

Annex I:

## Questionnaire for Application

### 1. Basic Information

Name	WILSON DOGBE
Organization	CSIR-SAVANNA AGRICULTURAL RESEARCH INSTITUTE
Position	PRINCIPAL RESEARCH SCIENTIST/ HEAD OF RICE R & D

### 2. Current Situation concerning implementation of NRDS and CARD related activities, as well as alignment in your country, that were formulated in the training in the previous year

1. In implementing the National Rice Development Strategy, the Ministry of Food and Agriculture (MOFA) benefited from inputs of national experts with multi-sectoral backgrounds as well as other stakeholder groups operating in Ghana. Currently, the National Strategy has been revised recently and some major constraints such as land development and land tenure arrangements, seed quality and availability, high cost of fertilizer, inadequate human resource capacity, inadequate harvesting and post-harvest management technology, weak local rice marketing system and the role of Government and related agencies have been considered. A revised governance structure comprising the key actors in the rice sector has also been proposed.

Seven (7) thematic strategy areas have been identified namely: Seed System; Fertilizer Marketing and Distribution; Post-Harvest Handling and Marketing; as well as Irrigation and Water Control Investment. Others are Equipment Access and Maintenance; Research and Technology Development; and Community Mobilization, Farmer-Based Organizations and Credit Management. For each of the thematic areas, some key actions have been proposed. The roles of government, public sector, private sector and NGOs have been considered critical for the attainment of the goals of the strategy. An implementation plan which will be developed subsequent to the adoption of the NRDS will indicate the details of the action plans, funding for the selected priority areas (where currently concept notes have been developed) and a comprehensive monitoring

2. The rice marketing infrastructure development and operation within the country is on the ascendency with annual production increasing steadily. Some strategies being implemented to achieve this include the introduction of harvesting equipment (reapers and combines), standard rice mills, improved parboiling equipment, storage facilities, drying patios and warehouses. Furthermore, accessibility to producing areas and marketing centers are also being improved.

Additionally, the development of suitable packaging, labeling and branding of locally produced rice as a way of promoting its patronage is increasing the market demand for

locally produced rice. Additionally, the country has developed a rice quality standard, which needs to be strictly adhered to further improve the quality of locally produced rice.

3. The Directorate of Crop Services (DCS) has been implementing the Ministry of Food and Agriculture policies in relation to rice production by focusing on strategies to increase local rice production in order to reduce rice imports.

- i. The MOFA DCS has been organizing frequent in-country training on quality rice seed and grain production and processing for relevant actors in the rice value chain to update their knowledge on best practices and implement them. This has equipped the rice actors along the value chain to use these best practices to increase their productivity.
- ii. The MOFA, represented by DCS, secured a financial support from African Development Bank to establish rice milling facilities in three Project Districts i.e. Hohoe District in the Volta Region, Kumbungu in the Northern Region and Ejura-Sekyedumasi District in the Ashanti Region. The name of the Project was Nerica Rice Dessimination Project. Three Private Sector Entrepreneurs benefited from this facility. The Entrepreneurs purchased the rice mill and its accessories and managed the facility, which comprise a store, a structure housing the mill, drying floor etc). The management of these milling facilities is in the hands of Entrepreneurs. It is interesting to note that the entrepreneurs are ensuring effective and efficient running of the operations of the facility and rice farmers in the districts are gaining from the quality output of the mills. In addition, the facility has employed indigenous workforce to reduce the unemployment rate in the districts. This Public-Private Partnership facility is used as learning sites for students to be abreast with rice post harvest activities to complement the theory taught in the schools.

As a way of maintaining the facility, representatives of the District Agriculture Department (DAD), Regional Agricultural Department (RAD) and Environmental/Sanitation Officer of the District Assembly routinely (on quarterly basis) visit the premises to discuss issues emerging from the operations of the mill.

### **3. Duties of your organization/Department and Yourself**

The CSIR-Savanna Agricultural institute is one of the major institutions responsible for Rice research and development in Ghana. The institute has released most of the consumer-preferred varieties and annually produces breeder and foundation seed for these varieties. SARI works with value chain actors especially processors and marketers to identify consumer preferred characteristics of varieties being developed.

I am rice agronomist with 28 years experience in the field and management of research and development projects across the entire rice value chain. I have coordinated the development of 7 varieties, component technologies and models for rice production, processing and marketing. I represent CSIR-SARI on the NRDS.

### **ANNEX II:**

## **Basic Information**

Name	DR. WILSON DOGBE
Country	GHANA
Organization	CSIR-SAVANNA AGRICULTURAL RESEARCH INSTITUTE
Position	PRINCIPAL RESEARCH SCIENTIST/ HEAD OF RICE RESEARCH AND DEVELOPMENT

### **2. Duties of Your Organization/Department and Yourself**

(1) The Savanna Agricultural Research Institute (SARI) is one of the 13 research institutes that make up the Council for Scientific and Industrial Research (CSIR). The CSIR-SARI was originally known as the Nyankpala Agricultural Experiment Station (NAES) and operated as an outpost of the Crops Research Institute, Kumasi. In June, 1994, it gained autonomy and was upgraded to a full fledged Institute and re-named Savanna Agricultural Research Institute.

The Institute's mandate is to "Conduct research into food and fiber crop farming in Northern Ghana (Northern, Upper East and Upper West Regions) for the purpose of introducing improved technologies to enhance agricultural productivity" The crops covered in its research mandate include sorghum, millet, rice, maize, fonio, cowpea, groundnuts, soybean, bambara beans, groundnuts, pigeon pea, yam, cassava, sweet and frafra potatoes, cotton and vegetables, among others.

The vision of the Institute is to "become a lead research and development (R&D) Institution by making agricultural research responsive to farmer needs and national development.

The mission is to "conduct agricultural research in Northern Ghana with the aim of developing and introducing improved technologies that will enhance overall farm level productivity for improved livelihoods"

The institute is represented on the NRDS task force. It also owns and operates a rice-processing centre.

(2) My department, the rice research and development program is responsible for all research and development activities on rice for the three northern regions of Ghana (Northern, Upper East and Upper West regions)

(3) As head of the Rice R&D program of SARI, I coordinate the planning and implementation of rice research and development activities and advice my director on

issues on rice. I represent my director at most meetings and discussions on rice. I represent my institute on the NRDS task force.

(4) I have been involved in NRDS formulation and the implementation of CARD related activities in Ghana. I have participated, in CARD General Meeting in Accra last year, b) Steering committee meeting in Nairobi Kenya in February 2014, c) I have participated in the CARD Working Week as a full member of the NRDS Task Force, and in other meetings on consultation / validation and launching of NRDS, Rice Seed Development Strategy/road map. I am currently coordinating a rice seed scaling project in the three northern regions of Ghana

### **3. Current Situation of NRDS (National Rice Development Strategy) and Rice Sector in Ghana**

Ghana was among the first-line countries to be supported to develop a National Rice Development strategy (NRDS) in 2009. Even though the NRDS is not being strictly implemented as planned it has been the main guide to rice research and development projects and projects in Ghana. After 5 years as a rice sector development guide, the document saw revisions in some parts last year. Further to the NRDS; the coalition has also supported us to develop a “Rice Seed Roadmap” which is also being finalized for ministerial approval.

The main strategic areas highlighted in the NRDS are: Rice Seed System; Fertilizer marketing and distribution; Post harvest and marketing; Irrigation and water control investments, Equipment access and maintenance’ Research and Technology dissemination: Community Mobilization, Farmer Based Organization and Credit management.

A number of interventions and initiatives have been designed and are being implemented with the view of improving the rice sector.

Among them are the following:

1. Rice Sector Support Project with emphasis on the development of Water Harvesting and Regulatory structures (WR&RS) on 6000 hectares of lowlands, with the support of the French Government, (2009-2016)
2. Rice Seed Scaling Project: USAID support;
3. Improvement and scaling up of the System of Rice Intensification (SRI) in Ghana. – Under WB-supported WAAPP 2A in collaborating with SARI.

4. West Africa Seed Program (WASP) supported by USAID
5. Enhanced Access to Quality Rice Seed Initiative (WAAPP support through DCS)
6. EDAIF supported Rice Intensification Initiative (RII)
7. Preparation of the “Rice Seed Roadmap.”

#### **4. Current Situation concerning Planning, Implementation, Operation and Management of Rice Processing, Storage, Transport and Marketing infrastructures**

Please describe how the domestically produced rice is generally processed in your country. Who does drying (e.g. farmers, cooperatives), how it is dried (e.g. sundry, with dryer machinery) who mills rice (e.g. private miller, cooperatives, farmers), with what machineries (e.g. with rice mill capacity of 3 tons/hour, manual milling), quality of processing (e.g. ratio of broken rice is high, stones are mixed), cost of processing (e.g. milling cost is high due to the low capacity of mills) [L]  
[SEP]

- . (1) Paddy in Ghana is processed mostly by artisanal processors using the small 0.5 – 1.5 tons per hour one pass mills that may be the small engelberg mill or the robber roller technology. After harvest paddy is sun dried on a tarpaulin by farmers after which they are either sold to aggregators/processors who mill it either straight or parboiled. Mills have an intense activity during harvest but just about 2-3 months after that most of them are either closed or work at less than 20% of their capacity. Quality of processing has improved significantly in recent time as a result of introduction of destoners and sorters into some of the mills. The challenge still has to do with the level of breakages that can be as high as 90% in the rainfed-produced paddy. Big commercial mills like the AVNASH Rice processing centre with a capacity of 500tons/day has just been established in northern region. The company is currently supporting out growers through their aggregators to produce two varieties for the mill.

- . Q.2 Please describe how the domestically produced rice is generally stored in your country. Where paddy is stored (e.g. at farm, at rice miller’s storage), where milled rice is stored (e.g. at miller’s storage, at whole sellers’ storage), how is the capacity and quality of storage (e.g. very few storages have air conditioning and moisture control, majority of storages have good ventilation system, storage management is not satisfactory thus increases storage cost, insufficient number of storages). [L]  
[SEP]

- . (2) Paddy is generally stored at the farmer’s house, and the rice mill or the aggregator’s house. The Ghana grains council has been encouraging

farmers and aggregators to use their accredited grain warehouses in the regions. Milled rice is stored at miller's and whole sellers' stores. Capacities of these facilities are low and are of poor quality. None of the storage facilities known have air conditioning and moisture control. Majority of storages have good ventilation system, storage management is not satisfactory thus increases storage cost.

- . Q3. Please describe how the domestically produced rice is transported in your country. Who transport rice (e.g. millers, traders, farmers), how is the road condition (e.g. main road is good but rural road is in bad shape), how is the capacity of transport means (e.g. shortage of trucks, the capacity of trucks are generally small), cost of transport (e.g. it is high because of bad road condition and distance to the market), distance to the markets (e.g. transport cost is too high to ship rice to markets from remote production areas, the distance between main rice production areas and capital city is close enough)
- . (3) Locally produced paddy or mill rice is transported by millers, traders, farmers by road to the market. Road conditions are generally bad and sometimes not motorable. The distances between the rice producing areas and the major consumption areas are far.
- . Q4. Please describe how the domestically produced rice is traded and marketed in your country. Who does marketing (e.g. retailers, whole sellers, government, cooperatives), any branding, if so, how branding is done (e.g. packaging, advertisement), where rice is traded (e.g. central wholesale market, local markets, retailing at supermarkets)
- . (4) There is no structured market for locally produced rice. Many attempts to do that have failed. The current practice is described below
  - (a) Local traders/aggregators who supply consumption centers close to the production areas.
    - Buy paddy from farmers
    - Process it at the local milling center
    - Sell it either directly to consumers or to traders
    - In rainfed areas, where moisture of paddy can be very low, local traders buy paddy, parboil it before milling
  - (b) Regional traders/aggregators have similar marketing functions like the local aggregators, but operate across larger distances and handle larger volumes
  - (c) Inter- Regional Traders
    - Link regions with surplus to major consuming centers
    - They mostly buy milled rice and organize transportation of milled rice to other regions.
    - Sell milled rice to retailers
  - (d) Retailers
    - May deal only with local rice or with both (local + imported)

Retailers do the marketing of locally produced rice with little or no branding (packaging and advertisement). Most of the business is done in the local markets. Attempts at retailing at some supermarkets are beginning.

. Q5. Please list up challenges in rice processing, storage, transport and marketing in your country

- . (5) Major challenges facing rice processing in Ghana are lack of sustained access to quality paddy, Management and processing Skills of managers and mill operators, inadequate storage capacity, poor access to operating capital, unreliable and high cost of energy, high transaction costs and poor market penetration of domestic rice as a result of inadequate branding.

. Q6. Please describe how processing, storage and marketing infrastructures in your country are operated. (e.g. Who does planning, who does implementation, who does operation, any legal framework, any policy framework) [L] [SEP]

- . (Ans 6) Most of the processing facilities are one man businesses thus the planning and implementation of processing activities are done by the owner with little or no systematic planning. [L] [SEP]


. (Q7) Please list up challenges in planning, implementation and operation of processing and marketing infrastructures in your country. [L] [SEP]

- Lack of national, regional or district implementation plan, policy or model for paddy aggregation processing and marketing.
- Poor entrepreneurial skills of actors along the rice processing and marketing value chain
- Poor linkage and coordination of actors along the value chain
- Inadequate storage facilities for paddy and milled rice.
- Lack of storage facilities for medium to long term storage of cargo and milled rice
- Poor roads linking the production and processing centres
- High cost of energy
- Poor access to operating capital (High interest rate)

. (8) Please describe how better planning and operation of processing and marketing infrastructure can help address challenges in rice processing and marketing. [L] [SEP]

- Proper planning to identify major production and consumption areas, actors within the rice aggregation, processing and marketing value chain and how their

activities should be organized and coordinated for mutual benefit and synergy is the starting point. The benefit of this is that through dialogue and consensus building with value chain actors, resources and infrastructure can be concentrated in few priority areas for maximum impact instead of the current approach of spreading thinly.

- (9) Please describe your tentative idea for solving the challenges mentioned in the above question (7) or improving the current situation 

To enhance the competitiveness of locally produced rice it is important to improve the generally poor-quality drying, storage and milling facilities by introducing standard rice mills, improved parboiling equipment, storage facilities, drying patios and warehouses. Accessibility to producing areas and marketing centers need to be improved. There is the need to establish warehouses for milled rice at central locations within major production and consumption areas, sustain rice marketing credit lines, build capacity of marketers and processors and improve accessibility to producing areas and marketing centers. There is also the need to enhance other pre and post harvest handling process (timely harvesting (clean threshing), proper curing prior to milling, improved parboiling practices and appropriate haulage systems) of rice. In the light of all these, collaboration with relevant agencies, notably Department of Feeder Roads (for improved farm tracks and rural road networks) and private transporters will have to be enhanced.

### **Some Proposed Actions**

1. Enhance quality of milled rice to meet national/ISO standards through provision of appropriate machinery and capacity building in post harvest handling of produce
2. Develop and promote a mutually beneficial aggregation model that links farmers to big mills and storage facilities
3. Provide adequate storage facilities in the major rice producing and consumption areas



4. Develop suitable packaging, labeling and branding of locally produced rice as a way of promoting its consumption
5. Develop a sustainable rice value chain by enhancing capacity of all actors to adhere to strict quality control procedures
6. Develop reliable price and market information system for use by stakeholders along the value chain

(10) Please describe the case (if any) where rice processing, transport and marketing are done in a well-organized, effective and efficient manner in your country. (Location, stakeholders, mechanism of coordination and operation, policy/legal framework, government roles, etc)

- In Ghana some examples of well organized case that I can share are:
  - The Gatsby rice Project experience where different value chain actors/entrepreneurs (production, processing and marketing) work together to ensure quality branded rice at the market. In this model the three entrepreneurs sign an agreement to work together where the output from one was an input for the other.
  - The Brazillian Agro Case in the Volta region of Ghana where the company organizes itself from production through processing to marketing. Her products are branded and supplied to hotels, super markets and wholesalers and retailers.
  - A third scenario is the Avnash mills Ltd case, where the mill supports aggregators farmers with inputs and services who in turn mobilizes quality paddy from farmers for processing and marketing.
- In all these cases there are no government's direct role nor policy/legal framework in their organization