

## **Rice Transformation Project Proposal**

### **EXECUTIVE SUMMARY**

Although rice grows well in all the six geo-political zones of Nigeria, the demand for polished long grain, stone free and odorless rice by the urban dwellers has fueled the demand for imported rice. Total demand for rice in Nigeria is put at about 5million MT a year out of which about 3.2 million MT are produced locally. The high cost of importation in recent years has highlighted the desire by the government to encourage import substitution by encouraging increased local production.

Locally produced rice at present is uncompetitive in the market because its value chain is fragmented and cannot offer a standard. It is fraught with poor quality- presence of extraneous materials such as stones and debris. Secondly because all operations are manual, cost of production is also high.

Earlier attempts to be self sufficient in rice production were partly frustrated by foreign large mills who took advantage of policy lapses to focus on brown rice importation rather than encourage paddy production by farmers. Rice also suffers from another factor which is that it is not a raw material for any industry. The breweries drive sorghum, textiles drive cotton and the pharmaceuticals drive cassava.

The goal of the present rice transformation agenda of President Goodluck Jonathan being implemented by the Honorable Minister of Agriculture, Dr. Akinwunmi Adesina, is self sufficiency in rice production and complete substitution of imported rice by year 2014.

The Rice Transformation Agenda intends to adopt the value chain approach to form a nucleus estate around the existing rice mills. Clusters of rice production will be identified and the farmers therein will be organized in a way that they can readily access inputs such as improved seeds, fertilizer, agrochemicals and modern methods of rice production from extension services. Each cluster will use improved seeds of recommended rice varieties and supply paddy to the mill. Using the modern methods listed above, paddy yield per hectare is expected to double by year 2014 and raise milled rice production to 5.7 million MT per year.

Rice production under rainfed lowland and irrigated lowland will be the main priority, but attention will be paid to rainfed upland rice in some key States. Fifteen States which produce mainly lowland rice have been selected for this exercise. They are: Kebbi, Sokoto, Kano, Niger, Kaduna, Taraba, Adamawa, Kwara, Ebonyi, Cross River, Bayelsa, Borno, Enugu, Ekiti and Ogun.

The State governments and their Extension Services will be involved in the formation of the clusters and the enumeration of the farmers.

The FG should enact a policy which will encourage Input Suppliers, Agro-dealers, Mills and Rice Merchants to contribute to the cost of Extension Services. The FG should also revise the tariff structure to make it 30% flat on both brown and milled rice.

Through price arrangements and guaranteed minimum price, continuous paddy supply to mills is expected. The demand for paddy by the mills is expected to drive paddy production. While paddy

production is expected to rise to 1,500,000 MT by year 2015. Total milling capacity of the recently procured mills is 500,000. More mills and storage facilities will be needed.

Expected impacts include conservation of foreign exchange, food security and creation of about 500,000 jobs.

## **Project Profile:**

### **Title: ACTION PLAN FOR RICE TRANSFORMATION AGENDA**

**Goal.** Self sufficiency in rice production and complete substitution of imported rice by year 2014

Specific Objectives:

1. Develop a vibrant rice value chain that will attract investments for locally produced rice.
2. Raise rice production level from current 3.3 million MT to 6 million MT per year to remove the shortfall between demand and production by year 2014.
3. Raise the quality of locally produced rice to international standards.
4. Build a network of paddy producers around rice mills to ensure regular supply of paddy.

### Justification

Nigeria is the world's second largest importer of rice, spending about N356 billion for about 2 million MT of milled rice. The world's rice market is highly volatile. Nigeria's largest supplier, Thailand is poised to increase price of rice by over 50%. Rice grows all across Nigeria; hence self sufficiency is highly possible.

### Strategy

1. Identify clusters of lowland and irrigated lowland rice ecologies in the selected States.
2. Organize the farmers into cluster groups to aggregate them for access to improved technology – seeds and other inputs- as well as market. This aggregation is a step towards reduction in production and transaction costs.
3. Increase in paddy production will be anchored on yield improvement per unit area (intensification) raising average yield per hectare from 1.5 to 6.5 mt per hectare.
4. Link farmers to credit sources and to the benefits derivable from activities of NIRSAL in the purchase of farm equipment and machinery.
5. Rehabilitate existing irrigation schemes to full capacity for paddy production.

### Expected Output

1. A viable rice value chain capable of meeting the country's rice demand put in place
2. Conservation of foreign exchange earnings resulting from elimination of rice imports.
3. Diversification of Nigerian economy.
4. Food security resulting from doubling of rice production from 3 MT/ha to 6.0 MT /ha.
5. Income growth and poverty reduction for rice farmers.
6. Generation of additional 500,000 jobs in the rural area.

Time – line: November 2011 – December 2014

Budget summary:N114,699.7

## 1.0 INTRODUCTION

Several decades has witnessed considerable depletion of the nation's foreign exchange by food import. Just recently, the Hon. Minister of Agriculture, Dr. Akinwumi Adesina put the food import between 2007 and 2010 (a period of 3 years) at N98 trillion or US\$628 billion. This is in spite of the fact that Nigeria has very favorable ecologies for rain fed lowland, irrigated lowland as well as upland rice production. Total potential land for irrigated rice production is estimated at 1.6 million hectares out of which only 47, 798ha is available.

Since 2003, the Federal Government has been desirous to make Nigeria self sufficient in rice production. It has pursued this goal by reviewing all the previous efforts in rice production and putting in place a project the Presidential Initiative on Rice that will produce 15 million ton of paddy or 9 million ton of milled rice at the end of the project life in 2008. In producing the blue print for achieving this goal, it was observed that lowland as well as irrigated lowland will play a pivotal role and all existing irrigation schemes in Nigeria, most of which had been abandoned should be rehabilitated and made available for rice cultivation.

Estimated national demand for rice is put at 5.2 million ton per annum. Production is estimated at 3.3 million ton leaving a demand gap of 1.9 million tons which is imported with the attendant drain on foreign reserve. This gap has continued to increase relative to demand. The National Rice Development Strategy produced in 2010 put national paddy production in 2007 at 3.4 million tons and a projection of 13.27 million tons for 2018.

The Nigerian rice sector is plagued with the following difficulties:

- The rice value chain is highly fragmented from production to marketing;
- It lacks an industrial demand to drive the chain e.g. breweries for sorghum, pharmaceuticals for cassava and textiles for cotton. The big mills which were supposed to drive the value chain were run by rice merchants who took advantage of Nigeria's inconsistent policy to focus on brown rice importation to the detriment of locally produced paddy;
- High production cost;
- Poor quality of the product, hence poor competitiveness with imported rice.

## 1.1 Overview of the Rice Sub Sector

### Production ecology

Rice is grown in all the States of the federation and F.C.T though production varies from state to state. Prevalent types of rice production systems in Nigeria include rainfed upland, rainfed lowland ), irrigated lowland, deep water floating and mangrove swamp. Table 1 shows major features of Nigerian rice production systems. Over 80% of our national production comes from rainfed lowland and irrigated lowland and also average yield is higher in both ecologies. It is therefore easier to increase national output by targeting both ecologies.

Table 1: Major features of Nigerian Rice Production Systems

Production System	Major States Covered	Estimated share of National rice area	Average yield (Ton/ha)	Share of rice production (%)
Rainfed Upland	Ogun, Ondo, Abia, Imo, Osun, Ekiti, Oyo, Edo, Delta, Niger, Kwara, Kogi, Sokoto, Kebbi, Kaduna, FCT and Benue States.	30%	1.9	28
Rainfed Lowland	Adamawa, Ondo, Ebonyi, Ekiti, Delta, Edo, Rivers, Bayelsa, Cross River, Akwa Ibom, Lagos, all Major river valleys, e.g shallow swamps, of Niger basin, Kaduna basin, and inland of Abakaliki and Ogoja areas.	52%	2.2	43
Irrigated	Adamawa, Niger, Sokoto, Kebbi, Borno, Benue, Kogi, Adamawa, Enugu, Ebonyi and Cross River, Kano, Lagos, Kwara, Akwa Ibom, Ogun State.	16%	3.7	29
Mangrove swamp	Ondo, Delta, Edo, Rivers, Bayelsa, Cross River, Akwa Ibom, Lagos.	1%	2.0	1

### Production Pattern

Production is dominated by smallholder farmers who use rudimentary, traditional, manual and drudgery fraught method in producing over 80% of our national production. On the average, these farmers cultivate between 0.5 and 1.5ha of land. Land preparation is done with hand implements thus limiting area cultivable by farm families as the method is tedious, time consuming and drudgery laden.

Irrigation schemes located in 26 states with a total area of 47,000 ha previously developed for irrigated rice and wheat production remained abandoned and need rehabilitation. The Presidential Initiative on Rice Production launched in 2005, projected that by the end of the project in 2008, a total of 3.0 million ha of land would have been put under rice cultivation. However, this project never really took off

despite the fact that huge sums of money had been accumulated under the Rice-Levy Account, a 10% surcharge on rice import, meant for the development of the sub-sector.

Policy Issues relating to Rice Sub-sector:

The national agricultural policy which emphasizes self sufficiency in food production, including rice, moved a step forward under the Presidential Initiative on Rice to emphasize national security and sufficiency as well as export of the commodity. This is because it was obvious that Nigeria is naturally endowed to produce the commodity.

The vision behind the setting up of the Rice Development Levy was to provide funds for rice development outside the usual budgetary/appropriation from the National Treasury. This fund was to take care of irrigation development, mechanization, processing, input supply, etc in a value chain. Despite pressure from United States, Thailand, Indonesia, etc the project imposed a 100% levy on rice import which suffered a lot of policy summersault that significantly reduced the levy to the current 20% tax and 20% surcharge. In 2010, some major stakeholders were even allowed to bring in rice on duty waiver basis thereby putting the rice sub-sector in jeopardy.

There is also the need to carry the Federal Ministry of Finance along so that such policy reversal which adversely affected local production, demand and marketing should not again jeopardize the development of the sub-sector.

## **2.0 CONSTRAINTS TO RICE SUB-SECTOR DEVELOPMENT**

2.1 Problems that militate against rice sub-sector development in Nigeria include:

2.1.1 Issues of inappropriate technology:

- i. Research Institutes with the mandate to develop new rice varieties are not sufficiently mobilized to play this role. Consequently, there is delay in both breeding process and official release of newly developed varieties;
- ii. There is little linkage between research and what is delivered to the field for farmers and other stakeholders;
- iii. There is need to link research and development to private sector needs including soil testing and diagnostic services;
- iv. There is limited awareness of the use of improved seed, coupled with poor distribution channels, poor seed quality and adulteration of seed;
- v. Lack of access to fund by seed companies to adequately produce improved rice varieties. There is need to provide funds for NCRI, Africa Rice, NASC and SEEDAN to facilitate their mandates.

2.2 Input supply to the Sub-Sector:

- i. There is low private sector participation in the fertilizer issues;
- ii. Fertilizer import is done late leading to late arrival on the farmers fields;

- iii. Quality of fertilizer imported into the country is low leading low crop yield;
- iv. There is need to liberalize fertilizer procurement and distribution markets to bring in the private sector;
- v. There is need to develop specific fertilizer base for agro-ecological zones; and
- vi. Similar problems exist with other input supply including agrochemicals, seed, and farm implements.

### 2.3 Inadequate Infrastructure for Rice Production:

- i. Irrigation facilities are inadequate, poorly maintained and virtually abandoned. Definite attention must be paid to irrigation to achieve the goals of the rice sub-sector;
- ii. Rural Development Department is not sufficiently mobilized to build and maintain rural needs. State and local governments are not doing enough either; and
- iii. Standard market infrastructure is also poorly developed.

### 2.4 Inadequate and irregular supply of inputs including credit, improved seed, fertilizers, agro-chemicals and farm implements.

### 2.5 Inadequate farm power including animal traction and tractorization.

### 2.6 Inadequate storage and price stabilization:

- i. There is need to expand the existing grain silos capacity;
- ii. Private sector participation in silo and storage programme is very minimal;
- iii. There is need to build the national capacity for agricultural commodity exchange including:
  - o Market Information System
  - o Farm level storage capacity;
  - o Uniform grade and standard system for staple crops; and
  - o Organize farmers groups that can produce and trade in large volumes and assure regular supplies especially to integrated mills.

### 2.7 Poor farmer organization and cooperatives to facilitate delivery of assistance to farmers and other stakeholders.

### 2.8 Environmental Constraints:

- Poor maintenance of already developed swamps;
- Drought and insufficient rain for upland rice leading to persistent crop failures; and
- Persistent over flooding of rice fields.

### 2.9 The Land Use Act of 1979 did not:

- allow for market liberalization to enable market forces to drive future land use;
- did not streamline and make transparent, the process of obtaining land titles;
- Did not allow titling as a collateral for agricultural lending by commercial lenders; and
- Did not allow for land acquisition by medium and large scale farmers for commercial agriculture.

### **3.0 FARM SUPPORT STRATEGY**

#### **3.1 Farm Mechanization:**

There is a growing private sector led initiative on tractorization. Land preparation should capitalize on the emerging national Tractor Owners and Operators Association of Nigeria (TOOAN). The project should build upon PrOpCom initiative of helping TOOAN members to acquire more tractors. PrOpCom's strategy for tractor intervention focuses on developing a private sales channel that will equip private tractor service providers with new, functional tractors via risk sharing. This sales model – linking private sellers to private buyers – aims to provide an alternative to present public schemes upon which tractor service providers and farmers have come to depend. This program will therefore fit nicely into the financing activities of the Nigeria Incentive-based Risk Sharing for Agricultural Lending (NISRAL). Other services such as harvesters and threshers should fall under similar PPP arrangements.

#### **3.2 Agricultural Input Supply:**

Agricultural input will be supplied to farmers at 50% subsidy. However, more intense supervision will be on the category I. Seed, agro-chemicals, fertilizers, credit, farm tools, etc will be provided for farmers. Farmers groups should also be involved in input procurement and distribution.

SEEDAN, NOTORE, and agro-chemical companies will supply seed, fertilizers and chemicals directly to farmers to ensure that inputs are delivered promptly at the farm gate. The farmers will pay 50% cash while the governments pay the other 50% as subsidy to input providers. This will be under PPP arrangement through authenticated and monitorable voucher system supervised by government agencies.

#### **3.3 Irrigation Facilities:**

There is Water Users Association in most FADAMA III sites. Farmers will pay 50% of the cost water supplied to their plots while the government pays the balance of 50% to relevant service providers. This will facilitate prompt and regular supply of water to farmers. Government should encourage the private sector to lease the irrigation schemes under PPP arrangement. This will ensure more efficient management and provision of services to farmers.

#### **3.4 Extension Service Delivery:**

The FADAMA III component IV has provision for Extension Service delivery. The project will collaborate with FADAMA III in extension service delivery to farmers involved in category I. USAID will be involved in this project as they have a farmer training programme that will benefit rice farmers. Also input providers will be encouraged to train farmers in use of their inputs.



## 4.0 PROJECT PROPOSAL

4.1 This project is designed to exploit all the available potentials to enable Nigeria attain self sufficiency in rice and become a rice exporting nation by the end of the project life in 2015. This means expansion into the high potential areas, especially the lowland valley bottoms and alluvial lowland along major river basins and elaborate investment in irrigation infrastructure, particularly low-cost, small-scale diversion schemes in lowland valleys. Investment in fadama areas as well as enhancement of productivity through intense use of agricultural inputs, technology and extension service delivery will be the approach. The project will be implemented over 4 years (2012-2015) in the first instance.

### 4.2.1 Aim of the Project

The aim of the project is to attain self sufficiency in local rice production by 2014.

### 4.2.2 Specific Objectives include:

- i. To increase national rice output from 2.3 million ton in 2010 to 6.4 million ton in 2015.
- ii. To increase total land area under rice cultivation from 2.1 million ha in 2010 to 3.4 million ha in 2015;
- iii. To increase average yield from 1.5 ton/ha in 2010 to 6.5 ton/ha in 2015;
- iv. To ensure adequate supply of inputs including improved seed, fertilizer, agro chemicals, tractorization, credit, technology, extension services processing facilities, etc to stakeholders. Inputs will be supplied directly to farmers by input providers under a voucher system administered by private sector and overseen by Government.
- v. Rehabilitation of existing but abandoned 73,115ha of irrigated land in 17 states.
- vi. Promotion of extension service delivery system and strengthening REFILS to enhance diffusion of improved methods of managing rice production and processing among beneficiaries.
- vii. Facilitation of credit through BOA, RUFIN and other credit institutions under the CBN, NIRSAL arrangement.
- viii. Promotion of farm power through the existing Animal Traction and Hand Tools as well as the Tractorization programmes of the Ministry.
- ix. Fabrication of rice processing /equipment s for supply to beneficiaries at 50% cost under growth enhanced support while encouraging private sector investors to establish modern integrated processing mills.
- x. Creation of awareness in production, processing, and marketing of rice in collaboration with NAERLS and private service providers.
- xi. Support to NCRI and Africa Rice in production of breeder and Foundation Seed I, support in the production of Foundation Seed II and for supervision of certified seed production by SEEDAN and outgrowers.
- xii. Promotion of the development of public/private partnership (PPP) arrangement in production input supply, processing and marketing of rice in and outside Nigeria.

### 4.3 Project justification

4.3.1 The project is fully aligned with vision 20:20 in the following areas:

- i. Enhancing production and productivity is a primary objective of the project to meet national demand and achieve food security.
- ii. The nation's effective irrigated land shall be increased from the current less than 1% of arable land to about 10% by 2015 through rehabilitation of existing schemes.
- iii. The fertilizer sector will be approached through voucher system of administration under a PPP arrangement with strong Government supervision.
- iv. Agricultural Research Institutions including NCRI and Africa Rice Centre will be encouraged to intensify research to develop high yielding, disease resistant planting materials.
- v. Mechanization including land preparations and integrated processing mills will be promoted to ensure quality of processed rice under PPP arrangement.
- vi. Agricultural Extension delivery system will be enhanced to facilitate enlightenment of (stakeholders) and to achieve mass adoption of improved technology. More extension officers will be involved and training provided to enhance their capacity.
- vii. Through improved processing and storage, post harvest losses will be minimized. The project will attract investors into the sector under PPP arrangement.
- viii. The project is designed to create a new generation of high input – high output farms that will drive the productivity machinery of the sub-sector through application of modern cultural practices and technology along the value chain.

4.3.2 Apart from Institutional development, the project will;

- i. Increase rice production to meet domestic shortfalls in demand
- ii. Contribute towards poverty reduction/ alleviation
- iii. Generate employment
- iv. Conserve Foreign exchange
- v. Diversify the economy
- vi. Improve farmers economic well being
- vii. Improve standard of living of the stakeholders in production, processing and marketing
- viii. Reduce rural urban migration
- ix. Increase the production of other crops especially wheat as a result of the provision of inputs and irrigation facilities

#### Overall Strategy

The three main production ecologies for rice in Nigeria are lowland rice, upland rice and irrigated rice. Amongst these, lowland rice has the highest priority for reduced production costs – being the ecology that represents the largest share of rice area and rice production (Table 2). Furthermore, the social opportunity costs of producing rice in lowlands tend to be limited in view of the limited viable alternatives. The upland and irrigated rice ecology have an approximately equal share in overall production. Still, irrigated rice should be second in priority as it represents an easier to target area – being smaller and less diffuse and having had past land development investments – with potentially high

spillovers from other regions. Within irrigated rice, immediate focus should be targeted to existing schemes (i.e. where the irrigation investment is a sunk cost) – not to the construction of new schemes. Kebbeh et al. (2003) reported in his survey of challenges and opportunities for improving irrigated rice productivity in Nigeria that in addition to problems with maintenance and operation of the northern irrigation, there is widespread underutilization of irrigation infrastructure at all schemes visited in the north. This under utilization can be readily taken care of by rehabilitations. Upland rice should be third priority. The mangrove ecology is mainly of local importance in the delta with only a minor contribution to the national rice subsector and does not merit attention within the context of this plan. For each rice ecology, two main options exist to increase the price competitiveness of Nigerian rice: increasing yields and reducing production costs. The relative potential of each depends on the ecology.

Table 2. Relative contribution of main rice ecologies to the rice sub-sector

Ecology	Area (000ha)	Area share	Yield/ha		Production Share
			(mt/ha)	Rice (000 mt)	
Upland	493	30%	1.9	562	28%
Lowland	854	52%	1.7	871	43%
Irrigated	263	16%	3.7	583	29%
Mangrove	16	1%	2.0	20	1%
<b>Overall</b>	<b>1642</b>		<b>2.1</b>	<b>2036</b>	

## 5.0 STRATEGY FOR DRIVING THE RICE TRANSFORMATION PROJECT.

### 5.1 State Participation:

This project will be implemented in 20 major rice producing States in the first instance. The States are Niger, Kwara, Kebbi, Kano, Kaduna, Taraba, Adamawa, Borno, Benue, Anambra, Ebonyi, Ekiti, Nasarawa, Ogun, Enugu, Baylesa, Cross River, Sokoto and Rivers States and FCT. Gradually, it will be expanded to cover all the states.

Farmers will be enumerated and registered with the aim to:

Incentivize the formation of clusters of farmers around small and large scale processing factories and disseminate to them improved production packages to increase productivity. Ensure farmers a market for their rice paddy via a direct access to existing processing factories. Also, establish a guaranteed minimum price scheme with government as buyers of last resort.

In year 2012, farmers' participation will be in two categories:

**5.2 Category 1** is farmers in locations identified with rice or clusters of rice farmers/outgrowers. These will be organized and biometrically registered to aggregate them for access to improved technology, seeds and other inputs as well as markets. Credit, training and all kinds of support provided by the project will be channeled to them. Such farmer should have 0.5ha of land and above and ready to

apply all the improved cultural practices as stipulated by the project. They will be monitored aggressively all through the project life. Farmers in this category will produce grade A paddy from varieties preferred by millers and consumers suitable for large mills currently being installed in the selected States. They will have measurable and quantifiable targets. It is projected that 20% of farmers will fall into this category in 2012, another 25% in 2013 and 2014 respectively and the rest of the farmers will be covered by 2015.

**5.3 Category II:** These are farmers who do not belong to the 1<sup>st</sup> category probably because their farms are isolated. Such farmers will be reached through the RIFAN in their states. Inputs will be given to them also as grant enhancement but they may not come under the intensive supervision, and monitoring as the 1<sup>st</sup> category.

**5.4 Intensification.** Yield improvement per unit area is a fast option for increasing domestic supply in the Nigerian rice market. It involves using all the modern technologies – improved seeds, correct and timely fertilizer application, good plant population, use of herbicides to control weeds and harvesting at optimum time. Rice experts agree that current yield level can be doubled by the utilization of the best rice crop management techniques. The Transformation Team will link up farmers with suppliers of inputs (fertilizer, Agro-chemicals; improved seeds, Premier Seeds and others, and various tractor operators' Associations for timely land preparation)

It is expected that between 2012 and 2015 yield per hectare will increase as follows for the registered farmer's clusters; Table 3.

Table 3: Expected Incremental Average paddy yield (ton/ha) 2011 to 2015.

Registered Farmers	2012	2013	2014	2015
Rainfed low land (paddy ton/ha)	3.5	4.5	5.5	6.0
Irrigated low land (paddy ton/ha)	4.0	5.0	6.0	7.0
Non Registered Rice farmers (paddy ton/ha)	2.5	3.0	3.5	4.0

5.5 Varieties to be promoted:

The following varieties will be emphasized across the rice belt.

FARO 44 early maturing (100-115) days (SIPPI), lowland,

FARO 51 CISADANE, lowland,

FARO 52 medium maturing (120 -135) days, lowland

FARO 57 medium maturing (120 -135) days, lowland

NERICAs 19, 34 and 49 new lowland varieties from Africa Rice Center

WAB 189-B-B-8- HB (upland – NERICA), upland.

FARO 56 & 55 upland. NERICAs 7 and 8 for immediate release.

- NCRI and Africa Rice will be funded to provide Breeder seed for the project.
- The production of Foundation Seed by the National Agricultural Seed Council (NASC) will be funded under the programme.
- Certified Seed will be provided by registered seed companies under a cooperation agreement with SEEDAN. Financial support will be given to the Seed Companies to facilitate production.

## 5.6 Area Expansion

Prospects for rice expansion in the lowland are feasible. Currently, only about 20% of inland valleys are being exploited.

Irrigated rice is considered as one of the most promising rice-based systems. It produces the highest yield per ha of all the systems and in addition offers the chance for two crops per year. The potential to expand is large especially as we look beyond the lowlands and explore nearly level plateaus that are situated near perennial sources of water (as the case in Lade, Patigi LGA in Kwara State).

For the Project, land area expansion under irrigation will focus on rehabilitation of existing irrigation schemes that are currently abandoned. A total of 73,155ha of land will be rehabilitated between 2011 and 2013, Table 4.

**Table 4: Rehabilitation of Existing Irrigation Projects in Nigeria (2011-2013) (ha)**

Zones	2011 (Ha)	2012 (Ha)	2013 (Ha)	2014	2015	Total (Ha)
North West	6,000	7,700	12,400	-	-	26,100
North East	800	3,270	750	-	-	4,820
North Central	1208	625	2,010	-	-	3,843
South West	930	1,050	400	-	-	2,380
South East	2,658	1,353	1,330	-	-	5,341
South South	14,548	16,063	60	-	-	30,671
Total	26,144	30,061	16,950	-	-	73,155

Source: Federal Ministry of Water Resources.

Increase in Area Under Cultivation (expansion) can be further achieved through:

- Enhanced water management practices particularly flood control measures in flood plains
- Expansion of FADAMA III activities to include rice production;

- Expansion of land under upland rice cultivation. Land expansion under this option will be confronted with environmental challenges especially where soil replenishment depends mostly of fallow.

#### 5.7. Planting Target and Production:

A proportion of agricultural lands are already under cultivation but under low input and low output (yield) environment. The project will change this scenario by providing services that will raise the output from the current 1.5 ton/ha to 6.5 ton/ha by 2015. The planting programme and production is summarized in Table 5A and 5B:

##### i. Category 1 farmers

These are farmers that will be registered as project farmers. They will receive all kinds of support at subsidy and will be intensively supported.

**Table 5A: Targets for Area, Paddy and milled rice output**

	2012	2013	2014	2015
Planting Target (ha)	250,000	450,000	700,000	1,000,000
Output paddy in mt	875,000	2,025,000	3,850,000	6,500,000
Output milled rice in mt (60% paddy)	525,000	1,215,000	2,310,000	3,900,000

##### ii Category II Farmers:

These are a mixture of rainfed upland and rainfed lowland farmers operating at relatively low input/low output environment across the participating states. They will be accessed through the RIFAN at both National, State and FCT levels. Some of these farmers are already into rice cultivation but will be supplied with inputs through RIFAN under growth enhanced scheme.

**Table 5B: Target for Area, Paddy and Milled Rice Output**

	2012	2013	2014	2015
Planting Target (ha)	200,000	300,000	400,000	500,000
Output paddy (mt)	500,000	900,000	1,400,000	2,000,000
Output milled rice (mt) (60% paddy)	300,000	540,000	840,000	1,200,000
<b>Projected Total Milled Rice Production (mt)</b>	<b>825,000</b>	<b>1,755,000</b>	<b>3,150,000</b>	<b>5,100,000</b>

By 2015, total production under the project will be 5.1 million mt of milled rice. This when added to about 1.3 million mt being produced by farmers who did not join the project, puts the total national production of milled rice at 6.4 million mt per annum.

## 5.8 Low hanging fruits' to raise demand for locally produced rice.

### 1. Tackling the problem of poor quality in rice

The main reason why locally produced rice is not attractive to urban dwellers is the admixture with extraneous materials like stones and other debris. Over 80% of locally produced paddy is processed and milled by small mills. Intervention such as increasing the access of small mills to destoners and color sorters, and parboilers to modern parboiling equipment will immediately take away the constraint to acceptability to acceptability by urban dwellers.

### 2. Elimination of interstate taxes on paddy movement across borders.

One of the complaints of the millers is high cost of paddy especially when sought from neighboring States. A government intervention that will eliminate interstate road taxes on paddy movement across State borders will significantly reduce cost of transaction, energize the millers to vigorously search for and increase demand for paddy.

### 3. Guaranteed minimum price for paddy

A guaranteed minimum price that offers farmers a fair price for paddy and a mechanism that gets the paddy to the mills at a cost that gives the mills a good margin of profit will enhance demand for paddy by the mills and strengthen the synergy between the farmers and the millers.

## 5.9 Seed Requirement

The national seed requirement for 2012 is put at 30,600 tons of Certified Seeds. Total Certified Seed presently available locally in the country is estimated to be about 14,000 MT. The shortfall of 16,000 MT will be sourced from neighboring African countries – WITA 4 (FARO 52) from Cote D'Ivoire, Lowland NERICA 19 from Mali and Lowland NERICA 49 from Niger Republic.

Projected seed requirements till 2015 are shown in Table 6 below.

**Table 6: SEED REQUIREMENT TARGET (2012 – 2015)**

YEAR	SEED(TONS)			COST OF SEED (mN)			ANNUAL TOTAL (Nm)
	CS	FS	BS	CS	FS	BS	
2012	30,600	510	8.5	6,120.0	153.0	4.55	6,277.55
2013	51,000	833.33	13.9	10,200.0	249.990	7.0	10456.99
2014	76,500	1200	21.3	16,720.0	446.250	12.78	17,179.03
2015	102,000	1700	28.3	22,440.0	595.000	16.98	23,051.99
	TOTAL			55,480.0	1,444.24	41,310	56,965.55

- i. N 200/Kg for CS in the 1st two years; N 220 /kg in the next two years
- ii. N300 /kg for FS in the 1<sup>st</sup> two years; N350/Kg FS in the next 2 years.
- iii. N 500/Kg for BS in the 1st two years; N 600/Kg BS in the next two years.

The seed sector faces some challenges that need to be addressed immediately:

1. Lack of operational cost.
2. Need to introduce technology for hybrid rice production.
3. Lack of adequate seed processing plants with drying and storage facilities.
4. Need to rehabilitate existing seed processing plants.
5. Need for effective monitoring of all the sectors in the seed value chain to ensure maintenance of limited generation cycle.
6. Inadequate number of breeders, seed technologists and seed analysts.
7. Inadequate seed testing laboratories.

#### 5.10 Fertilizer Requirement

Although rice responds sharply to fertilizers application, fertilizer use in rice is still minimal due to high cost and erratic availability. The recommended fertilizer rate for rice is 300 kg NPK plus 200 kg urea per hectare. The project will deal directly with fertilizer companies so that they can supply fertilizers directly to the farmers at 50% cost under a voucher arrangement while Federal and State governments pay 25% each to fertilizer companies under growth enhancement scheme.

#### 5.11 Agro-Chemical Requirement for 2012-2015

Use of agro-chemical in rice production is quite minimal in Nigeria due to farmers inability to afford the chemicals. Consequently, they depend on manual weeding method (rouging). Even in the event of pest and disease they still remain handicapped in taking control measures and in most cases they may not have the fund to purchase the chemicals. The total cost of agro-chemicals will rise from 2.25 billion to 3.86 billion in 2015. The Chemicals will be supplied at state level through service providers who will supply directly to farmers at 50% cost while the Government pays the balance of 50% as growth enhancement. Table 7 shows the agrochemical requirement for the project from 2011 to 2015.

**TABLE 7 INPUT REQUIREMENTS FOR 2011 TO 2015**

Activity	Quantity				Costs (Nm)				Total (Nm)
	2012	2013	2014	2015	2012	2013	2014	2015	
<b>Agrochemicals</b>					<b>1,967.2</b>	<b>2,340.55</b>	<b>2,867.96</b>	<b>3,448.85</b>	<b>10,624.56</b>
a. Herbicides									
- Pre-Emergence (Its)	100,500	120,600	150,200	190,100	251.25	300.0	375.0	475.0	1,401.25
- Post-Emergency (Its)	120,100	130,100	175,000	225,000	300.0	325.0	437.5	562.5	1,625.00
b. Insecticides (Its)	51,500	58,200	65,250	70,400	77.25	87.3	97.88	105.0	367.43



c. Rodenticides (mt)	120,100	138,400	175,500	225,100	180.0	207.6	263.25	337.65	988.50
d. Fungicides (Its)	51,500	58,200	65,250	70,400	77.25	85.30	97.88	105.6	366.03
e. Storage (Its)	54,300	56,900	64,300	75,400	81.45	85.35	96.45	113.1	376.35
f. Sprayers	40,000	50,000	60,000	70,000	1,000.0	1,250.0	1,500.0	1,750.0	5,500.00
<b>g. Fertilizers:</b>					<b>285.28</b>	<b>327.86</b>	<b>365.45</b>	<b>414.51</b>	<b>1,393.10</b>
- NPK (20:20:20)	52,000	60,000	65,000	72,000	208.0	240.0	260.0	288.0	996.00
- Urea	22,000	25,000	30,000	36,000	77.0	87.5	105.0	126.0	395.50
- Micro Nutrients	35.0	45.0	56.0	64.0	0.28	0.36	0.45	0.512	1.60
<b>TOTAL</b>					<b>2,252.48</b>	<b>2668.41</b>	<b>3,233.41</b>	<b>3,863.36</b>	<b>12,017.66</b>

#### 5.12 Publicity and Sensitization for 2012 to 2015

NAERLS, Samaru has the mandate for agricultural extension in Nigeria. The project will collaborate with the Institutes to produce posters, hand bills and other advertorials which will be used in production, processing and marketing of local rice. NCRI as well as FDA will be fully involved in production and distribution of extension manuals. Radio, TV and new paper advertisement will be employed in handling procurement processes and other adverts. Table x shows the various activities designed to promote publicity and linkages in the project. The cost of these activities amount to N1,268.0 million over the four (4) years of the project life, 2012-2015.

**TABLE 8: PUBLICITY, SENSITIZATION AND MARKETING FOR 2011 TO 2015**

Activity	Quantity				Unit Coat (‘000N)	Cost (Nm)				Total Cost (Nm)
	2012	2013	2014	2015		2012	2013	2014	2015	
Print Media	-	-	-	-	Lump	40.0	40.0	40.0	40.0	160.00
Television	-	-	-	-	Lump	45.0	45.0	45.0	45.0	180.00
Radio	-	-	-	-	Lump	48.0	48.0	48.0	48.0	192.00
Extension Guides	-	-	-	-	Lump	64.0	64.0	64.0	64.0	256.00
Posters and Hand Bills	-	-	-	-	Lump	50.0	50.0	50.0	50.0	200.00
Seminars and workshops	4	4	4	4	Lump	70.0	70.0	70.0	70.0	280.00
<b>TOTAL</b>						<b>317.00</b>	<b>317.00</b>	<b>317.00</b>	<b>317.00</b>	<b>1,268.00</b>
Marketing	-	-	-	-	Lump	15.0	15.0	15.0	15.0	60.0

### 5.13 Training Requirements

The Nigerian farmers need adequate training in relevant areas of Agriculture. There will be regular training courses on production processing and marketing of rice to bring Nigerian rice to international standards. Training will be conducted on geo-political zones, (Table 9)

**Table 9: Training Requirements for 2012 to 2015**

Activities	No of Training Schedules				Cost of Training (Nm)				TOTAL (Nm)
	2012	2013	2014	2015	2012	2013	2014	2015	
Zone, North East	3	3	3	3	50	50	50	50	200
Zone, North West	3	3	3	3	50	50	50	50	200
Zone, North Central	3	3	3	3	50	50	50	50	200
Zone, South East	3	3	3	3	50	50	50	50	200
Zone, South West	3	3	3	3	50	50	50	50	200
Zone, South South	3	3	3	3	50	50	50	50	200
TOTAL	18	18	18	18	300	300	300	300	1,200

## 6.0 IRRIGATION AND LAND DEVELOPMENT

Only about 16% of the total land area available for rice cultivation is irrigated. However, this accounts for as much as 29% of national production. With the uncertainties associated with weather, sole dependence on rain fed conditions as a means to boosting production in Nigeria cannot be assured. It is imperative that irrigated rice production play a significant role. Federal Ministry of Agriculture should collaborate with Ministry of Water Resources to provide resources for rehabilitation of existing schemes across the federation.

Nigeria has high potentials for irrigated rice development with vast but untapped potentials in the flood planes of river Niger, Benue, Cross River, Kaduna-Karadawa Sokoto-River, Hadejia-Jama'are, Gongola, Chad Basin, Ogun, Osun, Imo, Anambra and Benin-Owena River Basins totaling about 1.4 million hectares.

Details of rehabilitation programme of the existing irrigation schemes in the country have been developed by the Ministry of Water Resources. A total of 73,155ha of land will be rehabilitated between 2011 and 2013. Details are shown in Table 10.

**Table 10: Rehabilitation of Existing Irrigation Projects in Nigeria (2011-2013) (ha)**

Zones	2011 (Ha)	2012 (Ha)	2013 (Ha)	2014	2015	Total (Ha)
North West	6,000	7,700	12,400	-	-	26,100
North East	800	3,270	750	-	-	4,820
North Central	1208	625	2,010	-	-	3,843
South West	930	1,050	400	-	-	2,380
South East	2,658	1,353	1,330	-	-	5,341
South South	14,548	16,063	60	-	-	30,671
Total	26,144	30,061	16,950	-	-	73,155

## **7.0 FARM POWER REQUIREMENTS**

The provision of adequate farm power is central to increasing rice production to reduce drudgery and ensure timely field operations.

Table 11 shows the distribution of farm equipments for the registered farmers in 20 states of the federation.

For the non-registered farms, the farm power requirement in the form of tractors and implement will be as follows:

400 in year 2012

300 in year 2013

200 in year 2014

200 in year 2015.

These tractors and implement will be stationed at strategic locations for tractor hiring services under PPP arrangement. Farmers will also be encouraged to buy tractors as cooperatives under the tractorization programme of the Ministry. Tractors will be sold at 50% subsidy. They will be owned and operated by owner of large mills that will adjoin the cluster farms or service providers.

**Table 11: Farm Power and Processing Requirements Equipment for 2012 – 2015**

YEAR	2012	2013	2014	2015
Planted Area for Machine/Equipment provision	450,000	1,820,750	2,080,750	2,340,750
1. Land Preparation				
i. 75 No Tractor with implements (Plough, Harrow)	740	740	740	740
ii. Power Tiller with rotavator	370	370	370	370
2. PLANTING:				
i. Seed Drill	72	72	72	72
ii. Transplanter	72	72	72	72
3. CROP PROTECTION:				
i. Knapsack Sprayer	300	300	300	300
ii. Boom Sprayer	74	74	74	74
4. HARVESTING:				
i. Rice Reaper (0.5 tonne/hr)	180	180	180	180
ii. Thresher (0.75 tonne/batch)	180	180	180	180
iii. Combine Harvester				
a. 1 tonne/hour	370	370	370	370
b. 5 tonnes/hour	37	37	37	37
5. PROCESSING:				
i. Parboiler	370	407	407	444
ii. Dryer	370	407	407	444
iii. Mechanical Dryer	370	407	407	444
iv. Probe Moisture Tester	370	407	407	444
v. Rice Mill 1000 tonne/yr	37	37	74	74
vi. Rice Mill 50,000 tonnes/yr	4	5	5	6
vii. Destoner	100	100	142	142
viii. Packagin equipment (Bag, sewing and hot sealing machines)	105	105	142	

## 8.0 PROCESSING SUB-SECTOR

8.1 The quality of the local rice is a major concern for the future of the Nigerian rice sector. The processing Sub-sector is highly fragmented and offers no standard for quality of product. While part of the issue relates to the biophysical properties of the varieties locally produced, the major problem is the appearance and the cleanliness of the rice delivered to the market. While the milling technology has a great incidence on the technical performance, it is recognized that these attributes are greatly affected by the attention given to pre-milling and post-milling operations. These operations include winnowing paddy, drying, parboiling, destoning, and eventually packing. Parboiling paddy is the most important processing operation besides milling. It consists of soaking paddy in hot or cold water in a drum, followed by a rapid exposure of the soaked paddy to steam and a gradual drying for at least one day. The purpose of the operation is to respond to consumer preferences while it also has a positive effect on the grain milling properties (high recovery ratio) and on its nutritious properties. In Nigeria, all paddy processed is parboiled. Rice farmers, millers and specialized operators providing the service to producers or traders can equally take care of parboiling operation. It is recognized that the quality of the parboiling operation has a great influence on the technical performance of milling and therefore on the quality of rice. Accordingly, miller-traders generally prefer to parboil the purchased paddy themselves, while millers-only generally do not parboil themselves.

The goal is to ensure that paddy rice going for processing conforms to the following international specifications:

Paddy shall:-

- a) be the dried mature grains (with husk) of *Oryza sativa* L.;
- b) have uniform size, shape and colour;
- c) be hard, clean, wholesome and free from moulds, weevils, obnoxious smell, discolouration, admixture of deleterious substances and all other impurities except to the extent indicated in the under special characteristics;
- d) be in sound merchantable condition; and
- e) not have moisture exceeding 14 percent.

The cost of processing represents an increasing share of the production cost for local rice. Of this cost, parboiling makes up 75% of the processing cost, with milling contributing 17% and other operations accounting for the remaining 8%. This has obvious implication for cost effectiveness since there are very few integrated large milling plants that can handle the parboiling process in the country. Even these plants have often failed due to problems of operating efficiently for such reasons as low capacity utilization and idleness during off – peak season.

Secondly, the high cost of parboiling rice –75% of total processing costs - is due to the energy required, even where fuel wood is utilized. There is a need to adopt energy-efficient parboiling technologies.

Thirdly, the market price instability for finished rice often results in loss of profits to those women who, as front-line processors, bear the risk of holding the grains procured from the farm gate for parboiling, until they are presented to the open market after milling. These women should be empowered to enhance their performance in this economic function. It is important that the large millers begin to invest in large storage facilities to stockpile both paddy and grains, in order to obviate the problems arising from large unutilized capacities in the mills during off-peak season and from market price instability.

Fourthly, there is a need for investment in storage facilities, bore holes (and other clean water sources), good roads for evacuation of paddy or even the rice at the point of processing.

Finally, processing for value-added must take into account the full recovery of all rice byproducts as most of them easily find use in the production of other goods. This way profitability is further enhanced. For example, rice bran is a valuable commodity for livestock feed, domestic fuel and organic manure. The oil from bran is used for cooking, soap making, and anti-corrosive and rust resistant oils. The rice straw is used in the manufacture of straw board, thatching, making hats and mats as well as fodder for cattle.

## **8.2 Challenges in Rice Processing and Marketing**

- Challenges of harvesting/ mechanization
- Challenges of equipment for harvesting and primary processing for small and medium scale processors
- Poor agronomic practices and post harvest handling.
- Unavailability of appropriate technology on Parboiling and Drying equipment
- Challenges of parboiling for small scale industry
- Dearth of Proper Out-growers Scheme and inadequate quantity of certified seeds.
- Unavailability of adaptable equipment
- Challenges of Pricing for both paddy and milled rice
- Lack of infrastructural Development like access roads, power and water.
- Lack of Standardized weight and measures making pricing difficult.
- Challenges associated with Inventory Management and storage facilities
- Underdeveloped paddy market
- Lack of proper access to credit. Reluctance of Banks to lend due to inadequate solution.
- Underdeveloped quality control.
- Lack of availability of homogenous paddy.
- Manpower capacity development problem for farmers on Paddy Post –harvest handling and milling operators.

## **8.3 Rice Processing Requirements**

### **8.3.1 Small Scale Processing Mill**

Rice processing is a major challenge facing the rice sub-sector of the Nigerian economy. Poor processing method relate to harvesting, threshing, drying, parboiling and milling. Some of the large integrated milling machines have broken down and need urgent repairs. In addition most of the small processing machines lack accessories such as destoners, rice graders, drying slabs, batch dryers and parboiling tanks. These should be made available to rice millers to improve the quality of processed rice.

NCRI, Badeggi has developed some efficient processing equipment. Also a lot of work has been done by National Centre for Agricultural Mechanization (NCAM), Ilorin as well as the Nigerian Machine Tools (NMT) Oshogbo. The fabrication of rice processing equipment will be undertaken under this project and distributed to farmers at 50% subsidy. Total cost of mill accessories is N19,320.0m while the total cost of new milling machines is N2,496.0m, (Table 12).

**TABLE 12: NEW MILLING MACHINES AND ACCESSORIES REQUIREMENT FOR 2011 TO 2015**

Activity	Capacity	Number Required					Cost/unit (N)	Cost (Nm)				Total Cost (Nm)
		2012	2013	2014	2015			2012	2013	2014	2015	
<b>Mill Accessories</b>												
Destoners	300kg/day	1,000	1,000	1,000	1,000	5,000,000	500.0	500.0	500.0	500.0	2,000.0	
Rice Graders	300kg/day	1,000	1,000	1,000	1,000	5,000,000	500.0	500.0	500.0	500.0	2,000.0	
Rice parboiling machine	300kg/day	1,000	1,000	1,000	1,000	2,000,000	500.0	500.0	500.0	500.0	8,000.0	
Rice Temporing Dryers	300kg/day	1,000	1,000	1,000	1,000	1,500,0	500.0	500.0	500.0	500.0	6,000.0	
Wet Cleaners	300kg/day	1,000	1,000	1,000	1,000	80,000	500.0	500.0	500.0	500.0	320.0	
Pneunatic cleaners	300kg/day	1,000	1,000	1,000	1,000	250,000	500.0	500.0	500.0	500.0	1,000.0	
<b>TOTAL</b>							<b>4,830.0</b>	<b>4,830.0</b>	<b>4,830.0</b>	<b>4,830.0</b>	<b>19,320.0</b>	
<b>New Milling Machines</b>												
North Central	300kg/day	20	20	20	20	5,200,000	104.0	104.0	104.0	104.0	416.0	
North West	300kg/day	20	20	20	20	5,200,000	104.0	104.0	104.0	104.0	416.0	
North East	300kg/day	20	20	20	20	5,200,000	104.0	104.0	104.0	104.0	416.0	
South West	300kg/day	20	20	20	20	5,200,000	104.0	104.0	104.0	104.0	416.0	
South East	300kg/day	20	20	20	20	5,200,000	104.0	104.0	104.0	104.0	416.0	
South South	300kg/day	20	20	20	20	5,200,000	104.0	104.0	104.0	104.0	416.0	
<b>TOTAL</b>		<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>		<b>624.0</b>	<b>624.0</b>	<b>624.0</b>	<b>624.0</b>	<b>2,496.0</b>	
<b>GRAND TOTAL</b>							<b>5,454.0</b>	<b>5,454.0</b>	<b>5,454.0</b>	<b>5,454.0</b>	<b>21,816</b>	

Mill Components Rubber Roller at N1,700,000/unit

Per boiled at N1,800,000/unit

Dryer at N1,300,000/unit

Cleaner at N300,000/unit

Weighing scale at N200,000/unit

Bagging machine at N80,000/unit

Total N5,200,000/unit

### 8.3 Establishment of seventeen (17) integrated large scale Rice Processing Plants by NFRA.

The Federal Executive Council approved the establishment of 17 integrated large scale rice processing mills in 12 states of the federation. The approved schedule is as indicated below:

S/N	COMPANY NAME	STATE TO OPERATE	SITE LOCATION	NUMBER OF PROCESSING PLANTS	UNIT COST	TOTAL COST	40% CREDIT AMOUNT RECOMMENDED
1	OLAM NIGERIA LTD	KWARA ADAMAWA BENUE	Pategi Yola Makurdi	3	N1.4 Billion	N4.2 Billion	N1.680 Billion
2	DEANSMANGER PROJECTLTD	NIGER	Wuya Bida	2	N1.4 Billion	N2.8 Billion	N1.120 Billion
3	ISYAKU RABIU & SONS LTD	KANO	Sharada	2	N1.4 Billion	N2.8 Billion	N1.120 Billion
4	TARA-AGRO INDUSTRIES LTD	TARABA	Wukari	1	N1.4 Billion	N1.4 Billion	N560 Million
5	LABANA GLOBAL VENTURES LTD	KEBBI	Brinin Kebbi	2	N1.4 Billion	N2.8 Billion	N1.120 Billion
6	ADA RICE PRODUCTION NIG LTD	ENUGU	Adani	2	N1.4 Billion	N2.8 Billion	N1.120 Billion
7	BAYELSA FARM COMPANY LTD	BAYELSA	Yenogoa	2	N1.4 Billion	N2.8 Billion	N1.120 Billion
8	EBONY AGRO INDUSTRIES LTD	EBONYI	Ikwo	1	N1.4 Billion	N1.4 Billion	N560 Million
9	STINE INDUSTRIES LTD	ANAMBRA	Amichi	1	N1.4 Billion	N1.4 Billion	N560 Million
10	OFADA VEETEE RICE NIG. LTD	OGUN	Itori	1	N1.4 Billion	N1.4 Billion	N560 Million
	<b>TOTAL</b>			<b>17</b>		<b>N23.8 Billion</b>	<b>N9.52 Billion</b>

The purpose of this approval is to utilize the sum of N10billion from the rice levy account for a credit scheme to support local rice processing capacity expansion through procurement, installation and setting up of 17 large scale rice processing mills in 12 major rice producing areas.

The programme is to be implemented through Public Private Partnership (PPP) Concept of design, Build, Operate and Own (DBOO) model, with 40% credit from the Federal Government and 60% Investors share arrangement.



The 40% Federal Government credit is to be disbursed through the Bank of Industry in collaboration with UBA, ZENITH Bank, Access Bank, InterContinental Bank, Bank PHB, Fidelity Bank, Unity Bank, Fin Bank and FCMB.

The Central Bank of Nigeria, CBN, shall monitor the participating banks and the beneficiaries' performances and appropriate sanctions where necessary.

The Federal Government's 40% credit attracts 4% interest rate, 25 year payback period and 5 year moratorium.

The signing of tripartite agreements by the parties concerned was carried out on 30<sup>th</sup> July, 2009.

Site inspection and selection for the project were undertaken from 11<sup>th</sup> – 15<sup>th</sup> August, 2009.

At present, work has started on only 7 of the integrated mills and none has been completed. None readiness of the mills might constitute some challenge at 2012 harvest.

#### **8.4 Market fluctuations and flows**

##### **a) Seasonality and storage**

Paddy production is seasonal as all agricultural production – whereas double-cropping is limited in Nigerian rice production systems. Paddy and rice storage therefore offer a means to smoothen rice supply to consumers. Rice producers, traders or consumers, can perform this function at any stage of the commodity chain. For millers a smoother supply of paddy throughout the year also permits a more rational and better use of the equipment. While millers-only are entirely dependent upon their customers' marketing plan, and can store paddy to smoothen the activity. The share of miller-traders storing rice is higher for the largest size of mill, which corresponds to higher financial and physical storage capacity.

In fact, miller-traders store paddy to facilitate milling operation rather than to speculate on market changes between peak and lean periods.

#### **8.5 Storage Capacity**

- Government should expedite the completion of all silos and warehouses under construction and set aside about 25% - 40% of these storage space for the procurement of paddy from farmers to be released to Processors when the need arises.
- Open warehousing should also be encouraged.
- Commodity stock exchange and warehousing receipt financing should also be adopted.

#### **9.0 GOVERNMENT POLICY ON EXTENSION, FARM INPUT AND STORAGE**

Existing agricultural policies were reviewed and recommendations were made as follows:

## **9.1 Extension:**

### Recommendations:

- Training of extension agents on rice production, processing and marketing activities in the rice value chain;
- Increased funding of public extension system in order to revamp the extension system and to remobilize extension agents for more effective extension work.
- Forging a strong collaboration between the state and local governments in providing extension services to farmers in rice producing areas.
- Exploring and encouraging the capacity of private sector to render incremental extension services, with particular reference to main actors in the rice value chain; namely: Production (agro-dealers); Storage and Processing (Rice mills); Marketing (rice merchants).
- Adopting the Cooperative Extension System for rice to Institutionalize rice extension service in relevant areas, whereby the three tiers of government act in unison to sustain a line item vote in their respective budgets for focused and integrated extension work.
- Streamlining the role of the ADPs to be sharply focussed on rice extension work in relevant states.

## **9.2 Farm inputs:**

- The current policy (2001, 2006) that discourages government in procurement and distribution of fertilizer should be observed.
- The role of government should be restricted to provision of fertilizer subsidy (25%) through the technology-enhanced voucher scheme, and the regulation of the fertilizer market including quality control.
- Provision of 50 % price subsidy on rice seed at the output end of rice seed production (seed companies), for the gradual replacement of farmers' seed stock with improved rice seed within four years.
- Strengthening NASC for active work towards seed replacement for rice, regarding the different aspects of its mandate as indicated in the current policy document; namely: rice research and development, Varietal Registration and Release, Seed Production and Marketing, Seed quality control and certification, rice Seed Import and Export, Seed Processing/Conditioning, Seed Extension and Promotion; Seed Pricing; Private sector development; Human capacity development.
- Exploring the West African Regions to source additional certified rice seed varieties under the ECOWAS protocol in the short term towards meeting the seed demand for the rice transformation initiative.
- Promotion of agro-dealer networks for increased access of rice farmers to pesticides and other relevant agro-chemicals.

## **9.3 STORAGE POLICY**

- Revitalization of strategic reserve for rice at the national level
- Increased storage facilities for maintaining buffer stocks at state level;
- Farmer support for increased on-farm storage of rice at local level
- Participation in WFP through the national rice reserve

## **10.0 MARKETING/TRADE**

### **10.1 Tariff structure**

The group identified the prevailing tariff structure as unfavourable to the present intention of government to stimulate large incremental rice production in the country. This is based on WTO rules and ECOWAS protocol to the effect that 5% is charged on brown rice and 10% on milled rice, subject to imposition of a variable levy of 20% on milled rice.

Recommendation:

- Provide a flat levy of 30% on both brown and milled rice in favour of rice farmers and to eliminate the sharp practice in rice trade as a result of discriminatory tariff structure between brown rice (duty 5%) and milled rice (duty 10% plus 20% levy).
- Avoiding midstream changes in tariff structure except in times of emergencies based on established instances of natural disasters or other sources of price crisis in the rice market.
- Stipulates a maximum period of three years of storage for imported rice.

### **10.2 Marketing Institution**

There is a felt need for private sector-led marketing arrangement and establishment of a central marketing institution for rice in the country. In this regard, it was observed that the existing institutional arrangement for rice marketing (with reference to the Arable Crops Development and Marketing Companies) has failed to perform its mandate, and that establishing a marketing institution around individual crops will be unwieldy and not cost-effective. Also the group observed that, even though the defunct commodity board arrangement will not apply in the present circumstances, the wholesale scrapping of the old system in 1986 without recognizing its desirable features was unnecessary. .

Recommendations:

- That the Abuja Securities and Commodity Exchange (ASCE) be sensitized towards increased trade in rice on its floor.
- That the existing marketing arrangement be examined to retain the desirable features of the Arable Crops Development and Marketing Company and do away with its debilitating features.
- Establishment of a central marketing institution around rice and related commodities, to act as buyer of last resort and operate a guaranteed minimum price and such other regulatory functions in the rice value chain, driven by private sector.
- Establishment of market information system utilizing ICT

## **11.0 SUPPORT WILL BE PROVIDED FOR VARIOUS INSTITUTES AND AGENCIES ON YEARLY BASIS AS FOLLOWS:**

### **11.1 National Cereals Research Institute (NCRI), Badeggi:**

The project will support NCRI in its rice related research effort in the following areas:

- |  |   |        |
|--|---|--------|
| - Breeding programme to develop yet better breeder stock | - | N200.0 |
| - Breeder seed production effort                         | - | N500.0 |

-	Vehicles, Research materials	-	N80.0
-	Foundation I seed production	-	<u>N500.0</u>
	<b>TOTAL</b>	-	<b><u>N1,280.0</u></b>

#### 11.2 Africa Rice

Africa Rice has developed upland NERICA variety and its lowland NERICA 2 in undergoing varietal testing in the field. The following areas will be given support by the project.

<u>Activities</u>		<u>Cost (Nm)</u>
Breeding efforts	-	N50.0
Production of NERICA , Breeder seed	-	N100.0
Production of Foundation I of NERICA 1	-	N50.0
Field Testing of NERICA II (lowland rice)	-	<u>N50.0</u>
Total	-	<u>N200.0</u>

#### 11.3 National Agricultural Extension Research Liaison Services (NAERLS), Samaru, Zaria. Support will be in the following area:

i.	Production of rice publicity materials	-	N200.0
ii.	Training of Stakeholders	-	N200.0
iii.	Training relating to rice value chain implementation	-	N200.0
iv.	Building capacity of farmers/stakeholders in adaptive technology-	-	<u>N200.0</u>
	<b>TOTAL</b>	-	<b><u>N800.0</u></b>

#### 11.4 National Agricultural Seeds Council (NASC)

Support will be given in the following areas:

i.	Seed certification and quality control efforts	-	N200.0
ii.	Seed law enforcement	-	N300.0
iii.	Production and distribution of foundation seed	-	N200.0
iv.	Joint monitoring of breeder seed and varietals maintenance plots with Research Institutes	-	N200.0
v.	Supervision of out grower programme	-	<u>N200.0</u>
	<b>TOTAL</b>	-	<b><u>N1,100.0</u></b>

#### 11.5 Support to RIFAN to strengthen its state level branches for effective input delivery

-		-	<u>N200.0</u>
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## **12.0 PROJECT ORGANISATION AND MANAGEMENT**

12.1 A National Rice Development Committee will be established at the federal level to oversee the implementation of the rice development programme in the federation. With the Hon. Minister of Agriculture and Rural Development as the Chairman. The Hon. Minister of Water Resources shall be the Vice Chairman.

12.2 A State Rice Development Committee shall also be set up similar to that at the Federal level with the State Deputy Governor as the Chairman and the State Hon. Commissioner for Agriculture and Natural Resources as the 1<sup>st</sup> Vice Chairman and the State Chairman of the Rice Farmers Association of Nigeria as 2<sup>nd</sup> Vice Chairman. The State Desk Officer for Rice Value Chain Development Programme will serve as member/Secretary.

## **13.0 MONITORING AND EVALUATION**

There is need to set up a structure that is capable of generating data on the rice sub-sector from the project. There is obvious leak of data for planning such programmes. The following activities will be undertaken by the project monitoring and evaluation unit.

- Base line study should be carried out in the participating states. This will form the basis for future assessment of project performance.
- A mid term review would be carried out at the end of 2013 to review processes and procedures of implementation and to make necessary adjustments,
- Each participating state will prepare progress report which will reflect physical project achievements against targets.
- Continuous process of data build up on production, processing and marketing should continue throughout the project life so as to be able to assess the socio economic impact of the project on the beneficiaries.
- Research studies to find alternative uses of rice will be undertaken so as to create room for expansion of the programme and more critically address the issue of food security.
- Regular market surveys for rice and production inputs, processing and marketing will continue in quarterly basis in order to generate information for offering advisory services to the management especially on prices of services provided by service provider. Also Minimum Guarantee Prices will be based on such survey reports.

## **14.0 ELIGIBILITY CRITERIA**

### **State participation**

State participation will be dependent on the following

Submission of names of identified clusters of rice farmers who are willing to participate in the project.

- i. Biometric registration of farmers within the cluster for participation in the project.
- ii. Opening a rice development Account in the Ministry of Agriculture & Natural Resources.
- iii. Establishment of a functional rice desk office in the Ministry of Agriculture.

- iv. Regular holding of quality State Rice Development Committee meeting.

## **15.0 PROJECT BENEFITS, IMPACT AND SUSTAINABILITY**

Project intervention in the rice sub-sector will attract the following benefits to the country.

### 15.1 Production increase

The project will bring 1,500,000 ha of land under supervision for rice production inputs, extension services; training, technology etc will be made available to the farmers with consequent increase in output per unit area of land.

15.2 Farm power and processing equipment will also be made available in the areas of land preparation, spraying, harvesting threshing and all aspect of improved processing methods. This will reflect in the total land area cropped performance fairly as drudgery is reduced and also improved quality of processed rice.

15.3 Yield will increase from the present 1.5mt/ha to about 7.5mt/ha with the consequent increase in national output.

15.4 Total national output will increase from the current 3.1 million mt of milled rice to about 8.7 million mt by 2015. This will solve the problem of rice import into Nigeria and set the stage for rice export.

15.5 Over the period 2011 to 2015, a total of 327,723ha will be brought under irrigation in addition to the existing facilities. 73,155ha will be realized through rehabilitation of existing schemes while 754,568 will be realized through expansion of existing schemes. This will to some extent address the target set in the vision 20:2020 for which for national economic transformation.

15.6 Sustainability is built into this project from the beginning to the very end as it has been designed to be largely dependent on the private sector. The sector will provide mot of the services including input, land preparation and processing. Even with a change in government administration, with consequent shift in national emphasis, the project will continue with just minimum government supports.

15.7 Intangible benefits from the project include:

- Employment opportunities as more Nigerians will be engaged in the expanded rice sub-sector activities.
- Poverty reduction through import substitution.
- Conservation of scarce foreign exchange is achieved and this is ploughed into other sectors of our socio-economic life.

- Reduction in rural urban migration as more people get engaged in farming, input supply and processing of rice in the rural areas. Life in the rural area will become more meaningful as it will compare with the comforts of urban cities.
- 15.8 All these benefits are in perfect agreement with vision 20:2020 for national socio-economic transformation.

## **16.0 PRODUCTS**

Unlike sorghum (breweries), cassava (pharmaceuticals) and cotton (textiles), rice does not have a strong industrial base outside being a staple food. Nonetheless, three products are popular:

- Parboiled, milled, polished and stone free rice that is competitive in international markets
- Unparboiled, milled and polished white rice of international standard that is cheaper than parboiled rice.
- Unparboiled broken rice that can be a source of calorie for the low income group.

Some by-products from rice production and milling have found some commercial applications.

1. Rice straw: The straw contains fiber, carbohydrate, protein and traces of vitamins. It can be used as livestock feed, fertilizer, mushroom production, fuel for cooking, pulp and paper and as raw material for production of alcohol.
2. Rice hull and husks: Constitute 20% of the grain weight and can be used as a component of livestock feed, processed as fibre board or used as fuel/energy source.
3. The rice bran: It consists of 12 – 16% protein, 16 – 20% fat, 8 – 12% fibre and 7 – 10% ash. It can be processed into lubricating oil.

## **17.0 EXPECTED IMPACT**

A viable rice value chain capable of meeting the country's rice demand put in place  
Conservation of foreign exchange earnings resulting from elimination of rice imports.  
Diversification of Nigerian economy.  
Food security resulting from doubling of rice production from 3 MT/ha to 6.0 MT /ha.  
Generation of additional 500,000 jobs in the rural area.

## 18.0 LOG FRAME

Expected output	Intervention logic	Objectively verifiable indicators of achievements	Assumptions
Baseline study of cluster areas	Selection of a reputed organization like NISER to carry out studies.	Report showing details of each cluster's challenges.	Consistent policies favorable to all stakeholders. Funds will be available to prosecute all sectors of the transformation program.
Improved seeds of rice varieties for 2012 have been commissioned	Fund for local multiplication of certified seeds or for imports from neighboring countries.	Quantity of seeds in MT on hand and ready for distribution to farmers in the clusters	There will be no unrest in the country that will restrict movement
Identification of famers' clusters around mills and registration	Collaboration of State Extension Services	Biometric details of all farmers in each cluster.	
Improved input supply system	Establishment of sales outlets in rural areas	Number of outlets established in rural area.	
Increase paddy production to feed the mills	Guaranteed minimum price already established	Uninterrupted supply of paddy to the mills	
Branded locally produced rice in the market		Number of brands available in the market.	
Number of privately owned tractors and farm equipment will have visibly increased.	CBN working through NIRSAL		



## 19.0 TIME- LINE OF RICE TRANSFORMATION AGENDA

Activities	2011		2012													
	N	D	J	F	M	A	M	J	J	A	S	O	N	D		
HMA sensitizes Dep. Govs	■															
State teams are formed	■	■														
Identification of rice growing clusters and enumeration of farmers			■	■	■											
Base line survey of clusters			■	■	■											
Linkage of cluster farmers with the mills in a field day				■	■											
Credit dispensation arrangements				■	■	■	■	■								
Subsidy/loans/NIRSAL Support for equipment – tractors, threshers and mills				■	■	■	■									
Input delivery structure In place - Seeds, Fert. & herbicides plus training on use				■	■											
Land preparation				■	■		■	■								
Planting					■	■			■							
Harvesting/threshing/drying of paddy										■	■			■	■	
Processing											■	■	■	■	■	
Monitoring and evaluation								■	■	■	■	■	■	■		
Rehabilitation of irrigation schemes							■	■	■	■	■					
Advocacy for Nigerian rice													■	■	■	
Research and Development	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	

## 20.0 SUMMARY PROJECT COSTS

Project Cost (Nm)					Total Cost
	2012	2013	2014	2015	(N m)
Certified Seed	6,120.0	10,200.0	16,720	22,440	55,480.0
AgroChemicals	1,967.2	2,253.0	2,869.96	3,448.5	12,017.66
Fertilizers	1,480.0	327.86	365.45	414.51	1,393.10
Tractorization	1,480.0	1,480.0	1,480.0	1,480	5,920.0
Publicity and Senitization	317.0	317.0	317.0	317.0	1,268.0
Mill Accessories	4,830.0	4,830.0	4,830.0	4,830.0	19,320.0
New Mill macines	624.0	624.0	624.0	624.0	2,496.0
Training	300.0	300.0	300.0	300.0	1,200
Rehabilitation of Existing irrigation schemes	8.17	8.53	7.37	-	24.07
<b>Support to collaborating agencies</b>					
Support to NCRI	1,280.0	1,280.0	1,280.0	1,280.0	5,120.0
Support to Africa Rice	200.0	200.0	200.0	200.0	800.0
Support to NAERLS	800.0	800.0	800.0	800.0	800.0
Support to NASC	1,100.0	1,100.0	1,100.0	1,100.0	4,400.0
Support to RIFAN	200.0	200.0	200.0	200.0	800.0
<b>Project Management and Administration Investment Cost</b>					
Headquarters	57.6	-	-	-	57.6
States	158.0	39.5	39.5	55.3	292.3
Field Offices	142.0	35.0	35.0	49.0	259.0
<b>Recurrent Cost</b>					
Headquarters	200.0	200.0	200.0	200.0	800.0
States	400.0	500.0	600.0	720.0	3,220.0
Field Offices	200.0	250.0	300.0	370.0	1,120.0
Monitoring and Evaluation	342.0	378.0	448.0	533.0	1,710.0
<b>Total</b>	<b>21,009.25</b>	<b>25,331.85</b>	<b>32,716.28</b>	<b>39361.31</b>	<b>120,897.7</b>
17 New Integrated Mills (NFRA)	23,800				23,800
<b>Total</b>					<b>114,699.7</b>

**Year 1 – 19 States + FCT, Year 2 – 25 States, Year 3 – 30 States, Year 4 – 36 States + FCT.**

