



**THE REPUBLIC OF THE GAMBIA
MINISTRY OF AGRICULTURE**



**CONCEPT NOTES FOR THE IMPLEMENTATION OF THE
NATIONAL RICE DEVELOPMENT STRATEGY 2**

**PREPARED BY THE MINISTRY OF AGRICULTURE UNDER THE
TECHNICAL GUIDANCE OF THE COALITION FOR AFRICAN RICE
DEVELOPMENT (CARD)**

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1. GENERAL INTRODUCTION

Rice is the main staple of The Gambia with a per capita consumption of 117kg per annum, some 106% above the world average of 56.9kg. It is consumed at least twice a day in most households. The country is blessed with a climatic, soil and water conditions that are favorable enough to produce sufficient rice for the country as well as for export. However, the country continues to be among the heavily dependent on imported rice. The national rice demand as at 2021 stood at about 275, 000 MT. Out of this, only 19% is produced locally and the rest is met through importation. With the current world market price for broken rice at \$500 per ton, around \$77 million was spent in 2021 for importation of rice to meet the deficit.

While The Gambia imports more than three quarters of its national rice requirements, increasing world market prices coupled with the recent decline in the value of the local currency makes it more expensive to import this foodstuff into the country.

Decline in national rice production has significantly increased the dependency of rural population on imported rice, thus reducing their savings and net income. Income generated from other farming and off-season farm activities are inevitably used to procure imported rice.

Improved rice production and productivity will have positive rural income-effect and scarce foreign exchange saving-effect. All of these will have positive impact on overall national socioeconomic growth and the ultimate goal of the Government to transform the rice sector into a more vibrant commercially- oriented sector and this will be difficult to attain without a concerted and an operational National Rice Policy in place. The National Rice Development Strategy (NRDS 2) was, therefore, formulated to guide the realization of this goal.

In order to attract investments, concept notes for the implementation of the NRDS2 needed to be formulated. With the technical support of the Coalition for African Rice Development (CARD) and with financial support from the Islamic Development Bank (IsDB), the Ministry of Agriculture was able to bring together stakeholders in the rice sector in a five days' workshop held from the 5th to 9th December 2022 to brainstorm and prioritize areas of possible concept notes formulation. A total of 6 concept notes in three thematic areas were formulated. The strategic areas for which the concept notes were developed are shown in Table 1.

Table 1: List of Thematic Areas and Concept Notes

No.	Category	Title of Concept Note
1	Seed Development and Certification	1. Strengthening the capacity of NARI on rice research and establishment of bio-technology laboratory
		2. Strengthening the capacity of NSS on seed quality control and certification
2	Infrastructure and Capacity Building	3. Rehabilitation of existing rice irrigation schemes (pump & tidal)
		4. Enhancement of post-harvest handling and Establishment of storage facilities
		5. Strengthening the capacity of DOA extension agents
3	Service Provision	6. Establishment of mechanization hubs through PPP model

2. SEED DEVELOPMENT AND CERTIFICATION

Cost-effective and good quality rice seeds are essential factors in the attainment of increased rice production in any country. In the case of The Gambia, a national seed policy was enacted by parliament in 2011 and subsequently in the 2015, the National Seed Secretariat was established. The projected cumulative total of breeder, foundation and certified rice seed requirement of the NRDS 2 at the termination year of 2030 was estimated at 5.765 MT, 461.19 MT and 36,895.28 MT, respectively.

The capacity of the National Agricultural Research Institute (NARI) and the National Seed Secretariat (NSS) in terms of infrastructure and human resource development must be strengthened to help produce high quality seeds for onward transfer into the farming system. The introduction of improved rice varieties and biotechnology would be used to increase rice production.

2.1 Strengthening the Capacity of the National Agricultural Research Institute (NARI) on Rice Research and Establishment of Bio-technology Laboratory

2.1.1 Background & Justification

Availability of improved rice varieties in a country is obtained through localized rice breeding or sourcing of the breeder seeds from other research centers. Localized breeding gives each country the opportunity to get rice varieties that are very suitable for the local environmental and sociocultural preferences of its people. NARI being the only agriculture research institute of the country and mandated to produce agricultural technologies including suitable rice varieties has been operating without a functional biotechnology laboratory since its establishment in 1993. Also, the massive attrition and retirement of experience rice researchers have haunted the ability of the institute to guide rice research and development. Currently, the institute has no active breeding specialist.

The supporting infrastructure that are required in a breeding program such as agronomy lab and screen houses are also absent. These issues make it very imperative to strengthen the capacity of NARI to deliver on its mandate.

2.1.2 Overall Objective

The main objective of this project is to build the capacity of NARI in the development, production and maintenance of rice breeder seeds and varieties and establish a state-of-the-art biotechnology laboratory.

2.1.3 Specific Objectives

The specific objectives are:

1. build the capacity of NARI staff
2. establish a plant bio-technology and agronomy laboratories

2.1.4 Activities

The activities that will be undertaken in this project will include issues like carrying out a training needs assessment wherein the human resource needs and gaps will be identified and prioritized. There will also be searches for appropriate training institutions where those identified areas can be adequately taught. The other activities will include facilitation of admissions, financing of the training proper and continuous monitoring of students' progress.

2.1.5 Expected Impact

The successful implementation of the project is supposed to make the following impacts:

- i. The capacity of NARI will be built on rice breeding
- ii. The institute will be equipped with the necessary infrastructures to conduct rice research
- iii. There will be an increase in the availability of early generation seeds

2.1.6 Cost

The cost of the concept note on the strengthening of NARI rice research and establishment of a bio-technology laboratory is estimated at five million one hundred and eighty-five thousand eight hundred and forty US dollars (\$5,185,840.00). The detailed budget is presented in annex 1 table 1.

2.2 Strengthening the Capacity of the National Seed Secretariat (NSS) on Seed Quality Control and Certification

2.2.1 Background & Justification

The National Seed Secretariat (NSS) is the Government of The Gambia's institute responsible for seed quality assurance and certification processes. The NSS mandate currently includes foundation seed production, seed inspection and quality control and seed certification. To effectively and efficiently carry out these mandates, the NSS requires strengthening in many ways. These includes the training of more professionals in the various disciplines of seed science, and establishment of seed testing laboratories. The NSS currently has 2 small seed testing labs one at the Headquarters in Abuko and the other at its Central River Region satellite office in Sapu. Even though these labs are able to do the basic tests, a whole of other important tests cannot be adequately carried out due to the absence of certain equipment.

The strengthening of the NSS through establishment of a state-of-the-art seed laboratories and training of seed scientist and lab technicians will go a long way in improving the quality of seed production in the country.

2.2.2 Overall Objective

The overall objective of this project is to provide effective and efficient service delivery in rice seed quality control and certification process

2.2.3 Specific Objectives

The specific objectives are as follows:

- i. build the capacity of NSS staff in seed quality control and certification
- ii. build a modern seed testing laboratory
- iii. rehabilitate the existing laboratories and equip them with modern tools

2.2.4 Activities

Some of the activities to be carried out under this project will include conducting a need assessment for the human resource capacity building, laboratories, and lab equipment to establish the current capacities. This will be followed by search for institutes for training and facilitate admissions for the intending students. Training proper will be facilitated followed by monitoring of the progress of the students.

The activities in connection to the laboratory will involve hiring of a consultant for the design and supervision of the construction and rehabilitation works of the seed labs, recruitment of contractor for the construction and rehabilitation, management of the contracts, procurement of lab equipment and installation and training of lab technicians.

2.2.5 Expected Impact

The strengthening of the capacity of the NSS as an institute and its staff is expected to contribute to the efficient supply of high-quality foundation and certified seeds to seeds growers and farmers and this will in turn significantly improve rice yields across the country.

2.2.6 Cost

The cost of the Concept Note for the strengthening the capacity of the NSS on seed quality control and certification is estimated at one million five hundred and forty-seven thousand eight hundred and forty US dollars (\$1,547,840.00). The detailed budget is presented in annex 1 table 2.

3. INFRASTRUCTURE AND CAPACITY BUILDING

Development of each of the different segments of the rice value chain requires the existence of appropriate infrastructure and technical capacity. Rice fields that serve as center for rice production must be in the best status in terms of ground leveling and access to reliable water supply. Priority areas for investment in rice production in the NRDS2 is the irrigated perimeter including the pump and tidal areas.

Grain and seed stores as well as drying floors are also essential components that directly affect the performance of the rice sector. Post-harvest challenges such as drying and storage are major causative factors of low output in the Gambian rice sector. The people who are directly involved with the value chain actors at community level, whether it's in the rice fields, stores and aggregation centers are the front line extension agents. In addition to the high current ratio of 1:3000 extension farmer ratio, the capacity of the extension staff when it comes to GAPs on rice and post-harvest handling still requires upgrading.

3.1 Rehabilitation of Existing Rice Irrigation Schemes (Pump & Tidal)

3.1.1 Background & Justification

The existing rice irrigation schemes in CRR and URR which are the areas ideal for irrigated rice production were mostly developed in the 1980s to provide services for farming activities during the dry season. Most of these schemes have dilapidated to an extent that they are no longer able to support effective rice production. Most of the inlet and outlet canals are worn-out and not able to convey water in and out of the fields. Also, the access roads to the rice fields and field roads are in bad states and makes accessing the fields very difficult.

To enable efficient access to rice fields and rice cultivation in these areas, there is the urgent need to rehabilitate these structures.

3.1.2 Overall Objective

The main objective of this project is to enhance access to and management of irrigation water for increase rice seed and paddy production

3.1.3 Specific Objectives

The specific objectives are as follows:

- i. rehabilitate and upgrade facilities in the existing irrigation areas
- ii. construction and or rehabilitation of access roads, canals
- iii. sensitize and train farmers on use of irrigation schemes

3.1.4 Activities

The proposed project activities will include assessment of existing rice irrigation facilities in the rice hubs of the country i.e., CRRS/N and URR; recruitment of experts to redesign the existing irrigation schemes; recruitment of contractor for the rehabilitation works; carry out rehabilitation of the schemes; de-silting the canals. A need assessment for access roads will also be carried out. This will be followed by hiring of contractors to construct the new access roads and rehabilitation of the existing ones.

The other related activities will include profiling of farmers, revival and strengthening of farmers water user associations and strengthening of existing rice farmer organizations.

3.1.5 Expected Impact

Rehabilitation of the existing rice schemes in the pump and tidal areas of mainly CRRN, CRRS and URR is expected to have the following impacts:

- i. National rice production increased
- ii. Number of farmers engage in rice production drastically increased
- iii. Available cultivable land for rice production increased by at least 7 folds
- iv. Farmers' incomes increased
- v. Gross Domestic Product of the nation increased
- vi. Rice importation bill reduced

3.1.6 Cost

The cost of the Concept Note for the rehabilitation of existing rice irrigation schemes (pump & tidal) is estimated at eighteen million five hundred and eighty thousand US dollars (\$18,580,000.00). The detailed budget is presented in annex 1 table 3.

3.2 Enhancement of Post-Harvest Handling and Establishment of Storage Facilities

3.2.1 Background & Justification

Post-harvest handling of paddy remains a challenge in most parts of the rice hubs of the country i.e., CRRs/N and URR. After going through the difficulty of manually using sickles to harvest the rice and barrels to thresh, farmers find it very hard to effectively dry and properly store their paddy whilst waiting for milling. Most of the existing rice irrigated schemes do not have adequate drying floors for all the farmers to be able to dry their paddy adequately. Inadequate drying of paddy results in molding of the paddy during storage or high percentage breakage of rice kernels during milling and both can lead to high losses on the part of the farmer.

Storage facilities are also not enough in most of the rice schemes in the three regions. Many farmers carry their produce to dry and store in their spare rooms which is not ideal. Rice aggregators who normally buy paddy from small farmers require stores to safely store the paddy as they buy more. The stores that are used by these people are mostly dilapidated and not fit for the purpose.

The people who manage the stores and handles the paddy also require some capacity building on paddy handling and store management. Paddy drying as easy as it may look also requires technical expertise. Rice must be dried to a certain degree for it to have high milling percentage and the number of hours it spends under the sun can determine the degree of dryness. The system of arrangement of the bags in the store is also important in prolonging the self-life of the rice. Store managers also require knowledge on measurements and records keeping. Therefore, there is need for technical capacity building of those in charge of handling of the rice at drying floors and store managers.

Provision of adequate proper drying floors and stores and developing the capacities of those operating these facilities will help a great deal in improving the quality of paddy coming from our rice sector, but also entice private sector to get involve in rice buying since they will be able to have access to proper storage facilities.

3.2.2 Overall Objective

The main objective of this project is to improve the quality of locally produced paddy through enhanced handling, drying and storage.

3.2.3 Specific Objectives

The specific objectives are as follows:

- i. to establish stores and drying floors
- ii. to reduce post-harvest losses

- iii. sensitize and train farmers to use the improved storage facilities

3.2.4 Activities

The main activities that will be carried out under this project will include a need assessment to determine the number of drying floors and stores required in the schemes and the human resource capacity gaps in terms of handling of paddy at drying floors and grain or seed store management. An assessment of post-harvest losses directly linked to poor drying or storage or handling at these stages will be carried out. The findings of this activity will provide the baseline information on the scale of post-harvest losses link to poor drying and storage.

The other activity will be the recruitment of the design and supervision consultant for the stores and drying floors. This will be followed by the construction works and contract management. Upon completion of construction works, procurement and installation of store equipment will follow. On the capacity building aspect, store management communities will be formed and trained and also handlers of rice paddy at drying floors will be trained on appropriate post-harvest handling practices.

3.2.5 Expected Impact

The provision of adequate and appropriate drying floors and stores is expected to yield the following impacts:

- i. Improvements in the quality of locally produced paddy and milled rice
- ii. Increase in farmer's income
- iii. Post-harvest losses reduced by 5-10%

3.2.6 Cost

The cost of the Concept Note for the Enhancement of Post-harvest Handling and Establishment of Storage Facilities is estimated at four million six hundred and seventy-five thousand five hundred and fifty US dollars (\$4,675,550.00). The detailed budget is presented in annex 1 table 4.

3.3 Strengthening the Capacity of DOA Extension Agents to Improve Extension Delivery System

3.3.1 Background & Justification

The Department of Agriculture (DoA) is the public institution with the mandate to provide agriculture extension services. Currently, the extension delivery system is widely considered to be inadequate and inefficient. The current extension to farmer ratio is over 1 to 3000. This is considered to be extremely high and is among the causes of the poor extension delivery system.

In addition to the inadequate numbers of extension agents, the level of qualification of the serving ones especially in the area of rice is also a cause for concern. There is, therefore, a need to build the capacities through in-service long (degree programs) and short (professional) training.

3.3.2 Overall Objective

The main objective of this project is to have a cohort of extension workers who are well equipped with the prerequisite knowledge and skills on good rice agricultural practices

3.3.3 Specific Objectives

The specific objectives are to:

- i. build the capacities of the village extension workers (VEWs) and district extension supervisors (DES) on good agricultural practices on rice
- ii. increase the number of qualified personnel within the extension service

3.3.4 Activities

The set of activities that will be carried out in this project will include training needs assessment to determine the knowledge gaps that exists. Upon establishing the training areas and number that needs to be trained, the search for institutions will follow. The other activities will include facilitation of the training and monitoring of the training programs.

3.3.5 Expected Impact

The strengthening of the capacities of extension workers is expected to in turn result in positive farmers outputs. The knowledge that the extension workers will acquire will be transferred to rice farmers through their interactions with them and these will enhance their production skills and thus help increase their yields.

3.3.6 Cost

The cost of the Concept Note for the Strengthening the capacity of DOA extension agents is estimated at five hundred and eighty thousand one hundred and twelve US dollars (\$580,120.00). The detailed budget is presented in annex 1 table 5.

4. SERVICE PROVISION

4.1 Establishment of Mechanization Hubs through Public Private Partnership Model

4.1.1 Background & Justification

There are potentials for continuous rice production within the rice hubs of the country i.e., CRR south & north and URR due to the possibility of irrigation using the fresh waters from the river Gambia. Whilst there are efforts in some of these areas to cultivate rice at least twice in a year, the greater proportion of rice farmers in the rice irrigated perimeters are not able to cultivate in both dry and wet season largely due to the difficulty in accessing ploughing services on a timely manner. Currently, only one reliable mechanization service provider exists in the area i.e., Maruo Farms which is not able to meet the demand.

For double cropping to be carried out successfully in these areas, access to timely ploughing and rice processing services must be enhanced. If farmers are able to access plough services at

the very beginning of the dry season which is in January, and harvesting and post-harvest services in April, they can bag, store or market their produce and by May they can start preparing for the wet season production.

Establishment of mechanization hubs will create job opportunities for the youth folk in these regions. In addition, it will also ensure timely access to mechanization services to make the two season per year rice cultivation dream a reality and will greatly enhance rice production and productivity thereby increasing the country's chances of achieving rice self-sufficiency.

4.1.2 Overall Objective

The main objective of the project is to reduce drudgery and improve rice production and processing through effective and efficient mechanization service provision

4.1.3 Specific Objectives

The specific objectives of the project are as follows:

- i. establishment of three mechanization service hubs one in each regions of CRRN/S and URR
- ii. provision of production machineries
- iii. provision of processing machineries

4.1.4 Activities

The activities that will be undertaken as part of this project will include but not limited to issues such as identification and selection of the site for hubs, need assessment for the kind of land preparation and rice processing machinery required, recruitment of consultant for the design of the hubs, recruitment of contractor for the construction of the hubs (buildings and machinery sheds), procurement of the required machinery and operationalization of the hubs.

4.1.5 Expected Impact

The establishment and operationalization of the mechanization hubs is expected to greatly reduced drudgery and improve rice production and processing.

4.1.6 Cost

The cost of the Concept Note for the Establishment of Mechanization Hubs through Public Private Partnership Model is estimated at twelve million nine hundred and twelve thousand five hundred US dollars (\$12,912,500.00). The detailed budget is presented in annex 1 table 6.

5. IMPLEMENTATION ARRANGEMENTS

The Ministry of Agriculture is the implementing agency (EA) for all agriculture related projects on behalf of the Government of The Gambia. The ministry has established a central project coordinating unit (CPCU) and charged it with the responsibility of coordinating all agriculture projects. However, for ease of implementations they do collaborate with relevant agencies under which such projects fall, most often focal points are nominated for the smooth

implementation of such projects. Under this arrangement, the CPCU manages the fiduciary aspects of the projects and works with the line departments under the ministry in the implementation of the different components.

Equally, the ministry can allow whole projects to be managed at the line departments entirely depending on the nature of the project.

ANNEX 1: Summary Details of the Six (6) Concept Notes Presented in Tables 1 - 6

Table 1: Strengthening the Capacity of NARI on Rice Research and Establishment of Bio-technology Laboratory

1. Title (Full name)	Strengthening the Capacity of NARI on Rice Research and Establishment of Bio-technology Laboratory	
2. Project Location:	NARI (Brikama and Sapu)	
3. Implementing Agencies	Ministry of Agriculture	
4. Beneficiaries	NARI staff	
5. Target Group	NARI Researchers, field and laboratory technicians	
6. Type of project:	1. Grant, 2. R&D, 3. Technical Coop./Assistance, 4. National budget, 5. Private sector. (1, 2 and 3)	
7. Field of support:	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing 6. Post-harvest, 7. Quality Control, 8. Credit, 9. Capacity Building, 10. Infrastructure, 11. Other (specify below) (1, 2, 3, 9 and 10)	
8. Suggested Funding sources	GoTG, JICA, GIZ, AfDB, IFAD, IsDB, WB, USAID, AFD, FAO, KAFACI, KOPIA	
9. Budget (USD)	\$5,185,840.00	
10. Duration of the project:	5yrs	
11. Background /Justification	<ul style="list-style-type: none"> • NARI is the institute with mandate for crop breeding • deficit of researchers with currently no rice breeders • currently there is no bio-technology, agronomy lab and screen house 	
12. Goal and objective:	Overall objective: To build the capacity of NARI in developing, producing and maintaining early generation rice seeds (EGS) and appropriate laboratories	
	Specific objectives	Outputs
	1. Build the capacity of NARI researchers, field and lab technicians on rice research techniques	1.1: Five (5) breeders and 6 agronomists trained to PhD level 1.2: Fourteen (14) agronomists trained to MSc level 1.3: Thirty-two (32) research technicians trained to BSc & HND 1.4: Regularly conduct short term and in-house trainings for staff
	2. Establishment of a plant bio-technology and agronomy laboratories	2.1: one (1) bio-technology and 1 agronomy laboratories with equipment and 2 screen houses established
13. Activities	Specific Objective 1. To build the capacity of NARI Staff	

	1. training need assessment
	2. search for institutes for training
	3. facilitate admissions
	4. conduct training
	5. monitor the progress of the students
	Specific Objective 2: Establishment of plant bio-technology, agronomy labs and screen houses
	1. carry out a need assessment
	2. site identification for siting the laboratories
	3. hire a consultant for the design and procurement of lab equipment
	4. identify the contractor to construct the buildings
	5. construction of the laboratory buildings
	6. procure lab equipment and installations
14. Expected Impact:	1. The capacity of NARI will be built on rice research in general but on breeding specifically
	2. The institute will be equipped with necessary infrastructures to conduct rice research
	3. Increase in the availability of EGS

Table 2: Strengthening the Capacity of NSS on Seed Quality Control and Certification

1. Title (Full name)	Strengthening the capacity of NSS on seed quality control and certification	
2. Project Location:	NSS Headquarters	
3. Implementing Agencies	Ministry of Agriculture	
4. Beneficiaries	NSS staff, certified seed producers, seed companies	
5. Target Group	NSS staff	
6. Type of project:	1. Grant, 2. R&D, 3. Technical Coop./Assistance, 4. National budget, 5. Private sector. (1;3,)	
7. Field of support:	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing 6. Post-harvest, 7. Quality Control, 8. Credit, 9. Capacity Building, 10. Infrastructure 11. Other (specify below) (1,7, 9, 10)	
8. Suggested Funding sources	GoTG, JICA, ADB, IFAD, GIZ, FAO, IsDB, WB, KAFACI, KOPIA, AFD, USAID, USDA	
9. Budget (USD)	\$1,547,840.00	
10. Duration of the project:	5 years	
11. Background /Justification	<ul style="list-style-type: none"> • NSS has the mandate for seed inspection and certification • Limited seed technologists, seed quality control officers and inspectors • Moderately equipped seed testing labs 	
12. Goal and objective:	Overall objective: To provide effective and efficient service delivery in seed quality control and certification process	
	Specific objectives	Outputs
	1: Build the capacity of NSS staff in seed quality control and certification	1.1. Fourteen (14) seed scientists trained to MSc level, 1.2. Thirty-two (32) seed technicians trained to BSc and HND levels 1.3. Twenty-one (21) laboratory technicians trained
	2. Build a modern seed testing laboratory	2.1 1 modern seed testing lab built
	3. Rehabilitate the existing laboratory.	3.1. 1 seed testing lab rehabilitated in SAPU
	4. Equip the laboratories with modern equipment	4.1. Modern seed testing equipment provided
13. Activities	Specific Objective 1. To build the capacity of NSS staff in seed quality control and certification	
	1. to control a training need assessment	
	2. search for institutes for training	

	3. facilitate admissions
	4. conduct training
	5. monitor the progress of the students
	Specific Objective 2. To build a modern seed testing laboratory
	1. need assessment
	2. site identification
	3. hire a consultant for the design and supervision of the construction
	4. identify the contractor to construct the building
	5. construct building and procure lab equipment
	Specific Objective 3. Rehabilitate the existing laboratory at SAPU
	1. need to carry out assessment of the state of laboratory
	2. hire a consultant for the supervision of the rehabilitation work
	3. identify the contractor to rehabilitate the laboratory
	4. rehabilitation work commences
	Specific Objective 4. To equip the laboratories with modern equipment
	1. carry out assessment of the types of equipment needed.
	2. tendering of bid
	3. selection and awarding of contract
	4. delivering of the tools and installation and training of technicians
14. Expected Impact:	Efficiency and effectiveness in seed quality control and certification enhanced. Increase in high quality certified seeds.

Table 3: Rehabilitation of Existing Rice Irrigation Schemes (Pump & Tidal)

1. Title (Full name):	Rehabilitation of existing rice irrigation schemes (pump & tidal)	
2. Project Location:	CRRS, CRRN & URR	
3. Implementing Agencies	Ministry of Agriculture	
4. Beneficiaries	Farmers	
5. Target Group	rice growers	
6. Type of project:	1. Grant, 2. R&D, 3. Technical Coop./Assistance, 4. National budget, 5. Private sector. (1,3,4,5)	
7. Field of support:	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing 6. Post-harvest, 7. Quality Control, 8. Credit, 9. Capacity Building, 10. Infrastructure, 11. Other (specify below) (1, 3, 9)	
8. Suggested Funding sources	GoTG, JICA, ADB, IFAD, GIZ, FAO, IsDB, WB, KAFACI, KOPIA, AFD, USAID, USDA	
9. Budget (USD)	\$18,580,000.00	
10. Duration of the project:	5yrs	
11. Background /Justification	<ul style="list-style-type: none"> • The existing irrigation were developed in the 1980s to provide services for farming activities during the dry season • Over the years the water delivery capacity has reduced due to certain challenges and over use • Currently there is difficulty in accessing irrigation water due to the dilapidated nature of the canals and siltation • The access roads to the rice fields are in bad states and need to be rehabilitated 	
12. Goal and objective:	Overall objective: To enhance access and management of irrigation water for increase rice seed and paddy production	
	Specific objectives	Outputs
	1. Rehabilitate and upgrade facilities in the existing irrigation areas	1.1: Twenty-three (23) existing irrigation schemes rehabilitated
	2. Construction/rehabilitation of access roads, canals	2.1: Access roads to irrigation schemes constructed/rehabilitated
	3. Sensitize/train farmers on use of irrigation schemes	3.1: number of farmers and seed growers using irrigation schemes increased
13. Activities	Specific Objective 1. Rehabilitate and upgrade facilities in the existing irrigation areas	
	1. Carry out assessment of irrigation facilities across the country	
	2. Hire an expert to redesign the existing irrigation schemes	
	3. Recruit contractor to carry out rehabilitation and upgrading	
	4. Carry out rehabilitation/redesining of the schemes	

	Specific Objective 2. construction/rehabilitation of access roads, canals
	<ol style="list-style-type: none"> 1. need assessment 2. hire a contractor to construct the new access roads 3. carry out rehabilitation of the existing roads
	Specific objective 3. sensitize/train farmers on use of irrigation schemes
	1: profiling the farmers
	2: revive and strengthen farmers water user associations
	3: formation and strengthen farmers organization
14. Expected Impact:	1. National rice production increased
	2. Number of farmers engaging in rice production drastically increased
	3. Available cultivable land for rice production increased by 7-fold. Model rice fields/farms developed
	4. Farmers' income increased
	5. Gross Domestic Product of the nation increased
	6. Reduction in rice importation bill

Table 4: Enhancement of Post-Harvest Handling and Establishment of Storage Facilities

1. Title (Full name)	Enhancement of post-harvest handling and Establishment of storage facilities	
2. Project Location:	DoA (CRRS, CRRN & URR)	
3. Implementing Agencies	Ministry of Agriculture	
4. Beneficiaries	farmers, aggregators,	
5. Target Group	rice farmers, aggregators	
6. Type of project:	1. Grant, 2. R&D, 3. Technical Coop./Assistance, 4. National budget, 5. Private sector (1, 3, 4)	
7. Field of support:	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing 6. Post-harvest, 7. Quality Control, 8. Credit, 9. Capacity Building, 10. Infrastructure, 11. Other (Specify below) (1,4,5,6,7,10)	
8. Suggested Funding sources	GoTG, JICA, ADB, IFAD, GIZ, FAO, IsDB, WB, KAFACI, KOPIA, AFD, USAID, USDA	
9. Budget (USD)	\$4,675,550.00	
10. Duration of the project:	5yrs	
11. Background /Justification	<ul style="list-style-type: none"> • There is high post-harvest losses • There is high usage of rudimentary threshing system • inadequate drying floors • limited harvesting and threshing machines • dilapidated stores as well as poor technical capacity of the handlers 	
12. Goal and objective:	Overall Objective: The main objective of this project is to the quality of locally produced paddy through enhanced handling, drying and storage.	
	Specific objectives	Outputs
	1. To establish stores and drying floors	1.1. Twenty-three (23) stores and drying floors constructed
	2. To reduce post-harvest losses	2.1. post-harvest handlers trained
	3. sensitize and train farmers to use the improved storage facilities	3.1. number of farmers using the improved stores increased to 15,000
13. Activities	Specific Objective 1. To establish stores and drying floors	
	1. need assessment by DoA	
	2. design and supervision of the type of stores and accessories needed	

	3. construction of stores and drying floors
	4. procurement and installation of paddy cleaning tools
	Specific Objective 2. To reduce post-harvest losses
	1. assessment of post-harvest losses
	2. harvesting best practices
	3. training on appropriate post-harvest handling practices
	4. formation and training of store management committees
	Specific Objective 3 sensitize and train farmers to use the improved storage facilities
	1. conduct sensitization meetings
	2. recruit a trainer
	3. produce training materials
	4. carry out training
14. Expected Impact:	1. improved in the quality of paddy and milled rice 2. Increase in farmer's income 3. post-harvest losses reduced by 5-10%

Table 5: Strengthening the Capacity of DOA Extension Agents to Improve Extension Delivery System

1. Title (Full name)	Strengthening the Capacity of DOA Extension Agents to Improve Extension Delivery System	
2. Project Location:	DOA Head Office	
3. Implementing Agencies	Ministry of Agriculture	
4. Beneficiaries	DOA staff	
5. Target Group	Extension agents	
6. Type of project	1. Grant, 2. R&D, 3. Technical Coop./Assistance, 4. National budget, 5. Private sector. (1, 3,4)	
7. Field of support	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing 6. Post-harvest, 7. Quality Control, 8. Credit, 9. Capacity Building, 10. Infrastructure 11. Other (specify below). (1,3,4,6,9)	
8. Suggested Funding sources	GoTG, JICA, ADB, IFAD, GIZ, FAO, IsDB, WB, KAFACI, KOPIA, AFD, USAID, USDA	
9. Budget (USD)	\$580,120.00	
10. Duration of the project:	5yrs	
11. Background /Justification	<ul style="list-style-type: none"> • DoA is the public institution with the mandate to provide extension services • currently the extension delivery system is low • There exists a wide extension agent-to-farm ratio (1:3000), this results in an ineffective and inefficient extension service delivery • There is the need to enhance extension delivery service in order to improve the capacity of farmers to augment rice production and productivity 	
12. Goal and objective:	Overall objective: The main objective of this project is to have a cohort of extension workers who are well equipped with the requisite knowledge and skills on good rice agricultural practices	
	Specific objectives	Outputs
	1. to train extension workers	1.1. Twenty (20) extension workers trained at BSc and HND. 1.2: Twenty-five (25) extension workers trained at MSc level on rice agronomy
	2. capacity building of District Extension Supervisors (DES)	2.1. Sixty (60) DES trained on good agricultural practices on rice production 2.2: Seventy (70) extension agents for in service training
13. Activities	Specific Objective 1. To train extension workers	
	1. training needs assessment	
	2. search for institutes for training	
	3. conduct training	

	4. monitor the progress of the students
	Specific Objective 2. Capacity building of District Extension Supervisors (DES)
	1. training needs assessment
	2: search for institutes for training
	3: conduct training
	4: monitor the progress of the students
14. Expected Impact:	Capacities of village extension workers and district supervisors and farmers enhanced

Table 6: Establishment of Mechanization Hubs through Public Private Partnership Model

1. Title (Full name)	Establishment of Mechanization Hubs through Public Private Partnership Model	
2. Project Location	DoA (CRRS, CRRN, URR)	
3. Implementing Agencies	Ministry of Agriculture	
4. Beneficiaries	farmers	
5. Target Group	rice farmers	
6. Type of project	1. Grant, 2. R&D, 3. Technical Coop./Assistance, 4. National budget, 5. Private sector. (1,3,4)	
7. Field of support:	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing 6. Post-harvest, 7. Quality Control, 8. Credit, 9. Capacity Building, 10. Infrastructure 11. Other (specify below) (1,4, 10)	
8. Suggested Funding sources	GoTG, JICA, ADB, IFAD, GIZ, FAO, IsDB, WB, KAFACI, KOPIA, AFD, USAID, USDA	
9. Budget (USD)	\$12,912,500.00	
10. Duration of the project:	5yrs	
11. Background /Justification	<ul style="list-style-type: none"> • Limited access to mechanization services throughout the country • There is only 1mechanization hub in CRRS • Opportunities for mechanization abound in all the regions • There is private sector willingness to participate in mechanization service provision • There is high potential for job creation among the youths 	
12. Goal and objective:	Overall objective: The overall objective is to reduce drudgery and improve rice production and processing through effective and efficient mechanization service provision	
	Specific Objectives	Outputs
	1. establishment of mechanization service hubs	1.1: Three (3) mechanization hubs established in 3 agricultural regions (CRRN& S and URR)
	2. provision of production machineries	2.1: Provision of 63 tractors, 150 transplanters, 200 super-eco seeders, 34 combined harvesters

	3. Provision of processing machineries	3.1. Provision of 4 small mills of 1-5 tons/day, 20 medium mills of 5-10 tons/day, 15 IRM >10 tons/hr, 300 motorise threshers, 40 de-stoners, 50 winnowers, 50 dryers
13. Activities	Specific Objective 1. Establishment of the mechanization hubs	
	1. needs assessment	
	2. identification and selection of the site for hubs	
	3. recruitment of a consultant for the design of the hubs	
	4. recruitment of contractor for the construction of the hubs (buildings and machinery sheds)	
	Specific Objective 2. provision of production machinery	
	1. needs assessment	
	2. specification of the machineries required	
	3. procurement, assembling and supply of the machineries	
	Specific Objective 3. provision of processing machinery	
	1. needs assessment	
	2. specification of the machineries required	
	3. procurement, assembling and supply of the machineries	
14. Expected Impact:	1. drudgery in the rice sector greatly reduced	
	2 rice production and processing improved	
	3. mechanization service provision become effective and efficient	

ANNEX 2: Names and Details of Taskforce Members that Drafted the Concept Notes

NO	Names	Designation	Organization
1	Dr. Demba B Jallow	Director General NARI and National Focal Person for CARD	National Agriculture Research Institute (NARI)
2	Morro Manga	Director General	National Seed Secretariat (NSS)
3	Foday Jadama	Regional Agriculture Director	Department of Agriculture (DOA)
4	Dr. Lamin B Sonko	Agronomic Specialist & Rapporteur for the taskforce	Regional Rice Value Chain Development Project (RRVCDP)
5	Demba Jallow	Seed Officer	NSS
6	Dr. Lamin Dibba	Director of Research	NARI
7	Dr. Mike Nasamu	Consultant	CARD
8	Lamin Moro Bah	Principal Seed Officer	NSS
9	Dr Ebrima Njie	Senior Lecturer	University of The Gambia (UTG)
10	Absa Jow	Production Officer	Gambia Agriculture Food & Security Project (GAFSP)