

Mapping of
Poverty
Reduction
Strategies
Papers
(PRSP),
Sector
Strategies
and Policies
related to
Rice
Development
in Nigeria

REPORT



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Acronyms

AfDB	African Development Bank
ADPs	Agricultural Development Projects
AGRA	Alliance for Green Revolution in Africa
ARI	Africa Rice Initiative
BOI	Bank of Industry
CAADP	Comprehensive Africa Agricultural Development Programme
CARD	Coalition for African Rice Development
CBN	Central Bank of Nigeria
DFID	Department For International Development
ECOWAS	Economic Community Of West Africa
FCT	Federal Capital Territory
FDA	Federal Department Of Agriculture.
FGN	Federal Government of Nigeria
FMAWR	Federal Ministry of Agriculture and Water Resources
IFAD	International Fund for Agricultural Development
IPM	Integrated Pest Management
IRM	Integrated Rice Management
JICA	Japan International Cooperation Agency
KOICA	Korean International Cooperation Agency
NACGRAB	National Centre For Genetic Resource And Bio-tech
NACRDB	National Agricultural Cooperative& Rural Development Bank
NAFPP	National Accelerated Food Production Programme
NARI	National Agricultural Research Institutes
NARS	National Agricultural Research System
NASC	National Agricultural Seed Council
NCAM	National Centre for Agricultural Mechanization
NCRI	National Cereal Research Institutes
NEEDS	National Economic Empowerment and Development Strategy
NERICA	NERICA New Rice for Africa
NFRA	National Food Reserve Agency
NGN	Nigerian Naira
NGO	Non Governmental Organization
NRDS	National Rice Development Strategy
MT	Metric Ton
PLAR	Participatory Learning & Action Research
PPP	Public-Private-Partnership
PVS	Participatory Variety Selection
RAMP	Rural Access and Mobility Project
RBDAs	River Basin Development Authorities
RIFAN	Rice Farmers Association of Nigeria
USAID	United States Agency for International Development
USD	United State Dollar
WARDA	West Africa Rice Development Association/Africa Rice Centre
WUA	Water Users Association
WB	World Bank
NEPAD	New Partnership For Africa's Development
NFSP	National Food Security Programme

Executive Summary

i) Of all staple crops produced in Nigeria, rice is becoming increasingly important in terms of consumption and income to rice producers. Based on an estimated annual rice consumption of 5 million MT in Nigeria, per capita consumption is 32 kg per annum with per capita consumption in the urban areas higher, averaging 47 kg per annum (2008 estimates). However, domestic production has been far lower than demand, leading to considerable imports. In 2008, Nigeria produced approximately 2 million MT of milled rice and imported roughly 3 million MT, including the estimated 800,000 MT that is suspected to enter the country illegally on an annual basis. Estimates indicate that over 90 percent of domestic rice production comes from resource-poor and weakly organized small-scale producers, with average farm size of 1-2 hectares smallholders.

ii) Responding to the increasing importance of rice production in sub Saharan Africa, the Coalition for African Rice Development (CARD) initiative was launched at the Tokyo International Conference on African Development (TICAD IV) in 2008 and spearheaded by JICA, NEPAD and AGRA. The CARD initiative aims at doubling rice production in Sub-Saharan Africa from 14 to 28 million tons in 10 years. Nigeria is among the first group of pilot countries selected for programme implementation and the country has designed its National Rice Development Strategies (NRDS). The NRDS has an overall goal of increasing rice production in Nigeria from 3.4 million tonnes paddy in 2007 to 12.85 million tonnes by the year 2018.

(iii) The National Rice Development Strategies (NRDS) has a vision of improving every component of rice value chain. The NRDS subsectors include rice seed system, agro-chemicals supply, handling and application, fertilizer marketing and distribution, agricultural mechanization, irrigation and investment in water control technologies, post-harvest handling and processing, marketing, access to credit/agricultural finance, extension services, research and technology dissemination and policy environment.

iii) The objective of this study is to assess the coherence and linkages between the NRDS and the relevant planning and programming frameworks including growth and poverty reduction strategies; relevant sector-based strategies; public expenditure frameworks; ongoing rice related programs. The study also aims to provide a basis for reconciling the NRDS' requirements in terms of policy, institutional and investments measures / actions and the related opportunities indicated in the above planning frameworks and tools. The National Economic Empowerment and Development Strategy NEEDS is Nigeria's reform based medium-term plan for poverty reduction and economic development. The policy thrust of NEEDS is to implement a new agricultural and rural development policy aimed at addressing the constraints in the agriculture sector. The NRDS is consistent with the NEEDS. Both the NEEDS and the NRDS emphasize the need for a private sector driven agricultural sector.

iv) There are also other National and Sectoral Strategies which matches one or more of the NRDS subsectors. Some of the current National policies that complements the NRDS include 7point agenda, National Special Program for Food Security (NSPFS); 3rd National Fadama Programme; Rehabilitation of Small Scale Irrigation Schemes; Commercial Agricultural

Development Project (CADP); Rural Access and Mobility Project (RAMP); Rice Processing Investment Fund; Multinational NERICA Rice Dissemination Project. The sectoral policies include: the National Agricultural Policy (NAP); Agricultural Development Projects (ADP); Fertilizer Policy; National Irrigation Policy; River Basin Development Authority; Accelerated Rice Production in Niger River Basin; N10 billion Intervention fund for Rice Cluster Strategy; National Planning Commission Vision 2020 for the Agricultural Sector; National Cereals Research Institute.

v) There are also programmes sponsored by International Development Partners. This include Maximizing Agricultural Revenue and Key Enterprises in Targeted States (MARKETS); Promoting Pro poor opportunities through commodities and Service Markets (ProPcomBreeding for High-yielding Stable Drought Tolerant Rice and Provision of Quality Seeds of Rice for Poor Resource Farmers in Nigeria; Targeting Drought Avoidance Root Traits to enhance Rice Productivity under water limited environment; Improvement of Drought and Submergence Tolerance of Rice in Africa including NERICA

vi) The goals and objectives of NEEDS and the 7 point agenda as well as other sectoral strategies are consistent with the four pillars of CAADP as well as other regional strategies such as NEPAD and ECOWAP. All the national, sectoral and donor strategies policies and programmes analyzed are consistent with the NRDS. It is observed that the original intention of some of the national and sectoral policies and strategies were not to promote rice production alone but to develop Nigeria's agricultural sector in general. Given the uniqueness of each agricultural subsector, the rice sector may not necessarily respond to programmes targeted at the agriculture sector as a whole. Given the importance of rice in Nigeria, every aspect of the rice value chain deserves high policy focus.

vii) For the development of the rice sector, the NRDS identifies the following stakeholders as significant to the successful implementation of the rice Federal Ministry of Agriculture and Water Resources; National Food Reserve Agency (NFRA); National Agricultural Seed Council (NASC); National Cereal Research Institute (NCRI); the State Agricultural Development Programme (ADPs); National Centre for Agricultural Mechanization (NCAM); Agricultural Machinery: Mechanics and Operators Training Centre (AMMOTRAC); African Regional Centre for Engineering Design and Manufacturing (ARCEDEM); Federal Ministry of Finance; National Planning Commission; Nigeria Agricultural Cooperative & Rural Development Bank (NACRDB); Development Partners; Rice Farmers Association of Nigeria (RIFAN); commercial banks, microfinance institutions, Rice Processors Association; paddy traders, input dealers, wholesalers and retailers of domestic rice.

viii) Some of the observed gap or constraints in the rice value chain include: use of low quality input, high cost of fertilizer and difficulty in procuring fertilizer in the appropriate amount at the appropriate time, low level of knowledge and training, rain-fed cropping system, lack of irrigation facilities, lack of storage amenities, poor pests and disease management, lack of access to institutional and infrastructural support, lack of access to credit facilities, lack of quality control awareness, lack of access to improved technologies, high costs of energy for parboiling, lower output quality (post processing), weak market information service, inconsistent

tariff policies, and poor commercial linkages of marketing agents, policy inconsistency, poor policy implementation, land policy, low investment in agricultural research and agricultural extension.

viii) A number of high impact opportunities have been identified across the rice value chain including; improved input supply (especially seed and fertilizer), accelerated mechanization, improved access to financing, better quality control, improved extension services, development of new irrigation programs and rehabilitation of old systems, reduction of postharvest losses through improved processing, infrastructure improvement, enhanced research initiatives, and improved business climate, sustained capacity development programs for rice cooperatives.

ix) Taking account of the above opportunities, the study further suggests the following additional steps towards the achievement of the NRDS goals:

- The federal government should ensure that rice top its development agenda and priority should be given to timely implementation of rice programs.*
- Both the Budget Office of the federation and the Federal Ministry of Finance should ensure that necessary allocation is made in the annual budget towards the achievement of the NRDS.*
- Improving both the reliability of agricultural statistics and understanding of the impacts of past and existing policies on the rice sector are important to deliver evidence-based policy interventions.*
- More relevant stakeholders should be included in formulation and implementation of rice strategies and policies. Important stakeholders include Federal MDAs whose activities can create enabling environment for rice development in Nigeria especially Ministry of Transport, Ministry of Works and the Ministry of Power.*
- Government should intensify its efforts in the provision of a favorable enabling environment that encourages private investment in the rice sector such as maintaining a stable policy regime, fostering an attractive business climate, and providing basic infrastructure.*
- Achieving the NRDS would also require increase assistance of international development partners in terms of funding and institutional support.*

1.0 INTRODUCTION

1.1 Background

Agriculture constitutes one of the most important sectors of the Nigerian economy. The sector accounts for about 25 percent of gross domestic product, two-third of the workforce and account for about 5 percent of total exports. Similarly, agriculture constitutes the single largest contributor to the well-being of the rural poor, sustaining 90 percent of the rural labor force. Before the oil booms of the 1970s and 1980s, Nigeria had a vibrant agriculture sector. It was self-sufficient in food production and a key exporter of several agricultural commodities notably cocoa, oil palm, rubber, and groundnuts. However, the agricultural sector suffered neglect during the oil boom in the 1970s while exchange rate appreciation and overvaluation following the oil booms, along with distortions induced by an import substitution industrialization policy, reduced agricultural competitiveness and investment. Consequently, Nigeria became a food importer, and agricultural exports all but disappeared. Since the collapse of the oil boom of the 1970s, there has been a dramatic increase in the incidence and severity of poverty in Nigeria, arising in part from the dwindling performance of the agricultural sector where a preponderant majority of the poor are employed. In 2004 more than 92 percent of the population lived on less than \$2 a day, and 54 percent on less than \$1 a day (NBS, 2005). Most of these poor people are in rural areas where the incidence of poverty is highest among households in which the head is engaged in agriculture as the main source of livelihood and income.

The agricultural products in Nigeria can be divided into two main groups: food crops, produced for home consumption, and export products. Food crops production in Nigeria include sorghum, maize, cassava, yams, millet, rice and wheat. The production of most of these commodities is subsistent-based and they are of considerable importance for food security, expenditures and incomes of households. Of all these staple crops, rice is becoming increasingly important in terms of consumption and income to rice producers. Since the 1970's the status of rice in the average diet has been transformed from being a luxury food item to that of a staple and has become a major source of calories for the urban poor. For example, the poorest third of urban households obtain 33% of their cereal-based calories from rice, and rice purchases represent a major component of cash expenditures on cereals (World Bank, 1991). Data from several states in Nigeria demonstrate that rice availability and rice prices have become a major welfare determinant for the poorest segments of the countries' consumers who also are least food secure (Akande, 2002).

The structural increase in rice consumption in Nigeria could be attributed to various reasons including urbanization which has shifted consumer preferences towards rice. Consequently, the demand for rice in Nigeria has been increasing, even at a much faster rate than in other West African countries. For example, during the 1960's Nigeria had the lowest per-capita annual consumption of rice in the sub-region (average of 3 kg). Since then, Nigerian per-capita consumption levels have grown significantly at 7.3% per annum. Thus, per-capita consumption during the 1980's averaged 18 kg and reached 22 kg in 1995-1999. Based on an estimated annual rice consumption of 5 million MT in Nigeria, per capita consumption is 32 kg per annum with per capita consumption in the urban areas higher, averaging 47 kg per annum (2008 estimates). However, domestic production has been far lower than demand, leading to considerable imports. In 2008, Nigeria produced approximately 2 million MT of milled rice and imported roughly 3

million MT, including the estimated 800,000 MT that is suspected to enter the country illegally on an annual basis. Nigeria has been identified as the one of the largest importers of rice, second only to Indonesia. Nigeria is also the largest rice importer in Africa, accounting for 25% of Africa's import, and over 25% of all its agricultural imports, and more than 40% of its domestic consumption.

Rice is produced in several states in Nigeria including Kaduna, Niger, Benue Taraba, Kebbi, Sokoto Adamawa, Kano, Nassarawa, Kwara, Ekiti, Ondo, Ebonyi and Abia. Rice growing environment in Nigeria are usually classified into five rice ecosystems namely: Rain-fed lowland (which accounts for 47% of total rice production area), Rain-fed upland (30%), Irrigated lowland (including large-scale irrigation schemes and small-scale irrigation schemes, account for 16% of total rice area) Deepwater (5%) and Mangrove swamp (accounting for less than 1% of total rice area). Nigeria is currently the highest rice producer in West Africa, producing an average of 3.2 million tons of paddy rice or 2.0 million tons of milled rice per annum. Nevertheless, there remains a wide gap between local supply and the ever increasing demand for rice in Nigeria. Estimates indicate that over 90 percent of domestic rice production comes from resource-poor and weakly organized small-scale producers, with average farm size of 1-2 hectares smallholders. Rice has become a strategic commodity in the Nigerian economy and the increasing demand and high price of rice will continue to be a major issue in national food security. Consequently, the government of Nigeria has actively intervened in the Nigeria's rice economy over the last few years using measures including import tariffs and import restrictions as well as setting up special presidential committees on the product. Notwithstanding these policy measures, domestic rice production has not increased sufficiently to meet the increased demand.

Responding to the increasing importance of rice production in sub Saharan Africa, the Coalition for African Rice Development (CARD) initiative was launched at the Tokyo International Conference on African Development (TICAD IV) in 2008 and spearheaded by JICA, NEPAD and AGRA. The CARD initiative aims at doubling rice production in Sub-Saharan Africa from 14 to 28 million tons in 10 years, building on the existing structures, policies and programs, such as the Africa Rice Center (WARDA); the Comprehensive Africa Agriculture Development Program (CAADP) and the Africa Rice Initiative (ARI). Nigeria is among the first group of pilot countries selected for programme implementation and the country has designed its National Rice Development Strategies (NRDS). The NRDS has an overall goal of increasing rice production in Nigeria from 3.4 million tonnes paddy in 2007 to 12.85 million tonnes by the year 2018. The NRDS has a vision of improving every component of rice value chain including rice seed system, agro-chemicals supply, handling and application, fertilizer marketing and distribution, agricultural mechanization, irrigation and investment in water control technologies, post-harvest handling and processing, marketing, access to credit/agricultural finance, extension services, research and technology dissemination and policy environment. The NRDS identified four (4) components of the overall strategy that it will pursue in order to substantially achieve its objective. These are:

1. Processing and Marketing;
2. Land Development, Irrigation Development and Paddy Production;
3. Seed Development; and

4. Rice Production Inputs Supply Development.

The Project Management (coordination, monitoring and evaluation) is a major part of the implementation and it cuts across all the components.

1.2 Objective of the Study

The objective of this study is to:

- (i) To assess the coherence and linkages between the NRDS and the relevant planning and programming frameworks including (i) growth and poverty reduction strategies or equivalent, (ii) relevant sector-based strategies, (iii) public expenditure frameworks at national / sector levels and (iv) ongoing rice related programs
- (ii) To provide a basis for reconciling the NRDS' requirements (demand side) in terms of policy, institutional and investments measures / actions and the related opportunities (supply side) as indicated in the above planning frameworks and tools.

The specific objectives of this study are as follows:

- (a) Enhancing the integration of NRDS with the Poverty Reduction and National Development Strategies (PRS/NDS), related sector priority setting and financing processes and the four pillars of the Comprehensive African Agriculture Development Program CAADP) – by determining their linkages.
- (b) Laying the ground for broader donor support which will contribute to the funding of the NRDS implementation.
- (c) Contributing to ensure the sustainability of the funding of the NRDS implementation.

The specific activities assigned to the Nigeria national consultants are:

- (a) Mapping of ongoing or planned poverty reduction and national development strategies, sector strategies, policies, programs, related budget processes and expenditure frameworks of direct or potential relevance to NRDS' financing.
- (b) Mapping of ongoing or planned frameworks of dialogue of direct or potential relevance to the NRDS' implementation.
- (c) Ensuring how investments in rice value chains can be mainstreamed into national budgets to benefit from allocations coming from the treasury and how resources be mobilized from national and external sources for investments in rice value chains.
- (d) Analysis of the role and responsibilities of the key stakeholders who can improve the status of rice value chains in the different national strategies and investments plans.
- (e) Making the reconciliation between the NRDS' request (demand side) in terms of policy, institutional and investment measures and the related opportunities (supply side) as indicated in the above planning frameworks and tools.
- (f) On the basis of the reconciliation between the demand and the supply, setting up the gap in terms of programs, various measures / actions including additional financial resources

1.3 Methodology

In order to achieve the above set of objectives, the study uses both secondary and primary data sources. Using desk top research, the study analyzed various strategies, policies programs and expenditure frameworks at national and sector level with reference to the NRDS. Sources of secondary data used for the study included the Federal Ministry of Agriculture and Rural Development, Federal Ministry of Water Resources, Federal Ministry of Finance, National Planning Commission, Federal Ministry of Works and Housing, Ministry of Commerce and Industry, the National Cereal Research Institute (NCRI), the World Bank, United States Department of Agriculture (USAID), Alliance for Green Revolution in Africa (AGRA), the Web, and other related sources.

To assess the constraints and all possible opportunities across the rice value chain as well as to understand the way forward in achieving Nigeria's rice development strategies, some stakeholders in the Nigeria's rice sector were consulted. These include officials of the Federal Ministry of Agriculture, some members of the Rice Farmers Association of Nigeria, millers, rice importers and traders.

2.0 REVIEW OF STRATEGIES / POLICIES / PROGRAMS AND EXPENDITURE FRAMEWORKS

2.1 National Economic Empowerment and Development Strategy (NEEDS)

NEEDS is Nigeria's reform based medium-term plan for poverty reduction and economic development. NEEDS was conceptualized in 2003 and launched in 2004, as a response to the numerous challenges facing the nation. NEEDS is based on three pillars: (i) empowering people and building a Social Contract; (ii) promoting private enterprise to foster growth of the non-oil sector; and (iii) changing the way the Government work in Nigeria. The NEEDS recognized that growth in agricultural production had failed to keep pace with the needs of the country's increasing population which had led to a progressive increase in import bills for food and industrial raw materials.

Policy Thrust NEEDS I (2004-2007)

Its main policy thrusts include the following:

- (i) Provide the right policy environment and target incentives for private investment in the sector. Implement a new agricultural and rural development policy aimed at addressing the constraints in the sector.
- (ii) Foster effective linkages with industry to achieve maximum value-added and processing for export.
- (iii) Modernize production and create an agricultural sector that is responsive to the demands and realities of the Nigerian economy in order to create more agricultural and rural employment opportunities, which will increase the income of farmers and rural dwellers.
- (iv) Reverse the trend in the import of food (which stood at 14.5 percent of total imports at the end of 2001), through a progressive programme for agricultural expansion. Strive towards food security and a food surplus that could be exported.
- (v) Invest in improving the quality of the environment in order to increase crop yields.

NEEDS sets the following targets:

- (i) Achieve minimum annual growth rate of 6 percent in agriculture.
- (ii) Raise agricultural exports to \$3 billion by 2007. A major component of these exports will be cassava.
- (iii) Drastically reduce food imports, from 14.5 percent of total imports to 5 percent by 2007.
- (iv) Develop and implement a scheme of land preparation services to increase cultivable arable land by 10 percent a year and foster private sector participation through incentive schemes.
- (v) Promote the adoption of environment friendly farming practices.
- (vi) Protect all prime agricultural lands for continued agricultural production.

Overall Performance of NEEDS (2004-2007)

The performance of NEEDS surpassed expectations in many respects such as stable macroeconomic, privatization and liberalization. But the performance was weak in some other areas like monitoring and evaluation and effective coordination, poverty reduction, employment generation and power supply. Specifically, under NEEDS, the agriculture sector grew at an average annual growth rate of 7.0% from 2004 – 2006 as against the target of 6.0% (propelled by

activities in crops production, influenced by the Presidential initiatives on rice, cassava, and other crops). Other agricultural programmes implemented under NEEDS include the National Special Programme for Food Security covering 109 communities, the Community-based Agriculture Development Project, and World Bank National Fadama 11 project. Other achievements of NEEDS include easier access to Agricultural Credit Programme (Trust Fund Model TFM), promotion of Export Support initiatives (tariff measures and export support schemes for farmers and agric-businesses) and Value Added Tax exemption for locally produced agricultural input.

While acknowledging that significant progress have been made in the context of the NEEDS policy thrust and targets, there remains several challenges and outstanding issues to be addressed over the next few years in order to facilitate reduction in poverty levels in accordance with the MDGs by 2015. The observed gap were to be addressed in NEEDS-II

NEEDS-2 (2008-2011)

NEEDS 2 was formulated as a successor policy to the original NEEDS framework, and emphasizes the following: credit, land reform, agricultural extension, commercialization of agriculture, and post-harvest management, strengthening links between agriculture and industry, research and training, achieving Nerica rice yield of 7tons/ha, subsidy system, appropriate technologies,

Specific numerical targets and policy measures are as described below.

Numerical targets:

- (i) achieve an annual agricultural sector growth rate of 10% or more (cultivated agriculture 10%; husbandry 2.5%; forestry 8%; fishery 9%; or more),
- (ii) reduce the poverty rate among the agricultural population by half each year,
- (iii) achieve annual employment generation within the agricultural sector of 5% ,
- (iv) achieve agricultural product exports of US\$ 3 billion by 2011 (cassava, rice, cocoa, vegetable oil, peanuts, etc.), (v) reduce food imports from 5% to 0% by 2011, and (vi) achieve an annual cultivated land preparation rate of 10%.

2.2 The 7-point agenda (2007 – date)

Status: On going

In 2007, the federal government enunciated a seven-point agenda tackle the numerous problems facing the Nigerian economy. The 7 point agenda contains policy priorities that will strengthen the reforms articulated in the NEEDS document. These priorities include Power and Energy, Infrastructures, Food Security, Wealth Creation, Transport Sector, Land Reform, Security and Education. The 7 point agenda recognize the need for an agrarian based food reforms anchored on the desire for wealth creation in order to make a shift from the undue emphasis on oil and gas. Under the 7 Point Agenda, the federal government defined the following five major programmes for the period 2020:

1. Developing Agricultural Policy and Regulatory Systems (DARPS)
2. Agriculture Commodity Exchange Market (ACCOMEX)

3. Raising Agricultural Income with Sustainable Environment (RAISE)
4. Maximizing Agricultural Revenue in Key Enterprises (MARKETS)
5. Water, Aquaculture and Environment Resource Management

The emphasis of the agricultural agenda under the 7 point agenda would be on the development of modern technology, research, financial injection into research, production and the development of agricultural inputs. This effort is expected to lead to a 5-10 fold increase in yield and food production.

The implementation of the both the NEEDS-2 and the 7 point agenda remain on course with establishments of various national programmes and projects which would aid the achievement of the set goals and objectives. These programmes are financed through the national budget and foreign funds/credit. Some of the National strategies towards rice development implemented under the NEEDS and the 7 point agenda include:

- National Special Program for Food Security (NSPFS) (2008-date);
- 2nd National Fadama Programme (2003-2006);
- 3rd National Fadama Programme (2007-2012);
- Rehabilitation of Small Scale Irrigation Schemes (2003-date);
- Presidential Initiative on Increased Rice Production, Processing and Export (2003-2009);
- National Programme for food security; Commercial Agricultural Development Project (CADP) (2009-2014);
- Rural Access and Mobility Project (RAMP) (2006-date);
- Rice Processing Investment Fund (2009-date)

In addition to the above, there are also other sectoral strategies, policies / implemented by various ministries, departments and agencies of government including the the Federal Ministry of Agriculture and Water Resources, Federal Ministry of Finance, Federal Ministry of Works, Ministry of Commerce and Industries, National Planning Commission. Most of these programs are funded mainly from the annual national budget. Some of these initiatives include:

- Agricultural Research Institutes (1964-date),
- National Agricultural Cooperative Bank (1973 to date);
- Agricultural Development Projects (1975 to date);
- River Basin Development Authorities (1977 to date);
- National Cereals Research Institute (NCRI);
- National Agricultural Policy (2002 to date);
- National food Security program(2008 to date);
- Seed Policy (1992-date)
- Fertilizer policy(1970s- date);
- National Irrigation Policy (2006 to date);
- Accelerated Rice Production in Niger River Basin (2006-date);
- N10 billion Intervention fund for Rice Cluster Strategy (2009-date);
- Trade Policy (1970s-date);

Apart from efforts from the federal government and its agencies, Nigeria's rice sector has also received support from International development agencies such as the World Bank, FAO, AfDB, JICA, IFAD and USAID. These include:

- Rice Production, Post Harvest processing and Marketing Activities Advise by JICA
- Maximizing Agricultural Revenue and Key Enterprises in Targeted States (MARKETS) by USAID
- Promoting Pro poor opportunities through commodities and Service Markets ProPcom by DFID
- AGRA Rice Seed Production
- AGRA Breeding for High-yielding Stable Drought Tolerant Rice and Provision of Quality Seeds of Rice for Poor Resource Farmers in Nigeria
- Targeting Drought Avoidance Root Traits to enhance Rice Productivity under water limited environment by CGIAR Generation Challenge Programme
- Improvement of Drought and Submergence Tolerance of Rice in Africa including NERICA by JICA
- Community-Based Agricultural and Rural Development Programme (CBARDP) by IFAD
- Rural Finance Institution building Programme by IFAD

2.3 Consistency of the Poverty Reduction Strategies, National and Sectoral Strategies and financing processes with and the Comprehensive African Agriculture Development Program (CAADP)

Established as part of the New Partnership for Africa's Development (NEPAD), the Comprehensive Africa Agriculture Development Programme (CAADP) was endorsed by the African Union Assembly in July 2003. The main goal of CAADP is to help African countries reach a higher path of economic growth through agriculturally-led development, which eliminates hunger, reduces poverty, food and nutrition insecurity and enables the expansion of exports. CAADP works under four Pillars, each dealing with key issues in African agriculture. These are:

1. Land and water management
2. Rural infrastructure and trade related capacities for market access
3. Increasing food supply and reducing hunger
4. Agriculture research and technology dissemination and adoption

In aligning with CAADP, countries adopt the Maputo Declaration of: (i) Achieving an annual agricultural growth rate of at least 6 percent in agriculture; (ii) Allocating at least 10 percent of the national budget to agriculture. During 2005, Economic Community of West African States (ECOWAS) Agricultural Policy (ECOWAP) and the NEPAD Secretariat developed a joint ECOWAS Agricultural Policy (ECOWAP)/CAADP action plan for the period 2005-2010 for the development of the agricultural sector. Although regional in scope, the ECOWAP/CAADP agenda is an integral part of national efforts to promote agricultural growth and economic development. By signing the ECOWAP/CAADP Compact, Nigeria has incorporated CAADP into its agricultural agenda.

Nigeria's reform based medium-term plan for poverty reduction and economic development is embodied in the NEEDS and the 7 point agenda. There are other sector based policies which also

aim at improving agricultural production in Nigeria. The goals and objectives of NEEDS and the 7 point agenda as well as other sectoral strategies are consistent with all the pillars of CAADP as well as other regional strategies such as NEPAD and ECOWAP. For example, the policy thrusts of NEEDS are consistent with the four pillars of CAADP. Additionally, the federal government under the 7 Point Agenda defined five major programmes for the period 2020, which together represent Nigeria's priorities across ECOWAP/CAADP pillars. The programmes include (i) Developing Agricultural Policy and Regulatory Systems (ii) Agriculture Commodity Exchange Market (iii) Raising Agricultural Income with Sustainable Environment (iv) Maximizing Agricultural Revenue in Key Enterprises (v) Water, Aquaculture and Environment Resource Management. The first programme falls under pillars two and four of CAADP. The second, third and fourth programme fall under the second and third pillars, while element of pillar one and three are contained in the fifth programme. By aiming to reduce poverty, food insecurity and eliminating hunger through enhance agricultural production, NEEDS and the 7 point agenda as well as other sectoral policies and strategies are consistent with global development goals, such as the Millennium Development Goals (MDGs).

Since the incorporation of CAADP into Nigeria's agricultural agenda, the country has been successful in achieving an annual agricultural growth rate of greater than 6 percent in agriculture. However, the country has not been able to increase budgetary allocation to agriculture to 10 percent as stated in the Maputo Declaration.

2.4 Public Expenditure Framework

In Nigeria, both national and state budgets constitute elements of several short-term plans which are usually translated into programs of action through the annual budget. Since the inception of the civilian government in 1999, the thrust of the annual budgets has been to lay a solid foundation for a private sector led economic diversification and growth as a way of reducing unemployment and poverty. In pursuance of these objectives, the government set several targets. However, over the years, most of these targets were not met. The main source of funds for implementing the annual budgets in Nigeria is proceeds from the sale of crude oil. Other sources of funds include funds from internally generated revenues and from Donor/Development Partners.

The budgetary reforms which commenced in 2000 include the using projections of oil prices that are lower than the expected international price of oil over the budget period. For instance, in 2004, the government budgeted at a price of US\$25, US\$30 in 2005, US\$35 in 2006 and US\$40 per barrel of oil in 2007. This has enabled government to save every dollar above the budgeted price and there is a mechanism in place to ensure judicious use of the savings. The oil price-based fiscal rule and Medium-Term Expenditure Framework (MTEF) in budgeting have significantly enhanced public expenditure management and macro-economic stability. As part of the budgetary reform measures, steps were taken in 2005 to develop a Medium-Term Expenditure Framework (MTEF) which places emphasis on multi-year (three years) budgeting. The revenue estimates were also based on a Medium Term Revenue Framework (MTRF). In

general, the three-year budgeting approach has a number of advantages including (i) possibility of linking policy development with resources over time, (ii) creation of a predictable medium-term planning environment, (iii) provision of a framework for assessing priorities, and (iv) fostering the credibility of the fiscal strategy.

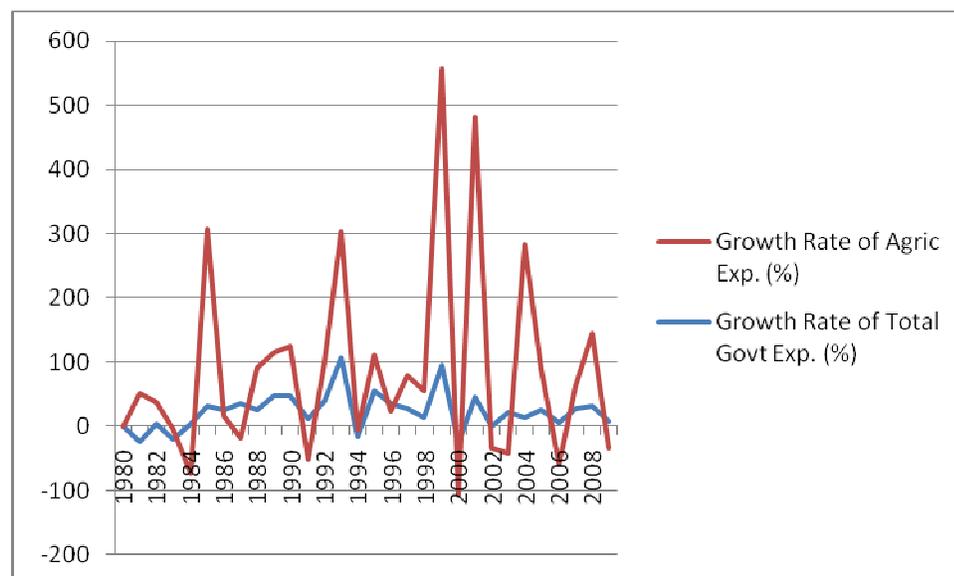
As part of the reform, ministries, departments and agencies (MDAs) of government were given “expenditure envelopes” from which they were to meet all their needs and deliver public goods and services. The allocation of such envelopes was done by the Budget Office of the Federation, working with the Minister of Finance and with the approval of the President following consultations with relevant stakeholders (the National Assembly, Organized Private Sector, Civil Society, the Public Sector and the Political Class). In allocating the envelopes, the major criteria were the size of each MDA’s payroll and priority level accorded to the services to be delivered by each MDA against the background of the priorities of the Federal Government as documented in NEEDS, the MDGs and stakeholders’ inputs.

The sectoral component of the medium term expenditure budgeting was the medium-term sector strategy (MTSS) process. Starting from 2005, MDAs were requested to develop and articulate Medium-Term Sector Strategies consistent with NEEDS and the MDGs. Although budgetary reforms has brought in a number of innovations in the Nigeria’s budgetary process, the country is still largely dependent on oil revenue and the budget therefore continues to be exposed to the volatility in the international oil market. Recent analysis of the federal budget over the period 2000 to 2007 also reveals some undesirable features such as dominance of recurrent over capital expenditure, deviation of actual budget from estimates, delay in budget approval and poor budget implementation.

2.5 Agricultural Budget

Agricultural budget in Nigeria has been very low and inconsistent. Figure 1 below shows compared growth rate of agricultural expenditure with the growth rate of total expenditure of the federal government in Nigeria between 1980 and 2009. While total expenditure indicates some level of consistency in its growth, the figure shows that agricultural spending has experienced large fluctuations. The variation and unpredictability in the rate of growth of agriculture spending partly explains the reason for many abandoned agricultural projects, poor agricultural service delivery as well as low private sector investment in agriculture in Nigeria.

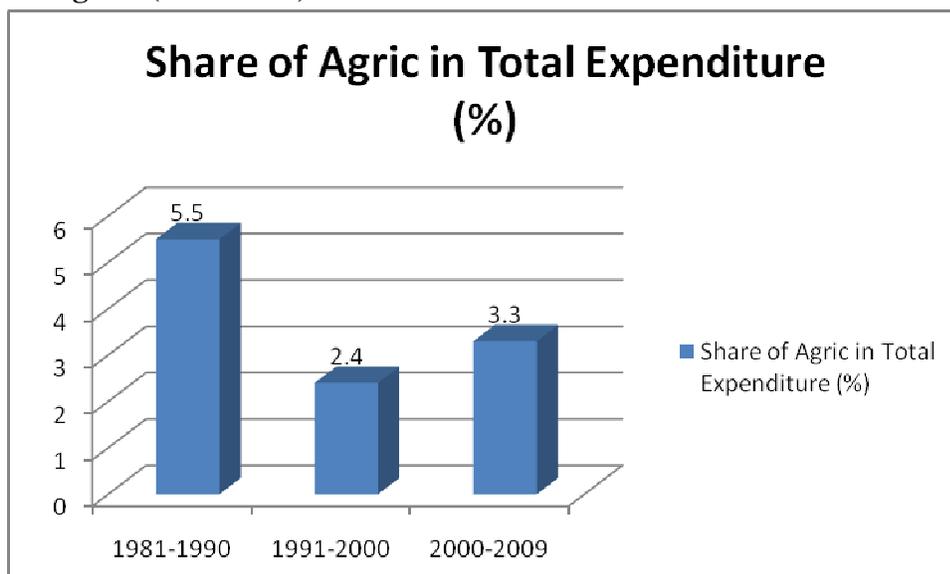
Figure 1: Growth Rate of Agricultural Expenditure and the Growth Rate of Total Expenditure of the Federal Government in Nigeria (1980-2009)



Source: Federal Ministry of Finance and Central Bank of Nigeria

Under the CAADP framework, agricultural spending is targeted to be 10 percent of total government spending in order to attain food security. However, Nigeria has not been able to achieve this target. Between 1981 and 1990, the share of agriculture in total expenditure average 5.5 percent. But the agricultural sector suffered some neglect during the 1990s with ratio of agricultural expenditure to total expenditure of the federal government during 1991-2000 averaging 2.4 per cent. In recent years (2001-09), agricultural spending showed some improvement owing to the new government's commitments towards the NEEDS and its 7- point agenda for National Development. The share of agriculture in total expenditure rose from 4.2 in rise and was 4.2 percent in 2002 to 5.5percent in 2005 but later dipped to 1.9 and 3.0 percent in 2007 and 2008 respectively. While the recent improvement in budget allocation towards the agricultural sector can be seen in appendix 1 and Figure 2, Nigeria still lags behind countries like Burkina Faso, Ethiopia, Mali, Malawi, and Senegal, which have either achieved or come close to achieving the 10 percent CAADP goal.

Figure 2: Share of Agriculture Expenditure Total Expenditure of the Federal Government in Nigeria (1981-2009)



Source: Federal Ministry of Finance and Central Bank of Nigeria

2.6 Status of Rice in National Development Programmes

During the colonial period and the years following Nigeria's independence, government attention was not focused on rice. Rather, efforts were on the promotion of those export crops such as cocoa, groundnut and rubber which had the potential of generating foreign exchange earnings to the country. Thus, while export crops were supported through pricing and marketing board policies, rice and other food crops were left to develop at their own pace with no incentive. However, since the 1970s rice has become important in the area of food security, for livelihood of rice farmers and the conservation of Nigeria's scarce foreign exchange. Consequently, the Nigerian rice sub sector has received more attention by government and other development stakeholders and there has been establishment of various agricultural development strategies, policies / programs and expenditure frameworks both at national level as well at the sector level. National development programmes, and strategies such as NEEDS and 7 point agenda have sought to promote rice development through several initiatives such as setting up special presidential committee on the product and the rice processing intervention fund is designed to offer credit support to investors in the rice sector. The modest improvement in Nigeria's rice sector could be attributed to these interventions.

2.7 Process of Implementation of Strategies, Policies and Programmes

The implementation of agricultural strategies, policies and programmes initiated by the federal government of Nigeria are done through the Federal Ministry Agriculture and Water Resources (FMAWR). Funds allocated to Agricultural development projects through the budget as are disbursed to the FMAWR. To implement various activities relating to agricultural development

in Nigeria, the Ministry has 13 Departments namely: (i) Department of Agriculture; (ii) Department of Livestock and Pest control Service; (iii) Department of Fisheries; (iv) Department of Rural Development (v) Department of Agricultural Land Resources (v) Department of Fertilizer (vi) Department of Strategic Grains Reserves (vii) Department of Cooperatives (ix) Department of Agricultural Sciences (x.) Department of Planning, Research and Statistics (xi) Department of Administration and Supplies (xii) Department of Finance and Accounts (xiii) Project Coordination Unit. The Ministry is also supported by key institutions and Parastatals among which are: a. The Nigerian Agricultural Cooperative and Rural Development Bank (NACRDB) b. Nigerian Agricultural Insurance Corporation c. Agricultural and Rural Management Training Institute (ARMTI), Ilorin d. National Centre for Agricultural Mechanization (NCAM), Ilorin e. 15 Agricultural Research Institutes f. 13 Federal Colleges of Agriculture. To implement projects at the State level are the Agricultural Development Programmes (ADPS) who work directly work with small holder farmers. Activities of ADPs include extension services, provision of improved technology, increased supplies of farming inputs (especially fertilizer), and rural infrastructure improvements. The ADPs are funded by the both the federal government and the State government. The ADPs have been a major channel through which government policies on rice production were implemented.

For donor funded projects, the implementation are usually done either directly by the donor through direct assistance to beneficiaries or through the FMAWR with technical assistance being provided by the donor.

2.8 Analysis of the key stakeholders' role and responsibilities

The NRDS identifies the following stakeholders as significant to the successful implementation of the rice development strategy.

i) Federal Ministry of Agriculture and Water Resources: the Federal Ministry Agriculture and Rural Development is responsible for the implementation of agricultural strategies, policies and programmes of the federal government of Nigeria. FMAWR will coordinate and monitor the progress and achievement of NRDS and will also ensure wider participation of stakeholders.

ii) National Food Reserve Agency (NFRA): under the FMAWR, the NFRA was established to ensure availability of food all year round at affordable prices, reduce post harvest losses, and have in store five percent of total national food output for necessary life line in times of need. The NFRA is also to support the implementation of the NRDS, develop exit strategy to allow the private sector take full responsibility of fertilizer procurement and distribution to farmers, with government regulating standards and quality assurance; facilitation of tractor and farm machinery services through public- private partnership; support for the development of seeds through provision of training equipment and seed money for the production and marketing of improved seeds and seedlings.

iii) National Agricultural Seed Council (NASC): The National Agricultural Seeds Council (NASC) is the specialized agency of Government saddled with the responsibility of overseeing the development of the Nigerian seed industry for improved quality seed production availability, access and affordability to farmers. The function of NASC in relation to the NRDS include seed industry development and coordination of breeder and foundation seeds; foundation seed production, distribution and monitoring of certified seed; the development, certification, and quality control of rice seeds; rice seed technology development, technical support services.

National Cereal Research Institute (NCRI): NCRI was established to conduct research into the genetic improvement and production of the major staple grains like rice, maize, cowpea and sugarcane. NCRI has so far released 57 improved rice varieties which most farmers are using in Nigeria. Improved rice processing technology has been developed by the institute. Trained 950 subject Matter Specialists (SMSs) from the ADPs in the use of technologies developed by NCRI in the past 5 years

iv) The State Agricultural Development Programme (ADPs): successful ADPs have the advantages of an agricultural extension system that integrates extension workers training and farm visits and ensure two-way communication between farmers and research as well as an effective farm inputs distribution system which operates through a network of farmer service centres (FSC) ensuring that supplying the needed farm inputs are reliable and are in close proximity to their farms. The ADPs has key role to play in the NRS especially in the areas of distribution of rice seed, fertilizer and other input as well as provision of extension to farmers.

v) National Centre for Agricultural Mechanization (NCAM): it has the mandate to develop low cost labor saving devices, machinery testing and machinery standardization. NCAM's activities encapsulate land clearing and land development, erosion control, weeding, harvesting, crop processing, irrigation, the use of small-scale tools and equipment, and animal draft power systems.

vi) The Agricultural Machinery: Mechanics and Operators Training Centre (AMMOTRAC): was established to train operators and mechanics to drive and maintain farm machinery.

vii) African Regional Centre for Engineering Design and Manufacturing (ARCEDEM): The African Regional Centre for Engineering Design and Manufacturing (ARCEDEM) has the mandate to develop and produce equipment prototypes in priority areas, including agriculture, for the creation of small and medium scale industries in Africa and to Development partners

viii) Federal Ministry of Finance: The Federal Ministry of Finance is responsible for the management and control of all finances of the Federal Government. This include the preparation

of annual budgetary estimates of revenue and expenditure for the Federal Government, mobilization of domestic and external financial resources for national development purposes and revenue allocation management. The FMF is important for the NRDS receive adequate funding and for the strategy to continue to top national development agenda in Nigeria

ix) National Planning Commission: The National Planning Commission was established to advice the Federal government on national development planning and the overall management of the economy. The NPC also set national priorities and goals and engender consensus among Government agencies, formulate and prepare long-term, medium-term and short-term national development plans and co-ordinate such plans at the Federal, State and Local government levels; and manage multilateral and bilateral economic co-operation, including development aid and technical assistance.

x) Nigeria Agricultural Cooperative & Rural Development Bank (NACRDB): NACRDB was established to provide loans and credit facilities to the agricultural sector. The NRDS relies largely on the NACRDB to increase the access of rice producers to funds. The Central Bank of Nigeria (CBN), Bank of Industry (BOI), commercial banks and microfinance banks are also expected to complement the NACRDB by extending more services to actors in the rice value chain.

xi) Development Partners: various international donors and development partners such as World Bank, IFAD, DFID and USAID have been sponsoring several projects in the rice value. The NRDS require more assistance from development partners in the areas of funding, capacity building and technical assistance.

xii) Rice Farmers Association of Nigeria (RIFAN): this commodity association is made of rice farmers and producers and they are primary stakeholder on issues related to rice development in Nigeria. RIFAN has begun the processes of organizing rice farmers into cooperative/community base groups to be utilized as facilities for higher production, better processing, more sales and easy access to inputs and data collection.

xiii) Rice Processors Association: the rice processing association is assuming greater role in the Nigeria's rice sector especially with the entrants of large scale industrial milling firms which can produce cleaned and polished rice that can compete with imported product.

xiv) Other Private Sector Value Chain Actors

Apart from the farmers and processors, other important private sector stakeholders include, input dealers, paddy traders, input dealers, wholesalers and retailers of domestic rice.

2.9 Analysis of National Strategies, Policies / Programs

(a) National Special Program for Food Security (NSPFS) (2008-date)

Status: Ongoing

NSPFS comprises a broad variety of interventions that focus on areas most relevant for improving food security at both national and household levels. The program has a total budget of US\$45.2 million which would be funded by the federal government as well as loan from FAO and AfDB. In successfully implementing its core elements, NSPFS has been strategic in improving farmers' access to inputs such as fertilizers and seeds for both rainfed and irrigated agriculture. Some activities related to rice value chain under the NFSP include (i) assists 2,800 households involving an irrigated area of 1,357.9 ha, (ii) distribute 603 irrigation pump units targeting 373 wells, (iii) distribute 1,208 gasoline and diesel pump units as well as 92,000 m of PVC pipe – to be paid for by the beneficiaries, (iv) construct earth micro dams at 5 locations and wells at 122 locations to improve access to water, (v) rainfed rice cultivated area of 13,442.59 ha with a beneficiary farmer population of 123,764, (vi) establishing demonstration farms at 95 locations, (vii) agricultural production inputs to benefit 12,764 farmers, (viii) distribute agrochemicals (25,283) liters and 484kg), fertilizer (5,199.11 tons), lime (126 tons), (viii) improve the fertilizer quality control testing center at Kaduna, and (ix) carry out 655 general training sessions for 9,736 farmers.

(b) 2nd National Fadama Programme (2003-2006)

Status: Completed

The National Fadama Development Project aims to establish Nigerian food security and reduce poverty. Although it has the same objective as the national food security project under assistance from both the FAO and World Bank, target areas are different. It is basically targeted at major river lowland areas and sources of flooding. The Second National FADAMA Development Project (NFDP II) was implemented in 2003-06, with funding US\$ 100 million from the World Bank, US\$ 30 million from the African Development Bank, and US\$ 25 million from the federal government. Project area encompasses 17 States. Activities under the programme include (i) capacity building (ii) rural infrastructure (10% of construction cost to be borne by Fadama members), (iii) acquisitioning experimental production inputs including wells, pumps, agricultural machinery, rice milling equipment, etc. (30% cost borne by fadama members), (iv) guidance service (10% cost borne by Fadama members), and (v) project management, monitoring and evaluation (grant-aid). A total membership of two million households was targeted.

(c.) 3rd National Fadama Programme (2007-2012)

Status: Ongoing

The objective of the third National Fadama Development (Fadama III) Project for Nigeria is to scale up the achievements made in Fadama II to more State of the country and to sustainably increase the incomes of fadama users. The project entails a total cost of US\$ 400 million (of which US\$ 200 million is to be funded by the World Bank). In addition to the 17 states and Abuja FCT included under Fadama II, The FadamaIII includes 19 more states within the project

area. Projects activities in relation to rice value chain include capacity building support for community organizations; small-scale community-owned infrastructure, input support, support to the Agricultural Development Programs (ADPs) to carry out training, research and on-farm demonstrations to farmers

(d) Rehabilitation of Small Scale Irrigation Schemes 2003-date

Status: Ongoing

In March 2003, the Nigeria Government, FAO and China signed an agreement to implement or rehabilitate small-scale irrigation schemes. Programme objectives are to (i) achieve food security and (ii) improve farmer productivity and income. Under the plan, 524 Chinese experts and engineers have been dispatched to 36 states and the Abuja FCT in Nigeria for the purpose of agricultural development. Total project cost is US\$ 22.4 million, of which 50% is borne by the federal government. Technical cooperation is subsequently being implemented in the areas of small dam construction / improvement, fisheries, irrigation, processing agricultural products, farm mechanization, and animal husbandry.

(e) Presidential Initiative on Increased Rice Production, Processing and Export (2003-2009)

Status: Completed

The Presidential Initiative on increased rice production, processing and export was inaugurated by the federal government in 2003 as measures to upgrade rice productivity and to reduce the countries dependence on rice importation. The specific objective of the programme is to produce 6 million tons of milled rice from 10.3 million tones of paddy by 2005 and 15 million tones of paddy or 9.0 million tons of milled rice by year 2007. The initiative has four components, namely:

- (i) Production, inputs and crop protection;
- (ii) Irrigation and land development ;
- (iii) Processing and marketing ; and
- (iv)Project management.

Activities under the initiate include:

- (i) Distribution of 81,505 R-box (50% subsidized) and 250 units of knapsack type sprayers to 36 states and the Federal Capital Territory (FCT)
- (ii) Multiplication of seed by the National Cereals Research Institute (NCRI) and the West African Rice Development Association (WARDA)
- (iii) Training of instructors in rice production and processing technology at 6 locations (targeting rice farmers and extension workers)
- (iv) Production of 58 tons of foundation seed by the National Seeds Service (NSS)
- (v) establish an R-box research station targeting 1,250 farm households
- (vi) construct rice mills at 10 locations and carry out related technical training

Moreover, a 100% import duty, as well as 10% levy (for rice development) placed paid on imported rice. Consequent to this intervention, the Nigeria's rice sector received some boost.

(g) National Food Security Program (NFSP) (2008- date)

Status: Ongoing:

The National Food Security Programme was developed by the Federal Ministry of Agriculture in 2008 and the objectives are to improve Nigeria's agricultural productivity; improve storage/

processing capacity and infrastructure and to derive over 50% of the nation's foreign exchange through agricultural exports. To achieve national sufficiency in rice, the NFSP set a target of 100 % increase in rice production by the end of 2011 i.e. from 2.8 million metric tons of paddy in 2008 to 5.6 million metric tons of paddy per annum. The programme is being financed through the annual appropriation budget, government's Agricultural Special intervention fund, public private partnership, (PPP), private sector investment and funds from international donor Partners

The key feature of the National Food Security Programme include providing a conducive environment, reducing post harvest losses through adequate storage, processing and appropriate outlets. Other feature include; land certification, opening up of large scale commercial farming deregulation of inputs subsidies, encouraging the setting up of agro-service centres in every local government for easy access to inputs by farmers, increasing current federal government storage capacity for food reserve from 300,000mt to 3,000,000mt in 2011 through the construction of silos, market development through establishing infrastructure for specialized markets integrated water management, research and development and especially in the areas of yield dynamics and biotechnology.

(h) Commercial Agricultural Development Project (CADP) (2009-2014)

Status: Ongoing

The goal of the project is to strengthen agricultural production systems and facilitate access to market for rice and some other targeted value chains among small and medium scale commercial farmers in the five participating states. The project is being funded through a World Bank loan of US\$ 150 million and would be implemented by the National Food Reserve Agency (NFRA) and the Federal Ministry of Agriculture Activities under the programme include:

- (i) Agricultural production and commercialization: this include technology demonstration and adoption; support to staple crop production systems; market facilitation; and capacity building
- (ii) Rural infrastructure: involve the network of farm access roads and rural energy
- (iii) Project management, monitoring, evaluation and studies

Since the inception of the programme, CADP had been supporting demonstration and dissemination of technology packages; procurement of improved seed varieties; establishment of post-harvest handling centers; training of commercial agriculture entrepreneurs and development of commercial agriculture product markets.

(i) Rural Access and Mobility Project (RAMP) 2006-date

Status: Ongoing

Financed through a World Bank credit of US\$60 million naira, the RAMP is to provide improved rural transport infrastructure in support of rural economic development activities and for better access to socioeconomic amenities by rural communities in Kaduna State (a rice producing state) and assist Kaduna State to manage the State road assets in a sustainable manner. RAMP has two components: upgrading, rehabilitation and maintenance of rural transport infrastructure; and institutional strengthening, reforms and capacity building. The rural transport infrastructure component would support the upgrading, rehabilitation and maintenance of about 600 km of rural roads in four prioritized intervention areas and about 130 river crossings spread

across the entire state. Activities under capacity building component include project management; institutional strengthening and capacity building; institutional reforms; Since inception of the projects, many rural communities and rice farmers have benefitted from roads constructed under the programme.

(j) Rice Processing Investment Fund (2009-date)

The Rice Processing Intervention Fund was designed to offer credit support to investors in the rice sector at four per cent interest rate. Repayment would be spread over 15 years with a five year moratorium. The fund, which would be administered by the Bank of Industry, was expected to kick-start 25 large scale integrated rice processing plants across the country. Each plant was estimated to cost N1 billion which means that prospective investors will have to provide 60 percent of the seed fund. A number of rice processing firms including Stallion Rice have been able to access the fund.

2.10 Analysis of Sectoral Strategies, Policies / Programs

(a) Federal Ministry of Agriculture and Water Resources

i) National Agricultural Policy (NAP) (2002- date)

NAP was promulgated in 2002 revealed the framework and action plans of Government designed to achieve overall agricultural growth and development. The objectives of the National agricultural policy are: (i) The achievement of self-sufficiency in basic food supply and the attainment of food security;(ii) Increased production of agricultural raw materials for industries;(iii) Increased production and processing of export crops, using improved production and processing technologies; (iv) Generating gainful employment; (v) Rational utilization of agricultural resources, improved protection of agricultural land resources from drought, desert encroachment, soil erosion and flood, and the general preservation of the environment for the sustainability of agricultural production; (vi) Promotion of the increased application of modern technology to agricultural production; and, (vii) Improvement in the quality of life of rural dwellers.

Some of the activities include the introduction and adoption of improved seeds and seed stock, and appropriate machinery and equipment, efficient utilization of resources, encouragement of ecological specialization and recognition of the roles and potentials of small scale farmers as the major producers of food in the country NAP also sought for a nationwide, unified and all-inclusive extension delivery system under the Agricultural Development Programme (ADP) in a joint Federal and State Government collaborative effort. Agro- allied industries were actively promoted.

ii) Agricultural Development Projects (1974-date)

Status: Ongoing

Agricultural extension and technology transfer policy objective was to promote the adoption of new agricultural technologies by farmers through a nationally coordinated extension service system. The basic strategy involved the use of a unified agricultural extension system under the aegis of statewide agricultural development programs (ADPs). The ADPs were set up to provide improved technology, increased supplies of farming inputs (especially fertilizer), and rural infrastructure improvements. The ADPs employed the Training and Visit (T & V) system. There

are presently 37 ADPs in all States and the FCT. The ADPs have been a major channel through which government policies on rice production were implemented. The training and visit extension method (T&V) was nationally adopted wherein the extension packages, comprising fertilizer and other elements to be disseminated to rice farmers, are subjected to the monthly technology review meetings (MTRM) prior to delivery to farmers during the fortnightly visits of the extension agents.

Though still in operation, activities of the ADPs have been drastically scaled down owing to the non-available of funds for operation. Moreover, the emphasis on modern technology in the ADPs led their agricultural research and extension services to focus on relatively high input technology for sole cropping system, these systems were not used by majority of small holders who used mixed/ relay cropping system. Similarly ADPs programmes for multiplication of improved seeds fell short of goals. Supplies of fertilizers were erratic largely due to centralized government control of international procurement and a heavy subsidy program.

iii) Fertilizer Policy (1970s-date)

Status: Ongoing

Nigeria has been largely an importer of fertilizer. Nigerian government has been prominently engaged in procuring and distributing fertilizer since the early 1970s. Both state and federal governments have also subsidized fertilizer, sometimes at rates as high as 95 percent. However, the subsidy programs have been plagued by pervasive problems of late delivery of fertilizer, and delivery of inappropriate quantities and types of fertilizer. Rent-seeking activities and political manipulation have also resulted in diversion of subsidized fertilizer from the intended beneficiaries (Nagy and Edun 2002). Despite the systemic inefficiencies of the government programs, scaling back of the subsidies in the early 1990s resulted in a precipitous fall in fertilizer consumption from about 460,000 metric tons (MT) in 1994 to less than 100,000 MT in 1999 (Chude 2006). The privatization of public fertilizer companies did not yield expected result because the private sector was inexperienced and undeveloped and could not compensate for the federal government's sudden exit from the sector (Nagy and Edun 2002). The federal government completely liberalized the fertilizer sector in 1997 but the measure did not result in increases in consumption or a more efficient private-based market. Among the alternatives to address these challenges, the federal government re-introduced fertilizer subsidy to the tune of 25% in 1999 (Banfu et al. 2010).

iv) National Seed Policy (1992-date)

Status: Ongoing

The national seed policy stresses the importance of ensuring adequate supply of good quality seeds at affordable prices. The major objective of this policy is to provide a framework for future development of the seed sub-sector through:

- (i) Establishment and governmental support of varietal improvement, registration, release and multiplication of released varieties;
- (ii) Re-organization of both the public and private sectors involved in the seed industry; and,
- (iii) Encouragement of the private sector participation and take-over by the seed industry.

The National Agricultural Seed Council (NASC) is the specialized agency of Government with the responsibility of implementing the National Seed Policy and to ensure improved seed

availability, access and of overseeing the development of the Nigerian seed industry for improved quality seed production affordability to farmers. The activities of the NASC in relation to rice include rice foundation Seed production, distribution and monitoring and seed technology development, technical support services

(b) Federal Ministry of Water Resources

i) National Irrigation Policy (2006- date)

Status Ongoing

The national irrigation policy is predicated on boosting domestic agricultural production – using irrigation to produce quality and quantity where rain-fed production alone cannot meet demand. The policy has a primary purpose to improve the performance of irrigation services within the mandate of FMWR. The specific policy objectives are summarized thus:

1. Raise overall irrigation productivity in all public and private initiatives,
2. Improve water service to all irrigation farmers
3. Improve and sustain irrigation efficiencies at all schemes, provide extension services and facilitate the provision of inputs and the marketing of outputs,
4. Remove constraints to private sector engagement and expand the capability of the private sector in both equipment manufacture and supply and in development activities including direct project operation and management.

Strategies to achieve the above objectives include rehabilitation of existing public schemes; reform of irrigation institution by streamlining existing institutions; introduction of progressive enabling legislation in land and water. Moreover, government will promote the development of a private sector (including irrigation companies and farmer organizations) to work hand in hand with the FGN in developing and managing irrigation schemes. Consequent to the irrigation policy, there have been greater private sector investments in Nigeria's irrigation schemes as well as rehabilitation of small irrigation schemes which many rice farmers has benefited from.

ii) River Basin Development Authority (1977-date)

Status: Ongoing

The River Basin Development Authorities (RBDAs) are the major instrument of the water resources and irrigation policy and they were established in 1977 to develop and take advantage of available waters in the country for agriculture, fishing and other purpose. Other objectives of the RBDAs include: providing large scale mechanized clearing and farming of land for farmer; constructing dams and bore-holes; supply of electricity; building agro-allied centres with workshops and tractor hire services; ensuring large scale multiplication of improved seeds; providing for large scale rearing of improved livestock and poultry and distribution to farmers. With respect to irrigated crop production within the RBDA areas of operations, no priority was given to rice compared to other crops. Farmers decide on the crops to grow based on the ecological adaptations, economic and cultural factors with respect to staple food and vegetable crops. In addition, most rice produced in Nigeria are rain-fed type which are usually planted during the growing season. In areas where hydromorphic or swamp rice is grown natural swamps and fadamas subject to seasonal flooding are used. The RBRDA have not been to achieve its set goals. The failure of the RBRDAS could be attributed to poor funding, lack of supply manpower, unnecessary political interference and managerial problems.

iii) Accelerated Rice Production in Niger River Basin (2006-date)**Status: Ongoing**

The Accelerated Rice Production Programme in the Niger River Basin is part of an initiative by the Federal Government of Nigeria (FGN) through the Federal Ministry of Water Resources (FMWR), to promote rice production in Nigeria, and in particular along the Niger River Basin. Total project costs is at Naira 6.41 billion (US\$ 48.5 million), with the investment costs for the full development of the scheme amounting to Naira 5.2 billion. The objective of the program to promote large-scale mechanized irrigated agriculture using improved modern techniques and driven by the private sector. In line with its policy framework of market liberalization, the federal government in consultation with the Food and Agriculture Organization (FAO), has selected a number of public sector irrigation schemes for divestiture to the private sector. The Tada Shonga scheme, with irrigable land of about 2 700 ha, and located in Kwara State, was selected to pilot the accelerated rice production programme, and public-private partnership in irrigation development.

Only rice is produced under the project. To get maximum benefits, double cropping would be practiced. It is estimated that by the fourth year of production rice crops would yield 6.5 tonnes/ha. The project is expected to have a strong impact on the livelihood of the population in the villages surrounding the project by generating additional income opportunities for at least 1000 rural households. The project would contribute to the balance of payments deficit in the rice sector by substituting approximately 20 000 tonnes of rice imports per year with a total value of close to N600 million at current prices.

(c.) Federal Ministry of Commerce and Industry**i) N10 billion Intervention fund for Rice Cluster Strategy (2008-date)****Status: Ongoing**

Rice cluster strategy is a measure implemented by the Federal Ministry of Commerce and Industry which aimed at improving the processing of rice to meet international and competitive standards through the establishment of rice clusters in all the rice producing areas of Nigeria. The objective of the rice cluster strategy is to boost rice production and processing by allowing rice producers to have access to common infrastructures such as power, water, access road, communication systems, loading bays, conveniences. The implementation of the rice cluster strategy is through public-private-partnership arrangement, with the federal government providing mainly the heavy equipments through the bank of industry, the State government concentrating on the provision of infrastructures and enabling environment while the private sector will be the processors. Three state with considerable activities in rice production and processing had been selected for pilot schemes. They are Niger, Kebbi and Ebonyi. Once success is achieved, ownership of the pilot clusters will be transferred to the private sector. The Rice Cluster strategy is through the N10 billion intervention Fund earmarked by the Federal Government for rice processing. The programme is been in progress with private sector participant accessing the fund through the Bank of Industry in partnership with some designated commercial banks

ii) The Rice Processing Intervention Fund (2009-date)**Status: Ongoing**

The Rice Processing Intervention Fund is designed to offer credit support to investors in the rice sector at four per cent interest rate. Repayment is spread over 15 years with a five year moratorium. The fund which would be administered by the Bank of Industry, is expected to kick-start 25 large scale integrated rice processing plants across the country. Each plant is estimated to cost N1 billion which means that prospective investors will have to provide 60 percent of the seed fund. The scheme is expected to accelerate the attainment of sustainable food security in Nigeria and promote investment employment generation and poverty reduction.

d) National Planning Commission**Vision 2020 for the Agricultural Sector (2009-date)****Status Ongoing**

The main planning policy for Nigeria is the National Planning Commission Vision 2020 which aims at positioning Nigeria amongst the 20 leading economies of the world by the year 2020. In view of the fact that agriculture is a major driver of growth of the Nigerian economy, it must play a crucial role in achieving this vision. Accordingly, the vision for the agricultural sector shall be “A Technology Driven Agricultural Sector that Is Profitable, Sustainable and Meets the Socio-Economic Aspirations of the Nation”. To achieve this laudable vision some sets of objectives, goals/ targets, strategies and initiatives were developed based on the current state of Nigeria’s agriculture.

The main objectives are: (i) Secure the food and feed needs of the nation (ii) Enhance generation of national and social wealth through greater exports and import substitution (iii) Enhance capacity for value addition leading to industrialization and employment opportunities (iv) efficient exploitation and utilization of available agricultural resources. The strategies that would be implemented so that the above targets would be achieved include: greater use of highly productive and disease-resistant crops ; use of hybrid seedlings and seed stock and through breeding and distributing high yielding varieties; expansion of existing food storage capacity by constructing additional food storage facilities, rehabilitation and completion of existing irrigation projects, strengthening the agricultural extension system through adequate capacity building.

(e) National Research Institutes**National Cereals Research Institute, Niger State with Rice Research Stations (1974-date)****Status: Ongoing**

The broad objective agricultural research policies in Nigeria has always been the promotion of scientific investigations into agriculture with a view to developing viable new technologies that are well adapted to Nigerian conditions. The National Cereal Research Institute (NCRI) has the national mandate mandated to carry out research on rice, sorghum, acha, sesame, and sugarcane. The NCRI rice research division to carry out research on the genetic improvement of rice and complementary technologies and it is made up the Upland Rice Research Programme, the Lowland Rice Research Programme, Acha Research Programme, the Rice Processing Unit, and Seed Production Unit. Major rice research activities are also carried out at Bende for the inland valley swamp, birnin Kebbi for deep swamp, Warri for tidal swamp. Other research centers include Ibadan, Amakama and Uyo for upland rice. There are about 10 other testing stations across the rice growing areas in the country. To date, NCRI has been able to develop various

varieties of improved rice which have been introduced to farmers. The major problem of the institute was that of inadequate finance. Research personnel also point to the lack of large scale irrigation and lack of mechanized rice production as serious problems. In addition, upgrading rice processing technology is a major issue. The activities of the NCRI is being complemented by other agricultural institutes such as National Agricultural Seed Council (NASC), National Rice Maize Centre (NRMC), National Varietal Release Committee (NVR), and the State Agricultural Development Programme (ADP). However, many of these institutes have also have funding problems.

(f) Nigeria Agricultural Cooperative & Rural Development Bank (NACRDB) (2001-date)

Status: Ongoing

The Nigerian Agricultural Cooperative and Rural Development Bank was established in 2001 by the merger of two banking institutions. The primary function of the NACRDB is to provide loans and credit facilities to the agricultural sector. Its current lending focus covers special projects, small and large scale farmers, cooperatives and other state agencies. NACRDB credits are broadly classified into micro-credit (NGN 1,000 - 250,000); small credit (NGN 250,000 - 5 million); and Medium credit (NGN 5 - 30 million). A uniform interest rate of 8 percent per annum is applied to all forms of credit. Micro credit is limited to agricultural cooperatives, small and medium credits targets small and large farmers as well as agricultural enterprises. Micro-credit encompasses group credit related to ECOWAS, UNICEF and NGO activities and accounts for 20,000 credit issuances nationwide. Repayment rate is reported to be extremely high. In the case of late payment, a penal interest rate of 2% p.a. is applied. At present, small credit is not being extended to wholesale and retail marketing agents. Furthermore, credit is not currently being directly extended to individual impoverished farmers who do not belong to an agricultural cooperative. Instead, credit is extended to poor farmers via lending from the bank to NGOs. Collateral in the case of micro-credit is a deposit equivalent to 10% of the borrowed amount, as well as a group guarantee by an agricultural cooperative. Small credit collateral entails buildings, farm machinery, etc. (land per se is not recognized as collateral).

In relation to rice development, the NACRDB had been providing credit to eligible rice farmers, however many small holder rice farmer could not access NACRDB credit because the Bank's micro credit is been carried out by international agency and NGO sponsored groups only. Moreover, independent farmers cannot access government bank credit. The challenges facing NACRDB include poor capitalization, poor management and lack of man power. To address the problem of the dearth of fund to rice producers, the NRDS recommends the restructuring of NACRDB and expansion of its lending capacity. To compliment the activities of NACRDB, the federal government in 2009 provided new intervention funds to support establishment of new rice processing industries through selected investment and commercial banks and also raised 200 billion naira bond through the Central Bank of Nigeria (CBN) to support agricultural production including rice.

(f) Trade Policy (1980s-date)

Status: Ongoing

To promote rice development in Nigeria, the federal government has employed various trade policy instruments such as tariff, import restrictions, and outright ban on rice import at various

times (see Table 1). During the 1970s and early 1980s, large importation of food items especially rice was allowed into the country at relatively cheap prices made possible by increased export earnings and highly over valued naira exchange rate. High rate of rice importation however had a negative effect on domestic production. To protect the domestic rice economy, the federal government imposed a ban on rice imports in 1985. However, in 1995, the import ban was lifted as the local supplies were inadequate to meet local demand. The ban cancellation resulted in a rapid increase in imports, in spite of repeated hikes on duty levels. Government banned milled rice imports and put a 50% duty on imports of parboiled rice. By 2005, import duty on rice was raised to 100 percent with additional 10 percent rice development levy. However, in 2008, when a global supply shortage doubled rice prices, Nigeria reduced its import duty from 100 percent to 0 percent for a 6-month period to alleviate food security concerns. In October 2008, the rate of protection was raised from 0 percent to 32.5 percent.

Table 1: Nigeria's Rice Trade Policy

Period	Policy Measures
Prior to April 1974	66.6% tariff
April 1974-April	1975 20%
April 1975-April	1978 10%
April 1978-June	1978 20%
June 1978-October	1978 19%
October 1978-April 1979	Imports in containers under 50kg were banned
April 1979	Imports under restricted license only Government Agencies
September 1979	6 month ban on all rice imports
January 1980	Import license issued for 200,000 tones of rice
October 1980	Rice under general import license with no quantitative restrictions
December 1980	Presidential Task Force (PTF) on rice was created and it used the Nigerian National Supply Company to issue allocations to customers and traders
May 1982	PTF commenced issuing of allocations directly to customers and traders in addition to those issued by NNSC
January 1984	PTF disbanded. Rice importation placed under general license restrictions

October 1985	Importation of rice (and maize) banned
July 1986	Introduction of SAP and the abolition of Commodity Boards to provide production incentives to farmers through increased producer prices
1995	100%
1996	50%
1998	50%
1999	50%
2000	50%
2001	85%
2003	100%
2005	110%
2007	100%
2008	0% for 6 months
2009	32.9%

Source: Federal Government Budgets, 1984-1986, 1995-2000; USDA Foreign Agricultural Service GAIN Report. "Nigeria Grain and Feed Rice Update."

It has been observed that Nigeria's protectionist stance on rice imports drastically inflates the retail price of imported rice. While the intent of protection is to incentivize investments in production and process upgrading and greater value chain coordination, Nigeria's weak investment climate deflects private sector investment in the rice sector on the scale that is needed. It was also observed that temporary removal of trade barriers 2008 did not result in reduced retail prices for imported rice due to inflationary pressures.

2.11 Analysis of Donor Strategies, Policies / Programs

i) Maximizing Agricultural Revenue and Key Enterprises in Targeted States (MARKETS) (2005-2010)

Donor: USAID

Status: Ongoing

This project aims to expand economic opportunity and promote Nigerian agricultural development by improving productivity, pushing for greater value-added products, and greater commercialization of growth and development in the agricultural sector based on a larger role by private enterprise. The present agricultural related markets are characterized by: (i) small markets (economics of scale are not applicable), (ii) low-level marketing machine (main reason is due to high transport costs, and (iii) absence of management know-how on the part of marketing-related personnel. The MARKETS project was subsequently launched to address these issues. The project aims to train individuals engaged in agricultural related markets (agricultural input sellers, millers, marketing agents, etc), as well as focusing on ways to expand product transaction opportunities. This in turn is designed to alleviate poverty by increasing income and employment. Project components are designed at developing added-value markets for grains (rice, sorghum, cowpea), daily products and fresh-water aquaculture products. Specific activities that have been sponsored under the programme include technical guidance to rice marketers and related personnel with an aim to upgrade competitiveness of domestic rice and quality of milled rice. The project cost is US\$ 24 million and would be done in the federal Capital and 15 states (Katsina, Kano, Bauchi, Plateau, Kaduna, Niger, Kwara, Oyo, Osun, Lagos, Edo, Benue, Ebonyi, Rivers, Bayelsa).

ii) Promoting Pro poor opportunities through commodities and Service Markets (ProPcom) (2005-2011)

Donor:DFID

Status: Ongoing

The ProPcom program aims to alleviate poverty by improving the efficiency of credit and service markets targeting the impoverished sector of the population. These targets are designed to generate income and employment opportunities, promote access to credit and service markets as well as promote market growth, and improve the living environment. This in turn is in line with targets for alleviating poverty as stipulated under NEEDS (i.e. stimulating a private-sector driven agriculture) and Millennium development objectives (fifty percent reduction of poverty rate by 2015). Project areas are Kano and Ogun States. Beneficiaries are rice farmers, produce processors (Parboiling, milling), marketers, cooperative member, etc. specifically, the project emphasizes (i) generating demand through aggressive private-sector participation in agricultural product processing and distributing, (ii) strengthening rice competitiveness by improved parboiling technology, (iii) focus on transparency with regard to the marketing route from Ofada rice production to the end consumer, and reducing marketing cost.

Ofada rice is cultivated in Ogun State, and has medium/short aromatic grains. Promotion of Ofada rice is done in collaboration with the Rice Farmers Association of Nigeria (RIFAN) in Ogun State. Under the project, two funds have been established: the facilitation Fund and the Stakeholder Innovation Fund. The Facilitation Fund is aimed at short-term technical assistance (industrial business strategy and planning, production and marketing assistance, gender equality,

etc), capacity building aimed at rice marketers, rice millers and parboilers. The project introduces new parboiling technology. The Stakeholders Innovation Fund provides activity funding support to stakeholders.

iii) Rice Seed Production (2008-2010)

Donor: AGRA

Status: On-going

The main goals of the project is to increase food productivity; to supply resource-poor smallholder farmers or southern Borno State with improved seeds of maize, rice, cowpea, and soybean at an affordable price, leading to increased food productivity and reduced poverty. The program was implemented by AGRA through Jirkur Seed Producers Cooperative Society and Manoma Seeds Ltd Southern Borno State The activities were financed by the AGRA grant of USD 172,000 for projects implemented by Jirkur Seed Producers Cooperative Society and the sum of USD 148,028 for projects implemented by Manoma Seeds Ltd.

iv) Breeding for High-yielding Stable Drought Tolerant Rice and Provision of Quality Seeds of Rice for Poor Resource Farmers in Nigeria (2007-2010)

Donor: AGRA

Status: Ongoing

The objective of the programme is to develop early, medium and late duration rice varieties, thus, allow flexibility on date of sowing for farmers. The programme also intend to develop plant architectures such as tall plants that will feed into the farming systems of this ecology. The project is financed through a USD 193,270a grant fund for the Improvement and Adoption of African Crops. Activities under the project include collection of genetic materials and multiplication, cross-pollination with landraces and materials from collaborators and screening of segregating populations for drought stress, on trials and Participatory Rice Breeding (PRB), On-farm multienvironment trials (METs), submission of data for the release of identified lines as variety, linkage with seeds companies (National and Private), and training of farmers For Community-Based Seed Production System (CBSS).

v) Targeting Drought Avoidance Root Traits to enhance Rice Productivity under water limited environment

2009-2011

Status: On going

Donor: CGIAR Generation Challenge Programme

The objective of the project is to elucidate the mechanisms and integrate the knowledge of dehydration-avoidance root traits in rice in relation to crop performance under rain-fed lowland conditions. Activities that would be supported under the programme include:

- (i) Evaluation of Oryza SNP germplasm and other varieties at seedling stage for deep rooting ability under greenhouse condition, under stress and non-stress conditions
- (ii) F3 populations for seedling stage tolerance will be phynotyped under upland condition for mapping
- (iii) Evaluation of some stress tolerant and high yielding breeding lines under rain-fed lowland conditions in IITA-Ibadan

(iv) Screening of some candidate drought tolerant rice breeding lines under rain-fed lowland drought conditions in Abakaliki

(v) The expected outputs of the project include:

(vi) Development of the protocol to assist with molecular breeding for drought resistance

(vii) Enhancement of the capacity of NARES researchers in the use of improved tools and methods for the genetic enhancement of drought resistance in rice

The project location is WARDA station in Abakaliki, Ebonyi State and would be implemented by IIRI in collaboration with WARDA-Nigeria

vi) Improvement of Drought and Submergence Tolerance of Rice in Africa including NERICA Donor: JICA

(2006-2011)

Status: Ongoing

The program aims at expanding rice production area and the stabilization of rice productivity in Africa. The project activities include:

(i) Evaluation of wide range of germplasm for drought and submergence tolerances

(ii) Identification of DNA markers linked to the tolerance

(iii) Use of DNA markers for breeding program to increase the tolerances

(iv) Introduction of genes to confer abiotic stress tolerance, such as DREB into NERICA varieties.

The project is been funded by a US\$1.5 million grant from JIRCAS

(vii) Community-Based Agricultural and Rural Development Programme (CBARDP) (2001-Date) Donor: IFAD

Status: Ongoing

The rural development programme was launched in eight northern states where poverty is widespread: Jigawa, Kano, Katsina, Kebbi, Sokoto and Zamfara, Borno and Yobe (rice is produced in some of these states). The project objective is to help the most vulnerable groups improve their incomes and living conditions. The programme targets a large section of the rural population, especially women, landless people, small-scale farmers, and those with only marginal lands. It is designed to empower these groups to participate in development activities. Some of the activities under the project include awareness promotion and capacity building of public and private sector service providers to respond to the needs of poor rural women and men, improving agricultural practices, resolution of conflicts between farmers and pastoralists and intensification crop and livestock production, development of safe irrigation, water supplies, environmental sanitation, and health and education facilities. Total cost of the project is US\$111.4 million of which IFAD loan component is US\$29.9 million. IFAD started direct supervision of this project as from June 2009. Nevertheless, CBARDP is confirmed a sound programme. The Community Driven Development (CDD) has been very successful and considered as best practice for local development. The approach has been adopted by several financiers in several states, including the African Development Bank (AfDB CBARDP) and the World Bank (Fadama project).

(viii) Rural Finance Institution building Programme (RUFIN) (2006-date)**Donor: IFAD****Status: Ongoing**

The objective of the programme is to strengthen microfinance institutions and establish linkages between these institutions and formal financial institutions in 12 Nigerian states, some of which are rice producing. By reaching out to poor rural farmers, the programme ensures that they gain access to financial services and can invest in and improve productivity in agriculture and small businesses. The programme supports the development of target-group organizations into rural finance institutions that improve poor rural people's access to low-cost credit. It assists microfinance institutions, including the Nigerian Agricultural Cooperative and Rural Development Bank (NACRB), the National Poverty Alleviation Programme, and NGO-microfinance institutions operating in rural areas. It helps them strengthen their rural outreach and improve their services to the most vulnerable groups, particularly households headed by women. The programme works to develop new alternative financial products, promote an improved legal, policy and regulatory framework, and establish linkages between the financial system and the rural production system.

Although the project was approved in September 2006, it was signed in August 2008 and declared effective in January 2010; Total project cost is US\$40.0 million of which approved IFAD loan is US\$27.2 million and approved IFAD grant is US\$400,000

2.12 Review of Donor Country Partnership Strategy: 2010-2013

The development agenda of donors for Nigeria is contained in the Country Partnership Strategy (CPS) document. The document provides a framework for the focus and vision of partnering donors. These include the World Bank, African Development Bank, DFID and USAID. The Joint strategies mainly focuses on supporting Nigeria's NEEDS programme, as well as tackling the MDG's and building demand for pro-poor change. The CPS covers Fiscal Year 2010-2013 and focuses on three themes to transform and diversify Nigeria's economy:

- (i) improving governance;
- (ii) maintaining non-oil growth; and
- (iii) Promoting human development.

To achieve better governance, the new CPS will focus on how the World Bank group and partners can help the government strengthen its own systems over the long term. (ii) Improving human development. To promote human development, the partnership will support improvements to increase the access, quality, efficiency, and utilization of the services for human development with an intensive focus at the state level. (iii) Sustaining and accelerating non oil growth: The focus will be on removing key constraints, in a targeted manner, to private sector growth. The objective of the assistance would be to provide the environment where Nigerian firms could increase efficiency of Nigerian firms so that they would be able to compete in regional and international markets in the longer term.

The focus of the growth strategy will therefore be on removing identified constraints to improving agricultural productivity, critical for poverty reduction, and promoting fast growing sectors where there is also potential for employment creation. This will involve targeting interventions in:

- (i) physical infrastructure to support growth clusters in identified geographic areas, such as in

Lagos and Kano-Kaduna:

(ii) investment climate improvement through selective efforts to streamline bureaucracy in land registration, planning approvals and building permits:

(iii) technical and vocational education to address skills gaps: and

(iv) reducing import bans and high tariff barriers. The ongoing micro, small and medium enterprise project supports performance and employment in these enterprises in selected non oil industry sub-sectors. The access to finance component has successfully established five new microfinance institutions and has provided loans of more than \$3 5m.

The implementation of the CPS is important for rice development in Nigeria, especially, the provision of enabling environment which would promote private sector investment in the rice value chain.

3.0 MATCHING OF THE STRATEGIES / POLICIES / PROGRAMS AND THE EXPENDITURE FRAMEWORKS WITH THE NRDS'SUB-SECTORS

3.1 The NRDS Goal and Subsectors

The overall goal of Nigeria's National Rice Development Strategy is to increase rice production in Nigeria from 3.4 million tonnes paddy in 2007 to 12.85 million tonnes by the year 2018. The specific objectives are as follows:

1. To increase production per unit area from 1.5 – 3.5t/ha to 2 - 8 t/ha depending on ecology, through a deliberate intervention in input delivery and empowerment of rice farmers through capacity building.
2. To improve extension service delivery system with special emphasis on rice.
3. To support private investors in establishment of modern rice processing facilities.
4. To provide functional irrigation facilities through the rehabilitation of dilapidated rice irrigation schemes areas in the flood plains of major rivers of the country.
5. To provide, through Public Private Partnership (PPP), rice production and processing machinery, and market linkage systems.
6. To establish a durable price support mechanism for stable producer prices in order to sustain farmers' interest in rice production through the guaranteed minimum price mechanism and attract the youths to rice farming and processing.

Moreover, the NRDS addresses 3 priority issues namely: Post-harvest Handling and Processing; Land Development and Irrigation; as well as Seed Development and Other Production Inputs. Consequently the NRDS focuses on the ten strategic areas discussed in table 3 below.

TABLE 2: NRDS SUBSECTORS

	NRDS SUB-SECTOR	NRDS VISION	Relevant organisation/stakeholder
1	Seed System Agro-Chemicals Supply, Handling and Application	To increase the availability of rice seed of improved varieties to the vulnerable rice farmers through direct distribution of seed or a market-based option	<ul style="list-style-type: none"> ● National Agricultural Seed Council (NASC) ● National Cereal Research Institute (NCRI) ● National Rice Maize Centre (NRMC) ● National Varietal Release Committee (NVRC) ● The State Agricultural Development Programme (ADP)
2	Agro-Chemicals Supply, Handling and Application	To improve the farmer-supplier linkage of agro-chemicals at an affordable rate and promote proper handling and application through capacity building.	<ul style="list-style-type: none"> ● Agricultural Production and Input Services (APIS) ● Department of the National Food Reserve Agency ● State Ministries of

			<p>Agriculture</p> <ul style="list-style-type: none"> ● Local Government Councils
3	Fertilizer Marketing and Distribution	To create viable fertilizer marketing and distribution through (i) strengthening distribution network, (ii) making private sector the driving force behind fertilizer marketing and distribution, (iii) increasing local production, and (iv) ensuring availability at affordable prices.	Agricultural production and input services (APIS) Department of the National Food Reserve Agency
4	Promoting Agricultural Mechanization	To promote modern agricultural mechanization in order to minimize drudgery and facilitate commercialization of rice production	<ul style="list-style-type: none"> ● National Food Reserve Agency (NFRA) ● National Centre for Agricultural Mechanization (NCAM) ● Agricultural Machinery Mechanics and Operators Training Centre (AMMOTRAC) ● African Regional Centre for Engineering Design and Manufacturing (ARCEDEM) ● The state agricultural development programmes (ADPs)
5	Irrigation and Investment in Water Control Technologies	To considerably increase the irrigated land planted to rice within 10 years	<ul style="list-style-type: none"> ● Federal Department of Water Resources ● River Basin Development Authorities (RBDAs) ● The States' government irrigation schemes
6	Post Harvest Handling and Processing and marketing	(i)To improve rice quality to exportable standard through improving processing capacity and promoting harvesting and post harvest processing facilities	<ul style="list-style-type: none"> ● National Food Reserve Agency (NFRA) ● National Cereal Research Institute (NCRI) ● National Centre for Agricultural Mechanization (NCAM)

		<p>nationwide complemented by adequate training for rice farmers and processors in order to bail the rice sector out of low quality and poor market competitiveness</p> <p>(ii) To increase the market share of locally processed rice and improve distribution networks both locally and internationally.</p>	<ul style="list-style-type: none"> ● The state agricultural development programmes (ADPs) Agro Processing and Marketing Department, NFRA ● Storage Department, NFRA ● Rice Farmers Association of Nigeria (RIFAN) ● Private Rice Processors ● Arable Corps Development and Marketing Company ● Abuja Commodity Exchange
7	Access to credit and agricultural finance	To improve lending to stakeholders in the rice value chain in a timely and adequate manner	<ul style="list-style-type: none"> ● Nigerian Agricultural, Cooperative and Rural Development Bank Ltd. (NACRDB) ● Central Bank of Nigeria ● Bank of Industry ● NEXIM Bank ● Commercial Banks
8	Extension services	To provide adequate extension services both to small and large scale farmers	<ul style="list-style-type: none"> ● FMAWR ● State ADPs ● Private Agricultural Input Companies ● NFRA
9	Research and technology dissemination	To strengthen research and agricultural extension system to effectively diffuse technologies on improved varieties, IRM options, crop and soil fertility management, integrated pest control (IPM), improved harvest and post harvest practices to farmers through enhanced linkages.	<ul style="list-style-type: none"> ● National Agricultural Seed Council (NASC) ● National Cereal Research Institute (NCRI) ● National Rice Maize Centre, National Varietal Release Committee (NVR) ● The State Agricultural Development Programme (ADP)

			<ul style="list-style-type: none"> ● National Centre for Agricultural Mechanization (NCAM) ● Agricultural Machinery Mechanics and Operators Training Centre (AMMOTRAC) ● African Regional Centre for Engineering Design and Manufacturing (ARCEDEM)
10	Others	To create better policy environment for rice sector development.	

3.2 Matching the Strategies, Policies, and Programmes with the Various NRDS subsectors

i) Nigeria's Poverty Reduction Strategies

The NEEDS is Nigeria's reform based medium-term plan for poverty reduction and economic development. The NRDS is consistent with the NEEDS. The NEEDS captures many of the problems limiting the growth of the rice sector and also listed strategies to be adopted to surmount the problems. The commitment of government to the implementation of all the strategies enumerated in the NEEDS would create an enabling environment for the achievement of the NRDS objectives. Similarly, the 7 Point Agenda relates to all the NRDS subsectors as it emphasis increased budgetary allocation to the agricultural sector, development of modern technology, an effective private sector-led input supply and distribution system, increased farmers access to appropriate financial services, markets development, research, eradication of post-harvest losses resulting from inadequate storage facilities and promotion of rain-fed and irrigated farming.

ii) Agricultural Spending/Expenditure Framework

Although government has increased its agriculture spending in recent years, the share of agriculture in total government expenditure can still be considered as low when compared to the CAADP target of 10 percent and the amount of investment needed to achieve the NRDS.

Analysis of the structure and allocation of federal capital spending on agriculture in Nigeria from 2001-2005 by Mogues et al. 2008 indicates that at the federal level, spending is highly concentrated in a few areas. The analysis revealed that 3 out of 179 agricultural programs accounted for more than 81 percent of total capital spending in agriculture. The three dominant activities are: fertilizer market stabilization (43 percent of total capital spending in agriculture); food security component of the National Special Program for Food Security (NSPFS) (22 percent of total capital spending in agriculture); and Silos Construction, Maintenance, and Development of Marketing Strategic Grain Reserve (16 percent of total capital spending in agriculture). Although the rice sector may benefit from these investments, such an agricultural investment portfolio reveals an unbalanced concentration of resources to a small number of interventions, leaving others that are vital for the achievement of the NRDS without enough

funding. These vital public investments include agricultural research and extension, capacity building among agricultural officials and farmers, agricultural finance, irrigation, and agribusiness development.

iii) Other National, Sectoral and Donor Strategies

All the national, sectoral and donor strategies policies and programmes analyzed are consistent with the NRDS. It is observed that the original intention of some of national and sectoral policies and strategies were not to promote rice production alone but to develop Nigeria's agricultural sector in general. Given the uniqueness of each agricultural subsector, the rice sector may not necessarily respond to programmes targeted at the agriculture sector as a whole. Given the importance of rice in Nigeria, every aspect of the rice value chain deserves more policy focus. The matrices 1-4 below show the matching of the strategies and programs and the expenditure frameworks with the NRDS' sub-sectors.

MATRICE 1 ON NATIONAL STRATEGIES/POLICIES- ONGOING & PLANNED WITH INPUTS FOR NRDS

Examples of Line Ministries	Strategies / Policies	Status and Period	Matching with NDRS sub-sectors	Remarks
Federal Ministry of Agriculture and Rural Development (formally Federal Ministry of Agriculture and Water Development)	National Agricultural Policy	2002-date On-going	All the NRDS subsectors	(i) Promotion of the increased application of modern technology to agricultural production; (ii) Introduction and adoption of improved seeds and seedstock, and appropriate machinery and equipment, (iii) nationwide, unified and all-inclusive extension delivery system under the ADPs. (iv) Aim at self-sufficiency in basic food supply and the attainment of food security
	National food Security program	On-going	All the NRDS subsectors	(i) Assist farmers in achieving their potential for increasing output, productivity and incomes, (ii) Strengthen the effectiveness of research and extension services in bringing technology and new farming practices developed by research institutes to the farmers (iii) Concentrate initial effort in pilot areas for maximum effect and ease of replicability, and (iv) Train and educate farmers in the effective utilization of available land, water and other resources and facilities to produce food and create employment.
	Fertilizer policy	1970s-date On-going	Fertilizer Marketing and Distribution	(i) The privatization of public fertilizer (ii) fertilizer subsidy to the tune of 25%
	Agricultural Development Programmes (ADPs)	1974-date On going	Extension Services	(i) The training and visit extension method (T&V) was nationally adopted (ii) fertilizer and other elements to be disseminated to rice farmers, are subjected to the monthly technology review meetings (iii) activities of the ADPs have been drastically scaled down owing to the non-

				available of funds for operation.
	Nigeria Agricultural Cooperative & Rural Development Bank (NACRDB)	2001 –date On-going	Access to Credit/Agricultural Finance	(i) Provision of credit to farmers. the NRDS recommends the restructuring of NACRDB and expansion of its lending capacity.
Federal Ministry of Water Resources	National Irrigation Policy	2006-date On-going	Irrigation and Investment in Water Control Technologies	The policy aims to (i) Raise overall irrigation productivity in all public and private initiatives, (ii) Achieve a strategic balance between irrigated and rainfed production, (iii)Stabilise the public irrigation sector and transfer O&M to the beneficiaries/private sector, (iv)Remove constraints to private sector engagement and expand the capability of the private sector in both equipment manufacture and supply and in development activities including direct project operation and management.
	River Basin Development Authorities (RBDAs)	1974-date On going	Irrigation and Investment in Water Control Technologies	(i) Provision of large scale mechanized clearing and farming of land for farmers; constructing dams and bore-holes; (ii) Poor performance of RBRDAs attributable to poor funding, lack of supply manpower,
	Accelerated Rice Production in Niger River Basin	2008-date On-going	Promoting Agricultural Mechanization	(i) Establishment of the Tada Shonga scheme, with irrigable land of about 2 700 ha a project wich cost Naira 6.41 billion (US\$ 48.5 million),

			Irrigation and Investment in Water Control Technologies Access to Credit/Agricultural Finance	(ii) Increased production of rice crops with yield up to 6.5 tonnes/ha
Federal Ministry of Commerce and Industry	N10 billion Intervention fund for Rice Cluster Strategy	2009 –date On-going	Post-Harvest Handling and Processing, and Marketing Access to Credit/Agricultural Finance	(i) boost rice production and processing by allowing rice producers to have access to common infrastructures such as power, water, access road, communication systems, loading bays, conveniences. (ii) Increase access to lonterm fund for investment in rice processing
Federal Ministry of Finance Trade Policy	5% import duty on rice	2008-date On going	Better policy environment	Protection of local rice producers
National Planning Commission	NEEDS	2008-date	All NRDS subsectors	(i) promote production, processing and marketing of priority food products including rice, (ii) strengthen the Agricultural Research Council of Nigeria (ARCON), (iii) improvement of the farmer credit system, (iv) establish private-sector joint venture companies in the area of product development and marketing (v) Presidential committee on rice

	7 point agenda	2007-date	All NRDS subsectors	emphasize developing agricultural policy agriculture market, raising agricultural income and water management
	Vision 2020 on Agriculture and food security	2009-date On going	All the NRDS subsectors	The strategies include: (i) promotion of use of highly productive and disease-resistant crops, increase the yield through the use of hybrid seedlings and seed stock (ii) target import substitution and promote export by providing special infrastructures and post production incentives to communities that are identified as high production centres. (iii) expansion of existing food storage capacity (iv) enhancement of quality, (v) rehabilitate and complete existing irrigation projects across the (vi) strengthening the agricultural extension.
Agriculture Research Institutes	National Cereals Research Institute, Niger State with Rice Research Stations		Seed System, Agro-Chemicals Supply, Handling and Application,	(i) NCRI has been able to develop various varieties of improved rice which have been introduced to farmers. (ii) the major problem of the institute was that of inadequate finance.

MATRICE 2 ON FUNDING FRAMEWORKS- ONGOING & PLANNED WITH INPUTS FOR NRDS

Name of funding framework	stakeholder (s) / (champion(s) or leaders	Coverage	Category and type	Status and Period	Total Budget	Matching with NDRS sub-sectors & related budget	Remarks
Rehabilitation of Small Scale Irrigation Schemes	FAO, FGN, China	Country wide – FCT and 36 states	Production; Marketing; Post Harvest; Irrigation	Ongoing	USD\$22.4 Million	Irrigation and Investment in Water Control Technologies	Food security, Improved farmers income
National Programme For Food Security -	AfDB, IDB; BADEA; FGN;SGs; LGs	Country wide – FCT and 36 states	Research and Development; Extension and Training; Production; Marketing; Post Harvest; Irrigation; Seed; Capacity Building	On-going 2007-2012	USD\$364 Million	All the NRDS subsectors	Establishment of 95 Demonstration Farms, Development of 13,442 Ha of land for rice cultivation, Provision of production inputs to benefit 12 764 farmers, Distribution of 25283 agro-chemicals, Distribution of 5,199.11 tonnes of fertilizer, General training of of 9736 farmers in 655 sessions.
Rice Processing Investment Fund	FGN	12 States	Marketing and Post Harvest		N10billion	Post-Harvest Handling and Processing, and Marketing	Aim to expand the domestic rice processing capacity by a

							minimum of one million tonnes per year and stimulate local production for self sufficiency in rice and to create employment opportunities
3 rd Fadama Development Project	World Bank, FGN	Country wide – FCT and 36 states	Extension and Training; Production; Capacity Building; Post Harvest; Marketing	On-going 2009-2014	USD\$250 Million	Seed System, Extension Services, and Post-Harvest Handling and Processing, and Marketing	(i) capacity building (grant-aid), (ii) rural infrastructure (iii) acquisitioning experimental production inputs including wells, pumps, agricultural machinery, rice milling equipment,
Commercial Agricultural Development Project (CADP)	World Bank loan (IDA), FGN	FCT and 5 States	Extension and Training; Production; Capacity Building; Post Harvest; Marketing	On-going 2009-2014	USD\$150 Million	Seed System, Agro-Chemicals Supply, Handling and Application, Fertilizer Marketing and Distribution	demonstration and dissemination of technology packages; procurement of improved seed varieties; establishment of post-harvest handling centers; training of commercial agriculture

							entrepreneurs and development of commercial agriculture product markets.
Rural Access and Mobility Project (RAMP)	FGN, State Govt, LG; World Bank	Country wide – FCT and 36 states	Capacity Building; Rehabilitation of Roads; Rural Mobility Improvement, promotion of SMEs	2006-2011 On-going	USD 225 million	Post-Harvest Handling and Processing, and Marketing	Improved rural roads for agricultural markets improvement
Multinational NERICA Rice Dissemination Project	AFDB loan	6 States	Extension and Training; Capacity Building;	2002-2010 On-going	USD \$7.72 million	Seed System (Breeder Seed, Foundation Seed and Certified Seed)	
2) International funding frameworks							
Maximizing Agricultural Revenue and Key Enterprises in Targeted States	USAID	4 States	Marketing	On-going 2005-2010	US\$25 million	Post-Harvest Handling and Processing, and Marketing	Provide technical guidance to marketers for domestic rice, Train individuals engaged in rice value chain (input

(MARKETS)							marketing, millers, marketing agents etc)
Promoting Pro poor opportunities through commodities and Service Markets ProPcom	DFID	Ogunstate and Kwara State	Policy; Research and Development, extension and Training, Production; post harvest processing; credit; seed and institutional development	On-going 2005-2011	15 million pounds	Post-Harvest Handling and Processing, and Marketing	Improve parboiling technology, Focus on transparency for rice marketing
Rice Seed Production	AGRA	6 States	Seed	On-going 2008-2010	US\$320,028	Seed System (Breeder Seed, Foundation Seed and Certified Seed)	Supply resource-poor smallholder farmers in Borno State with improved seeds of rice and other grains at an affordable price,
Breeding for High-yielding Stable Drought Tolerant Rice and Provision of Quality Seeds of Rice for Poor	AGRA	Ebonyi State	Research and Development; Extension services	On-going 2007-2010	US\$193,270	Seed System (Breeder Seed, Foundation Seed and Certified Seed)	Collection of genetic materials and multiplication, Participatory Rice Breeding (PRB), On-farm multienvironment trials (METs), and training of farmers

Resource Farmers in Nigeria							
Targeting Drought Avoidance Root Traits to enhance Rice Productivity under water limited environment	CGIAR Generation Challenge Programme	Africa Rice, Abakaliki	Research and Development	2009-2011	US\$87,000	Seed System (Breeder Seed, Foundation Seed and Certified Seed) and Research and Technology Dissemination	Development of the protocol to assist with molecular breeding for drought resistance rice Enhancement of the capacity of NARES researchers
Improvement of Drought and Submergence Tolerance of Rice in Africa including NERICA	JIRCA, JAPAN		Research and Development Seed	On-going 2006-2010	US\$1.5 million	Seed System (Breeder Seed, Foundation Seed and Certified Seed) and Research and Technology Dissemination	Rice seed breeding
Community-Based Agricultural and Rural Development Programme (CBARDP)	IFAD	8 northern states	Rural Development	2001-date	US\$111.4 million (IFAD loan component: US\$29.9 million)	credit; seed and institutional development; irrigation Better Policy environment	capacity building, improving agricultural practices, intensification crop production, irrigation, safe water supplies, sanitation, and

							health and education facilities
Rural Finance Institution building Programme (RUFIN)	IFAD	12 States	Credit and financial services	2006-date	US\$40.0 million (of which approved IFAD loan: US\$27.2 million and IFAD grant: US\$400,000)	Access to Credit/Agricultural Finance	Assists NACRB and rural microfinance institutions to strengthen their rural outreach, develop new alternative financial products and establish linkages between the financial system and the rural production system

MATRICE 3 ON FRAMEWORKS OF POLICIES DIALOGUE- ONGOING & PLANNED WITH INPUTS FOR NRDS

Name of the framework of policies dialogue	Stakeholders (champion(s) or leaders	Status and period	Agenda	Matching with NDRS sub-sectors	Remarks
Establishment of 2 pilot Rice processing and Marketing Centers	JICA, FGN	On-going 2010-2014	Post Harvest Marketing	Marketing	Project has been approved
Grant Assistance for under privileged farmers	JICA	pipeline	Production Post Harvest Marketing	Access to Credit/Agricultural Finance	Poverty reduction among
Agriculture and Rice Productivity Enhancement Research and Development	Japan through the World Bank- Japan Policy and Human Resources Development (PHRD)	pipeline	Research and Development Post harvest Human Capacity	Promoting Agricultural Mechanization Research and Technology Dissemination	

MATRICE 4 ON PROJECTS/PROGRAMMES OF PARTNERS IN DEVELOPMENT- ONGOING & PLANNED WITH INPUTS FOR NRDS

Partners in Development	Name of Project /Progr.	Coverage	Category	Status& period	Type (loan or grant)	Total Budget of Project /Progr.	Matching with NDRS sub-sectors & related budget	Remarks
World Bank	3 rd FADAMA Project	Country wide – FCT and 36 states	Extension and Training; Production; Capacity Building; Post Harvest; Marketing	On-going 2009-2014	Loan	USD\$250 million	Seed System, Extension Services, and Post-Harvest Handling and Processing, and Marketing	(i) capacity building (grant-aid), (ii) rural infrastructure (iii) acquisitioning experimental production inputs including wells, pumps, agricultural machinery, rice milling equipment,
	Commercial Agricultural Development Project (CADP)	FCT and 5 States	Extension and Training; Production; Capacity Building; Post Harvest; Marketing	On-going 2009-2014	Loan	USD\$150 Million	Seed System, Agro-Chemicals Supply, Handling and Application, Fertilizer Marketing and Distribution	demonstration and dissemination of technology packages; procurement of improved seed varieties; establishment of post-harvest

								handling centers; training of commercial agriculture entrepreneurs and development of commercial agriculture product markets.
Africa Development Bank	Multinational NERICA Rice Dissemination Project	6 States	Extension and Training; Capacity Building;		Loan	USD \$7.72 million	Seed System (Breeder Seed, Foundation Seed and Certified Seed)	Access of small-holder farmers to high yielding rice varieties and complimentary technologies is enhanced. Production of NERICA rice is increased to 162,000 tons by the end of project life
	Maximizing Agricultural Revenue and Key Enterprises in Targeted States	4 States	Marketing	On-going 2005-2010	Grant	US\$25 million	Post-Harvest Handling and Processing, and Marketing	Provide technical guidance to marketers for domestic rice, Train individuals

	(MARKETS)							engaged in rice value chain (input marketing, millers, marketing agents etc)
DFID	Promoting Pro poor opportunities through commodities and Service Markets ProPcom	2 States	Better Policy environment; Research and Development, extension and Training, Production; post harvest processing; credit; seed and institutional development	On-going 2005-2011	Grant	15 million Pounds	Post-Harvest Handling and Processing, and Marketing	Improve parboiling technology, Focus on transparency for rice marketing
AGRA	Rice Seed Production	6 States	Seed	On-going 2008-2010	Grant	US\$320,028	Seed System (Breeder Seed, Foundation Seed and Certified Seed)	Promoting availability and use of quality seeds
	Breeding for High-yielding Stable Drought Tolerant Rice and Provision	Ebonyi State	Research and Development; Extension services	On-going 2007-2010	Grant	US\$193,270	Seed System (Breeder Seed, Foundation Seed and Certified Seed)	Rice seed breeding

	of Quality Seeds of Rice for Poor Resource Farmers in Nigeria							
CGIAR	Targeting Drought Avoidance Root Traits to enhance Rice Productivity under water limited environment	Africa Rice Abakaliki	Research and Development		Grant	US\$87,000	Seed System (Breeder Seed, Foundation Seed and Certified Seed) and Research and Technology Dissemination	
JIRCA	Improvement of Drought and Submergence Tolerance of Rice in Africa including NERICA	Ibadan	Research and Development Seed	On-going 2006-2011	Grant	US\$1.5 million	Seed System (Breeder Seed, Foundation Seed and Certified Seed) and Research and Technology Dissemination	Rice seed breeding
World Bank-Japan PHRD	Agriculture and Rice Productivity Enhancement Research and Development	Nationwide	Research and Development Post harvest Human Capacity	pipeline	loan	USD\$15 million	Promoting Agricultural Mechanization	Improving rice production through research and development

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4.0 DETERMINATION OF UNSATISFIED NEEDS (GAP)

In order to fully identify, assess and evaluate the gap in achieving a sustainable rice sector, a 'value chain' approach has been adopted. This approach will enhance a comprehensive assessment of the constraints and all the possible opportunities across the value chain. The main functions in the rice value chain are production, post harvest processing and storage, and marketing.

4.1 Rice production

Nigeria has approximately 4.6 million hectares of land suited for rice production with only about 1.8 million hectares or 39% is currently developed for rice cultivation. Nigeria also possesses huge untapped potential for irrigated rice development. There is an estimated 3.14 million hectares of irrigable land out of which less than 50,000 hectares is currently under rice irrigation. Nigeria is also a major rice consumer. Per capita consumption is 32 kg per annum while domestic production (approximately 2 million MT) is far below the 5 million tonnes annual rice demand, leading to considerable imports. Increasing population and urbanization has continued to drive growing demand for rice in Nigeria. In addition, consumer preference for higher-quality rice is very strong and currently there is limited potential for substitution of poorer-quality domestic rice to meet this demand.

Traditional rice cultivation in Nigeria can be categorized into Rain-fed lowland (47%), Rain-fed upland (30%), Irrigated lowland (16%), deep water rice (3%), and mangrove/swamp rice (1%). Rain-fed rice cropping is performed largely by smallholders using a low-risk, low-input, low-yield strategy that requires a minimum of purchased inputs (fertilizer, seed and CCP) with yields of less than 2 MT per hectare. Increases or drops in yield are determined by a range of conditions including flooding, weed density, iron toxicity, and pest damage. Farm management is traditional, with manual labour involved in each step of the rice production process from cultivation to threshing. Cultivated land holdings are generally small scale. However, there are few larger-scale commercial rice farmers, generally retired military or civil servants, who produce on 20 or more hectares, may own their own processing equipment.

Margin Analysis: Several analyses have shown that paddy production is a very profitable business. A fully costed hectare using market rates for inputs and all labor and applying best practices that should yield 3.5-4 MT of paddy is nearly N130,000, yielding a profit of about N70,000 per hectare (Grant et al., 2009). If the farmer is able to significantly reduce his or her labor costs, either by trading labor to other farms or using family members, the returns to the household increase. Farmers who are using the more sophisticated production technologies in Fadama areas and are linked into regular markets are significantly more profitable than farmers who are using traditional production technology.

4.2 Rice Production Constraints

Traditional rice-cropping problems include the use of low quality, mixed varieties home-grown seed leading to degradation over time in quality. Similarly, high cost of fertilizer and difficulty in procuring fertilizer in the appropriate amount at the appropriate time has made many rainfed rice farmers cultivate without fertilizer. Other challenges include, scarcity and high cost of inputs, low level of knowledge and training, rain-fed cropping system, lack of irrigation facilities, lack

of storage amenities, non-certified seeds, poor pests and disease management, ineffective farm implements, lack of access to institutional and infrastructural support, lack of access to credit facilities, lack of quality control awareness. In addition, low mechanization on rice farms means heavy reliance on manual labor to carry out all farm operations. Labor costs on Nigerian farms are driven by opportunity costs of labor (hired) in alternative jobs in the cities such as motorcycle taxis riding and street hawking.

4.3 Post-harvest Processing and Storage

Harvesting: Rice harvesting in Nigeria is done manually with little or no mechanization. For cultivation more than a hectare, agricultural labour may be required. Labour cost may range between N5000 to 7,000 /ha and this cost is unaffordable by many small holder farmers. Because proper harvest timing determines the quality of rice, late harvesting can result in poorer quality. Nevertheless, there is a tendency toward late harvesting due lack of available labour at any given time.

Threshing: Although the use of electric powered threshing machines or foot-pedal operated machines is possible, many farmers in Nigeria uses traditional threshing method due to cost. Traditional threshing include beating of the rice ear or pounding of the harvested rice. The problem with these traditional threshing methods is that they are inefficient and there is high tendency of stones and dirt being mixed into the rice.

Drying and Sorting: Due to lack of modern drying equipment, direct sun drying is performed usually on bare ground, by roadside, on tarpaulin, or on used plastic bags. During this stage, foreign matter and small peddles get mixed in with the rice.

Parboiling: Parboiling is normally carried out very close to the milling. Most parboiling is carried out at the artisanal level. The NCRI has developed a mechanical parboiler appropriate for 300-500 kg of paddy at a time, but it is not widely used due to cost. Parboiling may costs between N300 and 500 per 100-kg bag of paddy, depending on the scale of processing (Grantet al, 2009)

Rice processing/ milling: Small mills dominate the processing of Nigeria's domestic paddy. However, small mills have the disadvantages of a high broken rice rate and poorer milled quality. The profit margins for traditional milling are quite small. Small mills will charge about N250 for a 100-kg bag of paddy but heavy duty mills may charge up to N500 100-kg bag of paddy. A small mill can process up to 15 100-kg bags of paddy in a day for total sales of N3,000 from which electricity, diesel, spare parts and labor costs must be subtracted. The small margin is a disincentive the investment of marginal improvements in rice processing capacity by small millers. Recently two new large-scale industrial mills owned by major multinational food companies (Olam and Veetee) began operation in Nigeria. Each mill has the potential to produce cleaned and polished rice that can compete with imported product. There are also some large-scale mills in Sokoto, Badegi and Onitsha established by State governments but they are barely operational due to lack of spare parts.

Storage: The traditional means of storing rice at the farmer level is in bags within a room in the farmer's dwelling. This, however, results in quality degradation due to inadequate storage temperature control and rodent invasive activity. This kind of inattention to quality control is linked to the low marketing price for traditionally stored rice.

4.4 Post – Harvest Processing Constraints

Due to scarcity of machinery to help grow, process and distribute the product, rice post-harvest losses account for 15–50% of the market value of production. Post harvesting constraints include lack of access to improved technologies, high costs of energy for parboiling, poor storage facilities, lack of adequate funding, lower output quality (post processing), and limited government incentives. The biggest problem in post-harvest processing is unhusked and milled rice quality control. Poor quality of domestic rice is caused by late harvesting, improper drying and sorting method which allows foreign matter and small peddles to get mixed with the rice and poor quality of mills and storage. With the establishment of the two large scale processing mills, OLAM and VEETEE, the main challenge is getting enough quality rice paddy to feed the mills.

4.5 Rice Marketing

The marketing structure includes producers (farmers; agricultural cooperatives), importers, wholesalers, retailers, brokers, collectors and shippers, parboilers, millers and the end consumer. Marketing of domestic rice is subject to a complex distribution structure involving numerous levels of middleman and rice merchant. Rice is supplied primarily to the immediate and adjacent urban markets. Large scale inter-state transfer of produce is only common during harvesting period. Accordingly, marketing of domestic rice heavily depends on the season. Marketing of imported rice however involves an organized distribution network geared to consumer taste. While imported rice varies in quality, it is all of a higher quality than the domestic rice. Margin analysis: Analysis shows that each marketing step from the mill to the consumer is generally a low-margin (less than 15 percent), high-turnover business. Traders buy 100-kg bags at the main processing clusters in volumes of 1-4 MT and then bring them to the end markets for wholesale and/or retail. The end market price of domestic rice is heavily dependent on the price of imported rice. Usually, traders are able to sell domestic rice at roughly 15-20 percent below the cost of imported rice. This price margin is transmitted back to the mills where the price of milled rice is set.

4.6 Marketing Constraints

One constraint to marketing of agricultural produce is weak Market Information Service. Lack of market information creates unequal playing fields between middlemen and farmers. This negatively affects the terms of trade for small holder farmers and raises market transaction costs which lead to poor integration of markets across space and time (Emodi and Madukwe 2008). Nigeria's tariff policies also affect marketing of domestic rice in the country. The lifting of imported rice ban and the adoption of inconsistent and flexible tariff rates has resulted in aggressive participation of private sector rice importers in the marketing sector, highly competitive rice markets, significantly increased imported rice quantity, and changes in consumer taste in staple food. Other issues affecting Nigeria's rice value chain include worsening profitability in rice cultivation due to rising chemical fertilizer price and agricultural

labour wages, switching from rice cultivation to other crops, lack of access to institutional credit on the part of small scale rice marketing agents and small farmers, inadequacy of modern storage and processing facilities, absence of a precise scale system in determining rice quantity, and poor commercial linkages of marketing agents.

4.7 Analysis of Gap in the Rice Value Chain as Identified in the NRDS

Table below shows the NRDS rice value chain gap analysis. From the table, rice production constraints include lagging rice development policies, inadequate irrigation, low level of farming technologies, inadequate agricultural input supply system, delay in disseminating improved seeds, inadequate and weak agricultural extension, and poor accessibility to institutional credits, among others. Gap in rice post harvest processing include use of traditional methods of processing, low farmers' awareness of quality control, poor parboiling techniques, use of obsolete milling machines, low milling efficiency due to frequent power failures. Rice marketing constraints include uneven locations of rice surplus and shortage areas, complex marketing channels for local rice, lack of storage facilities, inadequate rural road network, and inadequate supply of market.

Table 3: Rice Value Chain Gap

Stages	Problems	Constraints
Production	Rigid production system (Low productivity, predominant rainfed rice cultivation, And subsistence agriculture) ↓ Small-scale marketability (seasonal shipment and supply shortages) ↓ Low competitiveness of domestic rice in terms of quantity and quality ↓ Comparative advantages of imported rice (stable price and supply and quality rice)	(1) Lagging rice development (lack of policies and strategies) (2) Inadequate irrigation and water storage facilities (inadequate O&M of existing facilities and lack of funds available for new facilities) (3) Low level of farming technologies (Lack of technical know-how) (4) High production cost (rising prices of chemical fertilizers and high wages of hired labour) (5) Inadequate agricultural input supply system (Difficulty in procuring chemical fertilizers in a timely manner and in adequate quantity) (6) Delay in disseminating improved seeds (use of inherent and inferior home seeds mixed with different varieties of rice) (7) Inadequate and weak agricultural extension agents (shortage of extension agents and lack of their technical knowledge) (8) Lack of purchasing power (non-existence of off-farm income sources) (9) Delay in forming agricultural cooperatives (delay in adopting a communal shipment)

		<p>system)</p> <p>(10) Poor accessibility to institutional credits (lack of agricultural investments and dependence on non-institutional credits)</p> <p>(11) Absence of the effective use of by-product (lack of rice straw usage)</p>
Post-harvest processing	<p>Low awareness of quality control (generation of impurities at each stage of harvesting, threshing, drying, sorting, storing, parboil processing, drying, and mill processing)</p> <p>↓</p> <p>Low level of post-harvest processing technologies (adoption of labour-intensive technologies by farmers, diverse parboil processing techniques, use of obsolete milling machines, and increased crop losses)</p> <p>↓</p> <p>Low quality rice (mixture with impurities)</p> <p>↓</p> <p>Low competitiveness of domestic rice in terms of quality (inferior quality of rice and strong consumers' preference for imported rice)</p> <p>↓</p> <p>Comparative advantages of imported rice (stable price and supply, and high quality rice)</p>	<p>(1) Traditional methods of harvesting, threshing, drying, sorting, shoring and processing (generation of post-harvest losses, labour-intensive methods, generation of impurities)</p> <p>(2) Lagging agricultural mechanization (lack of access to institutional credits, delay in forming agricultural cooperatives)</p> <p>(3) Poor drying and vetting techniques of farmers (improper drying, uncertain moisture content, generation of impurities, lack of concrete drying platform)</p> <p>(4) Low farmers' awareness of quality control (appropriate moisture content, removal of impurities, high awareness of the high quality – high price principal)</p> <p>(5) Poor parboiling techniques (obsolete parboiling equipment, diverse parboiling techniques, use of low quality water)</p> <p>(6) Poor drying and sorting techniques of parboilers (improper drying, uncertain moisture content, generation of impurities, lack of concrete drying platform)</p> <p>(7) Low parboilers' awareness of quality control (appropriate moisture content, removal of impurities, high awareness of the high quality – high price principal)</p> <p>(8) Use of obsolete milling machines (predominant Engelberg-type milling machines, high generation of broken rice, generation of impurities such as chaff and bran)</p> <p>(9) Low milling efficiency due to frequent power</p>

		<p>failures (conversion of a type of power source from electricity to diesel)</p> <p>(10) Low millers' awareness of quality control (regarding removal of impurities, good understanding of the high quality – high price principal)</p> <p>(11) Low awareness of farmers, parboilers and millers on rice losses</p>
Marketing	<p>Lack of farmers' aspiration to produce surplus rice (difficult procurement of agricultural credit and high production cost)</p> <p>↓</p> <p>Small scale marketability (seasonal shipment, supply shortages, and strong consumers' preference for imported rice)</p> <p>↓</p> <p>Large variations in rice prices (unstable supply of rice in a timely manner and in adequate quantity)</p> <p>↓</p> <p>Low competitiveness of domestic rice in terms of price (price inferiority of domestic rice and stable prices of imported rice)</p> <p>↓</p> <p>Comparative advantages of imported rice (stable price and supply, and high quality rice)</p>	<p>(1) Uneven locations of rice surplus and shortage areas: differing state-wise self-sufficient rates in rice production (agro-ecological rice production systems based on natural conditions, advancement in urbanization, high population growth)</p> <p>(2) Complex marketing channels for local rice (intervention by numerous layers of marketing agents)</p> <p>(3) Lack of collection and shipment facilities (at the LGA and community levels)</p> <p>(4) Lack of storage facilities (at the LGA and farm levels)</p> <p>(5) Inadequate rural road network (feeder roads, roads between communities and district capital markets)</p> <p>(6) Limited inter-state transportation of rice (high transportation cost, scarcity of operational funds, lack of access to institutional credit)</p> <p>(7) Absence or inadequate supply of market information (traditional commercial transactions: pricing by marketing agents, limited number of marketing agents with access to price information)</p> <p>(8) Absence of rice grading standards (inappropriate determinants to pricing rice, the poor focusing more on quantities than quality, lack of farmers' awareness of quality control)</p> <p>(9) Lack of access to institutional credit (credit with high interest rates, low assessed value of collateral, inaccessibility to NACRDB by individual farmers and</p>

		marketing agents) (10) Delay in introducing a precise scale system in quantity measurement in rural markets (unhusked/milled rice bags, bowls and cans are popularly used without using a scale when determining quantity.)
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4.8 Other Constraints

i) Policy Inconsistency

Agricultural policies in Nigeria have been inconsistent while abandoning of programs is not uncommon. The policy process is made more complex by the multiple policies that exist at the national, state and local levels that can often run counter to one another. The lack of predictability surrounding Nigeria's agricultural policy framework makes investment in the value chain highly risky. For example in 2005, the federal government encouraged the investment of large multinational rice companies into rice processing in Nigeria by granting them concession to import brown rice at a preferential tariff rate of 50 percent. License holders were expected to invest in rice processing and cultivation schemes in return for the exclusive license to import brown rice for polishing. However within two years of its introduction, the exclusive licensing scheme was abandoned by the federal government.

ii) Poor Policy Implementation

Government credibility is further marred by poor policy implementation due to corrupt practices by some government officials and bureaucrats. For instance, with regards to the federal and various state governments' long-standing fertilizer subsidy programs, distribution of fertilizer remains a major problem. It is not uncommon for fertilizer to be given to non-farmers or diverted to destinations for which it was not originally intended. ¹⁶ This leads to obvious productivity problems at the farm level and an overall crowding out of potential commercial input dealers.

iii) Infrastructural Deficiencies

The poor state of infrastructure in Nigeria has continued to discouraged private sector investment in the rice sector. The national road network does not effectively reach small farms, which hinders the development of efficient trucking and transport systems for agricultural marketing and agri-business development. Nigeria's ports infrastructure and customs facilities are undersized and overtaxed while the unreliability of the power supply remain a major issue. These deficiencies contribute to the high production costs and further undermine the profitability of agriculture. A World Bank's investment climate assessment of Nigeria indicated that the most binding constraint to greater private investment in agriculture is poor infrastructure especially power and transport followed closely by low access and high cost of finance. For example, the private provisioning of electricity using generators by milling operators due to irregular power supply from the national grid increases cost of production since self-generated power is three to four times more expensive than power from the grid. Similarly, limited port and road facilities raise the costs of delivering inputs to farmers, and outputs to market. Access to regular and affordable sources of power as well as efficient transport system are very important for competitive processing and production, and thus key for improving the middle of the rice value chain.

iv) Poor Access to Finance

Access to finance is often a critical constraint for agricultural production in Nigeria. Overall, there is relatively little finance being provided by Nigerian financial institutions into the rice value chain. The government-run NACRDB was set up to provide financing to farmers, farmers organizations and farm produce merchants. However, NACRDB micro credit is not targeted at the independent farmers. Rather, it is been carried out by international agency and NGO sponsored groups. Other conditioning to accessing fund include 8 per cent interest rate per annum, lending period of 2 years or less, collateral of 10 per cent deposit and a guarantee by farmer group. Another alternative to government bank credit are commercial banks. However, and high interest rates which could be close to 30 percent when all charges are taken into account and collateral discourage most of the rural smallholder farmers from accessing commercial bank loans. Further, from a financial-sector perspective, productivity levels in rice farming are mostly static while the business environment for agriculture is generally poor, which leads private banks to reject the prospect of agricultural lending on a large scale. Lack of access to appropriate financial services negatively affect the rice value chain. At the production level, lack of financing constrains the ability of farmers to clear land or introduce irrigation; purchase inputs such as seed and fertilizer; pay for machinery services; undertake harvesting, storage, marketing activities; pay for extension and information services; bridge the pre-harvest income gap; avoid having to sell right after the harvest at low prices; smooth seasonal income flows; and insure against price or yield variability. At the post-harvest level, lack of financing limits the capacity of agribusinesses capacity to finance and supply farmers and also limits their capacity to buy and process farm produce. Strengthening rural financial systems is, therefore, needed to get agriculture going in Nigeria.

v) Land Policy and Access to Land

Incentives to invest in agriculture are so undermined by policies regarding land ownership and land tenure. The Land Use Act introduced in 1978, invested proprietary rights to land in the State. In reality, however, cultivated lands are still occupied by family members under customary laws. Group ownership of land in Nigeria has been associated with such problems as limited tenure security, restrictions on farmers' mobility, and the inevitable fragmentation of holdings among heirs. Using land as collateral for finance is also difficult for farmers due to the burdensome requirements and long process of transferring ownership,. Population density plays a role in land access, since in the most densely populated states, such as those of the Southwest, there is limited land available.

vi) Limited area under irrigation

Agricultural productivity is low in Nigeria in part because of the dependence on highly variable rainfall patterns. Irrigation, which has the potential to increase and stabilize yields and production, can contribute to productivity growth by improving the incentives to invest in improved technology and inputs. The area under irrigation will need to expand at unprecedented rates if irrigation is to make a significant contribution to agricultural growth. Constraints to continued development of irrigation in Nigeria include low profitability of irrigated crop production, poor public management of water resources and weak private management capacity.

Most public irrigation schemes in Nigeria are poorly managed. A recent review of 62 schemes found well over 50 percent in complete disrepair, while most of the rest were operating at low levels of capacity (FAO 2004). The poor condition of most of these schemes is attributed to a lack of funding for maintenance and operating costs, which in turn is attributed to insufficient budget allocations by the Federal Government combined with poor cost recovery mechanisms.

vii) Low Investment in Agricultural Research

Agricultural research in Nigeria is primarily funded through the federal government budget. At about 0.02 percent of GDP, the Nigerian government's funding for agricultural research is well below the average even for Africa (0.85 percent of GDP). Some of the challenges affecting agricultural research system in Nigeria include poor funding of the research institutes and weak poor coordination within the Nigerian agricultural research community resulting in duplication of efforts. . Similarly, the time between submission of planned budget by the research agencies and approval and release of funds is lengthy and often out of tune with research work plans.

viii) Agricultural Extension

Extension services in Nigeria are delivered mainly through government agencies, usually the ADPs. Due to underfunding, the ADPs have no resources to train their staff to stay current with good production practices or travel to the farming areas to work directly with farmers. Other problems with public agricultural extension in Nigeria include chronic underinvestment, poor coordination between different levels of government and poor accountability to farmers and processors (World Bank 2004). There is also a few of private agribusiness firms, mainly input dealers, which provide extension advice as a service to their clients, but the coverage is limited to a few crops. Producer organizations are also playing an increasingly important role in fostering farmer-to-farmer technology transfer, although many are still relatively new and lack capacity to operate effectively.

5.0 OPPORTUNITIES OF TAKING INTO ACCOUNT THE UNSATISFIED NEEDS

The gaps analyzed above imply that a number of high impact opportunities exist across the Nigeria's rice value chain. These include improved input supply, accelerated mechanization, improved access to financing, better quality control, improved extension services, irrigation programs, reduction of postharvest losses, infrastructure improvement, research initiatives, and improved business climate.

i) Input supply- Seed

Addressing the problem of inadequate input supply system and delay in disseminating improved rice seeds requires that there should be more programmes aimed at strengthening input supply systems in Nigeria. Stakeholders expected to lead in this initiative include the Federal Ministry of Agriculture and Water Resources, the National Seed Council (NASC), National Cereal Research Institute (NCRI) and the State Agricultural Development Programmes (ADP). To ensure that improved seeds are available to farmers, government would need to adequately fund the NASC and the NCRI to be able to develop and distribute. More importantly, government would need to fund and strengthen the capacity of ADPS to distribute new varieties to rice farmers. Development partners and donors are needed to complement the efforts of the federal government in area of funding and technical assistance. Similarly international agricultural institutions such as WARDA and IITA have a lot to contribute in terms of development and dissemination of improved rice varieties in Nigeria. The private sector also has a role to play in the efforts to strengthen seed distribution systems. For example, Olam (a private sector industrial mill) has a contract growing scheme that requires farmers to use new seed, which Olam itself is producing on 400 hectares and selling (about 700 tons of seed per annum) to its contract growers. This is the largest seed production and marketing activity in the country.

Given the fact that demand for modern varieties of rice seed in Nigeria is low, an effective promotion campaign will be needed to publicize their potential benefits. As noted in the NRDS and in the gap analysis above, many small holder farmers prefer to use saved seed and are not aware of the potential benefits of modern varieties. Some who are aware of new seeds may not have the experience and skills to manage them properly. Increasing the supply of improved seed will not be successful unless there is effective demand. Consequently, there should be programmes to increase the awareness of farmers on the advantages of modern varieties. Public research and extension organizations can contribute to this campaign by conducting participatory on-farm trials, planting demonstration plots featuring new varieties, and distributing seed samples along with technical information about crop management practices.

ii) Input supply- Fertilizer

Difficulty in procuring chemical fertilizers in a timely manner and in adequate quantity had continued to discourage the use among rice farmers. To promote the use of fertilizer among farmers, the NRDS propose 25 per cent subsidy by government. While subsidy may reduce cost of fertilizer to users, this strategy alone will not solve other pertinent issues such as fertilizer scarcity. Efforts should be towards involving the private sector in the procurement and importantly the distribution of fertilizers. Just as it did in fertilizer production, government should scale back its involvement in fertilizer distribution. The current system under which

public enterprises distribute fertilizer creates numerous opportunities for rent-seeking and corruption which also hinders smallholder farmers from having access to the product at affordable price and also discourages the development of competitive private fertilizer marketing companies. Increasing the role of private sector in the fertilizer sector will also require the development of an efficient and profitable fertilizer industry and strengthening of demand among farmers.

Similarly, with the low rate of fertilizer use among farmers, there should be programmes to increase effective fertilizer demand at the farm level. The FMARD, ADPS and State-level public research organizations should take the lead in evaluating alternative fertilizer management strategies and developing fertilizer use recommendations tailored to local needs and circumstances. State ADPs and local government public extension services should communicate these recommendations to farmers and demonstrate their potential profitability. Over time, as farmers become more skilled in the use of fertilizer this role of transferring technical information related to fertilizer use can be assumed by the same private firms that sell fertilizer to farmers.

iii) Agro equipment

Over 90 percent of agricultural work in Nigeria is done using hand tools. Causes of low level of mechanization in Nigeria include high cost of machinery and equipment; lack of service providers; inadequate mechanization technology; and low level of equipment leasing. It is stated in the NRDS that would provide 20,809 tractors of 75HP with implements as well as 4,162 power tillers with rotavator to rice farmers. Consequently, there should be programmes to develop and strengthen rice producer organizations or cooperatives so as to ensure the access of rice farmers to these facilities. The National Centre for Agricultural Mechanization (NCAM) and other stakeholders should also increase their effort in the production of locally fabricated farm equipment tailored to the Nigerian environment. In the longer term, promoting mechanization and improving farmers' access to agro-equipment will require that agro equipment come through service providers or farmers that can ensure substantial capacity utilization of the equipment by keeping the equipment active for most of the year. Where possible, the equipment should link with retailers of agricultural input like fertilizer and seed retailers as they have the largest footprint. Moreover, the prospect of bundling products and services will reduce the high transaction costs of dealing with rural smallholder markets. There is therefore need to build the capacity of agro-input marketers to include agro equipment leasing in their services. International development partners have successfully run programmes targeted at this set of actors in the past. Other stakeholders to take the lead in increasing the use of agro equipment include Agricultural Machinery Mechanics and Operators Training Centre (AMMOTRAC), African Regional Centre for Engineering Design and Manufacturing (ARCEDEM) and the state agricultural development programmes (ADPs)

iv) Quality Control

The NRDS recognize the issue of quality control as a factor affecting rice processing and marketing. Because domestic rice market is in competition with imported rice, quality improvement is imperative. It is accordingly important to programme which would enhance

awareness regarding the important of quality control at the farmer and parboiler/miller levels. Appropriate quality control is required at the farmer level with regard to harvesting, threshing, drying, and sorting. Thorough quality control is important at the rice parboiling and milling states. Efforts should be towards standardizing parboiling techniques, introducing new parboiling equipment, removing impurities, installing destoner equipment installation, switch from electricity to diesel as a power source. To ensure quality control at every stage of rice production, the FMARD and the ADPs in association with RIFAN should encourage uniform cropping should be encouraged. Government in conjunction with Rice Processors Associations should train and equip sanitary inspectors to work at rice mills.

v) Processing

As noted earlier, inappropriate handling and processing contribute to rice crop loss and limits domestic rice marketing in Nigeria. Consumer demand for higher-quality rice is high in the country but domestic rice has not been able to meet this demand. The challenge therefore is how to produce rice that can compete with high quality imported rice. The NRDS propose that government should establish large scale mills as a measure to this problem. However, 3 large mills located at Sokoto, Badegi, Niger State and Onitsha, Anambra State formerly owned by the State governments have all stopped operating due to various problems. It is therefore suggested that instead of direct processing, government should continue to create the enabling environment for the private sector by removing impediment to investing in rice processing. The implementation of the Rice Processing Intervention Fund which is designed to offer credit support to investors in rice processing plants at low interest rate should be continued. New investments in large-scale industrial mills by private companies (Olam and Veetee) offer good private-sector driven models that can compete with imports, offer lower prices to consumers, yield high profit margins to both the producers and the millers and contribute to a more efficient value chain overall that improves food security in Nigeria. One major constraint to the efficient running of large mills is the lack of a consistent, reliable supply of high-grade paddy. Therefore the establishment of viable large mills requires adequate investment of stakeholders including the private sector, FMARD, NCRI, ADPs in the development of out-grower schemes to ensure availability and quality of paddy.

vi) Irrigation Development

The development of the Nigeria's rice sector requires that irrigated area be expanded from current extremely low levels. Strategies for the improved performance of irrigation services to be implemented by the Federal Ministry of Water Resources include the rehabilitation of existing public schemes identified in the Review of Public Irrigation Sector in Nigeria (ROPISIN) as a priority. Similarly the NRDS proposed the rehabilitating 62,347 hectares of rice irrigation schemes. Other necessary action include the transition from publicly funded schemes to commercially viable irrigation as well as the creation of enabling environment and involvement of the private sector in developing and managing irrigation schemes. Given the challenges of large public schemes in Nigeria, the main strategy for expansion of national irrigation capacity should be accelerated expansion of the area under small-scale systems. This is also consistent with the NRDS which required government should provide small and medium scale irrigation equipment to the farmers.

vii) Finance

The Nigerian Agricultural Cooperative and Rural Development Bank, which provides bank loans and credit facilities to the agricultural sector, does not have any preference to the rice sector in its lending. Moreover, the Bank does not lend to individual. The federal government should therefore restructure and adequately fund NACRDB to be able to provide funds to the actors in the rice value chain. The recent establishment of N10 billion Rice Processing Intervention Fund and the N200 billion Commercial Agriculture Credit Scheme by the federal government is welcome development and would boost investment in the rice value chain. There should be programmes to develop and strengthen rice producer organizations and cooperatives to ensure the access of rice farmers and processors to these funds. Government should however avoid direct lending of credit to farmers which had been the main reason why past government lending schemes had failed in terms of viability and depth of outreach. Excessive government involvement is also partly responsible for poor repayment rates, as it contributes to the widespread perception in Nigeria that farmers are entitled to a share of the nation's oil wealth and that a good way for them to receive their share is through low-cost government loans. A better alternative is that farmers should access credit through private financial institutions especially, commercial Banks and micro-finance institutions (MFIs). Integrating MFIs into provision of credits to rice farmers also has the advantage of increasing the access of poor peasant farmers to formal financial services. Apart from the above, there should be more agricultural funds to the rice sector which would be commercially driven and targeted towards the functions and relationships in the value chain that would bring the greatest upgrading returns. For rice in Nigeria, these are the input industry through equipment and service suppliers, the emerging commercial farmers that want to mechanize and upgrade, and business people that want to start milling, storage, or processing businesses.

viii) Research

The main problem of agricultural research in Nigeria is inadequate finance. Due to lack of funding most public research institutes, including the NCRI, have not been able to carry out their mandates effectively and many researchers do not have access to adequate operating budgets. Other challenges include weak coordination within the Nigerian agricultural research community resulting in duplication of efforts. Achieving the NRDS targets requires sustainable financing of NCRI and other research institutions by the federal government, improving management, and ensuring the accountability of researchers to clients and funding agencies. Agricultural research should be designed to reflect the priority needs of rice farmers and agribusiness enterprises. Policies to encourage increased private sector research should be put in place, including policies to ensure an appropriate regulatory environment (e.g. intellectual property rights and biosafety). There should be efforts to diversify the mechanisms of funding agricultural research in Nigeria. Sources of funds should be expanded to include public, private, and beneficiary sources.

ix) Extension

Because the federal and state governments have been unable to fully fund the ADPs, extension services delivered through the programme are steadily being eliminated, especially those provided to the poorest producers. Other problems facing agricultural extension in Nigeria include lack of coordination and duplication of efforts, lack of financial sustainability, and poor accountability to farmers and processors. Both the federal and state government should show

their commitment to the NRDS by adequate funding of the ADPs. The FMARD should also move to improve coordination and reduce duplication of effort in the ADPs. To improve financial sustainability of agricultural extension services through the ADPs, there is need for policies and mechanisms for pluralistic funding such as user fees for large commercial farming. The opportunity of delivering extension service through other nontraditional channels such as the public, private, and nongovernmental sectors should also be explored.

x) Improved business climate

Government must continue to intensify efforts in the creation of a predictable and stable business climate that will allow individuals and firms to operate with certainty and confidence as they invest in productivity improvements, search new markets, and pursue value-adding activities throughout the rice value chain. This will require the design and implementation of supportive policies that are consistent and transparent, establishment of a stable macroeconomic environment, adequate financial services that provide appropriate access to credit at reasonable rates, well functioning legal and regulatory systems, clear definition and protection of property rights, and an efficient tax system that is not too burdensome on private entrepreneurs.

xi) Infrastructure

Infrastructure deficiencies contribute to the high costs of production and hinder rice marketing and agribusiness. Most importantly, for the achievement of the NRDS targets, governments must invest more in both infrastructures and processing facilities, providing the private sector with incentives to provide the processing facilities. Investments in rural roads should be targeted to areas where they will have maximum impacts on upgrading rice value chain. Water supply as well as power generation and distribution to rural areas must also improve. Market infrastructures such as markets, telecommunication, market information service and storage facilities should be developed.

6.0 Conclusion and Recommendation

The main objective of the study is to assess the coherence and linkages between the NRDS and the relevant planning and programming frameworks and to provide a basis for reconciling the NRDS' requirements and the related opportunities. The study reviewed various national and sectoral strategies towards rice development. Some Donor strategies were also reviewed. The analysis shows that all the policies reviewed were linked to one or more NRDS subsectors. There is no doubt that there is one or more policy or programme of the federal government that address each of the NRDS subsector namely: seed system, agro-chemicals supply, handling and application; fertilizer marketing and distribution; promoting agricultural mechanization; irrigation and investment in water control technologies; post-harvest handling and processing, and marketing; access to credit/agricultural finance; extension services; research and technology dissemination; better policy environment for rice sector development). However, the study identifies various gaps in the rice value chain which has constrained the development of the rice sector. The study also identified some high impact opportunity across the rice value chain including improved input supply, accelerated mechanization, improved access to financing, better quality control, improved extension services, irrigation programs, reduction of postharvest losses, infrastructure improvement, research initiatives, and improved business climate.

It should be noted that not all of the national and sectoral strategies are targeted at addressing the rice value chain in particular. Rather, many of these programmes aim at promoting overall agricultural growth in Nigeria. Given the uniqueness of each agricultural subsector, the rice sector may not necessarily respond to programmes targeted at the agriculture sector as a whole. For example, many rice farmers (mostly small holders) could not benefit from the NACRDB because the Bank's policy did not favour individual poor farmers. In a world of constrained resources, and a country with a large agricultural sector, an effective agricultural growth strategy for Nigeria should explicitly focus on sectors that have the greatest potential and crops destined for domestic market. Analysis from this study has shown the importance of rice to the Nigerian economy and deserves more policy focus. The federal government should ensure that rice top its development agenda and priority should be given to timely implementation of rice programs.

Although sound policies and strategies are important for the achievement of the NRDS, it is the implementation of these policies that will bring about the needed upgrade in the rice value chain. There are numerous policies and programme that match the NRDS. However, many of these elaborate policies only exist in paper. This is because there is little or no budgetary allocation to their implementation. The consequences of poorly implemented sound policy rhetoric include abandoned programmes, dilapidated projects and poor public service delivery. An example of this is the RBDA which was set up to provide surface water and underground water resources for farming in Nigeria. However, due to poor funding most of the river basins are dilapidated and non functional. Another example is the ADPs which have not been able to provide adequate extension service to farmers due to lack of funding. Consequently, there is no evidence of positive impact of these policies at the farm level. It is imperative that both the Budget Office of the federation and the Federal Ministry of Finance ensure that necessary allocation is made in the annual budget towards the achievement of the NRDS. They should also ensure timely releases of funds for implementation of projects across stages of the rice value chain. In addition, rice development initiatives should clearly indicate the sources of fund and funds should be used for

intended purpose.

With so many national and sectoral policies of relevance to the NRDS, it would be important to carry out studies to know which programs are successfully achieving desired objectives and to understand why some others are not working. Unfortunately, there are no impact analysis focused on the effectiveness of various government policies, such as subsidization, high tariffs/levies on rice imports and various other regulatory initiatives in Nigeria's rice value chain. Moreover, the absence of reliable statistic-detailed key metrics inhibits a more thorough understanding of Nigeria's rice value chain. Improving both the reliability of agricultural statistics in Nigeria and understanding of the impacts of past and existing policies are important to deliver evidence-based policy recommendations. It is recommended that effective programmes should be scaled up and vice-versa.

It is also recommended that apart from stakeholders identified in the NRDS, more relevant stakeholders should be included in formulation and implementation of rice strategies and policies. Important stakeholders include Federal MDAs whose activities can create enabling environment for rice development in Nigeria especially Ministry of Transport, Ministry of Works and the Ministry of Power. These MDAs as well as institutions working within the rice sector should coordinate with themselves so as to exploit operational complementarities and functional synergies. Coordination of activities across sectors will reduce unnecessary duplication of interventions and also ensure that rice development activities complement and build on one another. Opinions of actors in the value chain are important for the NRDS. Consequently rice producers, paddy traders, millers, and domestic rice traders should be recognized as important stakeholders. Microfinance banks, commercial banks, agricultural cooperatives should be represented in NRDS committees.

NRDS emphasize the need for a private sector driven rice sector which necessitate an appropriate balance in the role public and private sectors in the provision of goods and services. It is recommended that government intensify its efforts in the provision of a favorable enabling environment that encourages private investment in the rice sector such as maintaining a stable policy regime, fostering an attractive business climate, and providing basic infrastructure. Most importantly, government should make available to rice actors necessary infrastructures such as feeder roads, electricity power supply, extension services, storage facilities and credit. Moreover, it is important that government should be consistent, transparent and predictable. This is because inconsistency and lack of predictability in agricultural policy framework create a disabling environment for the private sector and makes it highly risky for actors in the rice value chain to invest in much-needed operational upgrades.

Finally, achieving the NRDS would require increase assistance of international development partners in terms of funding and institutional support. It is also recommended that development partners should state agricultural development priorities and to locate their proposed interventions within the national rice development strategy. Most contributions of development partners have been consistent with the NRDS. However, because the priorities of individual donors vary, the coverage in relation to NRDS subsectors is uneven. Consequently, some activities are generously supported, while others are chronically under-funded. Clear definition

of contributions to be made by Nigeria's development partners will help ensure that key development priorities will be addressed while reducing wasteful duplication of effort.

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8.0 APPENDICES

Appendix 1: Agricultural Expenditure in Nigeria (1980-2009)

	Total Exp	Agric Recurrent Exp	Agric Capital Exp	Agric Total Exp	Share of Agric exp in Total	Growth Rate of Growth Agric Exp	Growth Rate of Total Exp
Year	(N' Million)	(N' Million)	(N' Million)	(N' Million)	(%)	(%)	(%)
1980	14,968.60	17.14	435.60	452.74	3.0		
1981	11,413.70	13.03	775.10	788.13	6.9	74.1	-23.7
1982	11,923.20	14.80	1,035.10	1,049.90	8.8	33.2	4.5
1983	9,636.50	12.77	1,185.20	1,197.97	12.4	14.1	-19.2
1984	9,927.60	15.66	252.50	268.16	2.7	-77.6	3.0
1985	13,041.10	20.36	985.40	1,005.76	7.7	275.1	31.4
1986	16,223.70	20.69	892.50	913.19	5.6	-9.2	24.4
1987	22,018.70	46.15	365.10	411.25	1.9	-55.0	35.7
1988	27,749.50	83.00	595.70	678.70	2.4	65.0	26.0
1989	41,028.30	151.80	981.50	1,133.30	2.8	67.0	47.9
1990	60,268.20	258.00	1,758.50	2,016.50	3.3	77.9	46.9
1991	66,584.40	208.70	551.20	759.90	1.1	-62.3	10.5
1992	92,797.40	455.97	763.00	1,218.97	1.3	60.4	39.4
1993	191,228.90	1,803.81	1,820.00	3,623.81	1.9	197.3	106.1
1994	160,893.20	1,183.29	2,800.10	3,983.39	2.5	9.9	-15.9
1995	248,768.10	1,510.40	4,691.70	6,202.10	2.5	55.7	54.6
1996	337,417.60	1,592.56	3,892.80	5,485.36	1.6	-11.6	35.6
1997	428,215.20	2,058.88	6,247.40	8,306.28	1.9	51.4	26.9
1998	487,113.40	2,891.70	8,876.60	11,768.30	2.4	41.7	13.8
1999	947,690.00	59,316.17	6,912.60	66,228.77	7.0	462.8	94.6
2000	701,050.90	6,335.78	5,761.70	12,097.48	1.7	-81.7	-26.0
2001	1,017,996.50	7,064.55	57,879.00	64,943.55	6.4	436.8	45.2
2002	1,018,178.10	9,993.55	32,364.40	42,357.95	4.2	-34.8	0.0
2003	1,225,988.30	7,537.35	8,510.90	16,048.25	1.3	-62.1	20.4
2004	1,384,000.00	11,256.15	48,047.75	59,303.91	4.3	269.5	12.9
2005	1,743,200.00	16,325.60	79,939.41	96,265.01	5.5	62.3	26.0
2006	1,842,587.70	17,212.81	15,176.76	32,389.57	1.8	-66.4	5.7
2007	2,348,593.00	21,202.73	22,518.58	43,721.31	1.9	35.0	27.5

2008	3,078,300.00	65,400.00	27,481.74	92,881.74	3.0	112.4	31.1
2009 /1	3,284,702.60	22,435.20	32,969.98	55,405.18	1.7	-40.3	6.7

Source: Federal Ministry of Finance and Central Bank of Nigeria

Note: /1 Provisional