

RICE FARMING IN NIGERIA: CHALLENGES, OPPORTUNITIES AND PROSPECTS

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FOR SELF SUSTAINABILITY AND SOCIO-ECONOMIC DEVELOPMENT**

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1.0 INTRODUCTION

Nigeria is the most populous country in Africa and the black race with a tropical climate that ranges from arid zone in north to humid equatorial down south. The country's total land area is 923,768sqkm with as an estimated population of 166,629,000 in 2012 (Nigeria, 2014).

In Nigeria, agriculture plays a vital role in not only providing hard currency from the export of agricultural goods but also provide employment to more than 70% of the country's population and a source of raw materials to a number of industries. Agriculture also provides market for the output of non-agricultural sectors and also a source of capital to other sectors of the economy (Ihimodu, 1991).

According to Bdliya (2013) despite the fact that, more than 70% of Nigeria's population derives their livelihood from agriculture and agro-allied activities, with the sector contributing about 41% of the GDP and accounting for 5% exports, provides 88% of the non-oil earning. Nigeria's agriculture is still unable to sustain the economy and feed its teeming people considering a whopping sum of N11 Billion is spent on food imports annually.

2.0 RICE PRODUCTION IN NIGERIA

Before the advent of the Second World War, the predominant rice variety cultivated in Nigeria is the African originated red-grained species of the *Oryza Glaberrima*. However, with the out-break of World War II and its attendant, greater requirement of food for fighting troops, rice cultivation (especially the exotic) experienced the introduction of Guyana varieties, of which BG 79 was the most widely cultivated (Salako,). Since then, a lot of progress has been made in the development and releases of new rice varieties, by a host of Research Institutes in the country especially the National Cereals Research Institute (NCRI) Badeggi.

Total cultivable land in Nigeria is estimated at 82 million hectares while area suitable for paddy cultivation is estimated at 4.6 million hectares or only 39% is

currently utilized. The country is also blessed with untapped (3.14 million) hectares of land suitable for rice irrigation but only about 50,000 hectares is currently utilized.

The annual national demand for rice is 5 million tons and the annual production is estimated at 3.4 million ton while the annual national imports stood at about 1.6 - 2 million tons (Kura, 2009).

2.1 TYPES OF RICE CULTIVATION IN NIGERIA

One of the most original features of rice is the fact that it can be grown under very different environment conditions particularly from the point of view of its water supply, (Coste, 1987).

Akpokodje et-al (2001) stated that rice cultivation is virtually carried out in all the agro-ecological zones of Nigeria and despite this the area cultivated still appears small. The average rice farm holding in the country is 1-2 hectares.

Identified types of rice cultivation in Nigeria are:

i. Rainfed Upland Rice

- Predominant in the southern part of country but can also be found in the north.
- Bulk of cultivation is in Ogun, Ondo, Oyo, Edo and Delta States.
- Upland rice is typically intercropped with various crops such as vegetables, maize, cassava, yams, and sorghum.
- FARO -45 (ITA 257), FARO-46 (ITA 150), FARO 55 (NERICA I) FARO-56 (NERICA 2), FARO- 25. Are some of the upland improved seedvarieties.
- Major problems of upland rice are weeds, insects, rodents, birds and rice blast which may results due to mid-season drought.

ii. Rain Fed Lowland Rice

- Accounts for more than half of the total rice land area in Nigeria.

- Found mainly along the flooded River Valleys such as Niger, Benue, Kaduna Basins also found in Abakaliki and Ogoja areas of Ebonyi and Cross Rivers respectively.
- River banks or Fadama are usually flooded during the rainy season.
- Average yield per hectare high (2.2tons).
- As sole crop with fertilizers/improve seeds with no water control.
- FAROS – 15, 27,35, 36, 37, 44, 52, 57, 60, 61.

III. Irrigated Rice

- Account for 16% of total rice land area in Nigeria
- Good water control and two crops/annum
- Average yield per hectare (3.5 tons)
- FAROS – 44, 52, 57, 60, 61

iv. Deepwater/Floating Mangrove

- Where flooding achieves a depth of 60-100cm.
- Represents an increasing marginalized production system.
- Can be found in Sokoto Rima Valleys and Kebbi.
- FAROS - 6 ,7,

v. Mangrove Swamp Rice

- Found where the ocean's tidal action causes inundation at high tide and drainage at low tide.
- Soils are generally more fertile due to the regular deposit of silt during annual floods.
- Major constraints are high salinity of sulphate acidity.
- High labour cost, potential negative environmental impacts due to oil exploration.

2.2 FACTORS TO BE CONSIDERED WHEN EMBARKING OF RICE FARMING.

These factors are:

I Selection of high quality rice seed. The farmer will have the following advantages:

- Low seed rate required
- Good germination & uniformity
- Vigorous early plant growth helps in increase resistance to insects and diseases
- Decrease weeds competition
- Increase of up to 5-20% in rice yield

II Soil fertility Management

- Nutrients are important in rice crop growth & development, too much or less can affect yield
- Timely of application, rate of application and method of application are essentially important

III Water Management

- Too much or less water tend to be affect rice growth cycle or at the end affecting the soil fertility and the yields of the paddy.

IV Weed Control

- Very vital in rice farming.
- Weeds decrease the yield of rice due to the competition for sunlight, nutrient & water.
- Increases production cost such as in higher labour or inputs cost.
- Contaminates rice grains with weeds seeds and thereby reduce the market value of rice grains.

3.0 CHALLENGES OF RICE FARMING IN NIGERIA:

There are many challenges associated with rice farming in the country, these include:

- Climatic factors such as flood, soil salinity and erosion drought and global warming.
- Land tenure and Development: farmlands in Nigeria are so fragmented that the average farm holding is about 1-2 ha. This perhaps is due to the land tenure system that tends to hinder the ownership of land in the country. Potential land suitable for rice irrigation is still untapped.
- Most of our rice farmers are illiterates, unorganized with low-capital base and employed the use of simple and crude tools with little farm mechanization equipment usage.
- Weeds, pests and diseases problems.
- High cost of productive inputs such as seeds, fertilizers and other agro-chemicals.
- Improper handling/management of soil and water resource.
- Inadequate extension services which resulted due to the low ratio of extension worker to farmers.
- Non-availability/inadequate credit facility to farmers.
- Lack of good roads in the rural areas.
- Irregular and fluctuating prices of rice grains due to seasonal variation.
- Lack of good linkage between research institutes and farmers.

4.0 OPPORTUNITIES OF RICE FARMING IN NIGERIA

- Rice farming offers a lot of opportunity to the teeming populace, such as:
- Source of employment to especially youth and women.
- Investment opportunity not only in production but also in land development, marketing and processing.
- Source of income to farmers and a host other groups.
- Source of food supply to the nation.
- Source of raw materials to processors and food manufacturing companies.
- Provides market to agro-allied and non-agro base products.

- Rice by-products such as straw, husk, bran can be used for livestock feeds.

5.0 PROSPECTS OF RICE FARMING IN NIGERIA

The prospect for rice farming in Nigeria is very bright, if a number of factors are tackled seriously, these are:

- Land clearing and development under irrigation should be given serious attention.
- Land tenure system should be reviewed so as land ownership can be accessed with ease.
- Assess the viability of irrigation schemes through the substantial investments needed through public private partnership arrangement.
- GES programme should be pursued and identified problems associated with programme solved.
- Policy environment should clearly be consistent.
- Make the Nigeria rice consumable and affordable.
- Production, marketing and processing of rice should be well-integrated.
- Organization of farmers, marketers and millers should be looked-in.
- There should be synergy in operations between various stakeholders in rice value chain.
- Sensitize the Nigerian public for the need to patronize the Nigeria rice.
- Mechanization of the rice farming.
- Use of hybridization and bio-technology.

6.0 CONCLUSION

In conclusion, rice farming can be a tool for income generation and alleviate hunger and poverty in the country.

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APPENDIX 1

Shows a simple production cost and cost benefit analysis of one hectare of land at Jarman Baka village, Dorayi sector, Hadejia-Jama'are River Basin Authority, Kano State.

S/N	INPUT/OPERATION	PRODUCTION INPUTS COST PER HECTARE			LABOUR COST PER HECTARE			TOTAL COST PER HECTRE N
		NO. OF UNITS	UNIT PRICE COST	TOTAL COST N	NO. OF MAN DAYS	UNIT PRICE	TOTAL COST	
1.	Land Charges	1	25,000.00	25,000.00	-	-	-	25,000.00
2.	Water Charges	1	5,000.00	5,000.00	-	-	-	5,000.00
3.	LAND PREPARATION:							
	Bush/Stump Clearing	-	-	-	5	600.00	3,000.00	3,000.00
	Harrowing	-	-	-	1	10,000.00	10,000.00	10,000.00
	Basin Making/Leveling	-	-	-	10	10,000.00	10,000.00	10,000.00
4.	PLANTING:							
	i. Seed Rate	120kg	100.00	12,000.00	-	-	-	12,000.00
	ii. Seed Dressing Chemical (Apron plus)	250g	15.00	3,750.00	-	-	-	3,750.00
	iii. Seed Dressing	-	-	-	1	1,000.00	1,000.00	1,000.00
	iv. Broadcasting of Seeds	-	-	-	3	400.00	1,200.00	1,200.00
5.	PESTICIDES:							
	i. Herbicides	5ltrs	900	4,500.00	-	-	-	4,500.00
	ii. Pre planting (Glyphosate)	5ltrs	850	4,250.00	-	-	-	4,250.00
	iii. Pre-emergence (Propanil plus 2-4-D amines)	5ltrs	1400	7,000.00	-	-	-	7,000.00
	iv. Insecticide (Lambdacyhalothrin + Cypermethrin)	2ltrs	1,000.00	3,200.00	-	-	-	3,200.00
	v. Fungicide (Carbendazim + Mancozeb)	2kg	1,200.00	2,400.00	-	-	-	2,400.00
	vi. Application of pesticides							

					4	600.00	2,400.00	2,400.00
6.	FERTILIZER/FERTILIZER APPLICATION: i. NPK (20-10-10) ii. UREA (46-0-0) iii. Fertilizer Application	400kg 100kg	110.00 90.00	44,000.00 9,000.00				44,000.00 9,000.00 1,200.00
7.	WEEDING: i. 1 st of 2 nd Weeding (Roughing)				10	400.00	4,000.00	4,000.00
8.	IRRIGATION: i. Supplementary (4times)				8	500.00	4,000.00	4,000.00
9.	HARVESTING: i. Cutting and Threshing ii. Winnowing (65 bags) iii. Poly Bags iv. Packaging	– 65	– 80.00	– 5,200.00	25 5 – 10	1,000.00 650.00 – 300.00	25,000.00 3,250.00 – 3,000.00	25,000.00 3,250.00 5,200.00 3,000.00
10.	TRANSPORTATION AND STORAGE OF PRODUCE: i. Loading and off Loading (Farm to Store) ii. Transportation of produce (Farm to Store) iii. Stacking Wood iv. Hiring Store	1 5 1			5	650.00 6,500.00	3,250.00 6,500.00	3,250.00 6,500.00 1,250.00 5,000.00
11.	CONTINGENCY: i. 10% of the Total (Input of Labour costs)	20,955.00	20,955.00					20,955.00
12.	TOTAL EXPENDITURE			180,755.00			49,750.00	230,505.00
13.	TOTAL REVENUE: 75kgx65bags=4875	(65 Bags)	5,500.00	357,500.00				357,500.00
14.	TOTAL PROFIT (55.09%)							126,995.00