



RICE REVOLUTION AND ITS IMPLICATION TO NATIONAL DEVELOPMENT

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ABSTRACT

*This study examined the importance of indigenous institutional arrangements in rice production and processing activities in Nigeria, rice concept and the states that are involved in the production of rice. Analyses from the study showed that agricultural financing constitutes the greatest challenge that affects rice production and processing. This study recommends that sincere and concerted efforts on the part of the government in implementing the goals of Agricultural Transformation Agenda be made to engender the welfare of rice farmers through the development of the rice value chain. The opportunities identified in this study includes; creating platform through which the rice growers could leverage upon to facilitate access to inputs and technical support; gaining of visibility and market access to enhance returns on their farming endeavours. Rice revolution has boasted the economy of our nation greatly. The development recorded from 2016 shows that our nation would have developed more than this if rice revolution were introduced some years ago. Rice revolution has made the country not to only focus on oil but to diversify in the area of agriculture. Rice is the seed of a monocot plant. The botanical name for rice is *Oryza sativa* while in African rice is known as *Oryza Glaberrima*. Rice as a cereal grain and it is the most important staple food for a larger part of the world's human population. Rice can be cultivated through transplanting and seeding.*

KEYWORDS: rice revolution, national development, green revolution.

INTRODUCTION

Nigeria as a nation is endowed with numerous natural resources. Our land is very rich in agriculture. The rate of growth and potential in agriculture show that it will surpass oil as a major revenue earner for the country. Rice revolution was a welcome development, in order to alleviate the rate of poverty that was spreading far in Nigeria. Nigeria is the highest importer of rice globally and the largest producer in West Africa (Finelib.com 2017).

Farmers in Nigeria have started yielding seasons of fortunes (Idowu Samuel 2018). Nigerians have come to the realization that agricultural sectors development is gradually take over the nation. Nigerians are beginning to come to terms that agriculture now counts as a gold mine that were abandoned for years past.

Yuguda (2003) and Ohaka et al. (2013) are of the view that before the advent of crude oil, Nigeria produced almost enough rice for local consumption. However, with the discovery of petroleum in the 70's, its grown and consumed in all ecological zone of the country (Ohaka et al., 2013; Omotesho et al., 2010 production declined steadily over the years in relation to consumption with the result that lately, rice importation takes away huge sums of money from country's hard earned foreign exchange

According to Vanguard (2018) growing of agriculture started when recession crumbled our economic in 2015 which was the good side of the economic recession. It re-ordered the thinking of government and expanded its capacity to the growth of the non-oil sector, zeroing on the necessity to immediately diversity. According to Idowu (2018), The Central Bank of Nigeria (CBN), amid biting recession, worked in synergy with the ministry of Agriculture to craft an Anchor Borrowers Programmed aimed towards ensuring mass production of rice. President Muhammadu Buhari launched the Anchor Borrowers Programmes in September 2015.

Rice production (revolution) has solved the food problem of our nation. It is remarkable that in the year 2015 and 2016 respectively a bag of rice was sold for between #30,000 to #40,000 and it was not for common people and lives was made difficult for Nigerians until Nigerians decided to work on improving our made in Nigeria rice.

The Rice Revolution came with a boom that has been good to farmers and States Governments Initiative. It is no longer a thing imagination that farmers in rural Nigeria known as subsistence farming over the years could be instant millionaires. Rice production is an eye opener to economic prosperity for Nigeria (Idowu 2018).

RICE CONCEPT

Rice is the seed of a monocot plant. The botanical name for rice is *Oryza sativa* while in African rice is known as *Oryza Glaberrima*. Rice as a cereal grain and it is the most important staple food for a larger part of the world's human population especially in Asia, the Middle East, Latin America, West Indies and Africa. It is one of the world's three most produced grains along with wheat and maize (corn) (Chandler, 1979; Erebor, 1998 and Eleanor, 1975 cit. in Oyen and Ajah 2015). The crop constitutes one of the major crops produced in Nigeria. According to Babafada 2003 cit. in Oyen and Ajah 2015, rice is the fourth major cereal crop in Nigeria after sorghum, millet and maize, in terms of output and cultivated land area. It is a major staple and most popular cereal crop of high nutritional

value; Raufu, 2014; Ohajianya and Onyenweaku, 2003; Ajah and Ajah, 2014 and Abdullahi, 2012 cit. in Ohen and Ajah 2015).

Rice is an important crop in Nigeria because it can be produce for consumption and for sale. Rice is considered a luxury food for occasions. Rice has become a daily diet for many Nigerians due to the availability of rice. Many varieties of rice grown in Nigeria. We have traditional varieties of rice. Rice can be grown on upland fields or in paddle depending on the requirements of the particular variety. (www.odis.org), rice grows in swampy areas and regions with high rainfall. Rice can still grow in areas with little rainfall with the help of water controlling terrace systems. (Finelib.com 2017).

HOW TO CULTIVATE RICE

According to Oileh (imagedefault.com) it is believed that rice grows in wet, humid climate though it is not a tropical plant. There are two ways we can cultivate rice, such as transplanting and direct seeding. The seeding can be done by spraying the seeds to the soil before you plowed on the soil before cultivation the rice seeds, soak it in water for 34 hours then dry it for 24hours before the cultivation. Depending on the species of rice, the maturity is within 120 days to 200 days. At maturity of the rice, it can harvest by cutting the stalk directly beneath the heads and the grains separated from the stalk by a mechanized thresher (Finelib.com 2017).

RICE AS A LUCRATIVE BUSINESS IN NIGERIA

It is very important as Nigerian's to note that rice production is a lucrative business. I was opportune to own a rice farm some years ago in Morondava a district in Toliara of Madagascar that gave me an edge. Though rice farming is a tedious one but you can make it enjoyable.

For instance, Rotimi Williams, 35 years old Nigerian is the 2nd largest farm owner in Nigeria, the Kereksuk Rice Farm sitting on 45,000 hectares in Nasarawa State and has over 600 employees. Rotimi did not study agriculture in school but surfing the net and reading piece of work about rice (Nsehe 2016). Rice production is a lucrative business since more half of the population consumes it on daily basis.

RICE PRODUCING STATES IN NIGERIA

According to Finelib.com (2017), the main rice producing states in Nigeria are Benue State, Taraba State, Borno State, Niger State, Kano State, Kaduna State, Ebonyi State, Cross River State and Enugu State.



STATES AND THE NAME OF RICE THEY PRODUCE AND MARKET

According to Nairaland Forum, (2016), the following are the states and the names of rice which they produce, bag and market:

- ❖ Lake Rice is a product of Kebbi State.
- ❖ Mama Choice is a product of Nassarawa State.
- ❖ UMZA Rice is a product of Kano State.
- ❖ Mas Rice Mill is a product of Gombe State.
- ❖ Mama Happy Rice is a product of Niger State.
- ❖ Labana Rice is a product of Kebbi State.
- ❖ Ebonyi Rice is a product of Ebonyi State.
- ❖ Anambra Rice is a product of Anambra State.
- ❖ Olam, Lobi and Mama' Pride Rice are products of Nasarawa State
- ❖ Ofada Rice is a product of Ogun State
- ❖ Igbemo Rice is a product of Ekiti State.

THE CONCEPT OF REVOLUTION

The word "Revolution" must be one of the most commonly used nouns in the English language. We have revolutions in politics, in warfare, in economics, in technology. We have the Red Revolution, the Black Revolution, and now the Green Revolution and Rice Revolution (Destler). Merriam Webster Dictionary defines revolution as an activity or movement designed to effect fundamental changes in the socioeconomic situation; a fundamental change in the way of thinking about or visualizing something: a change of paradigm; and a changeover in use or preference especially in technology.

THE CONCEPT OF RICE REVOLUTION

Rice revolution is part of the green revolution. We shall consider the green revolution in nutshell. Longman Dictionary of Contemporary English defines Green Revolution as a large increase in the amount of crops, such as wheat or rice that are produced because of improved scientific methods of farming. Stone & Glover (2016) assert that it refers to assemblages of wheat and rice plants professionally bred and released primarily in Asia in the 1960s, where they were promoted along with agricultural chemicals. Wikipedia also called it Third Agricultural Revolution and refers it to a set of research and the development of technology transfer initiatives occurring between the 1930s and the late 1960s (with prequels in the work of the agrarian geneticist Nazareno Strampelli in the 1920s and 1930s), that increased

agricultural production worldwide, particularly in the developing world, beginning most markedly in the late 1960s. Wikipedia further states that the initiatives resulted in the adoption of new technologies, including:

“...new, high-yielding varieties (HYVs) of cereals, especially dwarf wheat and rice, in association with chemical fertilizers and agro-chemicals, and with controlled water-supply (usually involving irrigation) and new methods of cultivation, including mechanization. All of these together were seen as a 'package of practices' to supersede 'traditional' technology and to be adopted as a whole.

Both the Ford Foundation and the Rockefeller Foundation were heavily involved.[3] One key leader was Norman Borlaug, the "Father of the Green Revolution", who received the Nobel Peace Prize in 1970. He is credited with saving over a billion people from starvation. The basic approach was the development of high-yielding varieties of cereal grains, expansion of irrigation infrastructure, modernization of management techniques, distribution of hybridized seeds, synthetic fertilizers, and pesticides to farmers.”

THE CONCEPT OF GREEN REVOLUTION

Moreover, the term "Green Revolution" was first used in a March 8, 1968, speech by the administrator of the U.S. Agency for International Development (USAID), William S. Gaud, who noted the spread of the new technologies: "These and other developments in the field of agriculture contain the makings of a new revolution. It is not a violent Red Revolution like that of the Soviets, nor is it a White Revolution like that of the Shah of Iran. I call it the Green Revolution. (Wikipedia).Green revolution refers to assemblage of wheat and rice plants professionally bred and released primarily in Asia in the 1960s, where they were promoted along with the sponsors at the Ford and Rockefeller foundations.

Supervising the design was Ralph Walker, an American modernist whose firm was known for military installations and suburban corporate research campuses (Stone & Glover 2018). The green revolution was established for the purpose alleviating the wide spreading poverty and hunger in the land.

BRIEF HISTORY OF RICE REVOLUTION

Vidal (2013) states that the System of Rice Intensification or Rice Revolution dates back to the 1980s in Madagascar where Henri de Laulanie, a French Jesuit priest and agronomist, observed how villagers grew rice in the uplands. He developed the method but it was an American, Professor Norman Uphoff, director of the International Institute for Food,

Agriculture and Development at Cornell University, who was largely responsible for spreading the word about De Laulanie's work. Charles (2013) affirms the above and called it a global rice-growing revolution that started with a Jesuit priest in Madagascar, far from any recognized center of agricultural innovation.

RICE REVOLUTION IN NIGERIA

The Rice Revolution came as a result of the government of president Buhari including rice among 41 items placed on an importation ban list; a development with a boom that has been good to farmers and state governments that embraced the Federal Government's initiative. Farmers in Nigeria were only known for subsistence farming over the years but the federal government initiative farmers to be on top. The statistics on the success of agriculture alone, anchored essentially on rice production has been stunning, offering a window for Nigeria to see a better future. At the moment, the contribution of agriculture to the nation's GDP is projected to hit 40 percent by the third quarter of 2018, whereas, the contribution stood at 28 percent as at 2015. Prior to the emergence of the present administration, Nigeria depended largely on food importation to close the supply gap, while importing not less than 17 million tonnes within five years. The volume, however, started to drop, starting from 2016 when the country imported just 2.3 million tonnes. Again, Nigeria was spending not less than \$5 million per day on rice importation. With less emphasis on importation, rice accounted for 1.26 percent of the 2017 budget. The success in local rice production then began to cause ripples in the international market such that export to Nigeria from Thailand, which stood at 1.23 million metric tonnes in 2014, dropped rapidly to 23, 192 metric tonnes by 2017. The Nigerian economy thus became the largest economy in Africa over taking the economy of South Africa. (Idowu 2018)

NATIONAL DEVELOPMENT

According to Gbenga in vanguard (2018) Pointed out that the nation since the advent of democracy in Nigeria between 1999 and 2015 had experienced slight progress. The Nigerian economy thus became the largest economy in Africa over taking the economy of South Africa. However, the above gains especially in the economy fronts were so little to match the rate of poverty and underdevelopment of the country, fragile and unsustainable. In 2016 the bubble bursted and the economy moved to a negative growth only to be reflated by massive external borrowings. The massive loans taken could only achieve a sluggish growth of 1.5 percent compared to a huge external debt which quickly grew to about 18 billion dollars in two



years from a low figure of below US\$ 2billion as at May 2015. We are still waiting for outcome of various studies to show us the impact of what has so far happened to the Nigerian economy and society, since the economic recession of 2016. Current data from the Federal Bureau of Statistics are horrifying and the indicators horrendous. FBS statistics reveals that unemployment peaked from 6.3 per cent in 2015 to 18.6 per cent by 2017 an increase of 300 per cent. Worst still among the youths, it is a record high of 36 per cent little wonder why there is so much upheavals in the land. Therefore a platform to interrogate the Agenda for all round development of Nigeria, to fashion out a sustainable strategy for growth and development so that the country can live in peace, stability and prosperity cannot be more relevant than now. Once again, great Ife has proved truly great for creating the platform for this important discuss. What is Development? Development has been defined in multifarious ways by scholars of different shades. In the 70s a tribe of scholars of African Sociology and Economics led by the Guyanist scholar of African descent, Walter Rodney, were pre-occupied with this subject matter; they were known as Development and Underdevelopment theorists. Walter Rodney in his seminar work “How Europe Underdeveloped Africa” examined development at the individual level as “increased skills and capacity, greater freedom, creativity, self-discipline, responsibility and material wellbeing.” Walter Rodney like his later disciples, Samar Amin, Bade Onimode, Nzogola Ntalaja et al, applied their interrogation of the subject-matter of development beyond the individual to society, and the economy and also adopted models of interpretation of history and characterization of different epochs of development. In the Economic realm, Rodney opines that “A society develops economically as its member’s increase jointly their capacity for dealing with the environment.

IMPORTANCE OF RICE TO NATIONAL DEVELOPMENT

Rice is an important staple food crop for more than 60 percent of the world Population.

- 1.** Rice revolution is very important to national development because it yarns employment opportunities for both young and older people.
- 2.** Rice revolution has boost the economy of the Country greatly hence redirecting the thinking of national leader from oil to Rice.
- 3.** Rice straw is used as cattle feed, used for thatching roof and in cartage industry for preparation of hats, mat, ropes, sound absorbing, straw board and used as litter material.
- 4.** Rice bran wax, a byproduct of rice bran oil is used in industries.

5. Ready to eat products e.g. popped and puffed rice, instant or rice flakes, canned rice and fermented products are produced.
6. Rice husk is used as animal feed, for paper making and as fuel source.
7. Rice bran is used for poultry feed defatted bran, which is rich in protein, can be used in the preparation of biscuit.
8. Rice bran oil is used in soap industry; refined oil can be used as a cooling medium like cotton, seed oil/ corn oil.

CHALLENGES TO RICE REVOLUTION IN NIGERIA

Longtau (2003) points out the following challenges facing rice in Nigeria:

- **Policy inconsistency/instability Policy:** Policy inconsistency/instability Policy in Nigeria is not static and without cause any government in power makes changes for political consideration and some intangible reasons. Resources are allocated to feed the interest of that government. These may not necessarily be for the good of all, but they are considered national interests. Recourse to easy World Bank loans has compounded matters. Since 1960, each new government wishes to surpass the previous one in zeal of putting aside well-articulated policies and programmes. There has been continuity in government in Nigeria given its about 58 years of uneven political history. In the same way, there is no consistence in policy. Policy inconsistency is not only at the Federal level. In the democratic setting, states are autonomous and their policies can even be at variance with the Federal government. For instance, during the 2000 cropping season in Jigawa state alone, about 250 tonnes of rice seeds were planted. Jigawa happens to have over 170 wetlands and 60% of the floodplains of the former Kano State are in Jigawa. However, much of the wetlands will soon be turned into sugarcane plantations as a state policy (Longtau, 2003). He further pointed out that the situation in Kebbi State is more cheering as far as rice production is concerned. The Sokoto-Rima system which is about 300 km long is almost equally divided between Sokoto and Kebbi states. Over 200 km of River Niger flows through Kebbi. The potential of these watercourses is yet to be fully tapped.
- **Fluctuations in value of Naira:** Another main challenge to rice revolution is variable supply and pricing of inputs. The value of the Naira has suffered much fluctuation; hence the pricing of imported inputs as fertilizer and other agricultural chemicals. In the days of the oil boom, Nigeria had an artificial exchange rate of 40 US cents to N1.00. Its effect on

agricultural production could not be felt because of subsidies and huge foreign reserves. By the early days of the Structural Adjustment Programme of 1986, farmers started feeling the impact of the fluctuation. Five naira exchanged for the US dollar. Now N305.00 officially exchanges for a dollar under a single tier exchange market. This has serious implications for rice production. Imported inputs will continue to be beyond the reach of smallholder farmers because production costs will rise considerably. This is even worst for large-scale farmers who are more sensitive to input pricing.

- **Diseases:** This section draws heavily from Singh et al., (1997), Ukwungwu et al. (1989), and Ukwungwu et al. (1992) cit. in Longtau (2003), which treat agronomic constraints which affect rice production in Nigeria. The major rice diseases in Nigeria have been identified as leaf and panicle blast, rice yellow mottle virus (RYMV) and leaf scald. Also, sheath blight, grain discolouration, bakanae, false smut, sheath rot and brown spot are prevalent. Leaf and panicle blast is caused by the fungus *Pyricularia oryzae* and is very common in upland and rainfed lowland environments. It is also a common disease of plants under irrigated conditions. In areas prone to drought conditions, blast can be severe. Asian rice varieties are more susceptible to blast than the African rice (WARDA, 1999b cited in Longtau 2003). The diseases are explained thus: RYMV occurs in scattered spots throughout the country, but it is more prevalent in localised irrigated lowlands of the Sudan Savannah. Leaf scald is widespread in the humid zones on rainfed uplands and irrigated lowlands of the north. Sheath blight has been observed in upland varieties in the humid zones. Sheath rot is widespread in every RGE and if rainfall occurs at the reproductive stage, it can be severe.
- **Pests:** The African Rice Gall Midge (ARGM) is a major insect problem (Awoderu 1974, Alam, 1991 cit. in Longtau 2003). The midge *Orseolia oryzivora* is more common in the south. There was an outbreak in 1988 from Benue River floodplains through Anambra, Cross River, Imo and Ebonyi states. Abakaliki and Adani are hot spots for ARGM. African rice is more tolerant to ARGM and so are some Cisadane varieties. These are available for farmers to use due to the breeding of blast and ARGM resistant varieties (Akinsola, 1985, Anon. 1997b cit. in Longtau 2003). Stemborers have been reported in all RGEs. In upland rice, nematodes, termites and army-worms can be serious. Vertebrate pests as rodents and birds are major problems in all the rice growing environments. The common bird pests are weavers and quelea especially in the Sudan Sahel zone.

- **Climate:** Drought is a major problem of upland and rainfed lowland rice in the northern part of Nigeria. In some places like the Jere Rice Bowl, supplementary irrigation is mandatory. Low temperatures in the dry season that may be ideal for a wheat crop for which most of the irrigation projects were started in the first place can slow down rice growth and poor grain filling. Submergence of the crop and waterlogging in deep water environment and flood prone areas can be a real source of worry to farmers. Iron toxicity due to soils with high ferrous ion is common in inland valleys and irrigation sites throughout Nigeria (Masajo et al., 1986, Winslow et al. 1989 cit. in Longtau 2003). This can be easily corrected by manipulating the soil pH.
- **Water regime:** The management of water is crucial in profitable production of rice. The River Basin Development Authorities were established to harness the natural water resources for irrigation. Unfortunately, most of the dams overflow at the peak of the rains in July/August. This happens to be a crucial stage in the growth of the rice plant. Due to poor water management, the water released from these dams cause vast damage to rice fields downstream. Farmers in Kebbi states are always at risk if the Bakalori dam in Sokoto State is released in July/August. Farmers at Badeggi are at risk of total crop failure when River Gbako overflows. Equally, for many years running, farmers still in Niger State have suffered total crop failure due to untimely discharge of excess water from Kainji Lake and Shiroro Lake. In the year 2000, farmers in Kebbi could harvest a crop in four years because the Federal Ministry of Water Resources brokered an agreement between the states in the Sokoto-Rima River system and the water from the dams were released in April/May before the rains became established. With proper management the dams will never fill to the point of causing flooding, but still it will hold sufficient quantities for planned water activities. Farmers on the Benue drainage system are also at risk of total crop failure when excess water is discharged from a dam in Cameroon in the month of September/October. The Benue has caused serious flooding in recent times in Adamawa, Taraba, Nasarawa and Benue states. An international agreement on the release of excess water from dams in Cameroon needs to be brokered for the sake of smallholder rice farmers.
- **Weeds:** Weeds have the potential of causing total crop failure. Yield losses caused by uncontrolled weeds in rice have been estimated for Nigeria as 80-100% for upland ecologies and 46-84% for lowland ecologies (Akobundu et al., 1986 cit. in Longtau

2003). The major weeds of inland valley bottoms and floodplains are Cyperus spp., Commelina spp., Paspalum spp., Cynodon dactylon, Ischaerum rugosum, Echinochloa spp., Sacciolepsis spp. and so on. Weeds of deep water ecologies include Oryza barthii, O. longistaminata, Ipomoea aquatica and Eleocharis plantaginea. Competition with weeds in most rice growing ecologies implies that the farmers spend much time weeding. Moreover, social change makes it increasingly difficult for farmers to mobilise labour, and they are thus unable to increase production. Akobundu et al. (1998) describes aquatic weeds very accurately. The high cost of herbicides and their residual effects are major hindrances to the use of the technology. The most important method of weed control remains, and is likely to remain, through cultivation and efficient water control (Bullen, 1971 cit. in Longtau 2003).

- **Input supply:** Longtau (2003) asserts that input supplies are not only erratic, but sometimes adulterated and yet very expensive. Rotimi Williams quoted from the Nation online 2017 put the problems in perspective when he lamented that local rice production remained uncompetitive because of rising cost input. According to him, the inputs are seed, irrigation water, fertilizers and other assorted chemicals, pesticides and high electricity bills.
- **Recommendation:** Several problems associated with rice production have been identified and discussed above. Can anything be done to alleviate some? Given the huge potential for rice production in Nigeria and the interest of the present government in rice revolution, something ought to be done to make the sector take centre stage in food production. That notwithstanding the best option is to augment their efforts with that of private sector investment.
- **Government policy:** Government must make up its mind on how low agricultural productivity must be addressed. Good and sound policies are not in short supply, but their professional implementation. Subsidies will work only for large-scale producers. Most of the World Bank assisted programmes have been dismal failure because farmers made no input in their conception, planning and implementation. It is time for government to go the way of professional advice or face the grim reality of squandered hope of a better future under a democratic dispensation. Government must come up with smallholder producer friendly policies that will make him produce good quality local rice to compete with foreign rice. The institutional support for agricultural development as credit

facilities, cooperative organizations and insurance leave much room for improvement. Any institution that is not commodity and community based will amount to wastage of public funds.

- **Research focus:** Government and private sectors must fund research efforts and see to its implementation. Research focus must be needs orientated and not just to add to human knowledge. The western agenda and modelled form of research are to be discouraged and a collaborative research with farmers, NGOs and the private sector must be pursued. This research must be problem-solution oriented. Research should also be intensified on how data can be made accessible to researchers. Some data are from the colonial times and must be updated. The UNDP assisted Agricultural Databank established at Abuja with zonal offices at Enugu and Ibadan cannot work when the telecommunication system cannot be modernised to satellite systems (Longtau 2003). A useful contribution of government to research should be in the area of training.
- **Extension:** The collapse of the formal extension system is not due to a shortage of sound methodologies and expertise. Rather it is largely due to problems of logistics, poor and inadequate funding, lack of commitment on the part of technocrats and field staff and the lack of an understanding that agricultural development is not the only answer to reduction in rural poverty and impoverished livelihood (Longtau 2003). We must chart a new direction for a demand-led extension system whereby professional extensionists may be contracted by governments to deliver such services to farmers on a competitive but timely basis. Rural people are prepared to pay for healthcare services and the same can easily go for technical advice on agricultural production and marketing problems.
- **Rice cleaning technology:** Destoners have started appearing in many rice mills all over the country. That is a welcome development. However, the parboiling industry has much room for improvement especially in the area of hygiene and water sources. Once the rice cleaning technology can be perfected, the rice production revolution through breeding will rapidly lead to a rice marketing revolution. Government can train and equip sanitary inspectors to work at these mills. However, the Miller Associations should select, appoint and remunerate such personnel and not government.
- **NGOs/CBOs and the M-APs concept:** Most of the CBOs have no link with government. Rather NGOs are their foster parents. However, NGOs and even GOs have low capacity to carry out the objectives or policies they set out for themselves. The total

collapse in the formal extension system, low level of activities on the part of NARS, low participation by NGOs in rice production activities are ingredients which may be needful for a true testing of the M-Aps model.

- **Mechanized Farming:** Mechanization of rice farming in rural areas will increase productivity. And local farmers attest to it. Some of them, who spoke with The Nation, said mechanisation remained the key driver for change in the rice sub-sector, as this will not only benefit farmers, but make quality local rice available in the market (The Nation Online 2017). According to Williams, Nigeria will not achieve self -sufficiency in rice in the near future unless the government makes the required huge investment in key areas of the rice value chain. He, therefore, advised the government to prioritise the value chain and place more emphasis on quality seed and actual production than milling.

He said this is because the big millers are more concerned with imports than backward integration. According to him, the quality of rice produce by smallholder farmers still falls below the standard and must be strengthened with quality inputs if government is serious about closing the import gap.

IMPLICATION

The Nigeria soil is rich with all it takes to produce rice. The implication of rice revolution is that the nation will be major player on the world economy. Poverty will be eradicated in the nation and the issue of hunger will be tackled properly.

RECOMMENDATIONS

1. Nigerian's should patronize home- made rice.
2. Government should empower the farmers with the equipment, also with the availability of automated rice seed and seedling factory like what Cross Rivers State Governor Ben Ayade did for his State.
3. The issue of herders should be handled properly by the federal government since the farmers are restricted from going to their farm.
4. The government policy should enhance the availability of adequate machines, equipment and marketing of the Nigeria rice to all.
5. There should be increase awareness to the grassroots about Nigeria rice.

CONCLUSION

Rice production is lucrative business therefore we encourage Nigerians to embark on rice farmer. Government in recent times have realized the need to focus more attention in the



production of the cereal crops more especially on rice and cassava production as major plans in the agricultural transformation agenda. Therefore, to make this laudable initiative a reality, it is important that adequate attention is given to rice production and processing at all levels of government particularly in rice producing industries. In order to transform the current trends in rice production and processing in Nigeria, it is pertinent that agricultural development agencies in the country need to work closely with the small-scale farmers in the field to understand the real situation of things and the challenges they face. This implies that, strategies on how to improve the working conditions of these farmers should be the central point in the government planning and implementation process.

In Nigeria, rice production and processing have not yet be fully mechanized and to be able to achieve this starting from land development the issue of government financial support plays a significant role. This also entails other financial and technical assistance from agricultural engineers, extension workers, researchers, non-governmental organizations (NGOs), and other private investors. Given the natural endowments of Nigeria which includes favorable weather conditions, fertile land that supports rice production and its favourable ecological composition, the country has competitive advantage in large scale rice production coupled with great economies of scale. This will not only provide more employment opportunities in the state, but will further improve revenue generation in the State while at the same time enhancing the general living standard of the households that are connected to the rice value chain.

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