Country: Ghana

NATIONAL RICE INVESTMENT ACTION PLAN(NRIAP)

Strategic priorities, aligns with National Rice Development Strategy (NRDS), and attract investments

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Acronyms and Abbreviations

ADB / AfDB	African Development Bank
ADF	African Development Fund
AESD	Agricultural Engineering Services Directorate
AGRA	Alliance for a Green Revolution in Africa
BDS	Business Development Services
CRI	Crop Research Institute
CSIR	Council for Scientific and Industrial Research
DAES	Directorate of Agricultural Extension Services
DBG	Development Bank of Ghana
DCS	Directorate of Crop Services
DFI	Development Finance Institution
DP	Development Partner
DVLA	Drivers and Vehicles Licensing Authority
ECOWAS	Economic Community of West African States
ESIA	Environmental and Social Impact Assessment
FABAG	Food and Beverage Association of Ghana
FBO	Farmer-Based Organisation
FSRP	Food Systems Resilience Programme (World Bank)
FSC	Farmer Service Centre
GCF	Green Climate Fund
GHC / GHS	Ghanaian Cedi
GHG	Greenhouse Gas
GIDA	Ghana Irrigation Development Authority
GIRSAL	Ghana Incentive-Based Risk Sharing System for Agricultural Lending
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GRIP	Ghana Rice Production Improvement Project
GSA	Ghana Standards Authority
GSID	Ghana Seed Inspection Division
ICT	Information and Communication Technology
IDeA / IDA	International Development Association (World Bank)
IFAD	International Fund for Agricultural Development
IVD	Inland Valley Development
JICA	Japan International Cooperation Agency
KPI	Key Performance Indicator
M&E	Monitoring and Evaluation
MoFA	Ministry of Food and Agriculture
MFI	Microfinance Institution
MMDA	Metropolitan, Municipal and District Assembly
MSMEs	Micro, Small and Medium Enterprises
MOVE	Market Oriented Value Chains for Jobs and Growth in the ECOWAS Region
NDC	Nationally Determined Contribution (Climate)
NRDS II	National Rice Development Strategy 2
NRIAP	National Rice Investment Action Plan
ODA	Official Development Assistance
O&M	Operation and Maintenance
PPRSD	Plant Protection and Regulatory Services Directorate
PPP	Public-Private Partnership
R&D	Research and Development
REWARD	Regional Rice Resilient Value Chains Development Program in West Africa
RRR	Regional Rice Roadmap (ECOWAS)
SARI	Savannah Agricultural Research Institute
SME	Small and Medium Enterprise
SRI	Soil Research Institute
TA	Technical Assistance
ToT	Training of Trainers
VCA	Value Chain Analysis

WUA	Water Users Association

Executive Summary

Ghana's National Rice Investment Action Plan (NRIAP) 2026–2035 provides an investment framework to operationalise the National Rice Development Strategy 2 (NRDS II) and align national rice-sector priorities with the ECOWAS Regional Rice Roadmap. The plan addresses Ghana's continued reliance on rice imports despite sustained growth in domestic production and the structural constraints across the rice value chain that limit productivity, quality, competitiveness, and resilience. The NRIAP is an implementation and investment instrument, rather than a policy statement, and is structured for execution over a ten (10)-year period.

The overarching objective of the NRIAP is to accelerate Ghana's progress toward rice self-sufficiency while improving incomes and employment across the value chain, particularly for farmers, processors, youth, and women. Full implementation of the NRIAP is intended to deliver the core targets of NRDS II, including increasing paddy production to approximately 3.1 million metric tonnes over a cultivated area of about 636,000 hectares, and achieving a projected self-sufficiency level of 102 per cent by 2028.

Achieving these targets will reduce rice imports by approximately 670,000 metric tonnes per year, resulting in estimated import savings of around USD 200 million annually. Productivity gains, improved post-harvest performance, and expanded commercial activity across production, processing, mechanisation services, logistics, and input supply will generate significant employment across the agricultural value chain, with approximately 900,000 direct jobs and 1.7 million indirect jobs.

The NRIAP focuses on seven interlinked investment areas that address binding constraints in the rice sector. The indicative budget envelope for the NRIAP is **$3.03billion,** combining public expenditure, concessional finance, in-kind contributions, and private-sector investments. Development partners are expected to provide most of the financing, particularly for irrigation, seed systems, research, mechanisation, and climate-resilient infrastructure. The government of Ghana's resources will anchor implementation through funding for implementing agencies, public-good investments, and enabling policy and regulatory frameworks.

Private-sector and farmer contributions will play a smaller but catalytic role, particularly in commercially viable segments such as mechanisation services, milling, seed production, and aggregation. These contributions will be mobilised through direct capital expenditure, blended-finance instruments, value-chain financing facilities, and co-financing mechanisms, including input-credit schemes and cooperative investments.

To support effective implementation, the NRIAP prioritises:

- early-win investments that can be implemented immediately and demonstrate results.
- alignment and scaling of existing programmes, including Food Systems Resilience Project (FSRP), Regional Rice Resilient Value Chains Development Program in West Africa (REWARD), Market Oriented Value Chains for Jobs and Growth in the ECOWAS Region (MOVE), and Ghana Rice Production Improvement Project (GRIP), under a single national investment framework.
- mobilisation of concessional and climate finance for irrigation and mechanisation through multilateral development banks and resilience-focused windows; and
- use of blended finance, matching grants, and risk-sharing instruments such as Development Bank Ghana (DBG) and Ghana Incentive-Based Risk Sharing System for Agricultural Lending (GIRSAL) to crowd in private investment.

The NRIAP provides a structured, sequenced, and financeable framework to address Ghana's rice sector constraints at scale. By combining public investment, Development Partner financing, and targeted private-sector participation within a single national framework, the plan aims to improve productivity, reduce losses, strengthen competitiveness, and enhance resilience across the rice value chain. Its successful implementation depends on sustained financing, coordinated execution, and disciplined adherence to sequencing and readiness principles.

Table 1: Summary of NRIAP Actions

No.	Thematic Area	Components	Cost ('000 USD)	% Cost Share	Funding Sources	Lead Institution	Key Outputs
1	Fertiliser Marketing, Distribution and Usage Strategy *sustainable agricultural production through efficient and safe use of fertilisers*	1.1 Capacity Building of Actors on safe and efficient Fertiliser Use (rice-specific blends, Biochar production and use, Lime use etc), 1.2 Set up Digital Advisory Mechanism for Fertiliser Recommendations 1.3 Promote the use of drone technology for fertilizer application. 1.4 Establish a fertilizer production plant	2,062, 726	68.21	Public budget, Climate Finance, Private Sector Investment	MoFA-DCS, PPRSD, CSIR-SRI	• 430 soil test kits are fully operational across the target districts. • 450 AEAs and Lead Farmers trained on safe fertiliser use. • 10,450 farmers trained on soil-test-based fertiliser use, acidic soil management and and biochar production. • Digital advisory Platform launched, with active farmer users and advisories delivered. • 15–25% yield increase among participating farmers • Enhanced availability and affordability of quality, crop-specific fertilizers, leading to improved productivity and reduced dependence on imported inputs.
2	Seed Production under Irrigation *Enhanced foundation and certified seed production under irrigation.*	2.1. Site Suitability Assessments 2.2. Irrigation Land Development 2.3. Equipment and Material Procurement 2.4. Training and Capacity Building 2.5. Monitoring, Evaluation and institutional strengthening	7,128	0.24	Donor Agencies, Public Sector Budgets	MoFA-DCS, PPRSD (GSID), CSIR-CRI & CSIR -SARI	• Expand to100 ha of seed production under irrigation. • •Grow from minimal rain-fed to 2,000 ha irrigated certified seed production. • •Increase from one rain-fed seed production cycle to two irrigated cycles.
3	Research, Technology Development and Transfer *Maintenance of varieties for increased rice production*	3.1. Develop and purify climate-smart, high-quality rice varieties 3.2. Develop state-of-the-art nucleus and breeder seed fields for production and variety maintenance 3.3. Establish state-of-the art laboratories and build capacity of technicians 3.4 Promote and train farmers on adoption of new varieties	4,535	0.15	Donor Agencies, Public Sector Budget, and Private Investments	CSIR-CRI & SARI MoFA-DCS, PPRSD (GSID),	• Climate-resilient varieties: Increase from <1 per 4 years to 2–3 released varieties. • Purified varieties: Move from limited purification to 8 purified varieties available. • Breeder seed production: Grow from <500 kg/year to 2 MT per institution annually. • Seed production fields: 0.5 ha breeder seed field established in 3 research institutions • •+ 2 fully rehabilitated and equipped lab facilities. • •Multi-location trials: Expand from infrequent trials to ≥6 completed trial cycles. • •Increase from low adoption to ≥5 seed companies multiplying new lines. • •Shift from fragmented processes to a fully operational breeder-foundation-certified seed transfer system. • Capacity building : build capacity of at least 15 technicians/ lab staff

							• Promotion and training : train at least 50 extension officers and 500 farmers and millers on newly released varieties.
4	Harvesting, Post-Harvesting and Marketing *Improved processing and storage infrastructure for higher quality.*	4.1. Upgrade of 50 existing milling centres in major rice-producing districts 4.3. Construct storage and aggregation centres across 50 key rice-producing districts with hermetic storage systems , silos, covered drying floors, and Warehouse Receipt Systems integration. 4.2. Map and train 5000 farmers, FBO leaders, aggregator staff, miller staff, and warehouse managers trained in GSP and quality control. 4.4. Stakeholder Engagement and Structured Market Linkages (NAFCO, GCX, Importers, warehouse and Distributers, State Institutions, Supermarkets, Wholesalers) 4.5. Import Competition Response and Trade Protection Advocacy	104,446	3.45	DFIs, Private investment,	MoFA-DCS, AESD, DBG, GIRSAL,	•Post-harvest loss rate: Reduce from 15–25% to below 10% nationally. •Mills meeting GSA standards: Increase from <20% to ≥70% upgraded and compliant. •Operational aggregation centres: Grow from ~10–15 to 50 fully functional centres. •Upgraded warehouses: Expand from limited coverage to 50 modern facilities.
5	Community Mobilisation, Farmer-Based Organisation and Credit Management *Inclusive agricultural finance through innovative financial products and data-driven systems*	5.1. Stakeholder Engagement 5.2. Capacity Building for value chain actors, farmers, financial institutions, extension officers, 5.3. Digital Process Support 5.4. Credit support 5.5. Monitoring and Evaluation	10,399	0.34	DPs, Fintech service providers	MoFA-DCS, DAES GIRSAL, DBG	•FBO governance & financial systems: Improve from <30% functional to ≥70%. •FBO digital records & KYC use: Increase from <10% to ≥60%. •Credit accessed by rice farmers: Achieve a ≥3× increase from baseline. •Institutions offering value chain finance: Expand to ≥10 institutions. •Loan repayment rate: Improve from baseline to ≥90% among supported FBOs. Farmers using digital trade finance platform: Grow from 0 to ≥50,000 users. Insurance coverage for rice farmers: Increase from minimal to ≥30% of NRIAP-supported farmers. •Climate-smart finance models: Move from none to at least 2 fully operational models. Value chain actors getting access to funds: Increases

6	Equipment Access and Maintenance *Establishment of Farmers Services Centres and rehabilitation of agricultural mechanisation training centres*	6.1. Setting up 30 Farmer Service Centres 6.2. Rehabilitation of Existing Agricultural Mechanisation Training Centres. 6.3. Develop and Implement Tailored training programmes for 1000 agricultural machinery operators and farmers in correct tillage and other ancillary practices, including climate smart agric technologies, post harvest handling and processing, mounted annually 6.4. Training programmes for 500 mechanics and technicians on the repair and advanced maintenance technology of various agricultural machinery and equipment are conducted annually	434.366	14.35	DFIs, Public sector budgets, private sector investments	MoFA AESD, TVET, Atebubu and Somanya Centres, DAs and traditional rulers	•+30 fully operational Farmers Services Centres (FSCs) •+2 fully functional Agricultural Mechanization Training centres. •Certified machine operators: Scale up to ≥1,000 trained per year. •Certified mechanics/technicians: G≥500 trained per year. •Machine downtime: Reduce frequent breakdowns by 30–50%. •Preventive maintenance SOP adoption: Increase from low usage to ≥80% of operators. •Youth, women, PWD participation: ≥50% of trainees. •Job placement rate: ≥70% of trained operators placed. •Rice farmers have access to mechanized services for production to harvesting
7	Irrigation and Water Control *Rehabilitation and development of irrigation/inland valley sites*	7.1. Mapping and identification of potential sites for inland valley irrigation development 7.2. Conduct Feasibility, ESIA and Design Studies Covering Identified Sites 7.3. Rehabilitation of Existing Irrigation Schemes (Golinga, Libga and Botanga), 695 ha combined 7.4. Develop two (2) new18,000 ha irrigation schemes and 30,000 ha inland valley systems 7.5. Monitoring, Evaluation & Logistics	400,880	13.25	DFIs, Public sector funding, private investments	GIDA, MoFA-DCS, WRC, EPA	•+48,695 ha developed (30,000 ha IVS + 18,000 ha new irrigation schemes +695 ha rehabilitation of 3 existing schemes). •+5 fully functional schemes. •WUAs active in ≥80% of irrigated sites. •≥2 cropping cycles per year across all developed sites
		Total Investment Requirement (10 years)	3,025,000	100%			

1.0 Introduction

1.1 Current state of the rice sector

Rice consumption in Ghana has risen sharply over the past several decades, increasing from approximately 6.5 kg per capita in 1957 to about 45 kg in 2023, a trend driven largely by rapid urbanisation and population growth[1]. More than 50% of the rice consumed nationally is imported, reflecting a persistent consumer preference for foreign rice, widely perceived as superior in quality. However, recent promotional efforts through the Eat Ghana Rice programme have contributed to a modest increase in demand for Ghana rice.[2] Urban consumers tend to prefer imported rice because of its perceived advantages in taste, appearance, and ease of cooking.

Rice production in Ghana has experienced moderate growth but remains hampered by persistent structural constraints. National average yields remain low (3–3.5 tons/ha), with substantially higher performance in irrigated systems (up to 6.5 tons/ha) compared to rainfed systems (2.5–2.7 tons/ha).[3] The expansion of cultivated land has historically been the main driver of production growth, but this expansion is slowing, particularly in northern Ghana, where the agricultural labour force is declining due to rural emigration.[4]

Production is further constrained by the low adoption of improved technologies, suboptimal fertiliser management, limited mechanisation, and increasing climate variability. Additionally, rice producers in the Guinea Savannah zone exhibit lower technical efficiency than those operating in the forest–savannah transition zone[5].

Problem statement

Ghana's rice value chain remains structurally uncompetitive despite significant public and private investment, due to a set of interlinked constraints that limit productivity, quality, and year-round market supply. Mechanisation and processing assets are substantially underutilised due to weak technical capacity, inadequate paddy storage, and severe seasonal disruptions that limit milling to a short post-harvest window.

At the farm level, low adoption of improved seed, irrigation, and precise input use continues to depress yields and reinforce perceptions of inferior Ghana rice quality relative to imports. These technical challenges are compounded by limited access to affordable finance, high production costs that suppress farm-gate prices and investment incentives, and insufficient institutional coordination across policy, extension, trade, and infrastructure. Collectively, these constraints sustain import dependence, undermine investor confidence, and prevent Ghana's rice sector from realising its full productive and commercial potential.

1.2 National Rice Policy

Ghana's rice sector is guided by a well-established and largely coherent policy framework that positions rice as a strategic crop for food security, poverty reduction, and import substitution. At the national level, rice is prioritised under FASDEP II and its investment plans (METASIP I & II), aligned with CAADP, the Ghana Shared Growth and Development Agenda, and flagship initiatives such as the Feed Ghana Programme. Sector-specific direction is provided through the National Rice Development Strategy (NRDS), first adopted in 2009 under the CARD initiative and updated as NRDS II (2019–2030), which targets rice self-sufficiency by 2028.

NRDS II operationalises this ambition through a national coordination architecture led by the National Rice Coordinating Committee within MoFA to ensure policy coherence, stakeholder alignment, and resource mobilisation in line with Ghana's regional and continental commitments.

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1.3 Stakeholder analysis

Ghana's rice sector brings together a diverse set of actors whose interests and influence vary across the value chain. Public institutions, led by the Ministry of Food and Agriculture and supported by agencies responsible for irrigation, research, standards, and trade, shape the enabling environment through policy, regulation, and public investment, but face coordination and capacity constraints.

Smallholder farmers and farmer-based organizations dominate production and provide labour and local knowledge, yet are fragmented, capital-constrained, and highly exposed to climate and market risks. Private sector actors such as input suppliers, mechanization service providers, aggregators, millers, traders, and retailers drive commercialization and value addition, but their engagement is uneven and often limited by inconsistent paddy supply, quality challenges, and high operating risks.

Financial institutions and investors remain cautious, with limited appetite for primary production and greater interest in downstream segments where cash flows are clearer. Development partners, NGOs, and research institutions play a critical catalytic role by financing public goods, piloting innovations, and strengthening systems (seed, extension, data, and standards), often filling gaps left by weak market coordination.

Overall, the sector is characterised by strong interdependence but weak alignment, making coordination, trust, and risk-sharing central challenges to sustained growth and competitiveness. A comprehensive mapping of stakeholders relevant to Ghana's NRIAP is provided in Annex 2.

Justification for increased investment in rice value chains

Targeted investment in Ghana's rice value chain is a strategic opportunity to simultaneously reduce import dependence, strengthen food security, and stimulate private-sector growth. Priority investments in irrigation, mechanisation, processing, storage, and support services, anchored in the NRDS II and Feed Ghana agenda, would unlock higher yields, lower losses, improve quality, and create inclusive employment opportunities for youth, women, and persons with disabilities. When combined with climate-smart practices such as efficient fertiliser use, improved water management, and soil health restoration, these investments can enhance environmental sustainability. The seven NRIAP actions outlined in the following sections provide a coherent and fundable pathway to accelerate Ghana's transition towards rice self-sufficiency, regional market integration, and long-term food systems transformation.

1.4 Plan of Action

The plan structures Ghana's transformation around seven concrete priority actions as shown in the table below:

Table 2: Plan of Action

No.	Action	Intervention	Expected Outcomes
1	Fertiliser Marketing, Distribution and Usage	Promote sustainable agricultural production through efficient and safe use of fertilisers	Improved fertiliser use efficiency and access, reduced soil degradation, and increased rice productivity with lower environmental impact
2	Seed System under Irrigation	Enhance foundation and certified seed production under irrigation n	Increased availability of high-quality seed, improved varietal adoption, and higher, more stable yields
3	Research, Technology Development and Transfer	Development and maintenance of varieties for increased rice production	Release and sustained supply of high-yielding, climate-resilient, and consumer-preferred rice varieties
4	Harvesting, Post-Harvesting and Marketing	Enhancing inclusive agricultural finance through innovative financial products and data-driven systems for rice value chain actors	Reduced post-harvest losses, improved market participation, and stronger commercial integration of rice actors
5	Community Mobilization, Farmer-	Enhancing inclusive agricultural finance through innovative financial products and data-driven	Improved organization, bankability, and access to finance (long term and short-medium term) for farmers, FBOs and

	Based Organization and Credit Management	systems for rice value chain actors	other value chain actors, enabling scale and investment
6	Equipment Access and Maintenance	Establishment of Farmers Services Centres (FSCs) and rehabilitation of agricultural mechanization training centres	Improved availability and access to mechanized services including reliable skilled manpower and maintenance regime reducing production delays and costs
7	Irrigation and Water Control	Rehabilitation and development of irrigation/inland valley sites for improved rice seed and paddy production	Expanded irrigated area, reduced climate risk, and increased year-round rice production

2.0 Vision, Goal, and Objectives

2.0 Vision

The NRIAP pursues sustainable and competitive increases in domestic rice production, enhances quality, processing capacity, and value addition, strengthens market systems and regional trade integration, builds human and institutional capacity across the value chain, promotes inclusive participation and equitable benefits, and improves governance, data systems, and monitoring frameworks. To achieve this, Ghana's Rice Investment Action Plan envisions "contributing to national food security, boosting incomes, and reducing poverty through the achievement of rice self-sufficiency". The long-term goal is to reach 100% self-sufficiency in rice by 2028, sustain this achievement, and export any surplus to strengthen Ghana's foreign exchange reserves.

2.2 Goals and Objectives

The NRIAP will pursue the following goals and objectives.

Table 3: NRIAP Goals and Objectives

No.	Goal	Objectives
1	Increase domestic rice production sustainably and competitively	Expand productivity in rain-fed lowland and irrigated ecologies; target 20% annual yield growth
2	Enhance quality, processing capacity, and value addition	Upgrade mills and develop cluster-level processing centres. reduce post-harvest losses (15–25%) through improved drying, storage, and quality control
3	Strengthen market systems and regional trade integration	Improve aggregation, coordination, and marketing. Increase the share of local rice in public procurement and regional markets
4	Build human and institutional capacity across the value chain	Strengthen the skills of farmers, processors, technicians, service providers, and regulators. improve coordination among MoFA, the private sector, research institutions, and partners
5	Promote inclusive participation and equitable benefits	Ensure inclusion of women, youth, and persons with disabilities in line with NRDS II and Feed Ghana's inclusivity targets
6	Improve governance, data systems, and monitoring frameworks	Establish reliable data systems and digital platforms for market information, seed certification, and monitoring

3.0. Action Plan

The Action Plan outlines the priority investments Ghana will pursue to accelerate the transformation of the rice sector over the 2026–2030 period.

Action 1: Fertiliser Marketing, Distribution and Usage Strategy

Blanket fertiliser application has reduced economic returns, contributed to emerging soil degradation and nutrient imbalance, and increased the environmental footprint of rice production, undermining both competitiveness and sustainability. Action 1 addresses these challenges by establishing a coordinated national fertiliser and soil-health support programme to improve the availability, targeting, safe, and efficient use of fertiliser in rice-growing areas. By integrating soil testing into extension and digital advisory services and promoting complementary practices such as biochar and lime application, the programme shifts fertiliser use toward data-driven, climate-smart nutrient management that restores soil health and improves input efficiency. In addition, the use of modern technology, particularly the use of drones for fertiliser application and the use of rice-specific fertilisers, will be promoted. Activities, deliverables, budget and timeline are detailed in Annex 1.1 and outlined as follows.

1.1 Capacity Building of Actors on Safe and Efficient Fertiliser Use, Biochar Production and Lime Use

This component strengthens the human and institutional capacity required to ensure efficient fertiliser use in rice production. It also covers the nationwide soil-sampling baseline study, which provides the foundational data for soil testing and targeted fertiliser recommendations across rice-growing districts. It utilises a cascading training model, and equips Agricultural Extension Agents, irrigation officers, and lead farmers with practical skills in soil testing, precision fertiliser application, and the production and use of biochar and lime. These trained actors will then deliver sustained, on-farm step-down training to farmers using participatory trials, ensuring that knowledge is translated into practice at scale. In addition, the use of modern technology, particularly the use of drones for fertiliser application and the use of rice-specific fertilisers, will be promoted. The estimated budget for this activity is **$22,160,660.**

1.2 Set Up Digital Advisory Mechanism for Fertiliser Recommendations

This component provides the digital backbone that sustains and scales improved fertiliser use beyond face-to-face extension. It establishes a digital advisory platform that translates soil-test data and agronomic recommendations into timely, location-specific fertiliser guidance delivered via USSD, SMS, or mobile applications. By complementing extension services with continuous digital support, the platform reinforces proper fertiliser practices, improves the consistency of recommendations, and enables data capture to monitor fertiliser use and soil health trends. The required budget for this activity is estimated **at $1,500,000.**

1.3. Promote the Use of Modern Technologies (Drones) for Fertiliser Application

This action promotes precision fertiliser application through drone technology to improve nutrient efficiency, reduce wastage, and lower production costs. It will be supported by structured monitoring and technical backstopping to ensure quality implementation. Carbon credit mechanisms for biochar use will be facilitated to incentivise climate-smart practices. Rice-specific fertiliser blends will be promoted alongside drone services to strengthen commercial viability and private sector participation. The total budget for this activity is **$1,166,000.**

1.4. Establish a fertiliser production plant

This component seeks to reduce Ghana's heavy reliance on imported fertilisers, which exposes the rice sector to global supply shocks, price volatility, and logistical delays, thereby affecting farmers' access and affordability. Establishing a domestic fertiliser production plant , particularly one capable of producing crop-specific blends, will strengthen input security, stabilise supply, and reduce dependence on imports. The required budget for this activity is estimated at **$ 2,037,500,000.**

Action 2: Seed Production Under Irrigation

This action focuses on scaling Ghana's capacity to produce and deliver high-quality foundation and certified rice seed by leveraging on irrigation, strengthening research–industry coordination, and professionalising seed multiplication in priority rice basins. With only 30–35% of farmers currently using certified seed, and national production meeting less than half of annual requirements, seed availability remains a binding constraint to productivity and competitiveness. By explicitly targeting irrigated zones for foundation and certified seed production, the action addresses seasonal risks, stabilises supply, and enables multiple production cycles per year in line with Feed Ghana Programme and NRDS II targets. Activities, deliverables, budget and timeline are detailed in Annex 1.2 and outlined as follows;

2.1. Site Suitability Assessments

Pre-installation assessments would be carried out to establish the technical and environmental foundation for successful irrigated seed production. Water availability and quality assessments ensure that selected sites can reliably support year-round foundation and certified seed multiplication without compromising varietal purity or productivity. Soil suitability and crop-water requirement evaluations confirm that land characteristics align with rice seed production standards, reducing the risk of yield loss, contamination, or system failure. Together, these assessments would de-risk investments in the seed-facing irrigation infrastructure and ensure that selected sites are viable and suitable for market driven varieties. The estimated budget for this activity is **$90,000.**

2.2. Irrigation Land Development

Land development processes translate site suitability assessments into functional, production-ready zones for seeds. The development of the irrigation sites to undertake this operation will be catered for in Action 7. Clearing, levelling, and plot demarcation activities would create uniform production units that support efficient water management and quality control, which are critical requirements for foundation and certified seed production. Installation and rehabilitation of bunds, irrigation piping, and pumping systems enable precise water control, reduce seasonal variability, and allow for multiple production cycles per year. The estimated budget for this activity is **$1,722,000.**

2.3. Equipment and Material Procurement

Equipment procurement provides the physical backbone required for high-quality, irrigated seed production and post-harvest handling. Breeder seed procurement ensures genetic integrity at the start of the seed multiplication chain, while investment in specialised machinery, such as transplanters, reapers, threshers, seed graders, hermetic storage, and quality-control equipment, supports precision planting, harvesting, processing, and storage. Water monitoring systems and on-site quality control infrastructure strengthen compliance with certification standards and improve operational efficiency. The integrated equipment package will enable consistent seed quality, reduce losses, and support scalable, professional seed operations. The estimated budget for this activity is **$2,165,150**.

2.4. Capacity Building

Capacity building would ensure that physical investments in irrigation and equipment translate into sustained performance gains by the private sector. Farmers and seed producers are trained in efficient irrigation practices, climate-smart crop management, and system maintenance, equipping them to operate irrigated seed systems and marketing effectively. Targeted training for private sector seed producers strengthens technical competence, especially in water management, production scheduling, and quality assurance. This will support dual production cycles and long-term system sustainability. The estimated budget for this activity is **$2,856,030.**

2.5. Monitoring, Evaluation, and Institutional Strengthening

Instituting monitoring and evaluation activities would safeguard system performance, accountability, and learning across the irrigated seed network. Ongoing technical support is included in this component to ensure infrastructure functionality and reduce downtime. Water User Associations (WUAs) would also be formed (or engaged where none exist) to strengthen local governance and ensure collective responsibility for irrigation assets. Partnership building with public institutions, private seed companies, and producer groups enhances coordination, data sharing, and system scalability. A budget of **$295,000** is estimated for this action.

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Action 3: Research and Technology Transfer

This action strengthens Ghana's rice research and innovation ecosystem, ensuring a continuous pipeline of improved, high-performing rice varieties that reliably reach seed producers and farmers. Current production relies on a narrow set of ageing varieties, many of which are losing genetic purity due to weak early-generation seed (EGS) systems and limited varietal maintenance. The proposed investments in varietal purification, breeder seed production, advanced laboratory capacity, field infrastructure, and structured technology transfer address foundational weaknesses that constrain productivity, grain quality, and the uptake of complementary technologies such as precision fertiliser use and irrigation. The activities, estimated budget and timelines for this action are detailed in Annexe 1.3 and are outlined as follows:

3.1. Develop and Purify Climate-Smart, High-Quality Rice Varieties

This component strengthens the varietal pipeline by strengthening the system that develops, purifies, and releases climate-smart, high-quality rice varieties that respond to Ghana's evolving production and market needs.

Activities span from germplasm collection and parent selection through successive generation advancement (F1–F5), genotyping, multi-year field trials, and eventual variety release. Continuous field establishment, management, and storage would ensure genetic integrity and availability of materials throughout implementation and subsequent operations. The estimated budget for the activity is **$467,500.**

3.2. Develop State-of-the-Art Nucleus and Breeder Seed Fields for Production and Variety Maintenance

This component will enable operationalisation of research outputs by establishing and maintaining high-standard nucleus and breeder seed fields across key research institutions. Site selection and field establishment would create controlled environments for varietal maintenance, while continuous monitoring would safeguard genetic purity and ensure compliance with certification standards. Regular breeder seed production, coupled with appropriate packaging and storage, ensures a reliable and scalable supply of breeder seed for foundation seed multiplication. This activity closes a critical gap between research and the seed industry, stabilising the breeder–foundation seed interface and preventing genetic erosion that undermines certified seed quality at scale. The estimated budget for this activity is **$1,732,450 .**

3.3. Laboratory Establishment and Capacity Building

This component would help strengthen the scientific backbone of Ghana's rice research system by building modern laboratories, procuring advanced equipment, and providing targeted capacity-building for laboratory staff. Strengthened laboratory infrastructure would support genotyping, seed quality analysis, and disease diagnostics, while trained personnel ensure consistent application of protocols and quality standards. This would improve the speed, reliability, and credibility of varietal development and seed quality assurance. The estimated budget for this activity is **$2,170,000.**

3.4 Promotion and training on new varieties

This component will help strengthen the promotion and deepen the adoption of new varieties through training of extension agents on the new technologies (mainly new varieties), who will then train other extension agents and eventually farmers and millers. This will increase the acceptability of the new technologies and thus increase productivity. The estimated budget is **$165,000**

Action 4: Harvesting, Post-Harvest and Marketing -

This action aims to modernise Ghana's post-harvest, milling and marketing ecosystem by constructing, upgrading, and operationalising a nationwide network of 100 facilities — comprising 50 aggregation centres and 50 upgraded warehouses and mills — to serve as the backbone of a competitive and inclusive rice value chain. Persistent post-harvest losses, inconsistent quality, weak market linkages, and the flood of cheap imported rice continue to undermine farmer incomes and consumer confidence in locally produced rice. By strengthening storage, handling, drying, milling, and market systems simultaneously, this action aims to reduce post-harvest losses to below 10%, ensure year-round supply to domestic and regional markets at remunerative prices, and directly protect Ghanaian rice farmers from unfair import competition — thereby supporting Ghana's self-sufficiency and competitiveness objectives. A detailed breakdown of activities, timelines, and budget is provided in Annexe 1.4 and outlined below.

The components outlined below correspond directly to the elements of this system: Component 4.1 addresses the Milling infrastructure within Buying Centres; Component 4.2 addresses the Silo and Storage infrastructure; Component 4.3 addresses the Farmer Training and Mapping functions of the Farmer Service Centres; Component 4.4 addresses the market linkages to Buffer Stock, Commodity Exchange, and Open Market channels; and Component 4.5 addresses the Trade Protection Environment within which this entire system must operate.

4.1. Upgrade of Existing Milling Centres

This component focuses on modernising 50 existing milling centres across major rice-producing districts to improve processing efficiency, grain quality, and food safety. Technical assessments will identify upgrade needs, followed by the design and phased implementation of centre-specific modernisation plans. Investments in critical equipment, including moisture meters, weighing scales, multi-stage paddy cleaners, de-stoners, whiteners, and colour sorters, will ensure that milled rice meets consumer-preferred quality standards and can compete with imported rice on appearance, broken grain percentage, and taste. Combine harvesters, reapers, and mechanised

threshers will be deployed at milling centre catchment areas to reduce field-level post-harvest losses, currently estimated at 10–15% of total production. A digital farmer-to-miller mapping registry will be established and linked to each upgraded centre, enabling millers to know in advance the volume and quality of paddy available in their catchment and enabling farmers to be matched to the nearest certified, affordable miller. This registry will be linked to the national rice information management system and updated every cropping season.

While Ghana has hundreds of smaller mills scattered across its rice-producing districts, the selection of 50 strategic centres for comprehensive upgrading reflects a deliberate concentration of investment where it will generate the greatest systemic impact. The 50 selected centres serve as anchor processing hubs, located in districts with the highest paddy production volumes and strongest growth trajectories, with the physical infrastructure, land tenure, utilities, and logistics access required to justify multi-stage milling equipment, quality certification, and formal market linkage. Smaller community mills continue to serve local consumption needs and remain an important part of the rice processing landscape; the 50 upgraded anchor mills are complementary to, not replacements for, that existing network.

The urgency of this investment is underscored by Ghana's rice production trajectory. According to MoFA's Feed Ghana Programme projections, available paddy for consumption is expected to grow from 933,745 MT in 2024 to 2,704,731 MT by 2028, nearly a threefold increase over four years. Current mills average a milling capacity of 1.4 MT per hour, operating in one to three cycles of eight hours per day depending on paddy availability. At this throughput, existing milling infrastructure is already insufficient to process projected volumes without significant losses to quality and timeliness. Each upgraded mill is designed to achieve a processing capacity of 5.0 MT per hour, approximately 3.6 times current average throughput, through the installation of modern multi-stage milling lines. Operating at an average of two cycles per day across 180 milling days per year (reflecting Ghana's two main rice harvest seasons in the south, the major season from April to August and the minor season from September to December, each generating an active milling window of approximately 90 days), each upgraded mill will process approximately 14,400 MT of paddy annually, rising to 21,600 MT at peak three-cycle operation. Across 50 mills, this delivers a combined certified milling capacity of 720,000 MT per year under conservative assumptions, and over 1,000,000 MT at peak. Applying the milling recovery rate of 65% from 2027 onwards, the upgraded milling network alone will produce approximately 468,000 MT of milled rice annually, representing a substantial contribution to Ghana's self-sufficiency targets. The estimated budget for this component is **$47,940,000.**

4.2. Map and Train 5,000 Farmers, FBO Leaders, Aggregator Staff, Miller Staff and Warehouse Managers

This component builds the human capacity required to sustain post-harvest investments and enforce quality standards across the value chain. Training needs assessments will inform the development of tailored curricula, standard operating procedures, and practical training materials covering good storage, handling, processing, and inventory management practices. A pool of 50 master trainers — incorporating a mindset change and patriotism module to build pride in and commitment to domestically produced Ghanaian rice — will deliver large-scale, hands-on training to 5,000 mapped farmers, FBO leaders, aggregators, millers, and warehouse managers, with deliberate inclusion of at least 50% women, PWDs and youth. Targeted programmes and mentorship further support youth, PWDs and women to operate upgraded facilities. Together, these activities translate infrastructure upgrades into consistent quality improvements and stronger compliance with market and regulatory requirements. The estimated budget for this component is **$1,437,500.**

4.3. Construct Storage and Aggregation Centres with Hermetic Systems, Silos, Drying Floors and WRS Integration

This component addresses one of the most binding constraints in Ghana's rice sector: inadequate storage and aggregation capacity. It supports the design, construction, upgrading, and operationalisation of 50 storage and aggregation centres — including satellite centres located closer to farming communities — across key rice-producing districts, complemented by appropriate handling equipment and transport logistics. Each centre will be equipped with hermetic storage systems and silos of standardised capacities (1,000 MT, 2,000 MT, and up to 10,000 MT for strategic district hubs) to protect paddy from moisture damage, pests, and aflatoxin contamination, while enabling farmers to store beyond the harvest glut period and sell at better prices. Covered drying floors and biomass/solar mechanical dryers will be installed at all centres to ensure paddy is dried to the recommended moisture content of 12–14% before storage, a prerequisite for quality preservation and compliance with GSA standards. All 50 aggregation centres will be onboarded onto the Ghana Commodity Exchange Warehouse Receipt System (GCX-WRS), enabling farmers and FBOs to use stored paddy as collateral for credit and access transparent price discovery. A Guaranteed Minimum Floor Price mechanism for paddy and milled rice will be established and communicated to all rice-producing communities via community radio and FBO networks before each cropping season. This intervention will stabilise supply beyond the harvest window,

reduce post-harvest losses, enable bulk aggregation, and allow processors to operate year-round, directly improving market efficiency and price stability.

Storage capacity specifications have been derived from Ghana's projected paddy supply trajectory. Based on MoFA's Feed Ghana Programme data, available paddy for consumption is projected to reach 2,704,731 MT by 2028. Assuming the 50 upgraded aggregation centres collectively handle approximately 40% of total paddy, the certified, quality-controlled portion destined for formal institutional and retail markets, each centre will need to process and store an average of approximately 21,600 MT annually. Accounting for two and a half storage cycles per year across Ghana's two main harvest seasons, the required storage capacity per centre is approximately 8,000–10,000 MT. This underpins the specification of up to 10,000 MT for strategic district hub centres. Smaller satellite centres serving lower-volume farming communities are appropriately specified at 1,000–2,000 MT, providing a graduated network of storage capacity matched to local production volumes. At an average of 10,000 MT across all 50 centres, the total network storage capacity reaches 500,000 MT, sufficient to hold approximately 18% of Ghana's projected 2028 paddy supply at any one time, consistent with international best practice for national food reserve systems and providing Ghana with meaningful price stabilisation capacity for the first time. The estimated budget for this component is **$41,024,000.**

4.4. Stakeholder Engagement and Structured Market Linkages

This component strengthens the market-facing side of post-harvest investments by linking upgraded aggregation and milling centres to reliable, formalised buyers and distribution channels. MOU-backed offtake agreements will be negotiated between certified aggregation and milling centres and key state institutions — including NAFCO, Ghana School Feeding Programme, Ghana Health Service, Ghana Armed Forces, the Ghana Prison Service, Ghana Police Service, and public universities — with pre-agreed annual volumes and fast-track Treasury disbursement timelines. Structured supply and shelf-space agreements will be developed with major supermarket chains and organised wholesale market associations, including Makola, Malamata in Accra, and Kumasi Central. NAFCO will be formally designated as a strategic off-taker with a dedicated, pre-committed Treasury budget line and a 30-day payment guarantee to prevent the delayed disbursements that have historically undermined farmer confidence in buffer stocking arrangements. A national "Ghana Rice First" consumer awareness and domestic rice branding campaign will be launched across radio, television, social media, and community platforms to shift consumer preference toward domestically produced rice. A real-time digital rice price and market information platform will be established and made accessible via mobile phones and community radio in all rice-producing districts, providing farmers with transparent pricing information and reducing their vulnerability to middlemen's price suppression. The estimated budget for this component is **$3,800,000.**

4.5. Import Competition Response and Trade Protection Advocacy

This component directly addresses the structural market distortion that is currently rendering post-harvest investment commercially nonviable: the flood of cheap imported rice — arriving through both formal channels and illegal overland routes from Togo, Burkina Faso, and Côte d'Ivoire — that is systematically undermining domestic rice prices and leaving Ghanaian farmers unable to sell their harvests at profitable prices. Three targeted activities are proposed. First, a comprehensive assessment will be commissioned to quantify illegal and undervalued overland rice imports, document smuggling routes, and identify enforcement gaps that allow rice to enter the Ghanaian market below the ECOWAS Common External Tariff of 35%. Second, a "Ghana Rice First" public procurement policy will be formalised, requiring all government institutions to source 100% of their rice requirements from certified domestic millers, with compliance monitored through the NRCC. Third, a structured roundtable will be convened between Ghana rice value chain actors, represented by CARP and GRIB and the rice importing community, represented by the Food and Beverage Association of Ghana (FABAG) — with MoFA as moderator, to negotiate and formalise a mechanism through which importers commit between 25–40% of their annual import bill to purchasing from certified domestic millers, thereby redirecting commercial import demand toward the domestic rice sector. The estimated budget for this component is **$750,000.**

4.6. Contingencies

A contingency provision for this action is capped at 10% of total project costs, totalling $9,495,150. These funds will be accessed only through approved change-control procedures tied to clearly documented cost overruns or risk events.

Action 5: Community Mobilisation, Farmer-Based Organisations and Credit Management

This action addresses the structural financing constraints that limit investment across Ghana's rice value chain by combining institutional reform with digital financial transformation. Many rice actors, particularly farmer-based organisations (FBOs), remain excluded from affordable credit due to weak governance, poor record-keeping, and limited visibility to formal lenders. The intervention strengthens FBO creditworthiness, digitises farmer and transaction data, and enables data-driven lending models that reduce risk, lower transaction costs, and improve confidence among financial institutions. Activities, timelines and budgets are detailed in Annexe 1.5, and are outlined below:

5.1. Stakeholder Engagement

This component strengthens coordination and trust between rice value chain actors and the formal financial system. Regular engagement forums bring together farmers, FBOs, aggregators, processors, financial institutions, and digital finance providers to clarify financing needs, align expectations, and reduce information asymmetries. Targeted advocacy on digital trade finance increases awareness of alternative financing mechanisms beyond traditional collateral, helping stakeholders understand how transaction data, aggregation models, and structured markets can unlock credit. These engagements lay the relational and institutional foundation required for scalable value-chain finance. The budget estimate for this activity is **$567,500.**

5.2. Capacity Building

This component builds the skills and institutional readiness required for inclusive, climate-smart, and data-driven agricultural finance. Large-scale training targets value chain actors and financial institutions to improve their understanding of value chain finance, risk management, and digital credit systems. Dedicated modules will strengthen FBO capacity—particularly among women and youth—on climate-smart finance instruments such as carbon credits and the Sustainable Rice Platform (SRP). Aggregators are to be trained in commodity supply-chain management to reduce reliance on fixed collateral, while portfolio officers receive specialised training on liquidity and collateral management to de-risk lending. Extension officers, financial institutions, and digital service providers are equipped with tools for digital data collection, secure data management, and Know Your Client (KYC) compliance, ensuring that digital finance systems are credible, trusted, and compliant with regulatory requirements. This activity is estimated to cost **$7,961,600.**

5.3. Digital Process Support

This component provides the digital infrastructure and governance systems that enable transparent, traceable, and secure financial transactions across the rice value chain. AgTech platforms will be established to link production, aggregation, and trade data, improving visibility for lenders and reducing transaction risk. A standardised data-management guideline to harmonise data collection and use will be developed and disseminated to stakeholders. Validation workshops will ensure stakeholder buy-in and institutional adoption of these standards, supporting professional and consistent use of digital tools across the ecosystem. This activity is budgeted to cost **$550,000.**

5.4. Credit Support

This component is expected to make available funds to support identified actors in the rice value chain. In the form of revolving funds, such value chain actors shall be expected to apply for such a facility based on modalities to be developed. Making funds available will ensure that the needed funds are made available to actors in a timely manner. This is budgeted to cost an initial **$1,000,000**

5.5. Monitoring and Evaluation

This component ensures accountability, learning, and continuous improvement across community mobilization and credit-management activities. Monitoring and evaluation systems will track participation and adoption of digital tools, providing real-time feedback to implementers and partners. The evidence generated will support adaptive management, inform engagement with financial institutions, and strengthen reporting under the NRIAP. The estimated cost for this activity is **$320,000.**

Action 6: Equipment Access and Maintenance

This action is designed to strengthen Ghana's agricultural mechanisation ecosystem through a system-based approach that integrates service delivery, capacity development and technology deployment. Central to this effort is the establishment of Farmer Service Centres (FSCs) as decentralized, one-stop hubs to deliver end-to-end services including mechanization, extension, agro-input provision etc. The centres will provide farmers with timely and reliable access to equipment and technical support across full production value chain; from land preparation (tillage, planting) through harvesting and post-harvest processing, particularly within the rice-growing districts. The FSC model is structured to address key operational inefficiencies observed in existing mechanization schemes such as AMSECs.

In parallel, the action includes the rehabilitation and upgrading of two (2) Mechanization Training Centres at Atebubu in the Bono East Region and Somanya in the Eastern Region, into national centres of excellence. These facilities will service multi-technical functions including;

- Competency-based training and certification of tractor operators, technicians and service providers
- Preventive and corrective maintenance training to improve equipment life cycle performance
- Adaptive research and field testing of machinery under local agro-ecological conditions
- Technology demonstration and transfer platforms to accelerate adoption of appropriate mechanization solutions

These centres will form the backbone of a sustainable human capital development system, addressing the current deficit in skilled operators and technicians; a key constraint to effective mechanization.

The current and emerging constraints facing the agricultural sector such as; erratic rainfall, over-aged farmer population, demand for high quality produce from the market segment and low productivity, calls for drastic measures to intensify the adoption of technologies including appropriate mechanization by smallholder farmers.

Although previous initiatives including the Agricultural Mechanization Services Enterprise Centres (AMSECs), demonstrated the productivity benefits of mechanization, overall utilization has remained suboptimal. A key technical limitation has been frequent equipment downtime acused by weak maintenance systems, inadequate access to spare-parts and limited technical expertise at the point of use. This has resulted in high machine idle time, reduced return on investment, and deterioration of assets.

The action targets higher utilisation rates of agricultural machinery and equipment, reduced downtime and more sustainable mechanisation services delivery across rice-growing basins. A detailed breakdown of activities, budget and timelines can be found in Annexe 1.6, and are outlined below:

6.1. Setting up thirty (30) Farmer Service Centres

This component seeks to expand Ghana's mechanisation capacity through the establishment of thirty (30) strategically located Farmer Service Centres (FSCs) across key agricultural production zones. The FSCs will serve as decentralised hubs for the delivery of wide range of services including mechanisation services (from tillage, seeding, crop maintenance, harvesting, handling, drying and processing). The centres will have ancillary services such as mechanical workshop, machine service bays and spare-parts stores for maintenance and repairs of equipment. Each centre will be developed based on a structured site selection process that incorporates environmental and social safeguards to ensure compliance with regulatory standards and long-term sustainability. **The estimated budget for this activity is $382,400,000.**

6.2. Rehabilitation of existing Agricultural Mechanisation centres for youth, operators, mechanics and technicians

This component rehabilitates and upgrades the two existing Agricultural Mechanisation Centres (in Atebubu and Somanya to function as effective regional hubs for mechanisation skills development, certification, adaptive trials and technology transfer. Detailed needs assessments would identify infrastructure, equipment, and operational cost. Targeted procurement will enable the rehabilitation of mechanical workshops, the upgrading of outmoded machinery, and the provision of essential tools. Dedicated technical personnel will be recruited to manage and monitor centre operations, ensuring consistent service quality, equipment upkeep, and trainee supervision. The estimated budget for this action is **$31,350,000.**

6.3. Development and Implementation of Tailored training programmes for 2,500 agricultural machinery operators and farmers

This component develops a skilled workforce of agricultural machinery operators capable of operating equipment efficiently, safely, and in accordance with recommended agronomic practices. Tailored training programmes will be developed and delivered annually to youth, farmers, and existing operators. The training will cover machinery handling and ancillary practices that reduce wear and fuel costs. The training will also cover climate smart agricultural technologies such as drone applications in agriculture, tracking systems and robotics, Post harvest handling and processing knowledge will be enhanced. Trainees will be formally certified and licensed, improving employability, while structured workplace attachments provide practical experience on farms and with service providers. This activity will reduce misuse-related breakdowns, increase service reliability, and support higher mechanisation uptake across rice-producing areas. The estimated budget for the activity is **$13,590,000**.

6.4. Capacity building of 500 mechanics and technicians on the repair and maintenance of agricultural machinery and equipment

This component strengthens local repair and maintenance capacity by training and certifying mechanics and technicians to service agricultural equipment. Qualified resource persons will be engaged to deliver annual training to youth and existing technicians, focusing on diagnostics, preventive maintenance, and repair of commonly used machinery. Certified graduates will receive basic start-up toolkits to enable immediate entry into service provision, expanding local availability of skilled technicians. Ongoing monitoring and evaluation will track performance and placement outcomes. This activity will directly reduce equipment downtime, lower maintenance costs for machinery operators, service providers, and anchor mechanisation sustainability within local economies. The activity is estimated to cost **$4,173,000.**

Action 7: Irrigation and Water Control

The rationale for Action 7 lies in the deteriorated state of Ghana's existing public irrigation schemes and the untapped potential of inland valleys. Many schemes are operating well below capacity due to breached or silted reservoirs and or canals, broken pipes, damaged control structures, and weak operations, maintenance and management systems, resulting in significant water losses and reduced irrigable area. Rehabilitating these schemes offers high returns by restoring functionality and efficiency in existing potential irrigable areas. In parallel, inland valley development provides a cost-effective expansion pathway, leveraging favourable hydrology and gravity-fed systems that significantly lower capital and operational costs. Harnessing the potential of irrigation sites/inland valleys, while rehabilitating dilapidated irrigation schemes and developing new ones, would increase rice production and support self-sufficiency. Activities, detailed budgets and timelines for this action can be found in Annexe 1.7, and are outlined below:

7.1. Mapping and Identification of Potential Sites for Lowland/Inland Valley and New Irrigation Development

This component will establish the evidence-based potential irrigable areas by systematically identifying and validating high-potential inland valley and rehabilitation sites nationwide. Activities combine a national assessment of 48,695 ha (30,000 ha inland valley, 18,695 ha existing/new irrigation schemes) with detailed field-level mapping to identify technically viable and socially acceptable sites. Early and structured community sensitisation will ensure that farmers, local authorities, and private actors are engaged from the outset, reducing land-use conflicts and strengthening ownership. Consolidated assessment reports will be validated with key stakeholders and used to undertake official land acquisition processes with land owners, while prioritising the sites for feasibility studies and investment. The estimated budget for this activity is **$ 127,500.**

7.2. Feasibility, ESIA, and Design Studies for Identified Sites

This component reduces risk in large-scale irrigation investments by conducting comprehensive pre-construction studies at all selected sites. Technical feasibility and engineering studies, supported by topographic surveys and soil and water assessments, confirmed climatological hydrological suitability, command-area potential, economic and financial analysis for cost-effective project implementation.. Environmental and Social Impact Assessments (ESIAs) will ensure compliance with national safeguards and international best practices, including the mitigation of environmental risks and the management of social impacts. These studies will be validated by relevant stakeholders and will provide bankable designs, cost estimates, and implementation plans that enable the timely

mobilisation of contractors and financing arrangements for both rehabilitation and new inland valley schemes. This activity will cost an estimated **$4,440,000.**

7.3. Rehabilitation of Existing Irrigation Schemes
This component will rehabilitate and expand existing irrigation schemes (Golinga, Libga, and Botanga in the Northern Region). covering a combined area of 695 hectares. Rehabilitation and new construction activities will focus on critical infrastructure, including dam wall, reservoirs, headworks, canals, and regulatory structures, to increase irrigable areas and improve water-use efficiency. Targeted development will unlock the full irrigable potential, enabling higher cropping intensity and more reliable year-round paddy production. Parallel formation and strengthening of Water User Associations (WUAs) will build the required capacity for irrigation system operations, maintenance and management and ensure that rehabilitated assets are sustainably operated and protected from rapid deterioration. The estimated budget for this activity is **$5,965,000.**

7.4. Development of Lowland/Inland Valley Irrigation Schemes (30,000 ha)
This component will deliver the largest expansion in irrigated area by developing 30,000 hectares of new inland valleys. Drawing on validated feasibility and design studies, construction will focus on cost-effective, climate-resilient infrastructure, including simple water-harvesting and regulatory structures, reservoirs/weirs, canals, and gravity-fed distribution systems. Development of irrigable areas will follow a phased approach to enable rapid farmer uptake while maintaining construction quality and safeguarding compliance. Drying floors will be integrated into production sites to strengthen post-harvest handling and quality. Regulatory actions will also be implemented in parallel to ensure environmental compliance and secure long-term scheme viability. This approach leverages Ghana's significant inland valley potential to expand irrigation for increased production. The estimated budget for this activity is **$ 190,668,334.**

7.5 Develop New Irrigation Schemes (18,000ha)
This component will focus on the development of two new irrigation sites at Kpadjai in the Kpandai District of the Northern Region and Tease in Afram Plains South District of the Eastern Region under a large-scale commercial development, operation and management. The sub-project would require detailed design and feasibility studies. The estimated budget for this activity is **$180,390,000**.

7.6. Planning, Monitoring and Evaluation
This component will establish continuous oversight, coordination, and learning across all irrigation and water-access investments. Dedicated monitoring and evaluation systems will plan logistical arrangements, track construction progress, budget execution, safeguard compliance, scheme performance, and farmer uptake. Logistics and coordination support will ensure timely contractor mobilisation, equipment delivery, and inter-agency alignment. This component strengthens accountability, enables adaptive management, and ensures that irrigation investments deliver sustained productivity gains aligned with national rice self-sufficiency and climate-resilience objectives. The estimated budget for this is **$ 19,289,541.**

4.0. Conclusion

The National Rice Investment Action Plan sets out a practical and prioritised roadmap to close Ghana's persistent rice supply gap, and position the sector for sustained growth. Over the next ten years, the NRIAP focuses on actions that directly strengthen productivity, quality, competitiveness and resilience across the entire rice value chain.

Rice has become a cornerstone of Ghana's food-security agenda. Demand continues to rise sharply, and imported rice now absorbs a significant share of foreign exchange. Achieving self-sufficiency is therefore not just an agricultural goal — it is essential for economic stability, rural employment, climate resilience, and national development.

The NRIAP builds directly on the National Rice Development Strategy 2 (NRDS II) and aligns fully with the ECOWAS Regional Rice Roadmap, ensuring that Ghana's investments reinforce regional targets for productivity, trade and food-system resilience. By prioritising interventions that are technically sound, investment-ready and institutionally anchored, the Plan equips the country with a credible mechanism for mobilising financing, coordinating stakeholders, and driving measurable improvements across production zones.

Delivering this agenda will require strong commitment and coordinated investment. The government has a central role in providing policy stability, facilitating access to land, and allocating predictable co-financing. Development partners are invited to align new operations and additional financing to the NRIAP's priority areas,

particularly irrigation, mechanisation, seed systems, research, and post-harvest infrastructure. The private sector, millers, mechanisation service providers, aggregators, and financial institutions, will be critical in co-investing in processing, storage, mechanisation, and service delivery. Farmer-based organisations, local governments and civil-society actors will also be essential in strengthening adoption, governance and inclusive participation.

Ghana is ready to partner with stakeholders committed to accelerating the country's journey toward rice self-sufficiency. Through joint action and sustained financing, Ghana can reduce its dependence on imports, expand economic opportunities across rural communities, and build a resilient and competitive rice sector capable of meeting national and regional demand.

Table 4: Summary of NRIAP Actions

No.	Actions	Components	Activities	Expected Outcomes
1	Fertiliser Marketing, Distribution and Storage Strategy *sustainable agricultural production through efficient and safe use of fertilisers*	1.1 Capacity Building of Actors on safe and efficient Fertiliser Use (including use of rice-specific fertilizer blends), and Biochar Production 1.2 Set up Digital Advisory Mechanism for Fertiliser Recommendations 1.3 Promote the use of modern technologies (drones) for fertilizer application **1.3** Establish a fertiliser production plant	1.1.1. Develop (or revise) a standard soil testing training manual for AEAs 1.1.2. Procure 450 soil testing kits 1.1.3. Training-of-Trainers on Soil Testing (450 AEAs, Irrigation Scheme Officers and Lead Farmers) 1.1.4. Sensitise lead farmers (10,450) on targeted fertilisation using results from soil test 1.1.5. Develop a manual to guide efficient fertiliser use (rice-specific fertiliser blends and appropriate application) by farmers. 1.1.6. Farmer Stepdown Training on Efficient and Safe Use of Fertiliser through on-farm participatory trials (10,450 farmers, 430 trials) 1.1.7. Develop (or revise) standard training manual on organic fertiliser amendments (biochar production, compost, etc.) 1.1.8. Training of AEAs and Lead Farmers on organic fertiliser (Biochar, compost, etc) Production and Use (450 AEAs, Irrigation Scheme Officers and Lead Farmers) 1.1.9. Farmer Stepdown Training on organic fertilisers (Biochar, compost) Production and Use through on-farm participatory trials (10,450 farmers) 1.2.1. Digital Advisory Platform Development (Consultant and Initial Setup Costs) 1.2.2. Hosting Costs 1.3.1. Monitor implementation and provide technical backstopping 1.3.2. Facilitate a carbon credit offset for biochar usage by rice farmers 1.3.3. Undertake a soil sampling campaign (baseline study) 1.3.4. Promote the use of rice-specific fertiliser blends and drone technology for fertiliser application. 1.4.1. Conduct feasibility studies for establishing fertiliser blending and urea production plant in Ghana 1.4.2. Establish and operationalise a local fertiliser blending plant for rice-specific formulations. 1.4.3. Develop a PPP framework to mobilise investment and secure raw material supply for sustainable fertiliser production.	Improved fertiliser use and access, efficiency, and reduced soil degradation, and increased rice productivity with lower environmental impact
2	Seed Production under Irrigation *Enhanced foundation and certified seed production under irrigation.*	2.1. Site Suitability Assessments 2.2. Irrigation Land Development 2.3. Equipment and Material Procurement	2.1.1 Assess water availability and quality at selected seed production sites 2.1.2 Evaluate soil suitability and crop water requirements 2.2.1. Carry out clearing and levelling of selected production plots 2.2.2. Demarcate land allocation into production plots 2.2.3. Install bunds on selected plots/repair as required 2.2.4. Install irrigation piping and pumps across selected areas 2.3.1. Procure inputs to support foundation and certified Seeds production	Increased availability of high-quality seed, improved varietal adoption, and higher, more stable yields

		2.4. Training and Capacity Building 2.5. Monitoring, Evaluation and Institutional Strengthening	2.3.2 Establish seed conditioning (processing) facilities for foundation and certified seeds 2.3.3 Establish seed storage facilities at the 3 production zones 2.3.4. Implement best management practices for seed production, including crop monitoring and pest management 2.3.5. CAPEX + OPEX Procurements (initial setup, replacement and recurring costs) 2.4.1. Training on Efficient Irrigation Practices and Crop Management for seed producers 2.4.2. Train 100 seed producers and 20 institutional staff on irrigation management, seed quality assurance, and climate-smart practices. 2.4.3 Establish seed demonstrations and organize field days for seed producers to build their capacity 2,4.3. Develop a seed distribution network to support seed marketing 2.4.4. Undertake promotional activities to drive the use of certified seeds 2.5.1. Monitor yields and seed quality to assess the impact of irrigation 2.5.2. Evaluate the effectiveness of irrigation systems and identify areas for improvement 2.5.3. Partnership Building and Management	
3	Research, Technology Development and Transfer *Maintenance of varieties for increased rice production*	3.1. Develop and purify climate-smart, high-quality rice varieties 3.2. Develop state-of-the-art nucleus and breeder seed fields for production and variety maintenance 3.3. Establish state-of-the art laboratories and build capacity of technicians 3.4 Promote and train farmers on adoption of new varieties	3.1.1. Germplasm collection 3.1.2. Parent selection & crossing 3.1.3. F1 Generation development 3.1.4. F2 - F5 Development 3.1.5. Genotyping 3.1.6. Field Trials 3.1.7. Variety Release 3.1.8. Field Establishment 3.1.9. Field Management and Maintenance 3.1.10. Procurement of Equipment and Materials 3.1.11. Setup of Storage 3.2.1. Site selection and establishment across three institutions 3.2.2 Nucleus and Breeder field Monitoring across all institutional sites 3.2.3. Breeder Seed Production 3.2.4. Breeder Seed Packaging and Storage 3.3.1. Rice research lab construction across three sites 3.3.2. Procurement of lab equipment 3.3.3. Capacity building of laboratory staff 3.4.1. Training of extension offers 3.4.2. Training of farmers and millers	Release and sustained supply of high-yielding, climate-resilient, and consumer-preferred rice varieties
4	Harvesting, Post-Harvesting and Marketing *Improved processing and storage infrastructure for higher quality.*	4.1. Upgrade of 50 existing milling centres in major rice-producing districts 4.3. Construct storage and aggregation centres across 50 key rice-producing districts with	4.1.1. Conduct assessments of existing milling centres in major rice-producing districts (Northern, Upper East, Volta, Bono East, Oti, Ashanti, Eastern, Central, North East, Bono and Ahafo) to identify upgrade needs and feasibility. 4.1.2. Develop detailed upgrade plans for the centres, including specifications for modern processing equipment 4.1.3. Procure Required equipment ensuring compliance with Ghana Standards and ISO requirements.	Post-harvest losses reduced to below 10%; year-round market supply ensured; farmer incomes protected through guaranteed floor prices; domestic rice quality competitive with imports; formalised offtake via NAFCO,

		hermetic storage systems, silos, covered drying floors, and Warehouse Receipt Systems integration. 4.2. Map and train 5000 farmers, FBO leaders, aggregator staff, miller staff, and warehouse managers trained in GSP and quality control. 4.4. Stakeholder Engagement and Structured Market Linkages (NAFCO, GCX, Importers, warehouse and Distributers, State Institutions, Supermarkets, Wholesalers) 4.5. Import Competition Response and Trade Protection Advocacy	4.1.4. Install procured equipment for upgrade 4.1.5. Establish Monitoring Systems 4.1.6. Procure and deploy combine harvesters, reapers, and mechanised threshers at milling centre catchment areas to reduce field-level post-harvest losses 4.1.7. Equip all upgraded mills with multi-stage paddy cleaners, de-stoners, whiteners, and colour sorters to achieve consumer-preferred quality competitive with imported rice 4.1.8. 4.2.1. Conduct training needs assessment for target groups 4.2.2. Develop training content and adapt to the results of the needs assessment 4.2.3. Produce training materials 4.2.4. Develop standard operating procedures (SOPs) for post-harvest handling and quality control at upgraded milling and aggregation centres, based on industry best practices, including GSP, GWP, GHP, IPM, and inventory management. 4.2.5. Establish a digital farmer-to-miller registry for each upgraded centre, mapping farmers by district, season, volume, and paddy variety 4.2.6 Train a pool of 50 master trainers including mindset change/ patriotism 4.2.7. Organize and conduct training workshops and practical demonstrations for 5,000 mapped farmers, FBO leaders, aggregator staff, miller staff, and warehouse managers on post-harvest handling and quality control, targeting at least 50% women and youth participation, using SOPs developed in 4.2.4 4.2.7. Implement a monitoring system for training effectiveness 4.2.8. Develop targeted training programs for youth and women on the operation of upgraded mills and aggregation 4.2.9. Implement mentorship and support programs to encourage women and youth participation in the rice value chain. 4.3.1. Conduct needs assessment and develop standardised designs and specifications for different scales/types of storage for new facilities. 4.3.2. Procure equipment for new storage facilities in prioritised rice-producing districts 4.3.3. Upgrade and operationalise 50 aggregation centres (including satellite centers closer to farmers) with improved storage facilities and transportation logistics to ensure functionality and accessibility 4.3.4. Procure and install specified handling and quality control equipment (cleaning, weighing, drying, bagging). 4.3.5. Procure and install hermetic storage system, community storage facility and silos of standardised capacities (1,000MT, 2,000MT, .. 10,000MT) at each aggregation centre 4.3.6. Construct covered drying floors or install mechanical dryers (biomass/solar) to dry paddy to 12–14% moisture content at all storage centres 4.3.7. Onboard the 50 aggregation centres onto the Warehouse Receipt System (WRS) 4.3.8. Establish a Guaranteed Minimum Floor Price mechanism for paddy and milled rice, with seasonal price communication via community radio and FBO networks 4.3.9. Conduct routine training on facility operations and management (including Business Mindset change training)	state institutions, supermarkets and GCX; illegal imports monitored and curbed; farmers mapped to certified millers and buyers; increased consumer demand for domestic rice.

			4.3.10. Establish a monitoring system to track post-harvest losses and quality metrics at each facility, using tools like moisture meters and grading machines. 4.4.1. Develop partnerships with wholesalers, importers, distributors, and State Institutions (NAFCO, GCX, etc.) to ensure a steady market for rice aggregated at the upgraded centres. 4.4.2. Promote centre usage through awareness campaigns and training on marketing strategies to enhance the visibility and efficiency of rice distribution. 4.4.3. Formalise MOU-backed offtake agreements between certified aggregation/milling centres and State institutions (Ghana School Feeding Programme, Ghana Health Service, Ghana Armed Forces, Ghana Prison Service, and public universities), including pre-agreed annual volumes and fast-track Treasury disbursement timelines 4.4.4. Develop structured supply and shelf-space agreements with supermarket chains, and wholesale market associations (Makola, Malamata, Kumasi Central) 4.4.6. Develop and launch a national "Ghana Rice First" consumer awareness and domestic rice branding campaign (radio, TV, social media, community engagement) 4.4.7. Establish a real-time digital rice price and market information platform accessible via mobile and community radio for all rice-producing districts 4.5.1. Assessment to quantify illegal/undervalued overland rice imports and map smuggling routes 4.5.2. Formalise "Ghana Rice First" procurement policy requiring government institutions to source 100% of rice from certified domestic millers 4.5.3. Implement a round table discussion between Ghana rice value chain actors (CARP/GRIB) and the importing community (FABAG) with MoFA as moderator to fashion out a mechanism for importers to take a minimum of between 25 – 40% of their import bill to certified domestic millers.	
5	Community Mobilisation, Farmer-Based Organisation and Credit Management *Inclusive agricultural finance through innovative financial products and data-driven systems*	5.1. Stakeholder Engagement 5.2. Capacity Building for value chain actors, farmers, financial institutions, extension officers, 5.3. Digital Process Support 5.4. Credit support 5.5. Monitoring and Evaluation	5.1.1. Organise and map actors along the rice value chain 5.1.2. Facilitate meetings between value chain actors and financial institutions 5.1.3. Organise advocacy programs for stakeholders on digital trade financing 5.2.1. Train 7,000 value chain actors and financial institutions on improved technologies 5.2.2. Train 500 FBO members, including women, youth and PLWDs on climate SMART credit systems (carbon credit, SRP) 5.2.3. Train 100 aggregators on commodity supply chain management to reduce the need for traditional collateral 5.2.4. Train 300 portfolio officers on liquidity and collateral management to derisk credit 5.2.5. Train 420 extension officers on digital data collection tools 5.2.6. FBO sensitisation on digital data collection and protection 5.2.7. Train extension officers, financial service providers and digital service providers on secured data management and KYC compliance 5.3.1 Facilitate the establishment and usage of AgTech platforms to link transparency, traceability and security in trade transactions 5.3.2. Develop a data management guideline kit for use by stakeholders 5.4.1. Create financing packages to support the rice value chain 5.5.1. Monitoring and evaluation	Improved organisation, bankability, and access to finance for farmers and FBOs, enabling scale and investment

6	Equipment Access and Maintenance *Establishment and rehabilitation of agricultural mechanisation training centres*	6.1. Setting up 30 Farmer Service Centres 6.2. Rehabilitation of Existing Agricultural Mechanisation Centres. 6.3. Develop and Implement Tailored training programmes for 1000 agricultural machinery operators and farmers in correct tillage and other ancillary practices, including climate smart agric technologies, post harvest handling and processing, mounted annually 6.4. Training programmes for 500 mechanics and technicians on the repair and advanced maintenance technology of various agricultural machinery and equipment are conducted annually	6.1.1. Identify and secure land for establishing thirty (30) Farmer Service Centres 6.1.2. Conduct Environmental and Social Impact Assessment (ESIA) and other required assessments 6.1.3. Design and construct the FSCs to include mechanical workshops, machine shop, store rooms for spare-parts 6.1.4. Procure various agricultural machinery and equipment (tractors, seeders, sprayers, combine harvesters to equip FSCs 6.1.5. Identify and recruit personnel to manage FSCs under PPP arrangements 6.1.6. Monitoring and Evaluation (M&E) 6.2.1. Conduct a needs assessment for the Atebubu and Somanya Agricultural Mechanization Centres sites 6.2.2. Commence procurement processes to fill identified needs assessment gaps (including infrastructure and machinery upgrades) 6.2.3. Recruit personnel to manage and monitor centre operations across identified enclaves 6.3.1. Recruit resource persons for training 6.3.2. Develop training modules 6.3.3. Enrol/Mobilize youth and existing machine operators 6.3.4. Train youth and existing machine operators 6.3.5. Certify and license youth and existing machine operators 6.3.6. Provide support to trainees for workplace learning experience on farms (Attachment) 6.3.7. Monitoring and Evaluation (M&E) 6.4.1 Identify and recruit resource persons for training 6.4.2. Develop training modules 6.4.3. Enrolments (Advertisement, Shortlisting) 6.4.4. Train youth, mechanics, and technicians 6.4.5. Certify and license youth, mechanics, and technicians 6.4.6. Provide start-up basic tools/equipment to trainees 6.4.7. Monitoring and Evaluation	Improved availability, reliability, and maintenance of mechanisation services, reducing production delays and costs
7	Irrigation and Water Management *Rehabilitation of existing scheme and development of new irrigation and inland valley sites*	7.1. Mapping and identification of potential sites for lowland/inland valley (48,000 ha)and new irrigation development 7.2. Conduct Feasibility, ESIA and Design Studies for Identified Sites while taking steps to officially acquire the land. 7.3. Rehabilitation of Existing Irrigation Schemes (Golinga, Libga and Botanga), 695ha combined	7.1.1. Conduct desk studies and and preliminary field assessment of potential lowland/inland valleys and new irrigation nationwide 7.1.2. Commence official land acquisition process with land owners, community entry and engagement with potential project beneficiaries and actors, including farmers and the private sector 7.1.3. Prepare consolidated activity reports, validate and disseminate across key stakeholders for review and final site selection 7.1.4. Recruit consultants to manage feasibility, engineering studies, and project supervision 7.2.1. Conduct Topographic Survey 7.2.2. Conduct Soil and Water studies 7.2.3. Conduct Engineering studies 7.2.4. Conduct Environmental and Social Impact Assessment 7.2.5. Conduct Economic and Financial Analysis	Expanded irrigated area, reduced climate risk, and increased year-round rice production

		7.4. Develop lowland/ r inland valley irrigation schemes (30,000ha) 7.5. Develop New Irrigation Schemes (18,000 ha) 7.6.. Planning, Monitoring, Evaluation	7.2.6. Prepare, submit and validate reports of all pre-construction studies and findings 7.3.1. Update designs for rehabilitation and expansions of selected public schemes 7.3.2. Recruit contractors to carry out rehabilitation and expansion 7.3.3. Implement required regulatory actions (EPA and WRC Permits, GRM, RAP) 7.3.4. Rehabilitate headworks, canals, regulatory structures and expand irrigable areas for existing irrigation schemes 7.3.5. Form WUAs and build farmer capacity on irrigation system operation, maintenance and management 7.4.1. Recruit contractors to lead construction and project management 7.4.2. Construct water harvesting systems and improve farm and access roads in lowland and inland valley areas, supported by strengthened regulatory oversight. 7.4.3. Implement required regulatory actions (Obtain EPA and WRC Permits, GRM, RAP) 7.4.4. Construct a drying floor per 500ha cropping area for the entire 48,695 ha. 7.5.1 Recruit contractors to carry out construction and project supervision 7.5.2 Implement required regulatory actions (Obtain EPA and WRC Permits, GRM, RAP) 7.5.3 Construct headworks, canals, regulatory structures, and develop irrigable areas 7.3.4 Build capacity on the irrigation scheme management entity	

ANNEX

Annex 1.1: Detailed Budget Table of Investment Area 1

		COST										
ACTIONS	KEY ACTIVITIES	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	
1.1. Build Capacity of **Actors on Safe and Efficient Fertiliser Use**. Biochar Production and Lime Use.	1.1.1. Conduct national soil baseline study	12,900,000	0	0	0						0	12,900,000.00
	1.1.2. Develop standard soil testing training manual for AEAs	2,091,200	0	0	0	0	0	0	0	0	0	2,091,200.00
	1.1.3. Procure 450 soil testing kits	1,704,960	0	0	0	0	0	0	0	0	0	1,704,960.00
	1.1.4. Training -of-Trainers (ToT) on Efficient and Safe Fertiliser Use (USD)	60,900	53,250	0	0	0	0	0	0	0	0	114,150.00
	1.1.5. Stepdown Training Farmers on Efficient and Safe Use of Fertilisers (84 Trainings/year) (USD)	200,000	200,000	100,000	100,000	100,000	0	0	0	0	0	700,000.00
	1.1.6. Develop training manual on organic fertilizer amendments	2,091,200	0	0	0	0	0	0	0	0	0	2,091,200.00
	1.1.7. Conduct Training-of-Trainers on organic fertilizer amendments (Biochar/compost) Lime Production and Use, and lime use	60,900	53,250	-	-	-	-	-	-	-	-	114,150.00
	1.1.8. Conduct Farmer Stepdown Training on	200,000	200,000	100,000	100,000	100,000	0	0	0	0	0	700,000.00

	organic fertilizer amendments (Biochar/Lime, compost) Production and Use, and lime use through on-farm participatory trials											
	1.1.9. Promote the use of agricultural lime in identified acidic rice-growing areas through public-private collaboration to improve soil pH, enhance fertilizer use efficiency, and increase rice productivity	209,000	209,000	209,000	209,000	209,000	0	0	0	0	0	1,045,000.00
	1.1.10. Farmer stepdown training on lime application and integration with fertilizer use	200,000	200,000	100,000	100,000	100,000	0	0	0	0	0	700,000.00
	SUBTOTALS 1.1.											**22,160,660**
1.2. Set up Digital Advisory Mechanism for Fertiliser Recommendations	1.2.1. Platform Development (Consultant and Initial setup Costs)	1,000,000	0	0	0	0	0	0	0	0	0	1,000,000.00
	1.2.2. Costs of Platform Hosting	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	400,000.00
	1.2.3. Stakeholder sensitisation on digital advisory platform	-	0	50,000	30,000	20,000	0	0	0	0	0	100,000.00
	SUBTOTALS 1.2.											**1,500,000**
1.3. Promote the use of modern technologies(drones) for fertiliser application	1.3.1. Promote drone technology for fertilizer application	0	0	0	0	0	358,000	358,000	100,000	100,000	50,000	966,000.00
	1.3.2. Facilitating Carbon Credit Offset	0	0	0	0	0	100,000	100,000	0	0	0	200,000.00

	for biochar usage by rice farmers											
	SUBTOTALS 1.3											**1,166,000**
1.4. Establish Fertiliser Production plant	1.4.1. Conduct feasibility studies for establishing fertilizer blending and urea production plant in Ghana	0	0	0	0	0	4,000,000	-	-	-	-	4,000,000.00
	1.4.2. Construct EPC Ammonia–Urea Complex	0	0	0	0	0	-	508,500,000	811,000,000	706,000,000	-	2,025,500,000.00
	1.4.3. PPP framework development	0	0	0	0	0	1,000,000	1,000,000	1,000,000	1,000,000	4,000,000	8,000,000.00
	SUBTOTALS 1.4.											**2,037,500,000**
1.5. Monitoring and Evaluation	1.5.1. Monitoring project implementation and technical backstopping	300,000	300,000	200,000	200,000	100,000	100,000	50,000	50,000	50,000	50,000	1,400,000.00
	TOTALS	21,058,160	1,255,500	799,000	779,000	669,000	5,598,000	510,048,000	812,190,000	707,190,000	4,140,000	2,063,726,660.00

Annex 1.2: Detailed Budget Table for Investment Area 2

Investment Area 2: Seed production Under Irrigation												
ACTIONS	KEY ACTIVITIES	COST (USD)										TOTALS
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	
2.1. Site Suitability Assessments	2.1.1. Assess water availability and quality at potential production sites	45,000	-	-	-	-	-	-	-	-	-	45,000
	2.1.2. Evaluate soil suitability and cropwater requirements.	45,000	-	-	-	-	-	-	-	-	-	45,000
											Sub-Total Activity 2.1	90,000
2.2. Irrigation Land Development	2.2.1. Land Levelling	**105,000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	105,000
	2.2.2.Plot demarcation (0.1–0.2 ha seed plots)	105,000	-	-	-	-	-	-	-	-	-	105,000
	2.2.3.Bund Construction and Repair	315,000	-	-	-	-	-	-	-	-	-	315,000
	2.2.4. Irrigation Pipe Installation	1,197,000	-	-	-	-	-	-	-	-	-	1,197,000
											Sub-Total Activity 2.2	**1,722,000**
2.3. Equipment and Material Procurement	2.3.1. Procure inputs to support foundation and certified Seeds production	355,000	535,000	342,500	342,500	-	-	-	-	-	-	1,575,000
	2.3.2. Rice transplanters	15,000	-	-	6,000	-	-	-	-	-	-	21,000
	2.3.3. Mechanised canal desilter	3,000	-	-	1,500	-	-	-	-	-	-	4,500
	2.3.4. Grass cutters	3,750	-	1,750	-	1,250	-	-	-	-	-	6,750
	2.3.5. Dredging pump	1,050	-	350	-	-	-	-	-	-	-	1,400
	2.3.6.Mini rice reaper / combine	90,000	-	-	-	-	-	-	-	-	-	90,000
	2.3.7.Seed-grade threshers	25,000	-	-	8,000	-	-	-	-	-	-	33,000

	2.3.8. Aspirators / winnowers	4,800	-	-	1,200	-	-	-	-	-	-	6,000
	2.3.9.Hermetic bins	15,000	-	-	-	2,500	-	-	-	-	-	17,500
	2.3.10.Stackable crates (bulk)	30,000	30,000	30,000	30,000	30,000	-	-	-	-	-	150,000
	2.3.11.Water Monitoring Systems	60,000	-	-	-	-	-	-	-	-	-	60,000
	2.3.12. Costs of on-site quality Control Setup	200,000	-	-	-	-	-	-	-	-	-	200,000
											Sub-Total Activity 2.3	**2,165,150**
2.4. Training and Capacity Building	2.4.1.Training on Efficient Irrigation Practices and Crop Management for Seed Producers	15,000	15,000	15,000	15,000	15,000	-	-	-	-	-	75,000
	2.4.2. Train 100 seed producers and 20 institutional staff on irrigation management, maintenance, seed quality assurance and climate-smart practices.	30,000	30,000	30,000	30,000	30,000	-	-	-	-	-	150,000
	2.4.2. Establish seed demonstrations and organise field days for seed producers to build their capacity	405,000	405,000	405,000	405,000	405,000	-	-	-	-	-	2,025,000
	2.4.3. Develop seed distribution network to support seed marketing	131,206	106,206	131,206	106,206	131,206	-	-	-	-	-	606,030
											Sub-Total Activity 2.4	**2,856,030**
2.5. Monitoring, Evaluation and Institutional Strengthening	2.5.1. Personnel Costs for provision of Technical support on irrigation system operation and maintenance	20,000	20,000	20,000	20,000	20,000						100,000
	2.5.2.Personnel costs for engagement with WUAs	20,000	20,000	20,000	20,000	20,000						100,000

	2.5.3. Personnel costs for Partnership Management	10,000	10,000	10,000	10,000	10,000						50,000
	2.5.4. Implement best management practices for seed production, including crop monitoring and pest management	30,000										30,000
	2.5.5.Evaluate the effectiveness of irrigation systems and identify areas for improvement	15,000										15,000
											Sub-Total Activity 2.5	**295,000**
TOTAL		3,290,806	1,171,206	1,005,806	995406	664,965	-	-	-	-	-	**7,128,180**

ANNEX 1.3: Detailed Budget Table for Investment Area 3

Investment Area 3: Research and Technology Transfer												
ACTIONS	**KEY ACTIVITIES**	**COST ($)**										
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	TOTALS
3.1. Develop and purify climate-smart, high-quality rice varieties	3.1.1. Germplasm collection	7,660	-	-	-	-						7,660
	3.1.2. Parent selection & crossing	7,200	-	-	-	-						7,200
	3.1.3. F1 Generation development	11,400	-	-	-	-						11,400
	3.1.4. F2 – F5 Development	4,620	4,650	4,650	-	-						13,920
	3.1.5. Genotyping	-	-	-	10,080	-						10,080
	3.1.6. Field Trials	-	-	54,180	54,180	54,180	54,180					216,720
	3.1.7. Variety Release	-	-	-	-	28,470						28,470

	3.1.8. Field Establishment	5,805	5,805	5,805	5,805	5,805	5,805	5,805	5,805	5,805	5,805	58,050
	3.1.9. Field Management and Maintenance	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400	54,000
	3.1.10. Procurement of Equipment and Materials	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	30,000
	3.1.11. Setup of Storage	3,000	3,000	3,000	3,000	3,000	3,00	3,000	3,000	3,000	3,000	30,000
											Sub-Total Activity 3.1	**467,500**
3.2. Develop state-of-the-art nucleus and breeder seed fields for production and variety maintenance	3.2.1. Site selection and establishment across three institutions	730,950	525,000	-	-	-						1,255,950
	3.2.2 Nucleus and Breeder field Monitoring across all institutional sites	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	250,000
	3.2.3. Breeder Seed Production	20,100	20,100	20,100	20,100	20,100	20,100	20,100	20,100	20,100	20,100	201,000
	3.2.4. Breeder Seed Packaging and Storage	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550	25,500
											Sub-Total Activity 3.2	**1,732,450**
3.3. Lab Establishment and Capacity Building	3.3.1. Rice research lab Construction across three sites	120,000	120,000	120,000	-	-						360,000
	3.3.2. Procurement of lab equipment	600,000	600,000	600,000	-	-						1,800,000
	3.3.3. Capacity building of laboratory staff	10,000	-	-	-	-						10,000
	Sub-Total Activity 3.3											**2,170,000**
3.4 Varietal Promotion and Training	3.4.1. Training of extension offers	-	-	-	-	-	60,000	-	-	-	-	60,000
	3.4.2. Training of farmers and millers	-	-	-	-	-	105,000	-	-	-	-	105,000

											Sub-Total Activity 3.4	**165,000**
	TOTAL											**4,534,949**

ANNEX 1.4: Detailed Budget Table for Action 4

Action 4: Harvesting, Post Harvest and Marketing												
COMPONENT	ACTIVITIES	COST ($)										
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	**Total**
4.1. Upgrade of 50 Existing Milling Centres	4.1.1. Conduct assessments of existing milling centres (11 regions) to identify upgrade needs and feasibility	25,000	—	—	—	—						25,000
	4.1.2. Develop detailed upgrade plans including specifications for modern processing equipment	15,000	—	—	—	—						15,000
	4.1.3. Procure required equipment ensuring compliance with Ghana Standards and ISO requirements	12,500,000	12,500,000	—	—	—						25,000,000
	4.1.4. Install procured equipment for upgrade	—	7,500,000	7,500,000	—	—						15,000,000
	4.1.5. Establish monitoring systems	—	—	20,000	—	—						20,000
	4.1.6. Procure and deploy combine harvesters, reapers, and mechanised threshers at milling centre catchment areas	—	2,000,000	2,000,000	—	—						4,000,000
	4.1.7. Equip all upgraded mills with multi-stage paddy cleaners, de-	—	1,000,000	1,000,000	—	—						2,000,000

	stoners, whiteners, and colour sorters											
	Maintenance of Existing Centres		100,000	120,000	150,000	170,000	200,000	250,000	270,000	300,000	320,000	1,880,000
SUBTOTAL 4.1		**12,540,000**	**23,100,000**	**10,640,000**	**150,000**	**170,000**	**200,000**	**250,000**	**270,000**	**300,000**	**320,000**	**47,940,000**
											0	0
4.2. Map and Train 5,000 Farmers, FBO Leaders, Aggregator Staff, Miller Staff and Warehouse Managers	4.2.1. Conduct training needs assessment for target groups	—	5,000	—	—	—						5,000
	4.2.2. Develop training content and adapt to results of needs assessment	—	5,000	—	—	—						5,000
	4.2.3. Produce training materials	—	100,000	—	—	—						100,000
	4.2.4. Develop SOPs for post-harvest handling and quality control (GSP, GWP, GHP, IPM, inventory management)	—	2,500	—	—	—						2,500
	4.2.5. Establish digital farmer-to-miller registry for each upgraded centre, mapping farmers by district, season, volume, and paddy variety	150,000	50,000	50,000	25,000	25,000						300,000
	4.2.6. Train a pool of 50 master trainers including mindset change/patriotism module	—	25,000	—	—	—		5000	5000	5000	5000	45,000
	4.2.7. Organise and conduct training workshops and practical demonstrations for 5,000 mapped farmers, FBO leaders, aggregator, miller and warehouse staff (min. 50% women and youth)	—	—	550,000	—	—						550,000

	4.2.8. Implement a monitoring system for training effectiveness	—	20,000	—	—	—	20,000		20,000	20,000		80,000
	4.2.9. Develop targeted training programs for youth and women on operation of upgraded mills and aggregation centres	—	—	50,000	50,000	50,000			50,000		50,000	250,000
	4.2.10. Implement mentorship and support programs to encourage women and youth participation in the rice value chain	—	—	40,000	30,000	30,000						100,000
SUBTOTAL 4.2		**150,000**	**207,500**	**690,000**	**105,000**	**105,000**	**20,000**	**5,000**	**75,000**	**25,000**	**55,000**	**1,437,500**
												0
4.3. Construct Storage and Aggregation Centres with Hermetic Systems, Silos, Drying Floors and WRS Integration	4.3.1. Conduct needs assessment and develop standardised designs and specifications for different scales/types of storage	—	200,000	—	—	—						200,000
	4.3.2. Procure equipment for new storage facilities in prioritised rice-producing districts	—	2,500,000	2,500,000	2,500,000	—						7,500,000
	4.3.3. Upgrade and operationalise 50 aggregation centres (including satellite centres closer to farmers) with improved storage facilities and transportation logistics	—	2,500,000	2,500,000	2,500,000	—					7,500,000	15,000,000
	4.3.4. Procure and install specified handling and quality control equipment (cleaning, weighing, drying, bagging)	—	834,000	834,000	834,000	—						2,502,000

	4.3.5. Conduct routine training on facility operations and management including Business Mindset Change training	—	—	84,000	84,000	84,000						252,000
	4.3.6. Establish monitoring system to track post-harvest losses and quality metrics at each facility (moisture meters, grading machines)	—	—	—	20,000	—						20,000
	4.3.7. Procure and install hermetic storage systems and silos of standardised capacities (1,000MT, 2,000MT, 10,000MT) at each aggregation centre	—	3,000,000	4,000,000	3,000,000	—						10,000,000
	4.3.8. Construct covered drying floors or install mechanical dryers (biomass/solar) to dry paddy to 12–14% moisture content at all storage centres	—	1,000,000	1,000,000	—	—					2,000,000	4,000,000
	4.3.9. Onboard all 50 aggregation centres onto the Warehouse Receipt System (WRS)	—	200,000	300,000	300,000	200,000						1,000,000
	4.3.10. Establish Guaranteed Minimum Floor Price mechanism for paddy and milled rice with seasonal communication via community radio and FBO networks	150,000	100,000	100,000	100,000	100,000						550,000
SUBTOTAL 4.3		**150,000**	**10,334,000**	**11,318,000**	**9,338,000**	**384,000**	**0**	**0**	**0**	**0**	**9,500,000**	**41,024,000**
												0

4.4. Stakeholder Engagement and Structured Market Linkages	4.4.1. Develop partnerships with wholesalers, importers, distributors, and state institutions (NAFCO, GCX) to ensure steady market for rice at upgraded centres	—	—	—	50,000	—						50,000
	4.4.2. Promote centre usage through awareness campaigns and training on marketing strategies to enhance visibility and efficiency of rice distribution	—	—	—	50,000	50,000					100,000	200,000
	4.4.3. Formalise MOU-backed offtake agreements with state institutions (GSFP, GHS, Armed Forces, Prison Service, public universities) with pre-agreed volumes and fast-track Treasury disbursement timelines	100,000	100,000	50,000	—	—						250,000
	4.4.4. Develop structured supply and shelf-space agreements with supermarket chains and wholesale market associations (Makola, Malamata, Kumasi Central)	—	150,000	150,000	100,000	—						400,000
	4.4.5. Formalise NAFCO pre-committed off-take MOU with dedicated Treasury budget line and 30-day payment guarantee	100,000	50,000	50,000	50,000	50,000						300,000

	4.4.6. Develop and launch national "Ghana Rice First" consumer awareness and domestic rice branding campaign (radio, TV, social media, community engagement)	—	200,000	400,000	400,000	200,000		200,000	200,000	200,000		1,800,000
	4.4.7. Establish real-time digital rice price and market information platform accessible via mobile and community radio for all rice-producing districts	300,000	100,000	100,000	50,000	50,000		50,000	50,000	50,000	50,000	800,000
SUBTOTAL 4.4		**500,000**	**600,000**	**750,000**	**700,000**	**350,000**	**0**	**250,000**	**250,000**	**250,000**	**150,000**	**3,800,000**
												0
4.5. Import Competition Response and Trade Protection Advocacy	4.5.1. Commission assessment to quantify illegal/undervalued overland rice imports and map smuggling routes	200,000	—	—	—	—						200,000
	4.5.2. Formalise "Ghana Rice First" procurement policy requiring government institutions to source 100% of rice from certified domestic millers	100,000	50,000	—	—	—						150,000
	4.5.3. Implement roundtable between Ghana rice value chain actors (CARP/GRIB) and importing community (FABAG) with MoFA as moderator to fashion mechanism for importers to commit 25–40% of import bill to certified domestic millers	100,000	100,000	100,000	50,000	50,000						400,000

SUBTOTAL 4.5		**400,000**	**150,000**	**100,000**	**50,000**	**50,000**	**0**	**0**	**0**	**0**	**0**	**750,000**
												0
ANNUAL TOTALS		**13,740,000**	**34,391,500**	**23,498,000**	**10,343,000**	**1,059,000**	**220,000**	**505,000**	**595,000**	**575,000**	**10,025,000**	**94,951,500**
Contingency (10%)												9,495,150
GRAND TOTAL												**104,446,650**

ANNEX 1.5: Detailed Budget for Investment Area 5

	Investment Area 5: Community Mobilisation, Farmer-Based Organisations and Credit Management											
	KEY ACTIVITIES	**COST ($)**										
		Y1	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**	**Y8**	**Y9**	**Y10**	**TOTAL**
Action: 5.1. Stakeholder Engagement	5.1.1. Organize and map actors along the rice value chain	13,500	10,000	7,000	4,000	4,000	3,000	3,000	3,000	3,000	2,000	**52,500**
	5.1.2. Facilitate meetings between value chain actors and financial institutions	40,000	33,000	19,000	19,000	19,000	10,000	10,000	10,000	10,000	10,000	**180,000**
	5.1.3. Organize advocacy programs for stakeholders on digital trade financing	49,000	38,000	34,000	32,000	32,000	30,000	30,000	30,000	30,000	30,000	**335,000**
											Sub-Total Activity 5.1	**567,500**
Action: 5.2. Capacity Building	5.2.1. Train 7,000 value chain actors and Financial institutions	1,120,000	1,120,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000	560,000	**6,720,000**
	5.2.2. Train 500 FBO members per year including women and youth on climate SMART credit systems (carbon credit, SRP)	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	400,000

	5.2.3. Train 100 ayear ons per year on commodity supply chain management to reduce the need for traditional collateral	40,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	256,000
	5.2.4. Train 300 portfolio officers on liquidity and collateral management to derisk credit	9,600	9,600	9,600	9,600	9,600						48,000
	5.2.5. Train 420 extension officers on digital data collection tools	20,160	20,160	20,160	20,160	20,160						100,800
	5.2.6. FBO sensitisation on digital data collection and protection	33,600	16,800	16,800	16,800	16,800						100,800
	5.2.7. train extension officers, financial service providers and digital service providers on secured data management and KYC compliance	67,200	67,200	67,200	67,200	67,200						336,000
										Sub-Total Activity 5.2		**7,961,600**
Action: 5.3. Digital Process Support	5.3.1 Facilitate the establishment and usage of AgTech platforms to link transparency, traceability and security in trade transactions	130,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	400,000
	5.3.2. Develop data management guideline kit and distribute to stakeholders	50,000	25,000	25,000	25,000	25,000	-	-	-	-	-	150,000
										Sub-Total Activity 5.3		**550,000**
Action: 5.4 Credit Support	5.4.1. Create financing packages to support the rice value chain	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000
										Sub-Total Activity 5.4		**1,000,000**

Action: 5.5. Monitoring and Evaluation	5.5.1. Monitoring and evaluation	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000	320,000
											Sub-Total Activity 5.5	**320,000**
	TOTAL	**1,745,060**	**1,565,760**	**984,760**	**979,760**	**979,760**	**829,000**	**829,000**	**829,000**	**829,000**	**828,000**	**10,399,100**

ANNEX 1.6: Detailed Budget for Investment Area 6

Equipment Access and Maintenance												
ACTIONS	**ACTIVITIES**											
		Y1	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**	**Y8**	**Y9**	**Y10**	**TOTAL**
6.1. Set up Thirty (30) ultra-modern Farmer Service Centres (FSC) in Rice growing Areas	6.1.1. Identify and secure land for establishing thirty (30) FSCs	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	3,000,000
	6.1.2. Conduct ESIA and other required assessments	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	200,000
	6.1.3. Design and construct FSCs to include mechanical workshops, machine shop, store rooms for spare parts	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	300,000,000
	6.1.4. Procure various agricultural machinery and equipment (tractors, seeders, sprayers, combine harvesters to equip FSCs)	4,900,000	4,900,000	4,900,000	4,900,000	4,900,000	4,900,000	4,900,000	4,900,000	4,900,000	4,900,000	49,000,000
	6.1.4. Identify and recruit personnel to manage FSCs under PPP arrangements	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	30,000,000
	6.4.7. Monitoring and Evaluation	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	200,000

6.2. Rehabilitate two (2) existing Agricultural Mechanization centres for youth, operators, mechanics and technicians	6.2.1. Conduct a needs assessment for the Atebubu and Somanya Mechanization Training centres sites	100,000	-	-	-	-						100,000
	6.2.2. Commence procurement processes to fill identified needs assessment gaps (including infrastructure and machinery upgrades)	15,000,000	15,000,000	-	-	-						30,000,000
	6.2.3. Recruit Personnel to manage and monitor centre operations across identified enclaves	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	1,250,000
6.3. Develop and Implement Tailored training programmes for 1,500 agricultural machinery operators and farmers in correct tillage and other ancillary practices mounted annually	6.3.1. Recruit resource persons for training	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	440,000
	6.3.2. Develop training modules	60,000	-	-	-	-						60,000
	6.3.3. Enrol/Mobilize youth and existing machine operators	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	140,000
	6.3.4. Train youth and existing machine operators	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	12,000,000
	6.3.5. Certify and license youth and existing machine operators	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	150,000
	6.3.6. Provide support to trainees for workplace learning experience on farms (Attachment)	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	700,000
	6.3.7. Monitoring and evaluation (M&E)	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	100,000
6.4. Training programmes for 1000 mechanics and technicians on the repair	6.4.1 Identify and recruit resource persons for training	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	200,000
	6.4.2. Develop training modules	35,000	-	-	-	25,000						60,,000

and maintenance of various agricultural machinery and equipment are conducted annually	6.4.3. Enrolments (Advertisement, Shortlisting)	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	40,000
	6.4.4. Train youth, mechanics, and technicians	345,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	3,000,000
	6.4.5. Certify and license youth, mechanics, and technicians	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	35,000
	6.4.6. Provide start-up basic tools/equipment to trainees	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	600,000
	6.4.7. Monitoring and Evaluation	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	200,000
	TOTAL	40,300,500	55,085,500	40,085,500	39,785,500	40,110,500	40,085,500	40,085,500	40,085,500	40,085,5008	40,085,500.18	431,313,000.00

ANNEX 1.7: Detailed Budget for Investment Area 7

ACTIONS	ACTIVITIES	COST ($)										
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	TOTALS
7.1. Mapping and identification of potential sites for lowland valley and new irrigation development	7.1.1. Conduct desk studies and preliminary field assessment of potential lowland/inland valleys and new irrigation scheme development nationwide	20,000										20,000.00
	7.1.2. Commence official land acquisition processes with land owners community entry and engagement with potential project beneficiaries and actors, including farmers and the private sector	100,000	-	-	-	-						100,000.00
	7.1.3.Prepare consolidated activity reports, validate and disseminate across key stakeholders for review and final site selection	2,500	-	-	-	-						2,500.00

	7.1.4. Recruit consultants to manage feasibility, engineering studies, and project supervision	5,000	-	-	-	-						5,000.00
		127,500	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**127,500.00**
7.2. Conduct Feasibility, ESIA and Design Studies For Identified Sites	7.2.1. Conduct Topographic Survey	1,500,000	-	-	-	-						1,500,000.00
	7.2.3. Conduct Soil and Water studies	300,000	700,000	-	-	-						1,000,000.00
	7.2.4. Conduct Engineering studies	500,000	1,000,000	-	-	-						1,500,000.00
	7.2.5 Conduct Environmental and Social Impact Assessment	200,000	100,000									300,000.00
	7.2.6. Conduct Economic and Financial Analysis	30,000	70,000	-	-	-						100,000.00
	7.2.7. Prepare, submit and validate reports of all pre-construction studies and findings		40,000	-	-	-						40,000.00
		2530000	**1,910,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,440,000.00**
7.3. Rehabilitation of Existing Irrigation Schemes (Golinga, Libga and Botanga), 695ha combined	7.3.1. Update designs for rehabilitation and expansions of selected public schemes	5,000	-	-	-	-						5,000.00
	7.3.2. Recruit contractors to carry out rehabilitation and expansion	10,000		-	-	-						10,000.00
	7.3.3. Implement required regulatory actions (Obtain EPA Permits, GRM, RAP)	100,000	-	-	-	-						100,000.00
	7.3.4. Rehabilitate headworks, canals, regulatory structures and expand irrigable areas for existing irrigation schemes	-	1,680,000	2,800,000	1,120,000	-						5,600,000.00
	7.3.5. Form WUAs and build farmer capacity on irrigation systems operation, mentainance and management		-	50,000	100,000	100,000						250,000.00

		115,000	**1,680,000**	**2,850,000**	**1,220,000**	**100,000**	**0**	**0**	**0**	**0**	**0**	**5,965,000.00**
7.4 Develop lowland/inland irrigation schemes (30000ha)	7.4.1 Recruit contractors to lead construction and project management			10,000								10,000.00
	7.4.2 Construct water harvesting and regulatory and improvement of farms/access roads for lowlands/inland valley sites				18,000,000	36,000,000	45,000,000	54,000,000	27,000,000			180,000,000.00
	7.4.3 Implement required regulatory actions (Obtain EPA and WRC Permits, GRM, RAP)		80000	100,000	150,000	180,000	190,000	200,000	100,000			1,000,000.00
	7.4.4 Construct drying floor per 500ha cropping area			-		3,219,445	3,219,445	3,219,445				9,658,334.00
		0	**80,000**	**110,000**	**18,150,000**	**39,399,445**	**48,409,445**	**57,419,445**	**27,100,000**	**0**	**0**	**190,668,334.00**
7.5 Develop two new irrigation schemes - 18,000ha (Kpadjai – 8,000ha & Tease – 10,000ha)	7.5.1 Recruit contractors to carry out construction and project supervision			10,000								10,000.00
	7.5.2 Implement required regulatory actions (Obtain EPA Permits, GRM, RAP)			40,000	100,000	100,000	70,000	50,000				360,000.00
	7.5.3 Construct headworks, canals, regulatory structures and develop irrigable areas				20,000,000	45,000,000	60,000,000	35,000,000	20,000,000			180,000,000.00
	7.3.4 Build capacity on irrigation scheme management entity						10,000	10,000				20,000.00
		0	**0**	**50,000**	**20,100,000**	**45,100,000**	**60,080,000**	**35,060,000**	**20,000,000**	**0**	**0**	**180,390,000.00**
7.6 Planning, Monitoring, Evaluation (@ 5% of total project costs)												**19,289,541.70**

		2,772,500	3,670,000	3,010,000	39,470,000	84,599,445	108,489,445	92,479,445	47,100,000	-	-	**400,880,375.70**

Annex 2: Investment Area Summaries

c	Actions	Description	Rationale	Key activities	Responsible parties	Time line	Cost ('000 USD)	indicators	Risk and Mitigation
Fertiliser Marketing, Distribution and Storage Strategy **sustainable agricultural production through efficient and safe use of fertilisers**	1.1 Build Capacity of Actors on safe and efficient Fertiliser Use (including use of rice-specific fertilizer blends), and Biochar Production 1.2 Set up Digital Advisory Mechanism for Fertiliser Recommendations 1.3 Promote the use of modern technologies (drones) for fertilizer application **1.4** Establish a fertiliser production plant	coordinated national fertiliser and soil-health support. It introduces soil testing and digital advisory systems to guide fertiliser decision-making, expands farmer and AEA capacity for efficient nutrient management, and promotes the adoption of biochar and lime to restore soil health and reduce emissions	Fertiliser interventions can deliver better returns with precise application enabled by integrating soil testing into advisory services	1.1.1. Develop (or revise) a standard soil testing training manual for AEAs 1.1.2. Procure 450 soil testing kits 1.1.3. Training-of-Trainers on Soil Testing (450 AEAs, Irrigation Scheme Officers and Lead Farmers) 1.1.4. Sensitise lead farmers (10,450) on targeted fertilisation using results from soil test 1.1.5. Develop a manual to guide efficient fertiliser use (rice-specific fertiliser blends and appropriate application) by farmers. 1.1.6. Farmer Stepdown Training on Efficient and Safe Use of Fertiliser through on-farm participatory trials (10,450 farmers, 430 trials) 1.1.7. Develop (or revise) standard training manual on organic fertiliser amendments (biochar production, compost, etc.) 1.1.8. Training of AEAs and Lead Farmers on organic fertiliser (Biochar, compost, etc) Production and Use (450 AEAs, Irrigation Scheme Officers and Lead Farmers) 1.1.9. Farmer Stepdown Training on organic fertilisers (Biochar, compost) Production and Use through on-farm participatory trials (10,450 farmers)	MoFA – DCS, DAES, CSIR – Soil Research Institute, GIDA, FBOs & Lead Farmers, Agro-Input, Digital Advisory Providers, GSA, Carbon Project Developers:	2026 - 2035	2,063,,000	Number of testing kits deployed Coverage of farmer training Digital advisory platform performance and signups	**Risk:** Low adoption of soil testing, biochar, lime **Mitigation**: Participatory demos and lead farmer training **Risk:** Low digital advisory uptake. **Mitigation**: Utilise low-tech formats

				1.2.1. Digital Advisory Platform Development (Consultant and Initial Setup Costs) 1.2.2. Hosting Costs 1.3.1. Monitor implementation and provide technical backstopping 1.3.2. Facilitate a carbon credit offset for biochar usage by rice farmers 1.3.3. Undertake a soil sampling campaign (baseline study) 1.3.4. Promote the use of rice-specific fertiliser blends and drone technology for fertiliser application. 1.4.1. Conduct feasibility studies for establishing fertiliser blending and urea production plant in Ghana 1.4.2. Establish and operationalise a local fertiliser blending plant for rice-specific formulations. 1.4.3. Develop a PPP framework to mobilise investment and secure raw material supply for sustainable fertiliser production.					
Seed Production Under Irrigation	2.1. Site Suitability Assessments 2.2. Irrigation Land Development 2.3. Equipment and Material Procurement 2.4. Training and Capacity Building 2.5. Monitoring, Evaluation and Institutional Strengthening	Expansion of quality seed production by upgrading irrigated seed production sites, and scaling certified seed delivery to farmers in priority rice basins	Only 30–35% of Ghanaian farmers use certified seed. Meeting current population rice demand and production targets will require scaling up seed production by incorporating irrigation, targeted explicitly at foundation and certified seed	2.1.1 Assess water availability and quality at selected seed production sites 2.1.2 Evaluate soil suitability and crop water requirements 2.2.1. Carry out clearing and levelling of selected production plots 2.2.2. Demarcate land allocation into production plots 2.2.3. Install bunds on selected plots/repair as required 2.2.4. Install irrigation piping and pumps across selected areas 2.3.1. Procure inputs to support foundation and certified Seeds production 2.3.2 Establish seed conditioning (processing) facilities for foundation and certified seeds	MoFA (Directorate of Crop Services, PPRSD (GSID), Grains & Legumes Development Board (GLDB), CSIR–CRI & CSIR–SARI,Ghana Irrigation Development Authority (GIDA), Private Seed Companies (NASTAG members, FBOs / Outgrowers	2026 - 2035	7,128	Irrigated seed production area (foundation and certified) Number of annual seed production cycles	**Risk:** Weak Coordination **Mitigation**: Shared coordination platform championed by NRCC **Risk:** Climate shocks **Mitigation:** Resilient production calendars and water-efficient irrigation

			production zones.	2.3.3 Establish seed storage facilities at the 3 production zones 2.3.4. Implement best management practices for seed production, including crop monitoring and pest management 2.3.5. CAPEX + OPEX Procurements (initial setup, replacement and recurring costs) 2.4.1. Training on Efficient Irrigation Practices and Crop Management for seed producers 2.4.2. Train 100 seed producers and 20 institutional staff on irrigation management, seed quality assurance, and climate-smart practices. 2.4.3 Establish seed demonstrations and organize field days for seed producers to build their capacity 2,4.3. Develop seed distribution network to support seed marketing 2.4.4. Undertake promotional activities to drive the use of certified seeds 2.5.1. Monitor yields and seed quality to assess the impact of irrigation 2.5.2. Evaluate the effectiveness of irrigation systems and identify areas for improvement 2.5.3. Partnership Building and Management				
Research and Technology Transfer	3.1. Develop and purify climate-smart, high-quality rice varieties 3.2. Develop state-of-the-art nucleus and breeder seed fields for production and variety maintenance 3.3. Establish state-of-the art laboratories and build capacity of technicians 3.4 Promote and train farmers on adoption of new varieties	supporting varietal development, breeder seed production, advanced laboratory capacity, field infrastructure, and structured technology transfer mechanisms to ensure that improved varieties reach seed producers and farmers.	A small number of varieties dominate Ghanaian production, many of which are losing genetic purity due to inadequate maintenance and weak EGS systems. Modernising seed research infrastructure and adopting climate-resilient varieties can	3.1.1. Germplasm collection 3.1.2. Parent selection & crossing 3.1.3. F1 Generation development 3.1.4. F2 - F5 Development 3.1.5. Genotyping 3.1.6. Field Trials 3.1.7. Variety Release 3.1.8. Field Establishment 3.1.9. Field Management and Maintenance 3.1.10. Procurement of Equipment and Materials 3.1.11. Setup of Storage 3.2.1. Site selection and establishment across three institutions 3.2.2 Nucleus and Breeder field Monitoring across all institutional sites	CSIR–CRI / CSIR–SARI, Ghana Seed Inspection Division (GSID, Grains & Legumes Development Board (GLDB, Directorate of Crop Services, Private Seed Companies, University of Ghana & Research Institutions:	2026 - 2035	4,534	Number of climate resilient varieties in the market.	Risk: Limited availability of skilled technicians Mitigation: Long term training Risk: Purity losses in storage Mitigation: Employ controlled storage and update handling protocols

			significantly boost productivity and grain quality	3.2.3. Breeder Seed Production 3.2.4. Breeder Seed Packaging and Storage 3.3.1. Rice research lab construction across three sites 3.3.2. Procurement of lab equipment 3.3.3. Capacity building of laboratory staff 3.4.1. Training of extension offers 3.4.2. Training of farmers and millers					
Harvest, Post Harvest and Marketing	4.1. Upgrade of 50 existing milling centres in major rice-producing districts 4.3. Construct storage and aggregation centres across 50 key rice-producing districts with hermetic storage systems , silos, covered drying floors, and Warehouse Receipt Systems integration. 4.2. Map and train 5000 farmers, FBO leaders, aggregator staff, miller staff, and warehouse managers trained in GSP and quality control. 4.4. Stakeholder Engagement and Structured Market Linkages (NAFCO, GCX, Importers, warehouse and Distributers, State Institutions, Supermarkets, Wholesalers)	Modernises Ghana's post-harvest and milling ecosystem through the construction, upgrading, and operationalisation of 100 post-harvest infrastructure sites nationwide comprising of 50 aggregation centres and 50 upgraded warehouses/mills	Improving storage, drying, and milling facilities is essential to reducing post-harvest losses to below 10% and ensuring higher, more consistent rice quality—both of which are critical for strengthening consumer confidence in local rice.	4.1.1. Conduct assessments of existing milling centres in major rice-producing districts (Northern, Upper East, Volta, Bono East, Oti, Ashanti, Eastern, Central, North East, Bono and Ahafo) to identify upgrade needs and feasibility. 4.1.2. Develop detailed upgrade plans for the centres, including specifications for modern processing equipment 4.1.3. Procure Required equipment ensuring compliance with Ghana Standards and ISO requirements. 4.1.4. Install procured equipment for upgrade 4.1.5. Establish Monitoring Systems 4.1.6. Procure and deploy combine harvesters, reapers, and mechanised threshers at milling centre catchment areas to reduce field-level post-harvest losses 4.1.7. Equip all upgraded mills with multi-stage paddy cleaners, de-stoners, whiteners, and colour sorters to achieve consumer-preferred quality competitive with imported rice 4.1.8. 4.2.1. Conduct training needs assessment for target groups	•MoFA – Directorate of Crops Services, AESD) •Ghana Standards Authority (GSA) •Local Government Authorities •Millers, Aggregators & Warehouse Operators •FBOs & Cooperatives	2026 - 2035	104,446	Post harvest loss rate Number of operational aggregation and storage centres Number of value chain actors trained	Risk: Weak O&M capacity Mitigation: Operator training; performance-based management. Risk: Low adoption of upgraded centres Mitigation: Sensitisation campaigns; transparent fee structures;

	4.5. Import Competition Response and Trade Protection Advocacy			4.2.2. Develop training content and adapt to the results of the needs assessment 4.2.3. Produce training materials 4.2.4. Develop standard operating procedures (SOPs) for post-harvest handling and quality control at upgraded milling and aggregation centres, based on industry best practices, including GSP, GWP, GHP, IPM, and inventory management. 4.2.5. Establish a digital farmer-to-miller registry for each upgraded centre, mapping farmers by district, season, volume, and paddy variety 4.2.6 Train a pool of 50 master trainers including mindset change/ patriotism 4.2.7. Organize and conduct training workshops and practical demonstrations for 5,000 mapped farmers, FBO leaders, aggregator staff, miller staff, and warehouse managers on post-harvest handling and quality control, targeting at least 50% women and youth participation, using SOPs developed in 4.2.4 4.2.7. Implement a monitoring system for training effectiveness 4.2.8. Develop targeted training programs for youth and women on the operation of upgraded mills and aggregation 4.2.9. Implement mentorship and support programs to encourage women and youth participation in the rice value chain. 4.3.1. Conduct needs assessment and develop standardised designs and specifications for different scales/types of storage for new facilities.					

				4.3.2. Procure equipment for new storage facilities in prioritised rice-producing districts 4.3.3. Upgrade and operationalise 50 aggregation centres (including satellite centers closer to farmers) with improved storage facilities and transportation logistics to ensure functionality and accessibility 4.3.4. Procure and install specified handling and quality control equipment (cleaning, weighing, drying, bagging). 4.3.5. Procure and install hermetic storage system, community storage facility and silos of standardised capacities (1,000MT, 2,000MT, .. 10,000MT) at each aggregation centre 4.3.6. Construct covered drying floors or install mechanical dryers (biomass/solar) to dry paddy to 12–14% moisture content at all storage centres 4.3.7. Onboard the 50 aggregation centres onto the Warehouse Receipt System (WRS) 4.3.8. Establish a Guaranteed Minimum Floor Price mechanism for paddy and milled rice, with seasonal price communication via community radio and FBO networks 4.3.9. Conduct routine training on facility operations and management (including Business Mindset change training.) 4.3.10. Establish a monitoring system to track post-harvest losses and quality metrics at each facility, using tools like moisture meters and grading machines. 4.4.1. Develop partnerships with, wholesalers, Importers, Distributers and State Institutions (NAFCO, GCX etc), ,) to ensure a steady market for				

				rice aggregated at the upgraded centres. 4.4.2. Promote centre usage through awareness campaigns and training on marketing strategies to enhance the visibility and efficiency of rice distribution. 4.4.3. Formalise MOU-backed offtake agreements between certified aggregation/milling centres and State institutions (Ghana School Feeding Programme, Ghana Health Service, Ghana Armed Forces, Ghana Prison Service, and public universities), including pre-agreed annual volumes and fast-track Treasury disbursement timelines 4.4.4. Develop structured supply and shelf-space agreements with supermarket chains, and wholesale market associations (Makola, Malamata, Kumasi Central) 4.4.6. Develop and launch a national "Ghana Rice First" consumer awareness and domestic rice branding campaign (radio, TV, social media, community engagement) 4.4.7. Establish a real-time digital rice price and market information platform accessible via mobile and community radio for all rice-producing districts 4.5.1. Assessment to quantify illegal/undervalued overland rice imports and map smuggling routes 4.5.2. Formalise "Ghana Rice First" procurement policy requiring government institutions to source 100% of rice from certified domestic millers 4.5.3. Implement a round table discussion between Ghana rice value					

				chain actors (CARP/GRIB) and the importing community (FABAG) with MoFA as moderator to fashion out a mechanism for importers to take a minimum of between 25 – 40% of their import bill to certified domestic millers.					
Community Mobilisation and FBOs and Credit Management	5.1. Stakeholder Engagement 5.2. Capacity Building for value chain actors, farmers, financial institutions, extension officers, 5.3. Digital Process Support 5.4. Credit support 5.5. Monitoring and Evaluation	an institutional financing and digital transformation intervention that aims to remove the structural barriers preventing rice value chain actors—especially FBOs—from accessing affordable finance.	Although Farmer-Based Organisations (FBOs) could facilitate formal financing, poor governance and bookkeeping reduce their effectiveness. Digital transformation, including digital trade finance and data-driven credit scoring, can improve lending outcomes by lowering costs and increasing reliability.	5.1.1. Organise and map actors along the rice value chain 5.1.2. Facilitate meetings between value chain actors and financial institutions 5.1.3. Organise advocacy programs for stakeholders on digital trade financing 5.2.1. Train 7,000 value chain actors and financial institutions on improved technologies 5.2.2. Train 500 FBO members, including women, youth and PLWDs on climate SMART credit systems (carbon credit, SRP) 5.2.3. Train 100 aggregators on commodity supply chain management to reduce the need for traditional collateral 5.2.4. Train 300 portfolio officers on liquidity and collateral management to derisk credit 5.2.5. Train 420 extension officers on digital data collection tools 5.2.6. FBO sensitisation on digital data collection and protection 5.2.7. Train extension officers, financial service providers and digital service providers on secured data management and KYC compliance 5.3.1 Facilitate the establishment and usage of AgTech platforms to link transparency, traceability and security in trade transactions 5.3.2. Develop data management guideline kit for use by stakeholders	•MoFA – DAES, DCS, FBOs & Cooperatives •Financial Institutions (DBG, GIRSAL, ADB, MFIs •FinTech & Digital Service Providers.	2026 - 2035	10,399	Number of institutions offering rice value chain finance Number of FBOs onboarded to digital platform	Risk: Low adoption of digital platform Mitigation: hands-on training; design user-friendly interfaces; use USSD for low-tech users

				5.4.1. Create financing packages to support the rice value chain 5.5.1. Monitoring and evaluation					
6.Equipment Access and Maintenance	6.1. Setting up 30 Farmer Service Centres 6.2. Rehabilitation of Existing Agricultural Mechanisation Centres. 6.3. Develop and Implement Tailored training programmes for 1000 agricultural machinery operators and farmers in correct tillage and other ancillary practices, including climate smart agric technologies, post harvest handling and processing, mounted annually 6.4. Training programmes for 500 mechanics and technicians on the repair and advanced maintenance technology of various agricultural machinery and equipment are conducted annually	establishing two new state-of-the-art FSCs and rehabilitating two existing centres (Atebubu and Somanya) to serve as national hubs for training, certification, technology transfer, and workforce development for machine operators, mechanics, technicians, and service providers.	Mechanisation centre utilisation remains low, largely because of frequent equipment downtime. These breakdowns typically stem from weak maintenance systems and limited technical expertise. Establishing comprehensive training programmes for operators and mechanics would significantly reduce downtime, improve utilisation, and strengthen the long-term sustainability of mechanisation services.	6.1.1. Identify and secure land for establishing thirty (30) Farmer Service Centres 6.1.2. Conduct Environmental and Social Impact Assessment (ESIA) and other required assessments 6.1.3. Design and construct the FSCs to include mechanical workshops, machine shop, store rooms for spare-parts 6.1.4. Procure various agricultural machinery and equipment (tractors, seeders, sprayers, combine harvesters to equip FSCs 6.1.5. Identify and recruit personnel to manage FSCs under PPP arrangements 6.1.6. Monitoring and Evaluation (M&E) 6.2.1. Conduct a needs assessment for the Atebubu and Somanya Agricultural Mechanization Centres sites 6.2.2. Commence procurement processes to fill identified needs assessment gaps (including infrastructure and machinery upgrades) 6.2.3. Recruit personnel to manage and monitor centre operations across identified enclaves 6.3.1. Recruit resource persons for training 6.3.2. Develop training modules 6.3.3. Enrol/Mobilize youth and existing machine operators 6.3.4. Train youth and existing machine operators 6.3.5. Certify and license youth and existing machine operators	•MoFA-AESD •Traditional leaders •Local Government •Private partners •TVET Service / CTVET •Atebubu & Somanya Centres •DVLA	2026 - 2035	431,313,000	Number of fully functional FSCs (+30) Number of certified machine operators, technicians and mechanics Number of youth and women employed	Risk: Slow adoption of modern machinery. Mitigation: Demonstrations; community sensitisation. **Risk:** Low trainee enrolment or retention/ **Mitigation:** Outreach campaigns; incentives; partnership with YEA; gender-responsive training design

				6.3.6. Provide support to trainees for workplace learning experience on farms (Attachment) 6.3.7. Monitoring and Evaluation (M&E) 6.4.1 Identify and recruit resource persons for training 6.4.2. Develop training modules 6.4.3. Enrolments (Advertisement, Shortlisting) 6.4.4. Train youth, mechanics, and technicians 6.4.5. Certify and license youth, mechanics, and technicians 6.4.6. Provide start-up basic tools/equipment to trainees 6.4.7. Monitoring and Evaluation					
7.Irrigation and Water Control	7.1. Mapping and identification of potential sites for lowland/inland valley and new irrigation development 7.2. Conduct Feasibility, ESIA and Design Studies for Identified Sites 7.3. Rehabilitation of Existing Irrigation Schemes (Golinga, Libga and Botanga), 695ha combined 7.4. Develop lowland/ r inland valley irrigation schemes (30,000ha) 7.5. Planning, Monitoring, Evaluation	The action strengthens Ghana's rice production system through an irrigation expansion and rehabilitation programme covering 35,000 hectares nationwide. The action also strengthens Water User Associations (WUAs) to ensure sustainable, community-led management of irrigation assets.	Ghana's public irrigation schemes are aging and operating well below potential. Upgrading these schemes can significantly raise productivity and reduce water loss Furthermore, inland valley development is highly cost-effective, due to naturally favourable hydrology and gravity-fed systems that reduce pumping costs.	7.1.1. Conduct desk studies and and preliminary field assessment of potential lowland/inland valleys and new irrigation nationwide 7.1.2. Commence community entry and engagement with potential project beneficiaries and actors, including farmers and the private sector 7.1.3. Prepare consolidated activity reports, validate and disseminate across key stakeholders for review and final site selection 7.1.4. Recruit consultants to manage feasibility, engineering studies, and project supervision 7.2.1. Conduct Topographic Survey 7.2.2. Conduct Soil and Water studies 7.2.3. Conduct Engineering studies 7.2.4. Conduct Environmental and Social Impact Assessment 7.2.5. Conduct Economic and Financial Analysis	•Ghana Irrigation Development Authority (GIDA) •MoFA – Directorate of Crop Services •Water Resources Commission (WRC) •Environmental Protection Agency (EPA •District Assemblies •Water User Associations (WUAs)	2026 - 2035	400,880	Irrigation area developed and operational for rice (+35,000ha)	Risk: Environmental Impacts and displacement Mitigation: Strong ESIA compliance; biodiversity. Risk: Land acquisition disputes Mitigation: Land acquisition disputes Mitigation

				7.2.6. Prepare, submit and validate reports of all pre-construction studies and findings 7.3.1. Update designs for rehabilitation and expansions of selected public schemes 7.3.2. Recruit contractors to carry out rehabilitation, and expansion 7.3.3. Implement required regulatory actions (EPA and WRC Permits, GRM, RAP) 7.3.4. Rehabilitate headworks, canals, regulatory structures and expand irrigable areas for existing irrigation schemes 7.3.5. Form WUAs and build farmer capacity on irrigation system operation, maintenance and management 7.4.1. Recruit contractors to lead construction and project management 7.4.2. Construct water harvesting and regulatory and systems of farms/access roads for lowlands/inland valley sites 7.4.3. Implement required regulatory actions (Obtain EPA and WRC Permits, GRM, RAP) 7.4.4. Construct drying floor per 500ha cropping area 7.5.1 Recruit contractors to carry out construction and project supervision 7.5.2 Implement required regulatory actions (Obtain EPA and WRC Permits, GRM, RAP) 7.5.3 Construct headworks, canals, regulatory structures and develop irrigable areas 7.5.4 Build capacity on irrigation scheme management entity					

ANNEX 3: STAKEHOLDER ANALYSIS

Table 5: Stakeholder Analysis of Ghana's Rice Sector

Category	Stakeholder	Mandate / Role in the Rice Sector	Influence Level	Relevance to NRIAP Investments	Engagement Priority
Government Ministries & Public Agencies	Ministry of Food and Agriculture (MoFA)	Primary coordinator of NRDS II and Feed Ghana implementation; leads planning, regulation, extension, input systems, monitoring; chairs NRCC.	Very High	Strategic leadership, policy alignment, extension scale-up, implementation oversight.	High
	Ghana Irrigation Development Authority (GIDA)	Develops, rehabilitates, and manages irrigation and inland valley systems for seed and paddy production.	High	Delivery of irrigation expansion and climate-resilient production systems.	High
	Ghana Standards Authority (GSA)	Sets and enforces standards for milled rice, packaging, storage, and grading.	High	Critical for quality upgrading for rice mills.	High
	Food and Drugs Authority (FDA)	Ensures food safety, labelling, and national compliance.	High	Required for domestic market competitiveness and traceability.	Medium
	Metropolitan, Municipal & District Assemblies (MMDAs)	Provide local governance, land access facilitation, feeder road support, and logistics for community-level implementation of irrigation scheme mechanisation and post-harvest centres.	Medium	Essential for farmer mobilization, infrastructure rollout, and community sensitization.	High
	Ministry of Finance (MoF)	Oversees public financing, budget releases, and alignment with national investment frameworks.	High	Key for resource mobilization and co-financing arrangements.	High
	GIRSAL & Development Bank Ghana (DBG)	Provide credit guarantees, risk-sharing instruments, and medium-/long-term financing for VC actors.	High	Crucial for unlocking capital for mechanization, processing, seed systems, and aggregation.	High
Research Institutions & Academia	CSIR (CRI, SARI, SRI, FRI)	Conduct the varietal purification of selected seed varieties	High	Central to seed system improvement, productivity gains, and climate-smart innovations.	High
	Universities (UG, KNUST, UDS)	Build scientific workforce; conduct applied research and support RELC platforms.	Medium	Important for human capacity development and evidence generation.	Medium
Production Actors	Farmers (Smallholders & Emerging Commercial)	Core producers across rainfed and irrigated ecologies; primary beneficiaries of inputs, mechanization, and irrigation investments.	High (collectively)	Central to achieving production, productivity, and quality targets.	High

	Seed Producers (Companies & Registered Growers)	Multiply foundation/certified seeds; ensure availability of high-quality seed.	High	Key to meeting varietal replacement and seed access targets.	High
	Farmer-Based Organizations (FBOs)	Facilitate aggregation, training, credit access, and market linkages.	Medium	Useful platforms for community mobilization and inclusive programming.	High
	Water Use Associations	Manage water usage for irrigation schemes.	High	Essential to meet the target of irrigated rice productions/	High
Processing & Marketing Actors	Rice Processors (SMEs & Medium-Scale)	Convert paddy into milled rice; core to quality upgrading and reduction of post-harvest losses.	High	Critical for mill modernization, drying, destoning, branding, and PPPs.	High
	Aggregators	Consolidate paddy from farmers for bulk sales to processors.	Medium	Improve market efficiency and reduce transaction costs.	Medium
	Wholesalers & Retailers	Distribute branded local rice to consumers nationwide.	Medium	Key to demand creation and consumption of Ghana rice.	Medium
Private Sector & Development Partners	Input Suppliers & Mechanization Service Providers	Provide fertilizers, agrochemicals, machinery, repair/maintenance services.	High	Essential for mechanization hubs, input access, and productivity.	High
	Agritech Providers	Provide expertise for the development and deployment of digital solutions	High	Key to the digitalization of extension advisory	High
	Financial Institutions (Banks, MFIs, Agritech Lenders)	Provide loans, seasonal credit, equipment finance, digital financial products.	Medium-High	Necessary for financing production clusters and SMEs.	High
	Development Partners	Provide technical assistance, grants, concessional loans, policy support, and investment in seed systems, irrigation, mechanization, and digital systems.	Very High	Core to financing bankable projects and harmonizing national and regional frameworks.	High
Special Groups	Women	Dominate processing and local retail trade; key to inclusive growth.	Medium	Target group for empowerment, capacity building, and access-to-finance interventions.	High
	Youth	Key to mechanization adoption, digital services, and entrepreneurship.	Medium	Important for competitiveness and long-term sustainability.	Medium-High
	Persons with Disabilities (PWDs)	Targeted group for inclusive economic opportunities.	Low	Inclusion requirement across value chain interventions.	Medium
Coordination & Cross-Cutting Bodies	National Rice Coordinating Committee (NRCC)	Provides national-level coordination, policy guidance, and oversight of NRDS II. Interface with ECOWAS Rice Observatory.	Very High	Central governance mechanism for NRIAP implementation.	High

	Research-Extension-Farmer Linkage Committees (RELCs)	Facilitate technology transfer and adoption across districts.	High	Required for scaling innovations and farmer capacity building.	Medium-High

ANNEX 4 : Financing Strategy

4.1 Cost Estimates of the Investment Plan

Table 6: Cost Estimate of Investment Action Plan

NRIAP ACTION	Budget (USD)	Budget (GHS)	Percentage Contribution to Total
Fertiliser Marketing, Distribution and Usage Strategy	2,063,726,660	22,700,993,260	68.21
Seed System Production Under Irrigation	7,128,180	78,409,980	0.24
Research, Technology Development and Transfer	4,534,949	49,884,439	0.15
Harvesting, Post-Harvest and Marketing	104,446,650	1,148,913,150	3.45
Community Mobilisation, Farmer-Based Organisations and Credit Management	10,399,100	114,390,100	0.34
Equipment Access and Maintenance	431,313,000	4,778,033,502	14.36
Irrigation and Water Access	400,880,375	4,409,684,125	13.25
total	3,025,482,596	33,280,308,556	100

4.2 Sources of funding: public budget, private sector, and donors

To achieve financing for the NRIAP, a diversified and mix of public-sector resources, private investment, and support from development partners is necessary.

Table 7: Funding sources for the NRIAP

Funding Source	Target Share	What They Fund in the Rice Value Chain
Public Sector (Government)	20–30%	Capital and recurrent budget allocations to MOFA and other agencies involved in implementation, e.g. GIDA.
Development Partners	45–55%	AfDB, World Bank, IFAD, JICA, GIZ MOVE Programme, UN agencies, and bilateral financing of rural infrastructure and irrigation schemes, skills development, industrialisation, climate-resilient agricultural systems, promotion of agri-entrepreneurship, business development services (BDS), improved milling technologies, climate-smart production practices and market linkage incentives
Private Sector	15–25%	PPP investments of services, support on machinery, and (partial) credit risk guarantees.
Innovative / Blended Finance	10–20%	Blended finance facilities, credit guarantees, improvement of loan terms, climate and green finance, investment platforms supporting irrigation, mechanisation, renewable energy, and processing infrastructure.
Farmers & Cooperatives	5–10%	Cost-sharing for inputs, mechanisation services, small equipment, local storage, community infrastructure, and cooperative-based savings and credit schemes.

Public Sector Financing: The government can consistently contribute around 20–30% of the total NRIAP financing, via national allocation to MoFA and other agencies involved in implementation, e.g. GIDA. Public

financing thus underwrites the long-term asset base and policy backbone around which other sources of capital can be mobilised.

Development Partners: Development partners are expected to remain the single largest source of capital for NRIAP, consistent with past patterns in which a substantial portion of MoFA's operating and investment envelope has been financed by external assistance. Several ongoing and pipeline programmes are directly relevant to the NRIAP time frame:

- **IFAD's new Country Strategic Opportunities Programme (2025–2030)** for Ghana prioritises inclusive financing for women and youth through innovative approaches.,[6].
- **AfDB's Country Strategy Paper for Ghana (2024–2029)** explicitly prioritises agriculture and rural infrastructure as strategic focus areas for grant resources. Its support aims to enable the government to strengthen skills development, accelerate industrialization, and build climate-resilient agricultural systems through value chains and economic transformation zones—creating opportunities for the NRIAP's planned aggregation upgrades to connect into. The Bank also intends to deploy innovative financing to boost agri-entrepreneurship, enhance energy reliability, and expand technical training programmes, including initiatives like the mechanisation operator training proposed in the NRIAP[7].
- **AfDB's Resilient Rice Regional Value Chains (REWARD) project** is specifically targeted at rice valleys and irrigated systems in Ghana[8].
- **JICA's Ghana Rice Production Improvement Project (GRIP),** provides targeted technical
- strengthens SME millers, processors and aggregators through matching grants, business development services (BDS), improved milling technologies, climate-smart production practices and market linkage incentives. MOVE also implements the AfricaRice–MOVE Rice Master Training assistance to strengthen Ghana's capacity for irrigated rice production, seed quality improvement and farmer training.
- **World Bank's Food Systems Resilience Program 2:** The programme is rehabilitating and expanding irrigation schemes to enable reliable, year-round rice cultivation; improving access to high-quality seed and climate-smart agronomic practices; deploying digital and agro-climatic advisory tools to reduce production risks; and upgrading post-harvest, storage, and laboratory systems to improve rice quality and competitiveness.[9]
- **GIZ MOVE** Programme, which develops technical and managerial competencies across the value chain.
- Korea's K-Rice Belt Project targets the production of seed under a rice seed production complex

The financing strategy, therefore, assumes that approximately 45–55% of NRIAP resources can be realistically mobilised from multilateral and bilateral partners. The initiatives are a strong foundation for potential co-financing, parallel financing, and technical alignment. NRIAP interventions could be structured as plug-ins to these programmes, thereby accelerating implementation, reducing transaction costs, and strengthening investor confidence.

Private Sector Investment

Ghana already has several platforms that can be leveraged or scaled:

- The **Agricultural Mechanization Centres** model has established a PPP-like structure where private operators deliver services with some public support on machinery acquisition and policy coordination[10].
- The **Ghana Incentive-Based Risk Sharing System for Agricultural Lending (GIRSAL)** provides partial credit risk guarantees—up to 70% of agricultural loan principal—to participating financial institutions, alongside technical assistance and deal-structuring support designed to increase bank appetite for agribusiness lending[11].
- The **Development Bank Ghana (DBG)** identifies agriculture as one of its core focus sectors and has publicly committed about GHS 500 million to support agricultural growth[12].

[6] https://webapps.ifad.org/members/eb-seminars/2025-11-25-EB-Consultations/docs/EB-2025-OR-14.pdf?attach=1

[7] https://www.afdb.org/en/news-and-events/press-releases/ghana-african-development-banks-2024-2029-country-strategy-paper-ghana-prioritises-support-industrialization-and-sustainable-transport-infrastructure-79058?utm_source=m

[8] https://www.afdb.org/en/documents/multinational-project-develop-resilient-rice-regional-value-chains-west-africa-reward-ghana-p-z1-aa0-167

[9] https://documents1.worldbank.org/curated/en/099090924092039970/pdf/P172769-242adbcb-add5-4c68-b3a5-164d664e10b3.pdf

[10] https://riceforafrica.net/joomla/images/stories/PDF/good_practice_Ghana2017en.pdf

[11] https://www.girsal.com/agricultural-credit-guarantee-scheme/

[12] https://thehighstreetjournal.com/dbg-rolls-out-gh%E2%82%B5500m-to-boost-agribusiness-and-economic-resilience/

- The **Agricultural Development Bank (ADB)** and a range of rural banks and savings and loans companies are also active lenders to agriculture and stand to benefit from GIRSAL guarantees and DBG refinance lines to scale up lending into rice value chain investments.

Roughly 15–25% of total financing can be mobilised from domestic and regional private investors. Private sector contributions will also be bolstered by policy levers such as targeted tax incentives for agro-processing and machinery and streamlined approvals for PPPs in irrigation and mechanisation, and the continued scale-up of GIRSAL and DBG facilities for rice-related lending.

Innovative and Blended Financing Mechanisms
Ghana already operates several blended and risk-sharing mechanisms that the NRIAP can plug into rather than creating entirely new structures:

- **Blended finance arrangements** combining grants with commercial or quasi-commercial debt are already present in projects like FSRP, where public and donor finance de-risk private provision of inputs, services and infrastructure.
- **Guarantee and interest rate subsidy schemes**, notably by GIRSAL, are active and proven. These can be explicitly targeted to NRIAP priority investments (e.g., mechanisation centres, SME mills, certified seed enterprises) to lower collateral requirements and improve loan terms.
- **Climate and green finance** windows, including those underpinning FSRP and AfDB's REWARD project, can be used to support climate-resilient irrigation, inland valley development, water management and low-carbon practices in paddy production

While Ghana has not yet developed large-scale agricultural or diaspora bonds specifically for rice, the presence of these active instruments means that the NRIAP can be implemented immediately within existing blended finance infrastructure, with the option to introduce more sophisticated instruments over time.

Farmers' and Cooperatives' Contributions
Finally, farmers and their organisations will continue to play a co-financing role, particularly in:

- Repayment of input-credit, which replaces traditional subsidies with a structured input credit system linked to markets.
- Cost-sharing in smaller-scale irrigation and productive rural infrastructure, as is already envisaged under IFAD-supported schemes where communities contribute labour, local materials or partial cash towards irrigation structures and feeder roads.
- Membership fees, small savings schemes and in-kind contributions organised through FBOs and cooperatives, which strengthen local ownership and governance of assets.

These contributions are unlikely to exceed 5–10% of the total capital envelope, but they are crucial for sustainability—particularly for irrigation O&M and the effective use of mechanisation and post-harvest assets, via the current service rental arrangements.

4.3 Funding Gaps and Financing Scenarios

Although Ghana hosts a strong portfolio of development-partner programmes relevant to rice systems, the NRIAP's total investment requirement of **$3.03 billion** far exceeds the level of financing that existing commitments can realistically absorb. Ghana receives an average of USD 145 million annually in total ODA, of which only USD 40–60 million per year is directed to agriculture, and an even smaller fraction specifically supports rice[13]. Combined with public agriculture expenditure under the MTEF (USD 25–35 million per year)[14]This yields a five-year agriculture financing envelope of roughly USD 350–400 million—significantly below NRIAP's requirements.

Therefore, an estimated 30–40% of NRIAP's five-year investment envelope can be met through existing public and donor commitments. This leaves a financing gap of approximately 60–70%, representing the share of investment that must be mobilised through new funding streams earmarked for the NRIAP.

[13]OECD Data Explorer (2025)
[14] /https://www.mofep.gov.gh/sites/default/files/pbb-estimates/2025/2025-PBB-MOF.pdf

4.3.2. Financing Scenarios

To navigate uncertainty and guide sequencing, the NRIAP adopts three financing scenarios—Low, Moderate, and High—each corresponding to a realistic combination of public budget space, confirmed ODA inflows, private sector appetite, and blended-finance opportunities.

Table 8: Financing Scenarios

Scenario	Share of Total Requirement	Indicative Financing Available	Implementation Focus
Scenario 1: Low Financing	20–30%	USD 400–780 million	• Foundational, low-CAPEX enablers (irrigated seed production, varietal purification, fertiliser management, digital systems) • Selective rehabilitation of priority irrigation sites (≈5,000 ha). • Upgrade 15–25 post-harvest facilities aligned with existing programmes • Intensive FBO strengthening to improve future bankability
Scenario 2: Moderate Financing (Most Likely)	45–55%	USD 1.1billion – 1.4billion	• Full rehabilitation of targeted public irrigation schemes and development of 10,000–15,000 ha of new IVS • Establish all 4 mechanisation centres (2 upgraded, 2 new) • Roll-out 40–60 post-harvest facilities using blended finance and guarantees • Expand irrigated seed systems and research capacity across 3 institutions • Deploy digital dashboards, traceability pilots, and coordination mechanisms
Scenario 3: High Financing	65–75%	USD 1.9 – 2.3 billion	• Full irrigation agenda delivered (35,000 ha rehabilitation + new IVS) • Completion of all 100 post-harvest and milling facilities • Fully functioning national mechanisation network with PPP-based FSC linkages • Large-scale irrigated seed systems and full varietal purity compliance• End-to-end digital systems integrated with regional platforms

4.3.3. Institutional Arrangements for Fund Management

The Ministry of Food and Agriculture (MoFA), via the NRCC will maintain consolidated financing plans and annual allocation envelopes, coordinate with the Ministry of Finance on public appropriations and counterpart funds and serve as the national contact point for all development partners and Development Finance Institutions (DFIs).

At the output level, funds will flow through specialised agencies according to their mandates:

- Ghana Irrigation Development Authority (GIDA) – responsible for irrigation studies, designs, procurement, civil works, ESIA compliance, and O&M frameworks.
- Research Institutions (CSIR and Universities) – custodians of rice research, seed development, varietal purity systems and early generation seed infrastructure.
- MoFA-PPRSD – regulatory oversight for seed quality and certification.
- District Assemblies – last-mile infrastructure, aggregation points, land acquisition facilitation, and community mobilisation.
- Mechanisation centre operators & private mills – direct implementation of commercially bankable interventions.

Each agency will operate under standardised fiduciary frameworks aligned with development partner and GoG requirements.

ANNEX 5 : Implementation Arrangements

5.1 Operationalisation of the Investment Priorities

This chapter will outline the delivery mechanisms for each investment priority. Activities will be categorised based on their readiness for immediate investment. The implementation approach heavily depends on alignment with existing national structures—MoFA directorates, research institutions, GIDA schemes, extension systems, GSA standards frameworks, district assemblies—and regional coordination mechanisms under the ECOWAS Regional Rice Roadmap (2025–2035). Its implementation will also support progress towards Ghana's national goals, by harmonising national programmes such as Feed Ghana Programme and GIDA irrigation rehabilitation programmes with NRIAP priorities.

5.2 Coordination Mechanisms

The mechanism ensures that each investment area benefits from the comparative strengths of the institutions mandated to deliver them. Ghana will implement a multi-level coordination architecture that links national leadership, technical coordination, and district-level execution.

National Leadership

MoFA serves as the lead coordinating institution, responsible for policy oversight, annual work planning, and reporting to Cabinet and ECOWAS. The National Rice Coordinating Committee (NRCC) will provide strategic oversight, approve annual plans, and facilitate partner alignment.

Technical Coordination

Delivery is supported by the lead agencies for each of the actions, cutting across Ghana's coordinating agencies and key participatory organizations from the private sector. These include:

- Ministry of Food and Agriculture (MoFA) – DCS, DAES, AESD, PPRSD, PPMED)
- Council for Scientific and Industrial Research-(SRI, CRI, SARI, FRI)
- Ghana Irrigation Development Authority (GIDA)
- Metropolitan, Municipal and District Assemblies (MMDAs)
- Ministry of Trade, Agribusiness and Industry (MoTAI),
- Ghana Standards Authority (GSA),
- Food and Drugs Authority (FDA)
- Ghana Incentive-Based Risk Sharing System for Agricultural Lending (GIRSAL)
- Development Bank Ghana
- Universities - University of Ghana (SIREC-Kpong)

District-Level Execution

District Agriculture Departments will work with the MMDA offices to coordinate farmer mobilization, land-use facilitation, monitoring, and adoption. They will work directly with FBOs, WUAs, seed producers, millers, mechanization providers, and traders.

Coordination Matrix

Table 9: NRIAP Coordination Matrix

No.	Level	Core Responsibilities	Key Institutions
1	Strategic Oversight	Policy direction; resource mobilization	MoFA, NRCC
2	Technical Coordination	Design, planning, supervision	Implementation units (Seed, Inputs, Mechanization, Irrigation, Milling, R&D)
3	District Execution	Community mobilization; field monitoring	District Agriculture Departments
4	Private Sector Coordination	PPPs; service delivery; operations & maintenance	Millers, seed companies, FSCs, machinery dealers

5	Development Partners	Co-financing; Technical Assistance; alignment with international and regional frameworks	E.g. AGRA, WB-FSRP, GIZ, JICA, AfDB
6	Regional Alignment	ECOWAS reporting; indicator harmonization	MoFA, ECOWAS Rice Observatory

5.3 Coordination with private sector and development partners

A partnership-driven approach underpins NRIAP delivery. The private sector will lead service delivery in mechanization, milling, irrigation O&M, seed multiplication, and storage. Development partners will co-finance high-CAPEX investments and support capacity strengthening, digital systems, and innovation scale-up. Coordination will be supported through annual investment planning roundtables, joint sector reviews, and harmonised M&E frameworks – existing coordination mechanisms for rice will be leveraged.

5.4 Implementation Timeline and Phasing

The implementation timeline has been refined to reflect what has already been done in Ghana, what remains incomplete, and where institutional and technical readiness already exists. Several value-chain actions can commence immediately, while irrigation, inland valley development, and cluster-level milling infrastructure require preparation and engineering work.

Table 10: Implementation Summary Table

	Key Activities	Lead Agency	Supporting Partners	Start–End Dates	Status
	ACTION 1				
	Soil testing; extension rollout; safe-use training;	MoFA, DCS/DAES, CSIR-SRI	Input dealers, Farmers, FBOs	2026 - 2028	**Shovel-Ready** – extension content already available under other programs or can be quickly developed and delivered. Soil testing kits are easily procured.
	Digital advisory for fertiliser usage	MoFA, DCS/DAES, CSIR-SRI	Digital advisory providers	2026 – 2027	**Shovel Ready–** Existing pilots can be identified and scaled; the GhAAP platform could be leveraged.
	Biochar Production and Usage and lime Usage	MoFA, DCS/DAES, CSIR-SRI	Carbon project developers	2027 - 2030	**Design Needed –** Sensitisation, piloting and scale-up needed.
	Promotion of drones for fertilizer application	MoFA, DCS/DAES, CSIR-SRI, AESD	Input dealers, Farmers, FBOs	2027 - 2031	**Shovel Ready –** Advocacy, procurement and sensitisation required.
	Establishment of fertilizer production plant	MoFA, MOTAI, PPRSD	Financial Institutions	2031-2035	
	ACTION 2				
	Strengthen breeder seed supply; expand certified seed production under irrigation	MoFA - PPRSD (GSID)	GSID, GLDB, Seed Companies	2026 – 2030	**Shovel-ready** – activities are equipment-based and align with ongoing programmes. Training content already exists and needs to be disseminated.
	ACTION 3				
	Purification, maintenance and multiplication of varietal seed lines	CSIR-CRI, CSIR-SARI,	MoFA, University of Ghana	2026 – 2030	**Shovel Ready** – key implementation activities can be quickly completed
	Research lab establishment across focus institution/upgrade& staffing	CSIR-CRI, CSIR-SARI,	MoFA	2028 – 2030	**Design Needed - Needs** assessment and extensive procurement activities required.
	ACTION 4				

	Upgrade of existing mills	MoFA (Directorate of Crop Services)	MMDAs, Private Mills,	2026-2028	**Shovel-Ready** – technical packages standardised; partner programmes already operational
	Establishment of new milling centres	MoFA, MMDAs	Engineering providers	2026-2030	**Design Needed** – requires basin alignment + facility design
	Training of value chain Actors	MoFA, MMDAs,	Training providers	2027 – 2028	**Shovel-Ready – capacity-building** materials are already available.
	Construct storage and aggregation centres across 50 key rice-producing districts with hermetic storage systems , silos, covered drying floors	MoFA - DCS, AESD	MMDAs, Private sector, NAFCO, GCX	2026–2029	**Design Needed** — hermetic silo specifications and site assessments required before procurement
	Warehouse Receipt System integration (50 centres)	Ghana Commodity Exchange (GCX)	MoFA, Aggregators, FBOs, Banks	2027–2030	**Design Needed** — WRS operational framework and centre certification standards required
	Guaranteed Minimum Floor Price mechanism	MoFA / National Rice Price Advisory Committee	NAFCO, MoTIE, FBOs, Rice Millers Association	2026–2027	**Shovel-Ready** — policy framework exists; requires activation and seasonal communication protocol
	NAFCO formalised offtake and emergency off-take mechanism	NAFCO	MoFA, MoF (Treasury), MMDAs	2026–2028	**Shovel-Ready** — NAFCO mandate exists; requires pre-committed budget line and MOU with certified millers
	Institutional offtake agreements (School Feeding, Health Service, Armed Forces, universities)	MoFA / MoTIE	GSFP, GHS, GAF, Public Universities, Certified Millers	2026–2028	**Shovel-Ready** — institutions operational; MOU negotiations can begin immediately
	Supermarket and wholesale market supply agreements	MoFA / Private Sector	Supermarket chains, Wholesale associations, Millers	2027–2029	**Design Needed** — quality certification and packaging standards must be finalised first
	Import monitoring and trade enforcement (multi-agency taskforce)	MoTIE / GRA (Customs)	MoFA, NRCC, Ghana Police, Border Agencies	2026–2027	**Shovel-Ready** — agencies exist; requires Cabinet mandate and inter-agency MOU
	"Ghana Rice First" consumer branding and awareness campaign	MoFA / Ghana Tourism Authority	GSA, Media Houses, FBOs, Millers Association	2027–2029	**Design Needed** — branding strategy, packaging standards, and campaign materials to be developed
	Digital farmer-to-miller matching and market information platform	MoFA - DAES	AgriTech providers, Telcos, FBOs, Millers	2026–2028	**Design Needed** — platform architecture, data standards, and FBO onboarding protocol required
	ACTION 5				

	Training of finance institutions, FBOs, financial service providers	MoFA, GoG	DBG, GIRSAL, training partners	2026-2028	**Shovel Ready –** BDS training and sensitisation materials can be developed and disseminated.
	Farmer sensitization	MoFA Extension; District Assemblies	DBG, GIRSAL, training partners	2026-2030	**Shovel-Ready** – uses existing extension and market-systems structures
	Governance training for FBOs	MoFA; District Assemblies	DBG, GIRSAL, training partners	2026-2030	**Shovel-Ready** – BDS materials and training packages exist.
	Digital trade finance model deployment	MoFA, GoG	DBG, GIRSAL, training partners	2028 - 2030	**Design Needed –** consensus on modalities of digital finance model, advocacy across value chain to aid acceptance
	ACTION 6				
	Setting up of 30 Farmer Service Centres	MoFA-AESD	MMDAs, Universities,Private Sector, Traditional Leaders, DVLA	2026 - 2031	**Design Needed** – requires architectural design, ESIA, procurement, staffing
	Upgrade of existing Agricultural Mechanization Centres	MoFA-AESD	MMDAs, Private Operators, Universities, DVLA	2026 - 2028	**Shovel-Ready** – infrastructure exists, PPP model already established, needs assessment and equipment procurement required.
	ACTION 7				
	Establishment of new irrigation schemes	GIDA	MoFA, WUAs, MMDAs	2026 - 2035	**Long-Lead** – multi-year engineering, ESIA, and construction cycles
	Rehabilitation of existing schemes	GIDA	MoFA, WUAs, MMDAs	2026 – 2027	**Shovel-Ready** – Skeletal infrastructure already in place, only upgrades required.

ANNEX 6 : Monitoring and Evaluation: Key Performance Indicators

Table 11: Core Key performance Indicators for Ghana's NRIAP

Indicator Category	KPI	Definition	Unit of Measurement	Baseline (2025)	Annual Target	Endline Target	Data Source	Frequency
Productivity & Soil Health (Actions 1, 7)								
Soil Health & Fertiliser Efficiency	Number of soil testing kits procured	Count of soil testing kits distributed to AEAs	Number	< 50	150/year	450	MoFA procurement report	Annual
	Baseline study conducted for 215 districts	Soil sampling campaign conducted across rice districts	Yes/No	No	Yes	Completed	Soil Survey Report	Once
	Training manual developed on Soil Testing	Standard training manual produced	Yes/ No	No	Yes	Completed	Project report	Once
	Training manual developed on efficient fertiliser application	Development of a standardised national training guide on balanced and efficient fertiliser use for rice	Yes/No	No	Yes	Completed and disseminated nationally	Project report	Once
	Number of farmers trained on efficient fertiliser use	Number of rice farmers trained on correct fertiliser types, timing, rates, and methods of application	Number	< 1,000	3,000/year	≥ 11,000 (≥50% women, youth & PLWD)	Training attendance sheets; Training reports	Annual

	Number of farmers sensitized on fertilization based on soil testing	Number of farmers reached through awareness campaigns promoting fertilizer use based on soil analysis results	Number	< 3,000	15,000/year	≥ 45,000 (≥50% women, youth & PLWD)	Monitoring report	Annual
	Number of AEAs trained on Soil Testing	AEAs trained	Number	<100	200/year	450	Training sreport	Annual
	Number of soil tests conducted in farmers' field	Soil analyses completed by AEAs across priority rice basins	Number	Low/irregular	15,000 tests/year	≥25,000 tests/year	AEA reports; MoFA dashboards	Annual
	Adoption rate of soil-test-based fertiliser recommendations	% of farmers applying recommended fertiliser type & rate	Percentage (%)	<10%	30–40%	≥60%	Farmer surveys; extension monitoring	Annual
	Number of on-farm participatory trials established	Demonstration plots established to compare recommended fertilizer practices with farmer practices	Number	< 50	50/year	≥ 230	Activity report	Annual
	Training manual developed on organic fertilizer amendments	Development of a guide for composting, manure management, and integrated soil fertility management for rice	Yes/No	No	Yes	Completed and disseminated nationwide	Project report	Once

	Number of AEAs trained on Organic Fertiliser Amendments	Agricultural Extension Agents trained on composting, manure use, and integrated soil fertility practices	Number	< 50	150/year	≥ 400	Training reports	Annual
	Number of farmers trained on organic fertiliser amendment	Farmers trained in compost preparation and integrated nutrient management	Number	<2,000	10,000/year	≥ 30,000(≥50% women, youth & PLWD)	Training reports	Annual
	Number of farmers who have received carbon credit payout.	Farmers receiving verified carbon credit payments for adopting climate-smart soil and fertiliser practices	Number	0	1000/year	≥ 5,000(≥50% women, youth & PLWD)	Carbon registry reports; Project records	Annual
	Digital advisory platform on fertiliser recommendations	Deployment of a digital platform providing site-specific fertiliser recommendations	Yes/No	No	Yes (pilot phase)	Fully operational nationwide	Project report	Once (with annual usage monitoring)
	Number of rice-specific fertiliser blends available on the market	Number of fertiliser blends formulated specifically for rice and approved for sale	Number	≤ 2	5	≥ 10	PPRSD report	Annual
	Number of farmers using rice-specific fertiliser blends	Farmers applying certified rice-specific fertiliser formulations	Number	< 5% of rice farmers	20% adoption	≥ 50% adoption	Extension report	Annual

	Number of companies providing drone fertiliser application services to farmers	Registered companies offering drone-based fertilizer application services	Number	< 3	8	≥ 15	AESD report	Annual
	Number of farmers adopting drone services for fertilizer application	Rice farmers utilizing drone services for fertilizer application	Number	< 1,000	3,000/year ((≥50% women, youth & PLWD)	≥ 11,000	AESD report	Annual
	Number of fertilizer producing companies established in Ghana	Registered fertilizer production companies operating in Ghana	Number	0	1	1	MOTAI report	Annual
Productivity	Increase in rice yields among participating farmers	Yield improvement due to improved fertiliser usage,	Metric tons/ha	Varies by zone	+10–15%/year	≥25–30% cumulative increase	Field trials; production records	Annual
Seed System & Varietal Development (Actions 2 &3)								
Seed Production	Irrigated foundation seed area developed	Total irrigated hectares under foundation seed production	Hectares	<20 ha	+20 ha/year	100 ha	GLDB, PPRSD, GIDA reports, Research institutions, Seed enterprise	Annual
	Increase in the quantity of foundation seed	Quantity of foundation seeds produced (MT)	MT	Low	50	400	GLDB; PPRSD, Research institutions, seed companies	Annual
	Irrigated certified seed production area	Area under certified seed multiplication with irrigation	Hectares	Rain-fed dominant	400–500 ha/year	2,000 ha	GLDB; seed companies	Annual

	Increase in the quantity of certified seed usage	Quantity of foundation seeds produced (MT)	Metric tones	Rainfed dominant	2,000	10,000	GLDB; PPRSD, Research institutions, seed companies	Annual
Varietal Development	Number of new climate-resilient varieties released	Newly developed varieties registered and approved	Number	<1/4 years	1 new variety every 2 years	2–3 varieties	CRI/SARI; NSC	Biennial
Early Generation Seed Supply	Annual breeder seed production	Quantity produced annually across CRI/SARI	Metric tons	<0.5MT	1MT/institution	2MT/institution	CRI/SARI	Annual
Promotion and Training	Training farmers and extension officers	Number of farmers and extension officers trained on new varieties	Number	<100	≥500	500	MoFA-DAES	-
Inclusive Finance & FBO Strengthening (Action 4)								
Institutional Strengthening	FBOs with functional governance & financial systems	% of profiled FBOs meeting minimum governance & bookkeeping standards	Percentage (%)	<30%	+10–15%/year	≥70%	MoFA–DAES; FBO assessments	Annual
Financial Inclusion	Volume of credit accessed by rice value-chain actors	Total value of loans accessed through partner institutions	GHS / USD	Low	+20%/year	≥3× baseline	Banks, GIRSAL, DBG	Annual
Digital Transformation	Farmers using digital profiling / KYC systems	Number of farmers with digital records in trade-finance systems	Number	<10%	+8,000–10,000/year	≥50,000 users ((≥50% women, youth & PLWD)	FinTech platforms; MoFA	Annual
Risk Management	Loan repayment rate among supported FBOs	% of loans repaid on schedule	Percentage (%)	60–70%	+5%/year	≥90%	Banks; GIRSAL	Annual
Post-Harvest Systems, Milling & Market Access (Action 5)								
Post-Harvest Loss	National post-harvest loss rate for rice	Estimated % of paddy lost along the chain	Percentage (%)	15–25%	–2%/year	<10%	Post-harvest surveys	Annual

Market Infrastructure	Functional aggregation centres established	Number operational and meeting standards	Number	~10–15	10–12/year	50 centres	MoFA; District authorities	Annual
Hermetic Storage	Aggregation centres equipped with certified hermetic storage systems/ silos	Number of centres with installed and operational hermetic storage systems	Number	0	8–10/year	50 centres	MoFA; District Authorities	Annual
Drying Infrastructure	Centres with functional drying floors or mechanical dryers	Number of centres where paddy can be dried to 14% moisture content on-site	Number	0	8–10/year	50 centres	MoFA; Facility records	Annual
Milling Quality	% of mills compliant with GSA standards	Mills upgraded, equipped with multi-stage processing equipment, and certified	Percentage (%)	<20%	+10–15%/year	≥70%	GSA; MoFA	Annual
Digital Farmer-Miller Mapping	Farmers digitally mapped to certified millers	Number of farmers with active profiles in the farmer-to-miller registry, linked to an upgraded centre	Number	0	10,000/year	50,000 farmers	MoFA DAES; AgriTech platform	Annual
Warehouse Receipt System	Aggregation centres onboarded onto WRS	Number of centres registered and operating the Warehouse Receipt System	Number	0	8–10/year	50 centres	GCX; MoFA	Annual
Warehouse Receipt System	Volume of paddy stored under WRS as collateral	Metric tonnes of paddy deposited under WRS-	Metric Tonnes (MT)	0	+5,000MT/year	≥50,000MT	GCX; Aggregation centre records	Annual

		backed storage receipts						
Floor Price Mechanism	Seasonal floor price communicated and enforced	Whether a Guaranteed Minimum Floor Price for paddy and milled rice has been set, published, and enforced each season	Yes/No + GHS/MT	None	Operational from Season 1	Every season — all districts	MoFA; National Rice Price Advisory Committee	Seasonal
Floor Price Mechanism	% of farmers aware of seasonal floor price	Share of surveyed farmers in rice-producing districts who can correctly state the current floor price	Percentage (%)	0%	-	≥80%	Farmer surveys; FBO reports	Seasonal
NAFCO Offtake	Volume of domestic milled rice purchased by NAFCO annually	Metric tonnes of certified domestically milled rice purchased through pre-agreed NAFCO offtake MOU	Metric Tonnes (MT)	Emergency-only; no pre-commitment	50,000MT/year	150,000MT/year	NAFCO; MoFA	Annual
NAFCO Offtake	NAFCO payment turnaround time	Average number of days from certified delivery to payment disbursement to millers	Days	Unknown/delayed	≤45 days	≤30 days	NAFCO; Miller records	Quarterly
State Institution Procurement	% of rice procured by state institutions from certified domestic millers	Share of total rice purchased by GSFP, GHS, GAF, GPS, prisons, and public universities	Percentage (%)	<5%	#VALUE!	100%	Procurement records; MoFA; MoF	Annual

		sourced domestically						
Supermarket and Wholesale Linkages	Number of supermarket chains and wholesale associations with active supply agreements	Formal signed supply agreements in place with domestic rice shelf-space guarantees	Number	0	2–3/year	10 agreements	MoFA; Rice Millers Association	Annual
Consumer Demand	Consumer awareness of domestic rice quality	% of urban and peri-urban households aware of and able to identify certified domestic rice brands	Percentage (%)	Low/unmeasured	Campaign reach +500,000 households/year	≥60% urban household awareness	Consumer surveys; Campaign records	Annual
Consumer Demand	Market share of domestic rice in formal retail	% of rice sold in supermarkets and formal wholesale markets that is certified domestic rice	Percentage (%)	<10%	#VALUE!	≥35%	Retail sales data; GCX	Annual
Import Monitoring	Baseline of illegal/undervalued rice imports established	Whether import monitoring assessment has been completed and published	Yes/No + MT quantified	Not measured	Assessment completed Y1	Monitoring system operational	GRA; MoTIE; NRCC dashboard	Annual
Import Monitoring	Volume of illegal rice imports intercepted at borders	Metric tonnes of undeclared or undervalued rice seized at land and sea borders	Metric Tonnes (MT)	Unmeasured	Baseline established Y1	30% reduction from baseline	GRA Customs; Ghana Police	Annual
Ghana Rice First	Government institutions compliant with	Number of state institutions with documented	Number	0	5 institutions/year	All designated institutions	MoFA; MoF; Procurement Authority	Annual

Procurement Policy	Ghana Rice First policy	compliance with 100% domestic rice procurement requirement						
FABAG Roundtable	Volume of importer bill redirected to certified domestic millers	Metric tonnes of rice equivalent sourced by FABAG members from certified domestic millers under roundtable agreement	Metric Tonnes (MT)	0	Agreement signed Y1; purchases begin Y2	25–40% of FABAG member import volumes	MoFA; FABAG; GRIB	Annual
Inclusivity	Women, youth, PWD participation	Share of all trainees/beneficiaries	Percentage (%)	Low	+5%/year	≥50% across all classes	Training records	Annual
Mechanisation Capacity & Skills (Action 6)								
Human Capital	Certified machine operators trained	Number completing accredited operator training	Number	<150	500–700/year	≥1,000/year	Training centres; CTVET	Annual
Mechanization Efficiency	Reduction in machine downtime	% reduction in downtime among FSCs & service providers	Percentage (%)	High	–10%/year	30–50% reduction	FSC logs; service data	Annual
Institutional Strengthening	Functional mechanisation training centres	Number fully operational	Number	2 weak centres	+1 centre/year	4 centres	MoFA Mechanization Dir.	Annual
Irrigation & Mechanisation (Action 7)								
Irrigation Expansion	Additional irrigated rice area developed	Total hectares of new/rehabilitated irrigation	Hectares	<10% irrigated	6,000–7,000 ha/year	35,000 ha	GIDA; WRC	Annual
System Rehabilitation	Public irrigation schemes rehabilitated	Golinga, Libga, Botanga upgraded	Number	3 degraded	1 scheme/year	3 fully rehabilitated	GIDA; MoFA	Annual
Irrigation Management	Water User Associations functioning	% of schemes with operational WUAs	Percentage (%)	Limited	+10%/year	≥80%	WUA audits	Annual
Cropping Intensity	Dry season cropping cycles	Number of seasons cultivated	Number	1 cycle	1.5–2 cycles	2 cycles nationwide	Scheme records	Annual

ANNEX 7 : Risks and Mitigations

Table 12: Potential Risks and Mitigation Strategies to the Implementation of Ghana's NRIAP

Risk Category	Specific Threat to Implementation	Likelihood	Impact	Mitigation Measures
Technical Risks	Low utilisation of mechanisation centres (4 centres), resulting in weak financial performance	Medium	High	• Operate mechanisation centres under PPP with performance-based contracts • Guaranteed minimum service volumes through FBO agreements • Operator training and preventive maintenance schedules
	Poor quality of mill upgrades/new facilities (100 total) leading to sub-standard rice quality	Medium	High	• Standardised equipment specifications • Independent commissioning & QC audits • On-site technician training and SOP integration
	Delays in irrigation civil works (35,000 ha) due to engineering complexity	a	High	• Detailed engineering designs (DEDs) upfront • Framework contracts with vetted contractors • Construction supervision consultants embedded
Market & Price Risks	Paddy price volatility undermining milling and seed profitability	Medium	Medium–High	• Promote forward contracts & price floors • Structured trading platforms via aggregators • Diversification of products (parboiled, broken, branded rice)
	Competition from imported rice eroding consumer demand for domestic rice	High	High	• Quality upgrades across 100 PH facilities • Branding & packaging improvements • Consumer campaigns on domestic rice quality • Support for WRS and grading standards
Financial Risks	Inadequate cost recovery for irrigation O&M, threatening long-term viability	Medium	High	• Tariff-setting policy supported by ability-to-pay studies • O&M fund seeded with donor/government resources • Strong WUA governance & performance incentives
	SME borrower defaults on milling/mechanization loans	Medium	Medium	• Use guarantees (GIRSAL) • Cashflow-based lending tools • Matching grants for capex-heavy items • Financial literacy and bookkeeping support
Institutional & Governance Risks	Weak capacity of FBOs to manage aggregation, contracts, and services	High	Medium–High	• Governance training for 400+ FBOs • Digital recordkeeping apps • Incentive-linked partnerships with mechanisation centres and mills
	Slow coordination between MoFA, NRCC, District Directors, and private actors	Medium	High	• Strengthen NRCC secretariat • Monthly coordination dashboards • Joint planning sessions with districts & private sector

Climate & Environmental Risks	Flooding or drought cycles affecting productivity and infrastructure durability, especially for irrigation focused program s	High	High	• Climate-smart IVS design (drainage, bunding) • Use of resilient varieties from research institutions• Integrate NIMET/ECOWAS early warning data
	ESIA non-compliance causing project suspension or delays	Low–Medium	High	• Start ESIA early (Phase 1) • Engage communities and chiefs • Regular environmental monitoring and reporting
Operational Risks	Procurement delays affecting capex-heavy components	Medium	High	• Framework contracts • Dedicated procurement specialists • Use AfDB/World Bank-compliant procurement templates
	Human resource gaps in specialised roles (irrigation engineers, seed inspectors)	Medium	Medium	• Pre-procure TA firms • Build a national roster • Incentive packages for critical staff

ANNEX 8: VALIDATION WORKSHOP OUTCOMES

The validation workshop marked the culminating stage of Ghana's National Rice Investment Action Plan (NRIAP) development process. Its primary objective was to subject the draft Plan to rigorous technical scrutiny, test the realism of cost estimates and financing assumptions, and secure broad-based institutional and political ownership. Critically, the validation process also aimed to ensure that the NRIAP is not only technically sound but also investment-ready and implementable, with strong private-sector participation.

The validation was conducted in two phases. Phase I comprised a detailed technical review of all prioritised investment areas, held at the FSRP Office in Accra on 24–25 February 2026. This session convened subject-matter experts to interrogate assumptions, refine costing, strengthen sequencing, and assess the feasibility of implementation.

Phase II involved the final national validation workshop, held at the Oak Plaza Hotel on 26 February 2026. This broader session enabled high-level review, consensus-building, and formal endorsement. The two-phase structure ensured both depth of technical review and breadth of stakeholder ownership.

Participants represented the full spectrum of actors identified in the NRIAP stakeholder analysis (Annex 3), including:

- Private sector actors across the rice value chain (producers, millers, aggregators, input suppliers, processors, and commercial distributors)
- Financial institutions and impact investors
- Regulatory bodies and public agencies
- Development partners
- Input and mechanisation service providers

The strong representation of commercial actors and financial institutions was particularly significant. Their participation shifted discussions beyond policy intent toward bankability, commercial viability, risk allocation, and investment sequencing and reinforced the NRIAP's positioning as a framework for mobilising private capital rather than a purely public expenditure plan.

The validation process resulted in targeted refinements across all investment areas to strengthen technical soundness, implementation feasibility, and private sector participation. Several new actions were introduced, existing activities were clarified or expanded, and selected scopes were adjusted to better align with the 2028 rice sufficiency target and long-term sustainability objectives through 2035. As a result of these revisions, the total NRIAP investment envelope increased to **US$ 2,633,465,973.00 ,** reflecting expanded ambitions in input systems, market infrastructure, mechanisation capacity, and irrigation development.

A summary of the agreed revisions has been incorporated into the updated NRIAP narrative and is highlighted below.

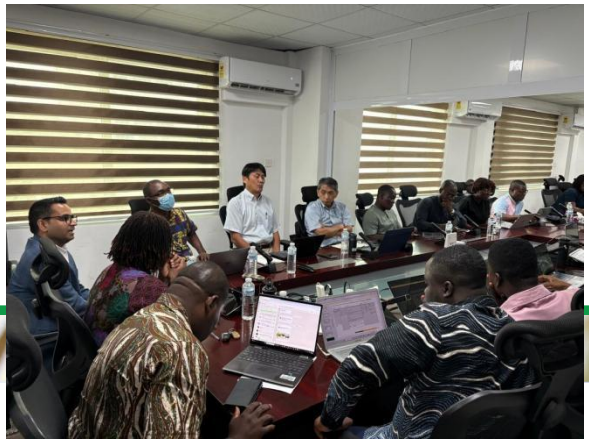
Investment Area	sions
Fertiliser Market Distribution and Usage	The key actions were expanded to include a new fertiliser production action (1.4) to build Ghana's domestic fertiliser production backbone. This aims to reduce reliance on imports and to expand private-sector participation in agro-input supply. Additional market development activities were incorporated under Action 1 to promote wider and more sustainable use of modern fertiliser technologies: • **1.3.2.** Facilitate a carbon credit offset mechanism for biochar usage by rice farmers

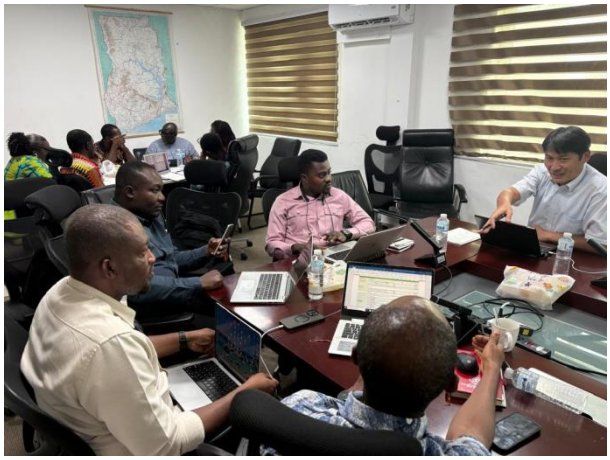
	• **1.3.3.** Undertake a nationwide soil sampling campaign (baseline study on soil fertility). • Promote the use of rice-specific fertiliser blends and drone technology for fertiliser application. The investment envelope for Investment Area 1 increased to **$2,063,726,660**.
Seed Production Under Irrigation	Key activity nomenclature under Actions 2.1 and 2.2 was revised for clarity. New key activities were introduced under Action 2.3 as follows: • **2.3.1.** Procure inputs to support foundation and certified seed production. • **2.3.2.** Establish seed conditioning (processing) facilities for foundation and certified seeds. • **2.3.3.** Establish seed storage facilities across the three production zones. • **2.3.4.** Implement best management practices for seed production, including crop monitoring and pest management. The inclusion of these activities increased the seed budget to **$7,278,180**.
Research, Technology Development and Transfer	A new key activity was introduced to strengthen commercialisation and improve linkages between research institutions and end users. The added action is: • **3.4.** Promote and train farmers on the adoption of new varieties. The budget increased to **$4,534,949**.
Harvesting, Post-Harvest and Marketing	This investment area was reinforced as a critical lever for increasing Ghanaian rice consumption, in line with the Feed Ghana Strategy. Additional actions were introduced to strengthen market systems, enable year-round rice availability, stabilise prices, and build demand for locally produced Ghana rice. Private sector representatives made specific recommendations reflected in the updated actions: • **4.3.** Construct storage and aggregation centres equipped with hermetic systems, silos, drying floors, and Warehouse Receipt System (WRS) integration. • **4.4.** Strengthen stakeholder engagement and structured market linkages (including NAFCO, GCX, importers, warehouse operators, distributors, state institutions, supermarkets, and wholesalers). The budget subsequently increased to **$96,526,650**.
Community Mobilisation, FBO Strengthening and Credit Management	One additional action was included to provide targeted value chain financing support to farmers: • **5.4.** Credit management for farmers. The total envelope increased to **$10,399,100**.
Equipment Access and Maintenance	Minor adjustments were made to beneficiary targets and budget allocations. • Training programmes were updated to reach **1,500 agricultural machinery operators and farmers annually** on correct tillage and related practices.

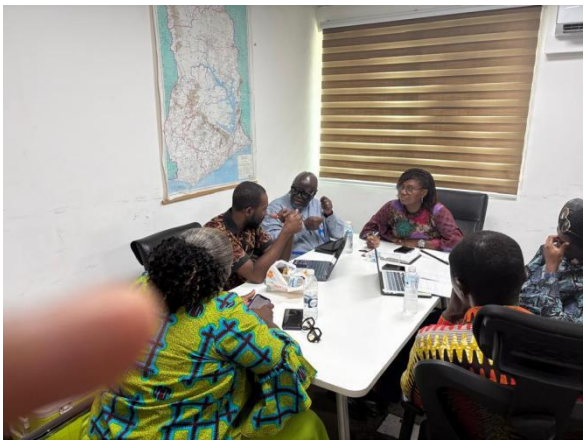
	• Training programmes were updated to reach 5**00 mechanics and technicians annually** on repair and maintenance of agricultural machinery and equipment. The revised budget is **$100,016,682**.
Irrigation and Water Control	Actions were updated to strengthen structured community and private sector engagement. Key activities were revised as follows: • **7.1.1.** Conduct desk studies and preliminary field assessments of potential lowland/inland valleys and new irrigation sites nationwide. • **7.1.2.** Undertake community entry and engagement with potential project beneficiaries, including farmers and private sector actors. • **7.1.3.** Prepare consolidated activity reports, validate findings, and disseminate to key stakeholders for final site selection. • **7.1.4.** Recruit consultants to manage feasibility studies, engineering design, and project supervision. In addition, a new action proposing the development of an irrigation scheme in the Southern region was proposed. This would be in the Afram Plains South District. The investment envelope was revised downward to **$405,080,376**, reflecting a reduction in the coverage area of existing schemes (Action 7.3) to 695 hectares across three schemes and the downward review of M&E to 5% of the total.

Ghana's National Rice Investment Action Plan (NRIAP) was formally validated on 26 February 2026. Official acceptance on behalf of Ghana's rice sector stakeholders was conveyed by the Honourable Deputy Minister of Food and Agriculture, Mr John Dumelo.

GALLERY

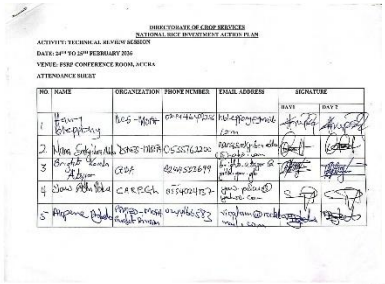


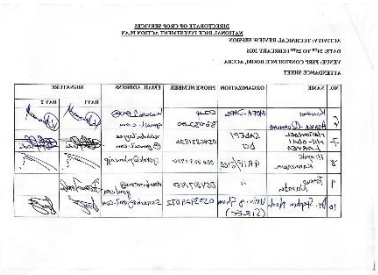


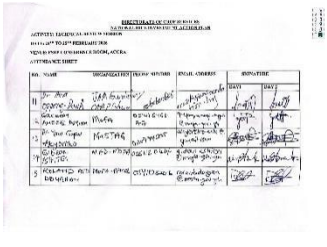


ATTENDANCE SHEETS

TECHNICAL REVIEW SESSIONS







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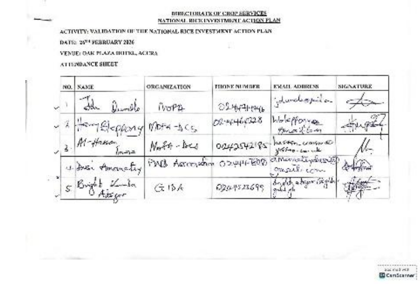
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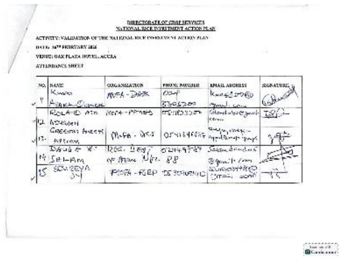
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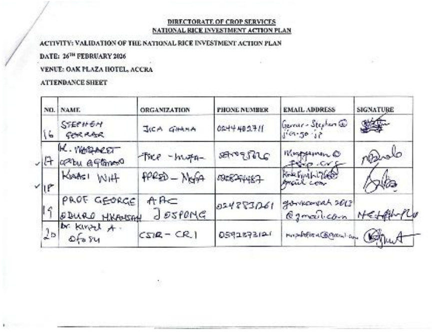
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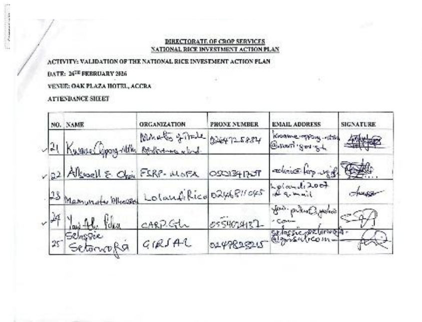
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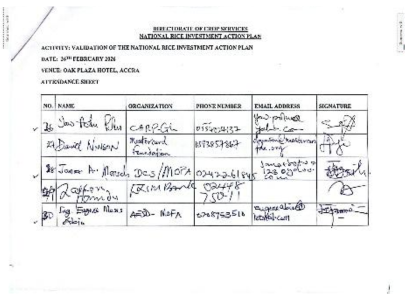
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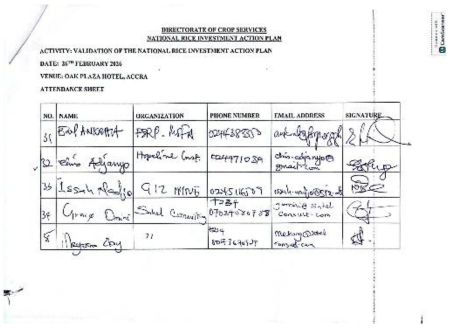
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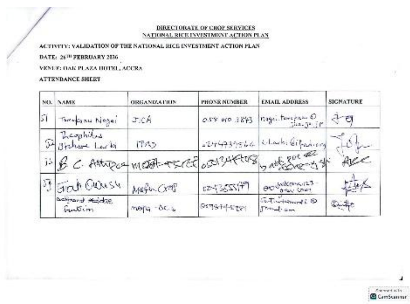
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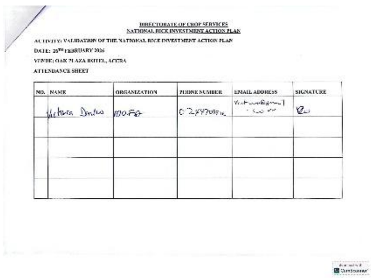
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