unanimous response suggests that without substantial financial backing, rice farming is largely inaccessible to young farmers, thereby stifling their ability to engage in large-scale production. This finding aligns with other studies in Nigeria and sub-Saharan Africa that highlight lack of access to capital as a pervasive challenge in agriculture. For instance, Ojo et al. (2020) pointed out that limited credit access has hindered youth entrepreneurship in agriculture across several Nigerian states.

Labour Intensive Nature (Mean: 3.75; Ranked: 2nd)

Labour intensive nature of rice cultivation received 48 respondents (VS), 9 (S), 2 (MS), and 2 (NS). The labour-intensive nature of rice cultivation is perceived as a significant constraint, with a majority (48 respondents) viewing it as very serious. Only a small portion considers it less severe, indicating widespread recognition of the physical demands of farming. Rice farming involves tasks such as land preparation, planting, weeding, and harvesting, all of which require significant manual labour. This discourages many youths, who may prefer more mechanized or less physically demanding occupations. This is in line with Ugwu and Kanu (2021) argument that the perception of farming as a laborious and unattractive occupation limits youth involvement in agriculture.

Access to Credit Facilities (Mean: 3.72; Ranked: 3rd)

Access to credit facilities has 43 (VS) and 17 (S) respondents. The inability to access credit facilities is seen as a very serious problem for 43 respondents and a serious one for 17. This underscores the difficulty young farmers face in obtaining loans or financial assistance to start or scale their agricultural activities. Access to credit is critical for acquiring inputs and technology, yet many financial institutions are hesitant to lend to smallholder farmers due to perceived risks. According to Oni and Oladejo (2019), youth farmers in Nigeria struggle with obtaining loans due to a lack of collateral and high interest rates. Addressing this constraint could involve policy changes aimed at providing more accessible and affordable agricultural credit.

Inadequate Provision of Incentives (Mean: 3.25; Ranked: 4th)

With 20 (VS), 36 (S) and 4 (MS) respondents respectively, a significant number of respondents see the inadequate provision of incentives as a major hindrance to their participation in rice farming. Although not as severe as lack of capital, this is still seen as a substantial constraint. This suggests that incentives such as subsidies, grants, and training programs are critical to motivating youths to engage in agriculture. The lack of these provisions discourages participation, as young people may not see a viable future in farming. Anugwom (2021) notes that government interventions often fail to reach their intended targets, further exacerbating youth disenchantment with farming. This further shows that, inadequate provision of incentives to youths is a serious constraint, because if it can be provided from the youths, it will motivate them to get involved in rice production, whereas if not, it will be otherwise.

Lack of Storage Facilities (Mean: 2.58; Ranked: 5th)

The distribution of responses here are as follows: 4 respondents (VS), 16 (S), 23 (MS), and 17 (NS). While some respondents regard the lack of storage as a serious issue, the majority consider it moderately serious, suggesting that although important, it is not the most pressing concern for youths in the area. Storage facilities are critical in preventing post-harvest losses, but many farmers in the study area seem to manage without sophisticated storage, perhaps due to smaller scales of

production or local market availability. According to Nwafor et al. (2020), inadequate storage infrastructure leads to significant losses in agricultural production, particularly during the harvest season, yet remains under-addressed in many rural areas.

Unavailability of Input (Mean: 2.52; Ranked 6th)

With responses of 3 (VS), 13 (S), 33 (MS), and 11 (NS) respectively, most respondents see the unavailability of agricultural inputs like seeds and fertilisers as a moderately serious issue. This suggests that, while it is a constraint, it may be somewhat less pressing than financial constraints or the labour-intensive nature of rice cultivation. This might not be unconnected with the fact that agricultural inputs are often scarce or overpriced, particularly in remote areas. Studies, such as that by Adeoye (2020), emphasize the importance of timely and affordable access to inputs to ensure high productivity in agricultural enterprises. Interventions to improve input availability would enhance youth participation.

Lack of Suitable Land (Mean: 2.25; Ranked: 7th)

This response has 6 (VS), 18 (S), 24 (MS), and 12 (NS) respondents respectively, indicating that lack of suitable land for rice cultivation is regarded as a moderately serious constraint by most respondents. This suggests that, although land access is an issue, it is not perceived as insurmountable. Access to land is a common challenge in rural areas, particularly for youths, as land ownership often resides with older generations or is controlled by local elites. Osabuohien et al. (2018) have highlighted land tenure issues as a barrier to youth engagement in farming across several African countries.

Inaccessibility of Information (Mean: 1.50; Ranked: 8th)

Inaccessibility of information occupies a relatively low position among respondents with 3 (VS), 9 (S), 15 (MS), and 33 (NS), respectively. It is ranked the lowest among the constraints, with the majority (33 respondents) viewing it as not serious. This indicates that most young farmers in the study area feel they have adequate access to agricultural information. While some farmers may struggle with accessing the latest agricultural knowledge or market trends, the relative availability of information through community networks or mobile technology has mitigated this constraint for many. Moreover, it also suggests that inaccessibility of information on rice production practices is not a constraint in the study area, as youths claim to have been involved in rice production, and have enough indigenous knowledge on rice production. Asargba et al. (2021) noted that mobile technology and extension services have played a crucial role in bridging the information gap for farmers in rural Nigeria.

The foregoing notwithstanding, the table provides valuable insight into the specific constraints that hinder youth participation in rice cultivation. Lack of capital and the labour-intensive nature of farming are identified as the most critical issues, while access to information is seen as the least concerning. These findings align with broader challenges in agricultural development in Nigeria, where financial, labour, and infrastructural barriers significantly impede youth engagement in agricultural activities (Oni and Oladejo, 2019; Ugwu and Kanu, 2021). Addressing these constraints will require targeted interventions that promote access to capital, labour-saving technologies, and better credit facilities for young people.

Conclusion and Recommendation

This research work was carried out to determine the level of youth's participation in rice cultivation in Ogbia, Sagbama, Southern Ijaw, and Yenagoa Local Government Areas of Bayelsa State in tandem with the two objectives of the study, namely, to examine the challenges and prospects of youths in rice cultivations, and identify the constraints/problems of youths' participation in rice cultivation in the study area.

The analysis of the constraints on youth participation in rice cultivation in the study area highlights that lack of capital and the labour-intensive nature of rice farming are the most critical barriers. These constraints directly impede young people from engaging in agricultural practices, exacerbating the limited access to financial resources and the physically demanding nature of farming. Other significant challenges include limited access to credit facilities and inadequate provision of incentives, which contribute to further disenchantment with agricultural participation. Conversely, issues like inaccessibility of information are perceived as less severe, indicating some level of adequacy in agricultural information flow or testament to residual knowledge in agricultural practices.

However, while the foregoing is self-explanatory, it is imperative to emphasise certain issues as critical to enhancing youths' participation in rice production in the study area under review. First, there is a clear need for policies and programs that ease financial constraints for young farmers. This can be achieved through accessible credit facilities, micro-loans, and agricultural grants tailored to the needs of youth. This has been a recurring suggestion in previous studies, yet it is one that requires deliberate design and political will to guide it with the prosperity of the state as its core principle. Here, the government needs to address the issue of access to credit facilities beyond rhetoric, by giving grants to farmers, reduce interest rates, eliminate the cumbersome requirements and stressful procedures for young people to access credit facilities. Second, mechanisation of farming processes to address the labour-intensive nature of rice cultivation. Investment in mechanisation and training for youth farmers is crucial here. Providing affordable access to machinery can reduce the burden of manual labour and make farming more attractive to younger generations.

Third, strengthen agricultural incentives for youths and youth groups/collectives. Developing well-targeted incentive programs that offer subsidies for inputs, training, and farm implements can motivate youths to participate more actively in rice farming. As Anugwom (2021) emphasised, the involvement of youths depends significantly on the availability of meaningful support, and support that demonstrates the importance of farming to society. Fourth, and lastly but by no means least, enhance agricultural inputs and storage infrastructure. This is imperative because mechanisation automatically means scaling up production and this requires adequate storage to accommodate increase production beyond the extant understanding of respondents as reflected in the responses. Also, improving the supply chain of inputs like seeds and fertilisers, as well as developing adequate storage facilities, will reduce the post-harvest losses and increase productivity, thus encouraging more youth participation. By addressing these key challenges, youth participation in rice cultivation can be significantly improved, contributing to agricultural development and sustainability in the region.

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