Proposed Research Program 2024-2025

Sl. No.	Program Area/Project/ Experiment Title & Duration	Major Objective	Expected output	Annual Budget (Thousand Tk.)
	Program Area: Varietal Development program (VDP)			
	Plant Breeding Division			
1	Development of Upland Rice (Broadcast Aus)	Development of high yield new rice varieties in combination of multiple traits such as adaptable to direct seeded condition, quick seedling emergence and vigorous growth, short growth duration (90-95 days), tolerance to lodging, drought and pre-harvest sprouting and good eating quality.	For B. Aus, promising lines/ varieties will be developed with short duration: 90-95 days, yield potential: 4.0-4.5 t/ha, with early vigor, adaptable to aerobic upland conditions through DSR and dibbling method.	1500
	Development of Jhum/Hill Rice	Development of high yielding rice variety with low (10-19%) to intermediate (20-25%) and high (25%) grain amylose content and drought tolerance suitable for Jhum cultivation.	For Jhum rice, high yielding rice variety with low (10-19%) to high (>25%) grain amylose content and drought tolerance along with good eating quality for jhum cultivation acceptable to tribal of Chattogram hill districts will be developed.	800
2	Development of Transplanted Aus (T. Aus) Rice	Introgression of earliness, pre-harvest sprouting tolerance and tolerance to high temperature into high yielding varieties for developing rice varieties with slender grain, short growth duration and resistance to major diseases under field condition.	Promising lines/ varieties will be developed with better yield potential (5.0–5.5 t/ha) and shorter growth duration (105-110 days) in comparison to existing varieties.	2000
3	Improvement of rice for shallow flooded & Deep-water environment	Development of high yielding (4.0-5.0 t/ha) rice varieties for shallow flooded area (up to 1.0 m depth), shallow deep area (30	High yielding (4.0-5.0 t/ha) rice varieties for shallow flooded area (up to 1.0 m depth), shallow deep area (30 cm water)	1700

		cm water) and medium deep area (50-60 cm water) along with submergence, facultative/slow elongation and hypoxia tolerance.	and medium deep area (50-60 cm water) along with submergence, facultative elongation and hypoxia tolerance will be developed.	
4	Development of Rainfed Lowland Rice (RLR) (T. Aman)	Introgression of genes from diverged genetic background for the improvement of standard T. Aman varieties.	Short duration varieties (105-115 days) with 4.5-5.0 t/ha yield potential and medium duration (116-130 days) varieties with 6.0-7.0 t/ha yield potential will be developed.	5000
5	Development of Salt Tolerant Rice variety for T. Aman and Boro Season	Introgression of salinity tolerant traits/ gene (s) in high yielding varieties suitable for RLR and irrigated Boro ecosystem.	Salt tolerant varieties will be developed based on farmers, consumers, miller's preference of target region with seedling stage (EC 14 dS/m) & reproductive stage tolerance (EC 8-10 dS/m) and better yield potential (5.5-6.5 t/ha for the T. Aman and 7.5-8.0 for Boro season) in comparison to existing varieties	10000
6	Development of Premium Quality Rice (PQR) for T. Aman and Boro Season	Introgression of genes for small & long slender grain with aroma, BLB and into high yielding genetic background for the development of national and international grade aromatic rice.	National grade (Kalizira, Chinigura, Kataribhog, Banglamoti and BRRI dhan34 type) and international grade (Basmati, Jasmine,) high yielding aromatic varieties with earliness, good plant type, anti-oxidant potential will be developed.	7000
7	Development of Antioxidant enriched Rice for T. Aman and Boro season	Introgression of Anthocyanin gene into the genetic background of high yielding rice variety	High yielding Antioxidant enriched rice variety will be developed	1000
8	Development of photosensitive Rice for T. Aman season	Development of strong photo-sensitive (Nizersail type) and medium photo-sensitive (Gainza type) premium quality rice for T. Aman season	Photo-sensitive high yielding varieties will be developed	500

9	Development of favorable Boro Rice	Development of new genotypes based on the farmers and consumers preference with better plant type and major insect and disease resistance.	Rice varieties for favorable irrigated ecosystem will be developed with high yield potential (7.0-8.5 t/ha), earliness to long duration and acceptable grain quality.	5500
10	Development of Cold Tolerant Boro Rice	Introgression of cold tolerance gene into high yielding rice genetic background.	Cold tolerance rice varieties will be developed for cold affected northern, western and Haor region with high yield potential (6.5-7.5 t/ha).	9000
11	Development for Micronutrient Enriched Rice (ZER) for T. Aman & Boro	Development of new genotypes with high iron and zinc content along with resistance to major insect pests and diseases, abiotic stress tolerance and acceptable grain quality.	Rice varieties with high iron and zinc content with resistance to major insect pests and diseases, abiotic stress tolerance and acceptable grain quality will be developed.	5000
12	Development of Insect Resistant Rice (IRR) for T. Aman & Boro Season	Introgression of genes of BPH and gall midge resistance into high yielding rice genetic background.	BPH and Gall midge resistant variety will be developed with better yield potential (5.5-6.5 t/ha for T. Aman and 7.0-8.0 t/ha for irrigated Boro season).	3500
13	Development of Disease Resistant Rice (BB, Blast & RTV) for T. Aman and Boro season	Introgression of high yield, lodging tolerance and disease resistance trait for BB, Blast & RTV.	BB, Blast and RTV resistant varieties will be developed with better yield potential (5.5 – 6.0 t/ha for T. Aman season and 7.5-8.0 t/ha for Boro season).	3000
14	Development of Submergence and Water Stagnation Tolerance Rice	Development of high yielding (6.0-6.5 t/ha for non-stress) and (5.0-5.0 t/ha for stress condition) rice varieties tolerant to submergence (flash flooding) and medium stagnant water (MSW) stresses with short/long growth duration, weakly/strongly photoperiod sensitivity, acceptable grain quality etc.	High yielding rice varieties with different growth duration and three weeks submergence, stagnant flood and anaerobic germination tolerances with yield target 6.0-6.5 t/ha in normal condition and 5.5 t/ha in stress condition.	3000

15	Development of Water Saving Rice	Development of short duration water-use-efficient rice genotypes with 10% more yield than the check varieties under transplanted alternate wetting and drying (AWD) & aerobic condition.	Short duration water-use-efficient rice genotypes with 10% more yield than the standard check varieties will be developed for Boro season under transplanted alternate wetting and drying (AWD) & aerobic condition.	1500
16	Development of Drought Tolerant Rice for T. Aman Season	Introgression of drought tolerance genes into high yielding rice genetic background.	Drought Tolerant Varieties for T. Aman season will be developed with potential yield target (5.0 – 6.0 t/ha).	3000
17	Deployment and Validation of High Beta-carotene Rice and High-Iron & Zinc Rice Varieties (Healthier Rice Project), T. Aman and Boro season	Development of new genotypes with high Beta Carotene (Vitamin-A) content along with resistance to major insect pests and diseases, and acceptable grain quality.	Development of high yielding rice varieties with enhanced Provitamin A, high Iron and Zinc content in polished rice grain.	4000
18	International Network for Genetic Evaluation of Rice (INGER)	Promising genotypes will be selected after evaluation and will be used as parent materials and also will be included in yield trial.	Exchange of elite rice germplasm among the rice growing countries of the world and their evaluation, characterization and utilization under wider range of environments for ultimate use by farmers.	500
	Biotechnology Division			
1	Development of premium quality rice (Kalizira type) variety	To develop premium quality rice DH lines through anther culture	Premium quality rice lines will be developed	100
2	Development of Aus variety	To develop short duration high yield Aus rice variety through anther culture	Short duration high yield Aus rice lines will be developed	100
3	Development of Aus variety	To develop short duration high yield Aus rice variety through anther culture	Short duration high yield Aus rice lines will be developed	100
4	Development of high yielding	To develop photosensitive rice variety	Photosensitive rice lines will be	50

			developed	
5	Development of high yielding photosensitive rice variety through anther culture	To develop photosensitive rice variety	Photosensitive high yielding rice lines will be developed	100
6	Development of low glycemic index (GI) rice variety	To generate low glycemic index rice through anther culture	Low glycemic index rice lines will be developed	100
7	Development of antioxidant-enriched black rice variety through anther culture	To develop antioxidant enriched high yielding black rice	Antioxidant enriched high yielding black rice lines will be developed	100
8	Development of protein and vitamin E enriched high yielding rice	To generate doubled haploid plant for protein and vitamin E enriched high yielding rice	vitamin E enriched high yielding rice variety will be develpoed	200
9	Development of ultra low GI rice variety development	To generate doubled haploid plant for ultra low GI rice variety	ultra-low GI rice variety variety will be develpoed	200
10	Studies Study on Kernel Elongation of Rice	to develop long slender rice variety with high kernel elongation (>1.7	Long slender rice lines with high kernel elongation will be developed	500
11	Development of premium quality rice (Kalizira type) variety through somaclonal variation	To create somaclonal variation towards development of high yielding premium quality (Kalijira type) rice varieties	premium quality (Kalijira type) rice varieties will be developed	200
12	Development of antioxidant enriched black rice variety through somaclonal variation	To create somaclonal variation for development of antioxidant enriched high yielding modern rice variety	Antioxidant enriched high yielding modern rice lines will be developed	150
13	Development of High yielding variety through somaclonal variation	To create somaclonal variation towards development of high yielding rice variety	high yielding rice variety will be developed	100
14	Development of high yielding premium quality rice variety through somaclonal variation	To select the best lines with high yield and desirable traits	high yielding premium quality rice variety will be developed	100
15	Preliminary yield trial (PYT) of	To evaluate initial yield potential of	potential of advanced breeding lines will	100

	mutant BRRI dhan48 and BR11	advanced breeding lines	be developed	
16	Development of high yielding short stature aromatic Kilizira type varieties using EMS	To develop high yielding short stature aromatic Kilizira type varieties	Aromatic Kilizira type varieties will be developed	100
17	Development of Sheath Blight resistant rice through mutation by EMS	To develop Sheath Blight resistant lines	Sheath Blight resistant lines will be developed	150
18	Development of Premium Quality Rice through Mutation by EMS	To develop high yielding, short stature, aromatic rice lines	High yielding variety rice lines will be developed	100
19	Developing rice variety through wide hybridization followed by embryo rescue	To develop high-yielding variety through wide hybridization followed by embryo rescue technique.	High yielding rice lines will be developed	800
20	Marker assisted selection for fragrance	To develop high yielding submergence tolerant aromatic rice variety	High yielding aromatic rice lines will be developed	100
21	Marker assisted selection for BB and Blast resistant rice	To develop BB and Blast resistant rice	BB and Blast resistant rice will be developed	50
22	Development of BB Resistance BRRI dhan87 through Marker assisted selection	To identify BB Resistant lines	Sheath Blight resistant rice lines will be developed	50
23	Association mapping (AM) for rice aroma	To purify the germplasm for making AM panel		100
24	Introgression of salt tolerant mangrove gene	To develop salt tolerance transgenic rice lines	salt tolerance transgenic rice lines will be developed	500
25	CRISPR-Cas9 mutagenesis of the BADH2 gene for aromatic rice	To develop aromatic rice variety using CRISPR-Cas9-targeted mutagenesis of BADH2 gene.	Transgenic plants will be confirmed by PCR and sequencing and Gene expression will be done	500
26	Suppression of serotonin synthesis in rice using	To develop high yielding aromatic rice	High yielding aromatic rice lines will be developed	100

	CRISPR/Cas9 for insect control			
27	Development of photosensitive high yielding rice variety	To identify genomic location controlling photosensitivity.	Photosensitive high yielding rice lines will be developed	50
28	Marker assisted selection for aromatic and submergence tolerance rice genotype	To develop high yielding submergence tolerant aromatic rice variety	High yielding submergence tolerant aromatic rice lines will be developed	50
29	Marker assisted selection for developing short stature Biroi rice	To develop high yielding biroi type rice varieties	Short stature Biroi rice lines will be developed	50
30	Isolation and cloning of drought tolerant genes from wheat	Isolate and cloning of drought tolerance gene	Drought tolerance gene will be isolated for the development of drought tolerant rice lines	200
31	Development of salt tolerant transgenic rice	To develop salt tolerant transgenic rice lines	Salt tolerant transgenic rice lines will be developed	500
32	Introgression of salt tolerant mangrove *gene*.	To develop salt tolerance transgenic rice lines	Salt tolerant transgenic rice lines will be developed	500
33	Development of salt tolerant transgenic rice	To develop salt tolerant transgenic rice lines	Salt tolerant transgenic rice lines will be developed	500
34	CRISPR-Cas9 mutagenesis of the *BADH2* gene for aromatic rice	To develop aromatic rice variety using CRISPR-Cas9.	Aromatic rice variety will be develpoed	500
35	Suppression of serotonin synthesis in rice using CRISPR/Cas9 for insect control	To develop insect resistant rice line by editing *OsCYP71A1* gene via CRISPR/Cas9 system	Insect resistant rice lines will be developed	500
36	Redesigning photosynthesis to enhance sustain rice yield potential under climate change	To improve rice photosynthesis	photosynthesis to enhance sustain rice yield potential	500
37	Redesigning photosynthesis to enhance sustain rice yield potential under climate change	To improve rice photosynthesis	photosynthesis to enhance sustain rice yield potential	C4 Karmasuchi, MOA
38	Studies Study on Kernel	to develop long slender rice variety with	Long slender rice lines with high kernel	500

	Elongation of Rice	high kernel elongation (>1.7)	elongation will be developed.	
	Hybrid Rice Division			
	Project: Development of parental materials for high yield, high amylose content and fine grain containing hybrid rice variety **Program Duration: 2024-2025**			
1.1	Source Nursery	Identification of prospective maintainers and restorers from diverse genetic origin		70,000.00
1.2	Test cross Nursery	1.Confirmation of maintainers and restorers from the crossed entries, 2. Selection of heterotic rice hybrids, 3. Conversion of prospective materials into new CMS lines.	New B & R lines identification	70,000.00
1.3	Backcross Nursery	Developing CMS lines from identified maintainer by back crossing.	New CMS line development	1,00000.00
1.4	CMS Maintenance and Evaluation Nursery	Maintain and evaluate of CMS lines	Genetic purity maintainance	1,50000.00
1.5	Development of disease resistant parental lines (Blast)	To develop new CMS lines resistance to disease (Blast) and selection of heterotic rice hybrids resistance to disease (Blast)	Blast resistant hybrid rice variety development	1,00000.00
1.6	Improvement of parental lines by (B x B) and (R x R) crosses.	To broaden the genetic base of parental lines	New recombinant B & R lines development	50,000.00
1.7	Submergence tolerant parental line development	To develop new CMS lines resistance to submergence and selection of heterotic rice hybrids resistance to submergence	Submergence tolerant hybrid rice variety development	1,50000.00
1.8	Field Rapid Generation Advance (FRGA) for B and R lines improvement.	New recombinant B & R lines will be developed	New recombinant B & R lines development	2,00000.00
1.9	Development of hybrid rice through CRISPR/Cas9 technology	Conversion of best inbred into promising maintainer line	Two lines hybrid rice variety development	5,00000.00
	Project-2: Evaluation of parental materials & hybrids			

	Duration: 2024-2025			
2.1	**Observational Trial (OT) of experimental hybrids**	Selection of promising hybrids	Selection of promising hybrids	1,00000.00
2.2	Preliminary Yield trials of promising hybrids	To study the wider adaptability and yield potentiality of promising hybrids	Adaptable promising hybrids selection	80,000.00
2.3	Combining ability of A, B & R lines	To select the best combiner (S) in respect of grain yield & yield components	Best combiner hybrids selection	80,000.00
2.4	National Hybrid Rice Yield Trial (NHRYT)	Evaluation of imported hybrids for subsequent selection		Funded by SCA
2.5	Quality ensure of previous season produced F_1 and CMS lines through grow out test	To determine purity of parental lines and hybrids of BRRI released hybrid rice	Ensure quality of produced CMS & F_1 seeds	50,000.00
2.6	Demonstration trials of BRRI released hybrids along with promising hybrids and checks	To evaluate the performances of released hybrids with promising ones	Best hybrid of promise identification	50,000.00
2.7	Multi-location Yield trials of Promising hybrids	To study the yield potentiality of promising hybrids at farmers field	Wide adaptable hybrids selection	5,00000.00
2.8	Identification of promising combiners developed using iso-cytoplasmic restorers (ICR)	Identification of promising combiners developed using iso-cytoplasmic restorers (ICR)	Iso-cytoplasmic restorer lines will be identified	1,00000.00
2.9	Breeding for outcrossing potentials in CMS lines	To select best CMS lines for enhancing seed production of hybrid rice	New CMS lines with high out crossed will be developed	80000.00
	Project-3: Seed Production of Parental lines and Hybrids **Duration: 2024-2025**			
3.1	Multiplication of promising CMS lines	To produce pure and good quality seed of CMS lines for subsequent use.	Seed increased for subsequent use	2,00000.00
3.2	CMS multiplication of BRRI hybrid dhan1 & BRRI hybrid dhan4	Production of pure and good quality seed of CMS lines.	CMS seed multiplication of BHD1 & BHD4	2,00000.00
3.3	CMS line multiplication of BRRI hybrid dhan2	Production of sufficient quantity quality seeds of CMS lines for subsequent use	CMS seed multiplication of BHD2	1,00000.00

3.4	CMS line multiplication of BRRI hybrid dhan3	Production of sufficient quantity quality seeds of CMS lines for subsequent use	CMS seed multiplication of BHD3	2,00000.00
3.5	F_1 seed production of BRRI hybrid dhan3	Production of sufficient quantity quality hybrid seed for subsequent use	F_1 seed production of BHD3 available	1,00000.00
3.6	F_1 seed production of BRRI hybrid dhan4	Production of sufficient quantity quality hybrid seed for subsequent use	F_1 seed production of BHD4 available	1,00000.00
3.7	F_1 seed production of BRRI hybrid dhan5	Production of sufficient quantity quality hybrid seed for subsequent use	F_1 seed production of BHD5 available	1.00000.00
3.8	CMS line multiplication of BRRI hybrid dhan5	Production of sufficient quantity quality seeds of CMS lines for subsequent use	CMS seed multiplication of BHD5	2,00000.00
3.9	F_1 seed production of BRRI hybrid dhan6	Production of sufficient quantity quality hybrid seed for subsequent use	F_1 seed production of BHD6 available	1.00000.00
3.10	CMS line multiplication of BRRI hybrid dhan6	Production of sufficient quantity quality seeds of CMS lines for subsequent use	CMS seed multiplication of BHD6	1,50000.00
4.11	F_1 seed production of promising hybrids	Production of sufficient quantity quality hybrid seed of promising hybrids for subsequent use	F_1 seed production of promising hybrids available	5,00000.00
4.12	CMS line multiplication of BRRI hybrid dhan8	Production of sufficient quantity quality seeds of CMS lines for subsequent use	CMS seed multiplication of BHD8	2,50000.00
4.12	F_1 seed production of BRRI hybrid dhan7	Production of sufficient quantity quality hybrid seed for subsequent use	F_1 seed production of BHD7 available	2,00000.00
4.13	F_1 seed production of BRRI hybrid dhan8	Production of sufficient quantity quality hybrid seed for subsequent use	F_1 seed production of BHD8 available	2,00000.00
4.14	Growth duration differentiation method (GDDM) for synchronization in flowering	To determine proper heading time of parental lines (A &R) of promising hybrids	Actual growth duration of A & R lines will be determined	50,000.00
4.15	Nucleus seed production of BRRI hybrid dhan1 & BRRI hybrid dhan4	To produce parental lines nucleus seeds of BHD1 & BHD4	Nucleus seeds of A & R lines of BHD1 & BHD4 produced	60,000.00
4.16	Nucleus seed production of BRRI hybrid dhan2	To produce parental lines nucleus seeds of BHD2	Nucleus seeds of A & R lines of BHD2 produced	60,000.00

4.17	Nucleus seed production of BRRI hybrid dhan3	To produce parental lines nucleus seeds of BHD3	Nucleus seeds of A & R lines of BHD3 produced	60,000.00
4.18	Nucleus seed production of BRRI hybrid dhan5	To produce parental lines nucleus seeds of BHD5	Nucleus seeds of A & R lines of BHD5 produced	60,000.00
4.19	Nucleus seed production of BRRI hybrid dhan6	To produce parental lines nucleus seeds of BHD6	Nucleus seeds of A & R lines of BHD6 produced	60,000.00
4.20	Nucleus seed production of BRRI hybrid dhan8	To produce parental lines nucleus seeds of BHD8	Nucleus seeds of A & R lines of BHD8 produced	60,000.00
4.21	Maintainer and restorer lines multiplication of BRRI released hybrids	Production of sufficient quantity quality parental lines for subsequent use	Maintainer & restorer lines of released hybrids available	50,000.00
	Genetic Resources and Seed Division			
1	**Project 01: Rice Germplasm Collection and Conservation**			
1.1	Collection of rice germplasm	To collect cultivated and wild rice germplasm from unexplored areas of Bangladesh and to store the collected rice germplasm for different users.	Collected germplasm will be conserved safely and documented along with their characters in Genebank and in computer database. Conserved germplasm with valuable traits will be made available for utilization as parent material(s) for developing new variety(s)/genotype(s).	500
2	**Project 02: Rice Germplasm Maintenance and Management**			750
2.1	Viability testing, periodic evaluation and routine monitoring of stored Germplasm	To investigate status of germination of the Genebank accessions.	Genebank accessions will be routinely rejuvenated avoiding duplicates and documented in the restricted database. Conserved germplasm with valuable traits will be made available for utilization as parent material(s) for the breeding programs.	

2.2	Rejuvenation and conservation of rice germplasm	To rejuvenate the Genebank accessions with fresh stock and to register the new collection by giving BRRI Genebank accession number after cross checking the duplication		
2.3	Purification of priority germplasm through rapid generation advance	To isolate pure and homogeneous germplasm line(s)		
2.4	Morphological characterization and documentation of rice germplasm	To characterize and document the rice germplasm as per BRRI prescribed "Germplasm Descriptors and Evaluation Form" as developed from biodiversity international and UPOV convention		
3	**Project 03: Exploratory and Genetic Studies.**			495
3.1	Study agronomic performance and photo inductive cycle of the selected photoperiod sensitive rice germplasm collected from Northern districts of Bangladesh	To identify agronomically superior germplasm suitable for post flood late transplanting	The genetic parameters/genetic studies of respective year will be helpful for varietal development and other plant breeding related issues	
3.2	Development of a duplicate free core set of rice germplasm through QC genotyping ang GBS profiling	- to optimize quality checking (QC) standards. - to sort and filter out duplicates of the genebanks accessions. - determination of sequence-based genetic distance and deploying trait-based SNPs.		
3.3	Whole Genome Sequencing of GBS purified germplasm	to develop a sequence repository for downstream analysis.		

		• to facilitate discovery of novel genes and variants associated with traits of interest.		
3.4	Trait discovery and validation of landrace varieties for specific adaptability	• To explore trait marker association for identifying genomic regions/QTLs/genes. • To develop functional makers and validate for specific traits required for climate resilience.		
3.5	Development of a duplicate free core collection of Nazirsail group of rice germplasm	To identify a duplicate free sub-set of Nazirsail germplasm accessions for future varietal development program		
3.6	Evaluation of Rata group of rice germplasm for agronomic and aroma quality	To develop a duplicate free core collection of similar named Rata group of rice germplasm accessions for future varietal development program		
3.7	Purification of Balam and Sada Mota rice germplasm	To purify the popular Balam and Sada Mota rice germplasm of southern region of Bangladesh by head to row method.		
3.8	Identification of Glutinous rice from genebank accessions for Jhum cultivation	To study the selection criteria for developing high yielding sticky rice.		
3.9	Purification and characterization of aromatic rice accessions	To develop a duplicate free aromatic rice germplasm panel		
3.10	Characterization of Biruin rice germplasm for yield and component traits, amylose and antioxidant content	Investigate amylose and antioxidant content in the Biruin germplasm		

3.11	Assessment of agronomic performance and trait-based phenotypes of Aus Germplasm	To investigate agronomic performance and response to different biotic and abiotic stress			
3.12	Molecular characterization of Aus rice germplasm collected from greater Kushtia region of Bangladesh	To characterize the rice germplasm through molecular tools using SNP QC and trait SNP panel			
3.13	Assessment of agronomic and physico- chemical properties of long slender rice germplasm	• To characterize the rice germplasm • To assess the physico- chemical properties including elongation ratio, amylose and aroma content of the long slender rice germplasm			
3.14	Assesment of physico – chemical properties of red rice germplasm of Bangladesh	To assess the phyco-chemical properties including amylose, mineral and aroma content of the red rice germplasm			
3.15	Morphological and molecular characterization of wild rice accessions	i. To characterize the wild rice accessions. ii. To make a core collection of wild rice accessions.			
3.16	Field validation of Blast resistant rice germplasm of Bangladesh.	To validate the rice germplasm for blast resistance in different areas of Bangladesh			
4	**Project 04: Seed Production and Variety Maintenance**			860	
4.1	Maintenance of BRRI released and recommended varieties	To maintain genetic purity and homogeneity in morphological characteristics	Varietal purity (both genetic and physical) will be maintained. Breeder seed will be supplied to GO, NGOs and private sector seed producing organizations.		

			Limited quantity of quality seed (QS) will be supplied to other divisions/Regional stations of BRRI and farmers directly or through DAE personnel for experimental/ exhibition purpose	
4.2	Nucleus seed production	To produce source seeds for breeder seed production of different BRRI varieties		
4.3	Breeder seed production	To produce the breeder seed (BS) of BRRI invented rice varieties as per indent of GO, NGOs and PS seed producing organizations/ companies/ entrepreneurs		
5	**Activities of GRS Division**			
5.1	Rice germplasm supply and exchange	i. To provide/supply rice germplasm accessions from BRRI Genebank to different divisions of BRRI for screening against biotic and abiotic stresses ii. To share germplasm to researchers from home and abroad under certain MTA.	All of the services from GRS Division are simplified for client's satisfaction.	
5.2	Sending *khudebarta* (SMS) for breeder seed distribution	To make it easy for the clients of BRRI Breeder Seed Network to get the information of BS distribution		
5.3	Breeder seed distribution	To supply the breeder seed of BRRI invented rice varieties as per indent of GO, NGOs and PS seed producing organizations/companies/entrepreneurs		
5.4	Monitoring of breeder and foundation seed production farms	i. To visit breeder seed plots of BRRI regional stations at flowering and maturity stages for ensuring the quality		

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		of produced seed as BS standard ii. To visit foundation seed (FS) plots of seed producing agencies at flowering and maturity stages for improving the quality of produced seed as FS standard by sharing experiences		
5.5	Publication on seed production technology package	To make seed technology knowledge available to the growers by preparing leaflet on seed production techniques for BRRI Rice Seed Network partners.		
	Grain Quality and Nutrition Division			
	1.1: Determination of physicochemical and cooking properties of advanced breeding lines	To help to develop data base on physicochemical, cooking and eating qualities of grain for newly developed breeding lines	Able to generate some breading lines with superior grain quality.	500
	1.2: Evaluation of physicochemical properties of newly released BRRI varieties	To determine physicochemical and cooking qualities of BRRI developed rice varieties for updating the database	Able to generate a database for newly released BRRI varieties.	500
	1.3: Calibration of NIR to predict proximate composition of rice varieties	1.To calibrate a near accurate prediction model for proximate composition of rice 2.To characterizing the proximate composition (moisture, carbohydrate, protein, lipids, ash	Able to screening huge number of rice sample for proxmymate composition and gave an idea to the breeder for their quality in early stage.	200
	1.4: Analysis of cooking properties of different forms of rice cooked in Bangladesh	To determine the cooking properties of different form of rice (PB and UPB) with different treatments for better cooked rice	Able to gave a complete cooking idea with better cooked rice for the BRRI varieties.	250
	1.5: Identification of superior size and shape (length, ER, IR and 1000g wt.) of cooked rice on the basis of different cooking system	To identify the parameters of rice grain through comparison of different components of rice samples that are responsible for superior size and shape of cooked rice	This study will help to identiy suitable cooking method which will give fine cooked rice length, elongation and volume expansion.	500

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	1.6: Nutraceutical Characterization of newly released BRRI varieties	To determine nutraceutical properties including antioxidants, minerals, fatty acid and amino acid profiling's of BRRI released HYVs from BR1 to BRRI dhan100 and BRRI hybrid1 to BRRI hybrid dhan7 along with their physicochemical and cooking properties.	Able to generate a database for newly released BRRI varieties.	200
	Grain Quality parameters for Consumer Preference			
	2.1: To Screening, Selection, and Training of Sensory Panelists	1. To determine impairment of primary senses (colour, vision, ageusia and anosmia) 2. To matching test for taste and odor substances 3. To ability to detect basic taste and odor acuity 4. To determine ability to characterized texture 5. To performance in comparison with other candidates	It will help to identify and measure the sensory attributes of interest and to relate quality indicators associated with the sensory attribute.	100
	2.2: Continuous Drying Solutions for Rice Bran Stabilization with Engineering Excellence	1. Develop a novel mechanical dryer design that enhances the efficiency of the rice bran stabilization process, focusing on precise moisture control to improve overall product quality. 2.Develop an efficient continuous drying system for rice bran stabilization, ensuring optimal moisture removal and improved product quality. 3.Integrate innovative fabrication techniques and materials into the mechanical dryer construction, aiming to	1. Develop and implement continuous drying methodologies specifically adapted for rice bran stabilization, emphasizing sustained and efficient heat treatment processes. 2. Integrate advanced engineering principles and technologies to optimize the performance and reliability of the continuous drying solutions, ensuring consistent and high-quality outcomes. 3. Emphasize excellence in engineering throughout the design, fabrication, and	350

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		optimize overall performance, energy efficiency, and operational reliability. 4.Design and fabricate an innovative mechanical husk-feed furnace for the dryer dedicated to rice bran stabilization 5.Investigate and incorporate advanced technologies to achieve consistent and precise control over the drying process, aiming to extend the shelf life of rice bran while maintaining its nutritional value. 6.Conduct comprehensive testing and validation processes to ensure the designed mechanical dryer significantly contributes to extending the shelf life of stabilized rice bran, while maintaining and possibly enhancing its nutritional attributes.	implementation phases to achieve superior results in rice bran stabilization, ultimately enhancing product quality and extending shelf life.	
	Nutritional Quality Assessment of Rice			
	3.1: Anthocyanin content, their antioxidant properties and expression of anthocyanin biosynthetic pathway genes in pigmented Boro rice cultivars of Bangladesh	1. To evaluate physicochemical properties and anthocyanin content in the pigmented traditional boro rice cultivars 2. Analysis of expression of major genes (PAL, CHS, ANS) involved in anthocyanin biosynthetic pathway.	This research helps to evaluate functional component from our traditional Boro rice cultivars which could be used as parental materials in rice breeding programs.	250
	3.2: A study on the high, intermediate and V. low amylose containing rice varieties and cultivars in relation to the palatability	To identify the parameters of rice grain through comparison of different components of rice samples that are responsible for palatability	This study will help to identiy which one is responsible for superior cooked rice taste in Bangladeshi people among high, intermediate, low and V. low amylose containing rice varieties and	200

			cultivars.	
	3.3: The effect of fermentation on the nutritional and microbial changes in panta bhat	1. To evaluate the nutritional properties of panta bhat 2. To determine the starch digestibility and bioavailability of mineral content 3. To evaluate the microbial properties and beneficial effect of panta bhat	This study will help for the comparison of nutritional properties between panta bhat and freshly prepeared cooked rice.	100
	3.4: A study on the different high protein containing rice varieties and cultivars in relation to the palatability	To identify the parameters of rice grain through comparison of different components of rice samples that are responsible for palatability	This study will help to identify high protein containing rice varieties and cultivars are responsible for superior cooked rice taste in Bangladeshi people.	200
	3.5: Assessment of heavy metals (Cd, Zn, Pb, Cr, As) in soil, water, and rice grain from industrial area (Dhaka, Gazipur, Narayangonj, Mymensingh, Narshindi etc.)	1. To quantify heavy metals in soil, water, and rice grain. 2. To identify area of rice field contaminated by industrial effluent water.	The study would reveal elevated levels of heavy metals (Cd, Zn, Pb, Cr, As) in soil, water, and rice grain samples collected from industrial areas around Dhaka, Gazipur, Narayangonj, Mymensingh, Narshindi, and others indicating potential environmental contamination and food safety concerns.	100
	3.6: Standardization of in vitro Glycemic Index (GI) method to evaluate GI value of rice	1. To standardize the in vitro GI method 2. To assess the variability of GI value through in vitro starch digestibility of physicochemically different BRRI varieties	This study will help to identify suitable method for easily evaluating the GI value of rice.	300
	3.7: Assessing and validating the BRRI Compact Rice Mill through a comprehensive exploration of physicochemical, mineral, and vitamin transformations across milling gradients	1. Assess the efficiency of the compact rice mill in terms of milling capacity and throughput. 2. Evaluate the impact of the compact rice mill on the physicochemical and cooking properties of milled rice, including quality parameters such as	The findings will demonstrate significant physicochemical alterations, mineral changes, and vitamin transformations observed across different milling gradients using the BRRI Compact Rice Mill, providing valuable insights into the milling	150

		moisture content, milling yield, broken percentage, and head rice recovery. 3.Determine the impact of the compact rice mill on the mineral content of different varieties of milled rice, focusing on essential elements such as iron, zinc, and magnesium across varied degrees of milling 4.Evaluate the influence of the compact rice mill on the vitamin content across milling gradients, with a particular emphasis on key vitamins such as B vitamins (e.g., B1, B2, B3) and vitamin E. 5.Compare the mineral and vitamin content of different rice varieties processed by the compact rice mill with that of rice processed using standard milling methods, ensuring nutritional adequacy and quality	process and its impact on rice quality and nutritional attributes	
	Commercial Rice Based Products			
	4.1: Survey on rice-based value-added products available in the market (Recommendation from BARC workshop-2021)	1. To find out BRRI varieties are used commercially for producing rice-based products 2. To analyze the nutritional quality of value-added rice-based products in the market	Identification and analysis of emerging trends and consumer preferences in the rice product industry, providing valuable insights for businesses and policymakers to enhance product development and market strategies.	300
	4.2: Formulation of Value-Added Rice Based Noodles.	1.To standardize a laboratory-scale method for making Flat, Macaroni, Spaghetti Pasta and Instant rice noodles, 2.To study genotype variation in	Rice based noodles will help people to increase their dietary diversity as well as those who are elergic to gluten can taste rice-based product insteas wheat.	500

		physicochemical cooking nutritional and sensory properties of rice flour in relation to noodles quality, and 3. To identify specific characteristics responsible for producing superior quality of rice noodles.		
	4.3: Design and Development of an Advanced Machine for Rice Vermicelli (Chutki Semai) Production	1.To design and implement a mechanical system for the efficient production of rice vermicelli, commonly referred to as 'Chutki Semai.' 2. To create a standard formulation of rice vermicelli, known by the popular name 'Chutki Semai.' 3. To adjust or modify the rice vermicelli manufacturing machine based on research discoveries as needed. 4. To perform a proximate analysis of the nutritional composition of the produced rice vermicelli. 5.To conduct a sensory evaluation to assess the overall quality and palatability of the rice vermicelli	Increase production capacity and efficiency of Chutki Semai (rice vermicelli) manufacturing. This output would highlight the machine's effectiveness in meeting the demands of large-scale production while maintaining product quality and consistency.	100
	4.4: Formulation of rice-based foods supplemented with anthocyanin-enriched fermented rice bran	1. Physicochemical and biochemical characterization of pigmented anthocyanin rich rice varieties. 2. Genome sequencing and analysis of gene expression in the anthocyanin biosynthesis pathway in selected Bangladeshi rice varieties. 3. Formulation of anthocyanin-fortified rice-based bakery products with fermented rice bran	1. Whole genome sequencing (WGS) data of five selected rice will scale up the bioinformatic analysis in our capacity at BRRI. 2. In vivo metagenomics study on gut microbioms will be concluded by consuming rice-based foods supplemented with anthocyanin-enriched fermented rice bran.	GQN-KGF-OFANS Project Funded 2022-24 (3 years

	4.5: Baseline survey for quantitative dietary data collection on current weaning practices	1. Collect information on current weaning practices of middle and low-income families of Bangladesh 2. Dietary and nutritional data analysis to reveal nutrient intake of six months to two years old child 3. Appropriate formulation for weaning food for Bangladeshi children based on the survey data. GQN lab, RAL and DU	Data on current weaning practices for six months to two years old child will be collected and that will help to formulate rice based weaning food.	800
	Remote sensing in Precision agriculture			
	5.1: Application of remote sensing in rice agriculture	1. To monitor crops at different growth stages 2. To ensure effective crop management 3. To validate precision agriculture in rice cultivation	Able to monitor crops at different growth stage to ensure effective crop management and validate precision agriculture in rice	800
	Program Area: Rice Farming Systems			
	Rice Farming Systems Division			
	Characterization of Farming System			
1.1	Study on cropping pattern of LSTD technology villages and harnessing opportunities for improvement	• To create database of existing cropping system in LSTD technology villages • To find out the status of MV rice coverage under different cropping pattern • To point out major constraints for further adoption of MV rice and other crops to increase productivity • To explore the scope of improvement	Improvement of existing cropping could be achieved	1050.0

		of existing cropping pattern • To create cropping pattern map using GIS tools		
1.2	Survey of rice-based cropping patterns and its improvement in Kushtia district	• To create database of the existing cropping pattern scenario in Kushtia district • To explore the scope of improvement of existing cropping pattern	Profitable cropping pattern will be identified	420.0
2. Development of Cropping System and Component Technology for Favorable Ecosystem				
2.1	Performance evaluation of four crop cropping pattern for irrigated medium high land ecosystem	• To evaluate the agronomic and economic performance of four crop cropping Crop pattern • To assess the soil fertility and weed infestation in cropping patterns	Crop productivity will be increased	200.00
2.2	Performance evaluation of three crop cropping pattern for irrigated medium high land ecosystem	• To evaluate the agronomic and economic performance of three crop cropping pattern • To assess the soil fertility and weed infestation in cropping patterns	Productivity will be increased as well as soil heath will be assessed	300.00
2.3	Determination of optimum planting window of newly released rice varieties in Mustard-Boro-T. Aman cropping system	• To find out the suitable rice varieties for Mustard-Boro-T. Aman cropping pattern under different planting times • To find out the optimum sowing/planting window of mustard-Boro-T. Aman cropping pattern	Optimum planting window under Mustard-Boro-Aman could be determined	200.00
2.4	Modification of waterlogged fallow land into year-round integrated agroforestry and fishery production system	• To bring waterlogged fallow land under year-round integrated production system through efficient utilization of different niches • To explore the best adaptative practices of fish, vegetables, and fruit production	Productivity as well as livelihoods of farmers will be increased	500.00

		for increasing productivity		
2.5	Transformation of waterlogged wetland into three-tier production system for integrated rice-fish, vegetables, and fruit cultivation	• To maximize productivity and production diversity through integrating rice-fish, vegetables, and fruits • To meet up the nutritional requirements of the farm family and increase income	Productivity as well as livelihoods of farmers will be increased	300.00
2.6	Performance of the main and ratoon crops of Boro rice at different planting dates	To identify the optimum time of the ratoon crop in Boro season	Optimum planting time could be achieved of ratoon crop	150.00
2.7	Effect of fertilizer management of late Boro rice under Mustard-Boro-T. Aman cropping Pattern	To compare the yield performance of late Boro rice with different fertilizer does under Mustard - Boro -T. Aman cropping pattern	Optimum fertilizer dose could be achieved of Mustard-Boro-T. Aman cropping pattern	200.00
2.8	Management of aged seedling to minimize the yield loss of T. Aman rice	To compare the yield performance of aged seedling of T. Aman rice through nitrogen fertilizer and crop management techniques		250.00
2.9	Suitability mapping of Mustard-Boro-T. Aman cropping pattern	• To find out the suitable environment of the Mustard-Boro-T. Aman cropping pattern • To relate crop yield, soil properties, water availability, agronomic practices, and weather parameters. • To develop GIS-based suitability maps for Mustard-Boro-T. Aman cropping pattern.	Crop productivity will be increased	400.0
2.10	Evaluation of crop productivity and soil health under conservation tillage system in Maize-Mungbean-T. Aman cropping pattern	To identify the extent of resource conservation and soil health by strip tillage system	Profitability of farmers will be increased	200.0

2.11	Evaluation of establishment method of mustard in Mustard-Boro-T. Aman cropping pattern	To identify the profitable cropping pattern and extent of resource conservation for increasing the crop productivity	Crop productivity will be increased	250.0
2.12	Introducing Boro rice in Maize (Silage)- T. Aman cropping pattern in Rajshahi region	• To increase the crop productivity and profitability • To increase the cropping intensity	Crop productivity and profitability will be increased	400.0
2.13	Maximize the resource use efficiency of agro-forestry system in Rajshahi and Kushtia region	• To increase the system productivity and existing resources • To find out the suitable DS Aman rice variety for agroforestry system	Crop productivity will be increased	200.0
2.14	Interpolation of premium quality and nutrient enriched rice varieties in Existing Mustard-Boro-T. Aman cropping pattern	To increase system productivity and profitability of existing cropping system	Crop productivity will be increased	250.0
2.15	Determination of optimum planting window of newly released T. Aman Rice varieties in Boro-Jute-T. Aman cropping pattern	To find out the effective rice varieties with appropriate planting time for increasing yield potential of T. Aman rice	Optimum planting window of rice will be identitied	400.0
2.16	Potato intercropping with maize in Maize-T. Aus-T. Aman cropping pattern in char area	• To increase system productivity and profitability of existing cropping pattern • To maximize the land use efficiency	Crop productivity will be increased	600.0
2.17	Adoption of newly released rice variety in Boro- T. Aus- Fallow cropping pattern in char area	To increase system productivity and profitability of existing cropping pattern	Crop productivity will be increased	400.0
2.18	Development and fine-tuning of suitable cropping pattern in rainfed lowland ecosystem in	• To increase the productivity through utilization of the fallow period • To find out the economically feasible	Crop productivity will be increased	200.0

	Sylhet region	CP		
2.19	Evaluation of different Aman rice varieties under Wheat-Jute-T. Aman cropping pattern in Faridpur region	• To find out the suitability of newly released Aman rice varieties under Wheat-Jute-T. Aman cropping pattern • To increase the system productivity and farmers' income	Suitable variety will be identified	500.0
2.20	Integration of fish in Boro-Fallow-B. Aman cropping pattern in low land ecosystem of Gopalganj area	To increase the productivity through fish inclusion in Gopalganj area	Productivity and profitability will be increased	400.0
2.21	Varietal improvement of Boro-T. Aus-T. Aman cropping pattern in Cumilla region	To maximize the productivity and farm income	Crop productivity will be increased	300.0
2.22	Improvement of Boro-Fallow-T. Aman cropping pattern in Cumilla region	To increase cropping intensity and productivity through crop intensification in rice-based cropping system	Crop productivity will be increased	250.00
	3.0. Development of Cropping System and Component Technology for Stress Prone Area			
3.1	Intensification of Watermelon-Fallow-T. Aman cropping pattern through inclusion of Aus rice	• To find out the suitable BRRI released rice varieties for Watermelon-T. Aus-T. Aman cropping pattern • To maximize the productivity and farm income	Crop productivity will be increased	200.0
3.2	Inclusion of rabi crops in single T. Aman area of saline coastal region	• To find out the suitable rabi crops varieties for Fallow-Fallow-T. Aman cropping pattern • To maximize the productivity and income	Crop productivity will be increased	350.00
3.3	Improvement of Boro-Fallow-T. Aman cropping pattern with BRRI newly released rice	• To evaluate the performance of BRRI newly released rice varieties in Boro-Fallow-T. Aman cropping pattern	Crop productivity will be increased	400.0

		• To increase the productivity of the existing two crop system		
3.4	Ratooning ability of BRRI released Boro rice varieties in Boro-Fallow-T. Aman cropping pattern	• To identify potential ratoon rice variety for tidal non saline ecosystem • To identify best fertilizer management under appropriate stem cutting for best ratoon rice crop • To intensify the CP and increase the productivity	Crop productivity will be increased	200.0
3.5	Development of improved cropping pattern in the non-saline tidal ecosystem	• To develop profitable copping pattern in the non-saline tidal ecosystem • To increase the cropping intensity as well as the total productivity	Crop productivity will be increased	400.0
3.6	Suitable varietal combination for Fallow-T. Aus-T. Aman cropping pattern in Barishal region	• To identify potential Aus and Aman varieties at different inundation depth in Barishal region • To increase the rice productivity of Barishal region	Crop productivity will be increased	300.0
	4.0 Development of Cropping System Technologies for Hill Ecosystem			
4.1	Exploring the hills for rice research: Feasibility study for exploring spring water for Boro cultivation	• To explore available water resource (Chhara) in hilly areas • To expand Boro rice cultivation using low lift pump (LLP) for irrigation in Fallow-Fallow-T. Aman cropping pattern • To increase overall rice production in hilly areas	Crop productivity will be increased	350.0
4.2	Exploring the hills for rice research: Feasibility of Boro rice cultivation in fringe land at Rangamati district	To increase the Boro coverage across the fringe land by cultivation of different Boro rice varieties	Crop productivity will be increased	200.0

4.3	Improvement of Jhum production system through the inclusion of modern HYV Aus varieties	To increase the system productivity through the inclusion of modern HYV Aus varieties along with the local varieties in jhum culture.	Crop productivity will be increased	400.0
	5.0 Validation and Delivery of Cropping System Technology			
5.1	Validation of pair row potato/pair row Maize-T. Aus-T. Aman cropping pattern in Northern region of Bangladesh	• To validate the profitable copping pattern under farmers field condition • To increase the Aus rice production	Crop productivity will be increased	1500.0
5.2	Inclusion of short duration Rabi crops (Mustard/Potato) in Boro-Fallow-T. Aman cropping system	• To evaluate the performance of short duration Rabi crops (Mustard/Potato) in Boro-Fallow-T. Aman cropping system • To increase the productivity of the existing cropping system	Crop productivity will be increased	8400.0
5.3	Inclusion of Aus rice in Wheat/Maize-Fallow-T. Aman cropping system	• To evaluate the performance of Aus rice in Wheat/ Maize-Fallow-T. Aman cropping system • To increase the productivity of the existing cropping system	Crop productivity will be increased	4000.0
5.4	Validation Boro-Aus-Vegetable (Bitter gourd + Potato) in medium highland ecosystem	• To increase the system productivity of the existing Boro-Fallow-T. Aman cropping systems through diversified crop arrangement. • To improve the livelihood of the farmers	Crop productivity will be increased	300.0
5.5	Piloting of improved cropping pattern in rainfed lowland ecosystem in Sylhet region	• To validate the profitable copping pattern in rainfed lowland ecosystem • To increase the cropping intensity as well as the total productivity	Crop productivity will be increased	400.0
5.6	Validation and fine tuning of	To increase the system production and	Crop productivity will be increased	400.0

	Lentil+Muskmelon-Jute-T. Aman cropping pattern in Faridpur region	farmers' income		
5.7	Validation of Boro-Deepwater Aman in the single Boro area of Faridpur region	To increase the system productivity and farmers' income	Crop productivity will be increased	350.0
5.8	Validation of improved cropping pattern in Barishal region	To increase the system productivity in Barisal region	Crop productivity will be increased	300.0
5.9	Inclusion of mustard (Canola) in Fallow-Fallow-T. Aman cropping system in Habiganj district	• To evaluate the performance of mustard (Canola) in Fallow-Fallow-T. Aman cropping system • To increase the productivity of the existing cropping system	Crop productivity will be increased	200.0
5.10	Inclusion of Aus rice after Boro rice in Boro-Fallow-T. Aman cropping system in Mymensingh region	• To evaluate the performance of Aus variety in Boro-Fallow-T. Aman cropping pattern • To increase the productivity of the existing two crop system with the inclusion of Aus rice	Crop productivity will be increased	300.0
5.11	Promotion of Gher production system	• To maximize the productivity of Gher system • To diversify the production system and to increase the farm income • To optimize the land and water use efficiency	Crop productivity will be increased	400.0
5.12	Inclusion of Aus rice in Relay Grasspea-Fallow-T. Aman cropping system	• To evaluate the performance of Aus rice in Relay Grasspea-Fallow-T. Aman cropping system • To increase the productivity of the existing cropping system	Crop productivity will be increased	350.0

5.13	Improvement of Fallow-Fallow-T. Aman cropping system	• To evaluate the performance of Aus rice and Sesame in Fallow-Fallow-T. Aman cropping system • To increase the productivity of the existing CS	Crop productivity will be increased	
5.14	Inclusion of Aus in single T. Aman cropping pattern	To increase the system productivity of in single T. Aman cropping pattern cropping system by the inclusion of T. Aus	Crop productivity will be increased	
5.15	Field days and farmers' training on different farming systems activities	• To motivate farmers for adoption of FSR technologies • To improve farmers' knowledge base on improved agricultural production system	Crop productivity will be increased	1200.0
	6.0 Integrated Farming Systems			
6.1	Monitoring the whole farm activities of intervened farmers	• To determine the livelihood improvement of the farmers resulted from the intervention of farming systems technologies • To observe the resource flow in the selected farm family	Livelihood of farmers will be increased	1000.0
6.2	Integration of mustard/ sunflower/pulses in the rice-based cropping system under different rice growing environments	To increase the system productivity by inclusion of mustard, sunflower and pulses in the existing cropping systems	Crop productivity will be increased	300.0
6.3	Promotion of improved cropping pattern packages	To increase the system productivity and income of the farmers through introduction of improved cropping patterns	Crop productivity will be increased and livelihood of farmers will be increased	300.0

6.4	Farmers' participatory evaluation of recently released BRRI varieties for Boro and T. Aman season	• To find out the suitable T. Aman and Boro varieties for different rice growing ecosystems • To disseminate these varieties for achieving higher production over the existing varieties	Crop productivity will be increased		200.0
6.5	Farmers' participatory quality seed production of recently released BRRI varieties for Boro and T. Aman season	• To demonstrate the quality rice seed production technique at farm level • To expedite the delivery systems of good quality seeds among the farmers' community	Quality seed will be produced and disseminated.		200.0
	Program Area: Crop Soil Water Management				
	Agronomy Division				
	Fertilizer Management				
1	Identification of BRRI developed boro rice varieties efficient to nitrogen fertilizer (2 Yrs)	1. To find out potential nitrogen efficient rice varieties. 2. To identify physiological characters and molecular mechanisms responsible for NUE. 3. To evaluate the agronomic performance of high NUE rice varieties under reduced nitrogen conditions.	Potential nitrogen efficient rice varieties will be identified		400
2	Nitrogen Fertilizer Optimization and Its Response to the Growth, Yield, and Quality of Premium Quality Boro varieties (2 Yrs)	1. Determine the optimum nitrogen fertilizer rate for premium quality Boro varieties to maximize yield without compromising quality. 2. Evaluate the response of Boro varieties to different nitrogen	To maximize yield The optimum nitrogen fertilizer rate for premium quality Boro varieties will be explored.		200

		fertilizer rates in terms of growth parameters such as plant height, leaf area index, and biomass accumulation. 3. Assess the impact of nitrogen fertilizer optimization on grain yield, and grain quality attributes (e.g., grain size, protein content, and milling quality and 2AP) 4. Investigate the nitrogen use efficiency (NUE) of premium quality Boro varieties under varying nitrogen fertilizer regimes.		
3	Fertilizer management for sustainable crop production in the T. Aman-Mustard-Boro-cropping pattern (2 Yrs)	1. To assess the soil nutrients status in T. Aman and Boro season 2. To assess the changes in soil nutrient contents with different fertilizer management 3. To find out the appropriate fertilizer management and specific variety for yield maximization of rice. 4. To find out the appropriate fertilizer management and specific variety for yield maximization of mustard		500
	Stress Management			
4	Heat stress alleviation in rice at the anthesis through agronomic practices (2 Yrs)	1. To elucidate the response of phenology, growth, yield and grain quality of rice to heat stress during the anthesis. 2. To determine the effect of management practices to resist heat	Yield loss due to heat stress will be quantified and possible heat stress mitigation technique will be developed.	300

		stress in rice		
5	Coactive role of Zinc oxide nanoparticles and stress-tolerant PGPR on drought stress in rice (2 Yrs)	1. To evaluate the individual effects of nano ZnO and PGPR on plant growth and physiological responses under drought stress conditions. 2. To assess the combined effects of co-inoculation of nano ZnO and PGPR on plant growth, water use efficiency, and stress tolerance. 3. To investigate the underlying mechanisms involved in drought stress mitigation by nano ZnO and PGPR, both individually and in combination.	The individual effects of nano ZnO and PGPR on plant growth and physiological responses under drought stress conditions will be explored.	300
	Yield Maximization			
6	Effect of agronomic critical factors-based managements for different yield goal level on lodging behavior of T Aus variety at Middle and Northern parts of Bangladesh (2 Yrs)	1. To study the effect of agronomic factors-based managements on varietal lodging behavior at different yield goal level of T Aus. 2. To recommend the judicial management protocol for sustainable yield of different variety in T Aus season.	The judicial management protocol for sustainable yield of different Aus variety will be developed	400
7	Knockout of *Gn1a* and *DEP1* CRISPR/Cas9 for Yield Maximization (5 Yrs)	1. To knockout *Gn1a and WFP/IPA1 or DEP1* gene by CRISPR Cas9 genome edition technique. 2. Evaluation of the effects of the target alleles in popular rice background through phenotypically and molecular basis	To improve rice yield through modifying yield-determining traits of existing cultivars using a molecular approach to ensure food security in the era of climate change.	700

	Weed Management			
8	Herbicide Resistance Screening in Mixed Weed Flora against Popular Herbicide: Insights from Field and Laboratory Studies in Bangladesh (2 Yrs)	1. Identify herbicide-resistant weed species present in mixed weed flora 2. Determine the level of resistance and the mechanisms involved (e.g., target-site mutations, metabolic resistance). 3. Evaluate the effectiveness of popular herbicides against resistant weed populations. 4. Provide recommendations for integrated weed management strategies to combat herbicide resistance.	The level of resistance and the mechanisms involved (e.g., target-site mutations, metabolic resistance) will be dtermined	300
9	A Field survey on weed diversity in different Agricultural regions of Bangladesh	1. To know the weed management option and to formulate recommendation of standard herbicides with appropriate doses in different ecosystem. 2. To formulate a weed database with major or minor weeds in rice ecosystem. 3. To investigate the distribution and severity of weed flora prevailing in different agricultural rejoins 4. Identify emerging weed problems and directions for further research and development for improved weed management in upland and lowland rice.	• The distribution and nature of major and minor weeds of upland and lowland rice have been idenfied due to changing climate and cropping pattern. • Will be idenfied weed database that will help to formulate appropriate weed management action	500
10	Assessment of yield and	1. To find out the actual yield loss in	Actual and potential yield loss (%) by	500

	economic losses in rice due to weeds in Bangladesh	farmers level of Bangladesh due to improper weeding. 2. To findout the potential yield loss in different locations of Bangladesh.	weeds in the farmer's field will be fild out which will make weed management decision better.	
	Soil Science Division			
I.	**Fertility Assessment of Rice Soils and Nutrient use efficiency in rice**			
	1.1 Determination of nutrients (N and K) requirement of rice plant in field condition and prepare a strong image database	• To identify and estimate judicial N and K fertilizer requirement of rice plant in field condition by image-based analyses using android mobile set • To determine the effect of precision nutrient management on grain yield and socio-economic impact on new technology	Nutrient requirements of rice crop to be prescribed at field conditions by analyzing leaf colour images of a particular genotype	90
	1.2 Delineating productivity of rice soils in the ecologically constrained areas of Bangladesh through digital soil mapping (DSM)	• To determine the yield potentiality of rice soils in the ecologically constraint areas of Bangladesh through development of DSM • To generate recommendations for effective soil fertility management in the constraint areas	Detailed maps to be developed for precise nutrient recommendations and improved management of the identified fertility constraints.	Funded by PARTNER proj.
	1.3 Long-term effect of primary nutrients on crop growth, yield and soil properties under Conservation Agriculture	To evaluate the effect of primary nutrients on crop growth, yield and soil properties under conservation Agriculture	Development of tools for sustainable nutrient management for rice under conservation agriculture	Funded by PARTNER proj.
	1.4 Site specific nutrient management (SSNM) for	To quantify nutrients at optimal rates and times in order to achieve high rice yield	Optimum nutrient recommendations for advanced breeding lines will be	Funded by PARTNER proj

	ALART materials	and high nutrient efficiency	developed.	
	1.5 Site specific nutrient management (SSNM) for newly released BRRI Varieties	To quantify nutrients at optimal rates and times in order to achieve high rice yield and high nutrient efficiency	Optimum nutrient recommendations for new rice varieties will be developed.	Funded by PARTNER proj
	1.6 Improve rice yield and nitrogen use efficiency through nano-technology and zeolite amendment (Lab & field expt.)	• To synthesis and characterized Urea-Nano fertilizer • To assess the N fertilizer use efficiency, yield contributing parameters, rice yield and soil available N	Development of synthesized nano-urea fertilizer to increase nitrogen use efficiency and rice yield.	Funded by PARTNER proj
	1.7 Potassium management in rice-based cropping pattern in Old Himalayan Piedmont soil	• To identify the K deficiency in soil and plant tissue in AEZ 1 (Piedmont soil) • To determine the K contribution for different crops (rice, wheat, maize etc.) • To increase crop yield in the respective cropping pattern and • To maintain soil fertility especially for K	Sustainable and improved rice yield and maintenance of soil K fertility.	Funded by LSTD proj
	1.8 Evaluation of the efficacy of commercial fertilizers and PGRs on rice cultivation (nano fertilizer, liquid fertilizer, combined fertilizer, sea weed extract and organic fertilizer)	To evaluate the efficacy of commercial fertilizers and PGRs for rice growth and yield.	The tested commercial fertilizers and PGRs will be recommended for improved rice yield.	Funded by PARTNER proj.
	1.9. Soil fertility map development and soil characterization of the research farms of BRRI Regional stations	• To develop a soil fertility map • To characterize the soils of the research fields of the BRRI regional stations; • To classify the soils according to the world soil classification system.	Detailed maps to be developed for precise nutrient recommendations in BRRI R/S.	2.0

		• To quantify the changes in soil nutrients on long term basis		
	1.10. Carbon and nitrogen fractions and stocks under continuous wetland condition in intensive rice cropping	• To study the long-term effect of different inorganic fertilizer application on different fractions of SOC and soil N • To estimate the effect of long-term chemical fertilizer on changes in C & N in intensive rice cropping	Carbon and nitrogen stock in soil under continuous rice crop will be quantified	1.0
	1.11. Study the phosphorus fractions from Long-term phosphorus experiment	• To find out the different P fractions in long-term P application • To identify the mining nutrient • To determine the N-P, N-K, P-K, P-Zn ratio in soil • To maintain soil fertility	Net P balance in long-term rice production will be quantified.	1.5
	1.12. Changes of soil fertility of long-term missing element trial	• For maximizing rice yield • To identify the mining nutrient • For maintain soil fertility	Yield limiting fertility factors will be identified for better soil management	1.5
II.	**Integrated nutrient management for intensive rice cropping**			
	2.1. Best management practices to increase rice productivity and soil health	• To obtain quality and safe rice • To sustain crop yield • To maintain soil health & minimize environmental pollution	Development of technologies for safe rice production, maintenance of soil health and minimize environmental pollution	Funded by PARTNER proj.
	2.2 Nutrient management for fine, aromatic and premium quality rice of Bangladesh	• To observe the reduction of grain yield and quality of fine aromatic rice cultivars in north-western part of Bangladesh • To develop an integrated nutrient management package for increase rice	Integrated nutrient management package will be developed for increase the quality and yield of fine rice	Funded by LSTD proj

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		yield and sustain soil fertility • To maintain grain qualities (aroma, fineness etc.) through proper fertilizations		
III.	**Soil and Environmental problem**			
	3.1. Greenhouse gas absorption, emission and mitigation under Wheat-Jute-T Aman cropping system in High Ganges river floodplain (AEZ-11)	• To assess the total absorption and emission of GHG • To find out net ecosystem carbon budget	Net ecosystem carbon budget in rice based production system will be quantified.	2.0
	3.2 Mitigating carbon emissions and measuring carbon absorption in rice cultivation through Zeolite application	• To generate data on GHG (CH_4 and N_2O) emissions from rice cultivation using various fertilizer management; • To find out a net carbon balance between emission and absorption from rice cultivation; • To develop technology that allows lower GHG emissions from rice cultivation, and creating awareness among farmers on GHG mitigation, and absorption	• GHG emissions will be quantified from rice fields with different fertilizer management, particularly Zeolite application and their upscaling in different agroecological zones. • Quantification of reduced global warming potential and higher rice yield. • Net carbon balance will be quantified	Funded by PARTNER proj.
	3.3. Saline Soil Management through organic & inorganic amendment & surface drainage	• To investigate the effectiveness of organic & inorganic amendments along with shallow surface drain in mitigating soil salinity & increasing rice yield	Strategies to mitigate soil salinity and increase rice yield in saline soils will be developed.	1.5
	3.4 Method validation for quantification of total and inorganic arsenic in husked	• To demonstrate the performance characteristics of ICPOES-HG quantification method for selective	Method validation and get accreditation by BAB for determining As.	Funded by PARTNER proj.

	and unhusked rice by ICP-OES with Hydride Generation	determination of inorganic (iAs) and total (tAs) As in husked and unhusked rice with a low detection limit. • To meet up the prerequisite to get accreditation by BAB of BRRI RAL for As.		
IV	**Soil Microbiology and Biofertilizer**			
	4.1. Innovative climate smart techniques for the improvement of hill soil health, conserve soil micro-biodiversity and Paddy yield in existing rice cultivation system	• To study the agricultural soil health (physical, chemical and biological properties of hill soil ecosystem) of Ramu, Sitakundu and Matiranga upazilla • To find appropriate climate smart need based nutrient management technologies for sustainable soil health and biodiversity of the hilly areas • To improve rice yield in ecofriendly practice	Development of appropriate climate smart nutrient management technologies for sustainable soil health of the hilly areas	80
	4.2. Isolation and screening of Methane Degrading Bacteria	• Isolation and identification of indigenous potential methanotrophs from paddy field • Determination of methane oxidation capability of the isolates.	Potential methanotrophs will be isolated from paddy field for reducing methane emission.	3.0
	Irrigation and Water Management Division			
1.	**Improvement of Water Use Efficiency in Irrigated Agriculture**			

1.1	Determination of Physical and Hydraulic Properties of Different Soil Types (2022 to be conitued)	• To determine important physical properties (bulk density, particle density, infiltration rate, hydraulic conductivity, soil-water retention, etc.) of root zone soil • To develop soil-water retention/characteristics curves • To determine parameters of soil-water retention function	• Documentation of important soil physical properties for improved water management • Generation of data bank for utilization in crop modeling		100
1.2	Development of an Automated and IoT based procession irrigation system using multiple sensors and automatic control gates. (2024-2028)	• To develop a sensor and IoT-based smart irrigation system for controlling water application in a plot as well as in the whole command area • To improve the water use efficiency and water productivity in rice cultivation • To develop a user-friendly irrigation saving technologies for the farmers	• An automated and user-friendly water saving technology for rice • Increased water use efficiency and water productivity		300
1.3	Study on Water-Stress Tolerance for Different Advanced Rice Genotypes of BRRI (2025 to be contined)	• To quantify water-stress tolerance capacity for different rice varieties • To determine yield of the rice varieties under different water-stress conditions	• Scaling of water-stress tolerance capacity (WSTC) of each variety • Easy scheduling of irrigation based on WSTC • Additional information for cultivation of a newly released variety		100
1.4	Performance Evaluation of the Proposed Rice genotypes Under Different Water Regimes (2019 to continued)	• To study performance of the proposed rice varieties under different water regimes • To evaluate suitable water regimes for proposed lines/varieties of rice	• Determination of water stress tolerance capacity of proposed lines/variety • Water management package identification for specific variety		200
1.5	Optimization of Water Use Efficiency Through	• To increase water use efficiency in crop cultivation	• Feasibility of subirrigation system in rice cultivation		300

	Subirrigation in Bangladesh (2022 to 2026)	• To design and installation of subirrigation system • To evaluate the performance of sub-irrigation system in transplanted rice field	• Increased water use efficiency and water productivity	
1.6	Soil moisture sensor and IoT based automated sprinkler irrigation system for Rice (2024-2028)	To develop and implement a sensor and IoT-based smart sprinkler irrigation system to improve water use efficiency and productivity in rice cultivation	• An automated and user-friendly water saving technology for rice • Increased water use efficiency and water productivity	300
1.7	Establishment methods and irrigation effects on crop performance and water productivity of Boro rice (2024-2026)	• to evaluate the effect of establishment methods on rice growth, yield and yield components under different irrigation regimes; • to determine the suitable establishment method and water use efficiency for rice cultivation	• Suitable rice establishment method and water use efficiency	100
1.8	Real-time Monitoring System for Salt Dynamics in Different Textured Soils by Using Internet-of-Things (IoT) (2023-2025)	• To develop a IoT based procedure for monitoring salt dynamics in soils, and • To monitor salt movements during salinization and desalinization processes in 3 different textured soils under saturated/unsaturated conditions	• A real time soil salinization and desalinization monitoring system will be developed based on IoT. • These features will provide an integrated solution that can facilitate the monitoring and prevention of soil salinization in coastal regions	200
1.9	Performance Evaluation of Smart Card Operated Irrigation Management of Rice Field in Muhuri Project Areas of Feni District (2023-2026)	• To optimize the use of water for irrigation applying smart card technique • To reduce energy cost compared to farmer's traditional management practices	To increase average water use, reduce water required /Kg of Boro rice production, increase yield avg. yield, reduce irrigation Cost, increase avg. earning /Ha. of Boro rice cultivation.	300

		• To evaluate a cost-benefit analysis of the different irrigation methods		
1.10	Assessment of Available Water Resources for Bringing Fallow Lands Under Cultivation in Sylhet and Habiganj (2023-2025)	• To quantify the fallow land amount in Sylhet and Habiganj • To identify water sources and estimate available water resources • To figure out a suitable way for irrigating fallow lands	A working guideline for increasing irrigated cropping area in Habiganj and Sylhet region could be carried out.	100
1.11	Increasing Land Productivity in Valley Area of Hilly Region Through Integrated Minor Irrigation System (2023-2026)	• To conserve water from hilly stream near valley in dry season • To develop appropriate water distribution and application systems for irrigating valley land • To bring fallow lands under rice or rabi crop cultivation	Irrigation facility development using nearby water sources will increase the cropping intensity and land productivity in valley areas of hilly regions.	150
1.12	Sensor-Based Soil Moisture Tracking for Varying Water Level in Paddy Field (2023-2026)	• To calibrate soil moisture sensors with observed lab and field data • To monitor and record continuous soil moisture data over the season • To figure out soil moisture dynamics with water level depletion	• Precise soil moisture relationship with shallow water table and its effect on crop yield could be identified.	500
1.13	Sensors and IoT Based automatic precision irrigation system at different water regimes: Performance of an automatic gate (2024-2028)	• To develop and implement a sensor and IoT-based smart irrigation system to monitor and control water usage that can improve water use efficiency and productivity in rice cultivation • To make the irrigation water saving technologies user friendly for the farmers through automation	• An automated and user-friendly water saving technology for rice • Increased water use efficiency and water productivity	300
1.14	Study on trend and variability	• To evaluate long term changes and	Irrigation water requirement and plant	100

	analysis of climatic parameters in different agro ecological zone of Bangladesh (2024-2027)	trends • To determine irrigation water requirement by CROPWAT model in different agro ecological zone of Bangladesh • To correlate climate change with crop yield	growth will be determined	
2.	**Utilization of Water Resources in Rainfed Environment**			
2.1	Agricultural drought forecasting for mitigating drought in T. Aman rice (2021-2025)	• To validate drought by using forecasted rainfall and evaporation • To mitigate drought by applying supplemental irrigation • To determine suitability of drought model for forecasting, and • To determine yield performance after mitigating drought	• Drought tolerance ability of BRRI dhan71 will be identified for Kushtia region. • Effect of supplemental irrigation on yield and yield contributing parameters of BRRI dhan71 will be quantified.	100
2.2	Irrigation Scheduling of Rice (*Oryza sativa* L.) Based on Weather Forecasting in Gazipur (2020-2025)	• To predict water demand through water balance simulation model for rice cultivation • To compare performance of water balance simulation model with AWD and conventional methods • To validate water balance simulation model with CROPWAT 8.0 model • To recommend the better method for irrigation scheduling of rice	• Irrigation water requirement determination through weather forecasting. • Better method for irrigation scheduling	100
3.	**Land Productivity Improvement in the Coastal Environment**			

3.1	Assessment of Water Resources Availability Suitable for Irrigation to Increase Crop Production in Tidal Areas of Barisal Region (2025 to be continued)	• To monitor dynamic temporal variation of surface water salinity in the dry season at different locations of Barisal region • To assess constrains and prospects of tidal water utilization for irrigated crop cultivation • To assess availability of water and potentials for irrigated crop cultivation	• Availability of suitable water in terms of salinity for irrigation at different distances from the coast towards the upstream • Guidelines for productivity improvement through assessment of available suitable water resources for irrigation	100
3.2	Water Resources Assessment During Dry Season Crop Cultivation in Selected Polders of Coastal Region (2017-2026)	• To delineate suitable water resources during dry season • To determine the amount of fresh water available for crop production during dry period • To assess cultivable area used for different cropping patterns based on water resources	• Availability of suitable water in rivers and canals in dry season • Productivity improvement through assessment of available suitable water resources for irrigation	100
3.3	Impact of Saline Water Irrigation and Rice Straw and Gypsum Amendment on Soil Physicochemical Properties and Rice Yield in The Coastal Saline Area (2021-2025)	• To evaluate the effect of rice straw and gypsum incorporation and saline water irrigation on soil physical and chemical properties • To find out the effect of rice straw and gypsum amendment on rice growth and yield in the saline area • To find out the sustainable saline water irrigation for rice cultivation in the coastal area	• Ameliorate of the harmful effect of salinity and improve soil properties • Sustainable use of saline water irrigation for rice cultivation in the coastal area	100
3.4	Performance of hybrid and inbred boro rice under different level of irrigation water salinity	• To assess the hybrid phenological and morphological causes of yield variation under saline condition	Suitable Boro rice varieties with phenological and morphological characteristics will be identified under	300

	in coastal saline area (2024-2026)	• To identify the suitable rice cultivars for higher yield in the coastal saline area	saline condition	
3.5	Electrical conductivity sensor and IoT based soil and river water salinity monitoring in the coastal region of Bangladesh (2024-2028)	• IoT based electrical conductivity measurement of coastal rivers for remotely, frequently and real time monitoring of the water salinity. • Assessment of suitable soil and water resources for crop productivity improvement in the coastal regions	• Water and soil salinity dynamics in coastal regions • Suitable time for closing and opening of the sluice gates in the polders	300
3.6	Improving water and land productivity by hybrid rice cultivation during Aus season at Subarnachar (2024-2026)	• To identify the constraints for Aus cultivation at Subarnachar • To identify location specific technologies for Aus cultivation to increase land and water productivity at Subarnachar • To identify appropriate water management to increase crop production during Aus season • To identify appropriate rice varieties to increase crop production during Aus season • To study the economic benefit of Aus cultivation	▪ Constraints of Aus rice cultivation will be determined ▪ Appropriate water management will be determined ▪ Suitable variety will be determined Economic benefit will be determined	500
4.	**Sustainable Management of Water Resources**			
4.1	Monitoring Groundwater Level Fluctuation and Safe Utilization of Groundwater in Different Geo-Hydrological Regions	• To determine fluctuation of groundwater level over time and its relationships with rainfall • To determine water quality for	• Known dynamic behavior of groundwater level in different regions of Bangladesh • Awareness development for judicial	100

45

	(1779 to be continued)	assessing its suitability for irrigation	use of groundwater resources	
4.2	Assessment of Surface and Groundwater Quality for Irrigation in Selected Locations of Bangladesh (2029-2025)	• To determine the surface and groundwater quality parameters • To determine the suitability of groundwater for irrigation	Safe irrigation water sources identification	150
4.3	Present Status and Potentiality for Increasing Rice Cultivation in Surface Water Irrigation Projects of Bangladesh (2021-2025)	• To determine the present status of major irrigation projects • To identify the problems of command area increasing • To figure out the improvement options for surface water utilization	Improvement options of surface water irrigation project	100
4.4	Groundwater Use Potential for Supplemental Irrigation for Boro Rice Production in the Haor Areas (2022-2025)	• To assess the groundwater availability for Boro rice cultivation • To install tubewell for irrigation development • To reduce yield loss due to water stress at the later stage of Boro rice • To assess potential command area for the installed STW	To increase productivity by mitigating water stress at the reproductive phase of rice	500
4.5	Effectiveness of Surface Laid PVC Pipe Irrigation for Boro Rice Cultivation in The Haor Areas (2022-2025)	• To develop a portable water conveyance system under undulating condition of haor areas • To minimize irrigation water loss in distribution systems of the LLP schemes • To increase irrigation coverage per unit time	To increase crop coverage by improving irrigation facilities for Boro production	200
4.6	Estimation of groundwater	• To evaluate long term changes and	Sustainability of groundwater	100

	rechage in Cumilla and Sylhet region (2024-2026)	trend of GWL • To evaluate rainfall trend • To estimate GW recharge	abstraction will be identified	
5.	**Utilization of Renewable energy**			
5.1	Development of A Low-Cost DC Solar Water Pump for Irrigation in Bangladesh (2019-2025)	• To use a permanent magnet brushless DC motor for operating solar water pump • To find out optimum panel size for good matching between pump and PV module • To test efficacy of the pump for surface water irrigation • To determine economic feasibility of the pump for rice cultivation	• Optimum panel and pump size • Suitability for rice irrigation • Environment friendly technology	150
5.2	Feasibility Assessment of Solar Pump Utilization for Irrigation Purpose in Chattogram Region (2021 -2025)	• To evaluate the present status of solar pumps at field conditions in Chattogram region • To find out the suitable source of water for solar pumping system • To assess the suitability of solar pump system at Chattogram region	• Present irrigation scenario, sources of irrigation water and energy for irrigation pumps • Suitability to use of solar energy in irrigation	100
6.	**Technology Validation in the Farmers' Field**			
6.1	Upscaling of Improved Water Management Practices for Sustainable Productivity in the Haor areas (2022-2025)	• To document the existing agricultural water management practices for identifying problems and potential to attain higher productivity in the haor areas. • To assess the effect of water stress on the yield of Boro rice and find suitable	Crop and land productivity will be improved	5825

		measures to overcome the problem. • To demonstrate performance of suitable water management technologies for the improvement of irrigation efficiency and optimum crop yield; and • To explore the possibility of increasing crop production by further irrigation expansion.		
6.2	Mitigating Risk and Scaling-Out Profitable Cropping System Intensification Practices in the Salt-Affected Coastal Zones of the Ganges Delta (2021-2025)	• Scaling out profitable cropping system intensification practices • Mitigating risk of changed practices and changing climate	Crop and land productivity improvement in the coastal area	2628
6.3	Productivity Enhancement through Improved Agricultural Water Management Technologies in the Haor Areas (PIWMH) (2023-2024)	• To increase the water resources availability from different sources to ensure optimum irrigation in crop production; • To demonstrate performance of suitable water management technologies for the improvement of irrigation efficiency and optimum crop yield; and • To enhance land productivity through cultivation in fallow land and crop intensification in the haor areas.	• Ensured irrigation for sustainable crop production • Water saving by around 20% • Increased cultivation area, cropping intensity and productivity • Policy recommendation for agricultural development of haor areas	5000
	Plant Physiology Division			
	Project 1: Salinity Tolerance			
1	Exploring new sources and advance breeding lines for	To identify salt-tolerant advance breeding lines/germplasm at the seedling	New sources of Salinity tolerant donor and tolerant advance breeding lines	100000.00

	salinity tolerance from at seedling stage Starting date: September, July, 2024 Ending date: June, 2024	stage.		
2	Phenotyping and screening of germplasm against the traits related with salinity tolerance **Status of the Experiment:** New Starting date: 2024 Ending date: 2026	To characterize the component traits associated with salinity tolerance.	New sources of salt tolerance rice genotypes at seedling stage which may be used to future breeding program.	200000.00
3	Characterization of Rice Germplasm for Whole Growth Period at Different Salinity Stress Starting date: 2024 Ending date: 2025	To identify the level of tolerance of the tested germplasm, to identify the safe level of soil and water salinity for growing the germplasm and to estimate the yield and yield components.	New sources of salt tolerance rice genotypes at reproductive stage which may be used to future breeding program.	150000.00
4	Characterization of hybrid varieties for whole growth period at different salinity stress Starting date: 2024 Ending date: 2025	To identify the level of tolerance of the tested varieties, to estimate the yield and yield components and to know the mechanisms of salinity tolerance	Salinity tolerance ability and its mechanism of its tolerance will be identified.	150000.00
	Project 2: Submergence Tolerance			
5	Exploring new sources of submergence tolerance Starting date: April 2024 Ending date: July 2024	To identify submergence tolerant germplasm	Submergence tolerant germplasm will be detected.	150000.00
6	Screening for stagnant flooding tolerance of	To identify tolerant germplasm/advanced breeding lines for water stagnation	Water stagnant tolerant genotypes with high tillering ability.	150000.00

		condition		
	germplasm/advanced breeding lines Starting date: April 2024 Ending date: November 2024			
	Project 3: Drought Tolerance			
7	Confirmation of performance for ALART/ RYT /AYT materials under drought stress at reproductive stage **Status of the Experiment:** New **Starting date:** July, 2024 **Expected ending date:** Feb, 2025	To evaluate of **ALART/ RYT /AYT** materials under control drought condition in the net house.	Drought tolerant genotypes will be identified.	150000.00
8	Screening germplasm for drought tolerance at reproductive phase (PARTNER-Project) **Status of the Experiment:** New Starting date: July' 2024 Expected ending date: April' 2025	To identify rice germplasm tolerant to drought stress at reproductive phase.	The best tolerant germplasm to be further used as donor parent for developing future drought-tolerant varieties**.**	150000.00
9	Evaluation of previously selected germplasm under drought stress at reproductive phase in the rain-out shelter **Status of the Experiment:** New **Starting date:** July 2024 **Expected ending date:**	To find out the correlation of field performance of tested genotypes with the performance	Drought tolerant genotypes would be confirmed under control condition.	100000.00

	December 2024			
10	Physiological and biochemical characterization of advanced breeding lines under drought stress at reproductive phase **Status of the Experiment:** New **Date of initiation:** July 2024 **Date of completion:** March 2025	i. To assess the effect of drought stress on growth and yield of the tested genotypes. ii. To identify the physiological traits associated with drought tolerance.	Mechanism of tolerance of tested genotypes would be determined.	150000.00
	Project 4: Heat Tolerance			
11	Screening for high temperature induced spikelet fertility QTL introgressed advanced breeding lines and germplasm under controlled conditions Starting date: March 2024 Expected date: October 2024	To identify new sources of heat tolerance from Bangladeshi rice germplasm.	New sources of heat tolerance from Bangladeshi rice germplasm	150000.00
12	Preliminary yield trial of high temperature-induced spikelet fertility introgression lines in the background BRRI dhan28 and BRRI dhan29 Starting date: March 2014	To find out yield potential phenotypic similarity with respective recipient parents.	Heat tolerant BRRI dhan28 and BRRI dhan29, which can tolerate high temperature ($>35^0$C) during flowering.	150000.00
13	Screening for high-temperature tolerance of spikelet fertility QTL introgression lines i. Starting date: February 2023	To identify high-temperature tolerant lines under controlled condition.	High temperature tolerant introgression lines	150000.00
14	Pyramiding of qHTSF4.1 and qEMF3 in the background of BRRI varieties	To combine heat tolerance and escape mechanism to achieve greater tolerance against high temperature during	Pyramided heat tolerance and escape to achieve greater tolerance against high temperature during flowering	200000.00

		flowering.		
	Project 5: Cold tolerance			
15	Exploring new sources of cold tolerance from BRRI Gene Bank collections at seedling stage	To identify rice genotypes which can tolerate low temperature at seedling stage.	Identification of new sources of cold tolerant germplasm at seedling stage.	100000.00
16	Screening of advanced breeding lines for seedling stage cold tolerance (SDCTR Project)	To identify advanced breeding lines which can tolerate low temperature at seedling stage.	Identification of cold tolerant advanced breeding lines at seedling stage.	100000.00
17	Screening of advanced breeding lines for cold tolerance at reproductive stage (SDCTR Project) **Status:** New Date of initiation: October 2024 Date of completion: July 2025	To identify cold tolerant advanced breeding lines for whole growth period at natural cold condition.	Determination of tolerance level of tested breeding lines.	100000.00
	Project 6: Growth and Yield Potentiality			
18	Yield assessment of advanced breeding lines in response to photoperiod **Status of the Experiment:** New Starting date: July 2024 Expected date: December 2024	To determine the yield in response to photoperiod under late Aman planting	Seeding time limit for late planted Aman rice	150000.00
19	Characterization for lodging tolerance of BRRI released varieties in different transplanting time of Boro season Starting date: January, 2024	To determine the lodging characters of BRRI released latest varieties	Lodging tolerance of the tested varieties will be known.	150000.00

	Ending date: December 2025			
20	Screening for lodging tolerance of advanced breeding lines in Boro season Starting date: January, 2024 Ending date: December 2025	To determine the lodging characters of BRRI released latest varieties	Lodging tolerance of the tested advanced breeding lines will be known.	100000.00
21	Evaluation for lodging tolerance of latest varieties in T. Aman season at different time of transplanting Starting date: June, 2024 Ending date: July, 2025	To determine the lodging tolerance of tasted varieties	Lodging tolerance of the tested varieties at different planting time lines will be known.	100000.00
22	Photoperiod sensitivity test of different types of rice genotypes **Status of the Experiment:** new materials Starting date: April 2024 Ending date: June 2025	To know the photosensitive response of tested genotypes	Photo-sensitivity of the tested genotypes will be known.	150000.00
23	Reduction of pre-harvest sprouting of rice through chemical spraying. **Status of the Experiment:** New **Starting date**: April, 2023 Ending date: September, 2023	To reduce the pre-harvest sprouting spikelet in rice panicle	PHS preventing technology.	100000.00
24	Pyramiding strong-culm QTLs SCM1 and SCM2 in the background of Bangabandhu dhan100 and BRRI dhan87 **Starting date**: 2023	To develop lodging tolerant version of Bangabandhu dhan100 and BRRI dhan87	Pyramided lodging tolerant version of Bangabandhu dhan100 and BRRI dhan87	150000.00
25	Dormancy and viability test of	To determine the dormancy and viability	Dormancy and viability period of these	50000.00

	BRRI varieties grown in Aus, Aman and Boro season **Status of the Experiment:** New **Starting date**: 2025	period of rice varieties in Aus, Aman and Boro season	varieties would be known.	
	Project 7: Genome editing			
26	Mutagenesis through CRISPR/Cas9 system for new trait/s development	To develop salinity tolerance, male sterile line for two-line hybrid system and semidwarf plant in rice.	Development of salt tolerant, male sterile rice line for two-line hybrid system, and semidwarf rice.	200000.00
	Project 8: C4 rice research and development			
27	Investigation of anatomical and photosynthetic differences in the C3-rice leaves and C4 species Starting date: July 2021 Expected date: June 2025	1) To identify leaf anatomical differences between C3-rice and C4 species. 2) To explore differences of photosynthetic related parameters between rice and C4 species	Anatomical and photosynthesis differences of C3 and C4 species	200000.00
28	Optimizing chlorophyll fluorescence imaging system for photosynthetic efficiencies of C3 and C4 species in different stress condition Starting date: July 2021 Expected date: June 2025	i. To identify photosynthetic efficiencies of C3 and C4 species under low CO_2 stress. ii. To explore photosynthetic differences of rice under salinity, submergence and drought stress.	Optimized chlorophyll fluorescence imaging protocol for stress detection of C3 and C4 species	200000.00
	Project 9: Crop Weather Information			
29	Manual weather station data collection and maintenance Starting date: 1973	To collect, transfer and storage of different weather variables	Archiving of manual weather data from BRRI headquarter and different regional stations.	100000.00
	Program Area: Pest Management			

	Entomology Division			
1	Pest monitoring in BRRI farm. Duration: Long term, continued since 1972.	To study the insect pests and their natural enemy incidence at BRRI farm and to create a database to develop a forecasting system.	Insect pests and their natural enemy incidence will be identified and a database for insect forecasting will be developed.	150000/-
2	Insect pests and natural enemy in light trap. Duration: Long term, continued since 1972.	To study the pest and their natural enemy incidence patterns in rice fields and to create a database to develop a forecasting system.	Insect pests and their natural enemy incidence will be identified and a database for insect forecasting will be developed.	150000/-
3	Survey and monitoring of rice arthropods in different AEZ. Duration: Long term, continued since 2020.	To identify the peak abundance of insect pests in different AEZ of Bangladesh.	The highest levels of insect pest abundance in various Agro-Ecological Zones (AEZ) of Bangladesh will be determined.	200000/-
4	Behavioral adaptation of RLR in different weather condition. Duration: Mid term, continued since 2019.	To identify the effects of temperature on life cycle of rice leafroller.	The impact of temperature due to climate change on the life cycle of the rice leafroller will identify.	200000/-
5	Species composition of stem borer in rice. Duration: Mid term, continued since 2022.	To study the relative abundance of different species of rice stem borers and to determine the yield loss due to their damage.	Will assess the relative prevalence of various species of rice stem borers and quantify the resulting yield loss from their damage.	150000/-
6	Conservation of natural enemies through eco-engineering. Duration: Mid term, continued since 2019.	To conserve natural enemies through ecological engineering approaches. To reduce insecticide application in rice production. To identify the parasitoids for specific flowers.	Ecological engineering methods for preserving natural enemies will minimize insecticide usage in rice field.	200000/-
7	Study on entomogenous fungi to control BPH. Duration: Mid term, continued since 2019.	To identify the entomopathogenic fungi isolates that naturally infected brown planthoppers.	Naturally occurring entomopathogenic fungi isolates that have infected brown planthoppers will discover.	200000/-

8	Study on the biology of green mirid bug an egg predator BPH. Duration: Mid term, continued since 2022.	To know the biology and life cycle of green mirid bug.	An efficient natural predator will be utilized for managing Brown Planthopper (BPH).	100000/-
9	Estimation of yield loss due to insect pests of rice. Duration: Long term, will be continued from 2024.	To determine the yield loss of rice due to insect. To predict losses for formulating action thresholds.	The whole scenario of rice yield loss due to insect will determine.	New
10	Test of different insecticides against major insect pests. Duration: Long term, continued since 1972.	To evaluate the effectiveness of commercial formulations of different insecticides against major insect pests of rice.	Effective insecticide formulation and dose against specific insect will evaluate.	300000/-
11	Use of nanoparticle to control rice insect pests. Duration: Mid term, continued since 2019.	To develop nano-particle based pest management in rice. To reduce chemical pesticide load in environment.	Nano particle based pest management will reduce the use of chemical insecticides.	300000/-
12	Insecticidal effects of different botanicals for the management of rice leaffolder. Duration: Short term, will be continued from 2024.	To know the efficacy of different botanicals for management of rice leaffolder.	Various botanicals will be employed for controlling rice leaffolder infestation.	100000/-
13	Effect of different insecticides on resistance GLH population. Duration: Mid term, will be continued from 2024.	To find out the location specific GLH resistance level against different insecticides.	We will identify various insecticides that are effective against GLH populations that have developed resistance.	200000/-
14	Effect of insecticide on resurgence development in absence or presence of natural enemy. Duration: Short term, will be continued from 2024.	To know the role of natural enemy for the control of resurgence development.	The impact of insecticides on the resurgence of pest populations, both in the presence and absence of natural enemies, will be identified.	100000/-

15	Residue analysis of different insecticide in rice by using LCMS. Duration: Mid term, continued since 2020.	To detect insecticide residues in rice hull, bran and polished rice. To establish monitoring and guidance on safe use of insecticide in rice field.	The presence of insecticide residues in rice hulls, bran, and polished rice, will assess and will develop monitoring protocols and guidelines for the safe application of insecticides in rice fields.	500000/-
16	Development and validation of analytical methods for multiple pesticide residue determination in rice grain using Liquid Chromatography with Tandem Mass Spectrometry (LCMS/MS). Duration: Mid term, continued since 2023.	To develop and validate a multi-residue analytical method for the analysis of different pesticide in rice grain using QuEChERS (Quick, Easy, Cheap, Effective, Rugged and Safe) extraction coupled to LC-MS/MS.	A validated analytical method for multiple pesticide residue determination in rice grain using LCMS will develop.	500000/-
17	Screening of rice germplasm, advance line against BPH, WBPH, GLH, GM. Duration: Long term, continued since 1972.	To identify resistant rice germplasm against major insect pests.	Insect resistant rice germplasm will be idenfied.	400000/-
18	Identify of biotype on brown planthopper in Bangladesh. Duration: Long term, will be continued from 2024.	To find out the biotype scenario in rice ecosystem. To identify the resistance genetic sources.	Updated information of BPH biotype and their incidence pattern will find out.	New
19	Suppression of serotonin synthesis in rice using CRISPR Cas9 for insect control. Duration: Mid term, continued since 2019.	To develop insect resistant rice variety. To reduce insecticide dependency.	Insect resistant rice line will be developed.	500000/-
20	Controlling rat in rice field through integrated management approach. Duration: Long term, will be	To manage rats in rice field through different options in a sustainable way.	A sustainable way to control rat will be identified.	New

	continued from 2024.			
	Plant Pathology Division			
	Project: Survey and monitoring of rice diseases			
1	Survey and monitoring of rice diseases in selected areas	1. To investigate the present status of different rice diseases in different climatic environments 2. To update disease crop calendar	Present disease status in farmers' field will be known.	700
2	Country wide rice disease(s) sample collection, processing, registration and preservation	1.For the development of Pathogen bank 2.Genetic variability study	Genetic variability of the pathogens will be known	100
	Project: Population structure and biology of major pathogens			
3	Population biology of *Rhizoctonia solani* for Sheath blight resistance in rice	To study the population structure of *R. solani* in Bangladesh	Identification of virulence patterns of *R. solani*	200
4	Assessment of Microbial community in Sheath Blight affected rice field	1.To evaluate microbial community at species level; 2. To identify Bacteria/fungus population which promotes ShB disease; 2.To find out biocontrol agents against ShB	1.Effect of fungicides on soil rhizospheric microbial population will be known. 2.Bacteria/fungus population which promotes ShB disease will be known and 3 Biocontrol agents against sheath blight will be identified.	50
5	Studies on the population biology of rice blast pathogen (*Magnaporthe oryzae*) in Bangladesh	1. To select new differential blast isolates 2.To identify candidate resistant gene(s) or source(s) 3. To monitor regularly of the evolution of new races	Differential set of blast isolates will be identified	300
6	Characterization of blast	To investigate the various fungal	Effective blast management stragetiges	50

	isolates collected from different hosts	morphological characteristics.	will be developed.	
7	Variability of *Fusarium* sp. associated with bakanae disease	To determine the morphological, pathological, and molecular diversity, of the *F. fujikuroi* population isolated from symptomatic bakanae-diseased rice plants in Bangladesh	variability of the pathogen and thereby to develop cultivars with inbuilt resistance to bakanae disease.	500
8	Characterization of *Bipolaris oryzae* causal agent of Brown spot disease	To see the variability among *B. oryzae* isolates collected from different location	Variability among *B. oryzae* isolates collected from different location will be known.	25
9	Isolation of rice false smut and Sheath rot pathogen from different locations	To identify the diversity of false smut and sheath rot pathogen	Diversity of false smut and sheath rot pathogen will be identified	100
10	Pathotyping, virulence and molecular detection of *X. oryzae* pv. *oryzicola* causing BLS of rice	To identify virulent isolates and to study genetic variability of *X. oryzae* pv. *oryzicola* pathogen	A set of virulent isolates will be identified	100
11	Detection of causal agent of bacterial panicle blight of rice	Isolate and identify the bacterial panicle blight (BPB) pathogen	Bacterial panicle blight (BPB) pathogen will be identified	100
	Project: Disease resistance and molecular studies			
12	Sheath blight disease resistance in rice through Crispr-Cas9 genome editing	To develop resistance against rice sheath blight pathogen	Homozygous gene-edited sheath blight resistance rice plant	300
13	Development of pre-breeding materials for rice sheath blight disease	To develop sheath blight resistant pre-breeding materials	Sheath blight resistant pre-breeding materials will be developed	
14	Assessment of susceptibility to sheath blight in BRRI released and other HYVs of rice	Identification of resistance source(s) for rice sheath blight resistance breeding	Resistance source(s) for rice ShB resistance breeding	50

15	Screening of germplasm and advanced breeding lines against sheath blight of rice	To find out resistant genotype(s) against sheath blight disease	Sheath blight resistant materials would be obtained	100
16	Development of blast resistant varieties using differential system and molecular markers	To develop blast resistant materials for Bangladesh	Blast resistant materials would be obtained.	500
17	Screening of advanced breeding lines and germplasm against blast diseases	To identify blast resistant germplasm	Durable blast resistant variety will be developed.	100
18	Detection of novel loci underlying rice blast resistance by integrating a genome wide association study (3K Genome Project)	To detect novel loci underlying rice blast resistance in local germplasm of Bangladesh.	Resistance source(s) for rice blast resistance breeding	200
19	Genome-wide association study to identify blast resistant novel loci from Bangladeshi landraces.	To detect broad spectrum resistant loci underlying for rice blast, disease (*Magnaporthe oryzae*) in Bangladesh	Resistance source(s) for rice blast resistance breeding	500
20	Marker assisted pyramiding of major blast resistance genes *Pi9, Pita2* and *Pb1*.	To widen the resistance spectrum of emerging lines as well as to attain durable resistance	Resistance source(s) for rice blast resistance breeding	300
21	Phenotypic and molecular characterization of rice blast resistance in native Rice Germplasm in Bangladesh	Phenotypic Assessment, Molecular Identification and Population Structure Analysis of native germplasm against rice blast.	New blast resistant sources/QTL will be identified	100
22	Transcriptome analysis of blast disease resistant advanced lines	Validation of reference genes to observe the functional status of advanced lines	Disease resistance mechanism will be understood.	200
23	Gene expression profiling and proteomics during rice blast (*Magnaporthe oryzae*) disease development (PhD work)	To know the gene expression profiling and proteomics during rice blast disease development	Blast resistant variety development	300

24	Characterization of upland Aus rice genotypes resistance to blast	1.To understand blast resistance mechanism in Aus germplasm 2.To evaluate the physio-chemicals & nutraceutical properties	New blast resistant sources will be identified.	100
25	Development of durable Blast and BB resistant variety through mutagenesis by CRISPR/Cas9 system	To develop broad spectrum resistant rice variety against Bacterial Blight and Blast disease using CRISPR/Cas9 system	Multiple disease (BB and Blast) resistant variety will be developed within short time.	500
26	Introgression of blast resistance gene(s) into BRRI dhan58 using marker assisted backcross breeding	To introgress blast resistance *Pi9* and *Pb1* genes in BRRI dhan58	Blast resistant variety development.	50
27	Screening of rice germplasm against Bakanae disease	To identify the resistance source against bakanae	Potential donors for resistance to bakanae disease will be identified.	100
28	Development of bakanae resistant pre-breeding lines	To develop bakanae resistant pre breeding material/lines.	The superior resistant lines will be selected based on pathogenicity test against virulent races.	300
29	Evaluation and screening of rice germplasm resistant to false smut disease at field condition	To identify potential donors for resistance to rice false smut	Potential donors for resistance to rice false smut disease will be identified.	50
30	RYT of tungro resistance advanced breeding lines	To observe the yield and tungro resistance in different regions/hotspots	Develop tungro resistant variety.	100
31	Observational Yield Trial (OT) for Tungro disease	To select genetically fixed lines with RTV resistance and yield potential	Develop tungro resistant variety.	100
32	Screening of germplasm/ advanced breeding lines against rice tungro.	To identify the resistance native source against tungro disease of rice.	Potential donors for resistance to tungro disease will be identified	50
33	Genome-wide association studies for identifying quantitative resistant loci (QRL) conferring rice BB	1.To identify useful BB resistant QTL(s)/gene(s) 2.To elucidate genetic mechanism of bacterial blight disease resistance	Useful gene resources, resistant genetic loci of land races and distribution and nature of pathotypes of *Xoo* will be revealed.	500

	resistance			
34	Screening of rice germplasm and advanced materials against Bacterial blight disease	To identify new resistant sources against bacterial blight disease	Potential donors for resistance to BB disease will be identified	50
35	Development of BB resistant pre-breeding materials for T. Aus	To develop medium duration BB resistance advanced lines for T. Aus	Develop BB resistant variety.	100
36	Development of pre-breeding materials of BB and False smut resistance in the background of BRRI dhan49	To develop resistance rice lines of bacterial blight and false smut disease.	Develop BB and false smut resistant variety.	100
37	Evaluation for Blast and BB resistant long duration advanced lines during Boro	To evaluate specific and general adaptability of blast and BB resistant LD advance breeding lines	Develop blast and BB resistant variety.	50
38	Evaluation for Blast and BB resistant short duration advanced lines during Boro	To evaluate specific and general adaptability of blast and BB resistant SD advance breeding lines	Develop blast and BB resistant variety.	50
	Project: Epidemiology, yield loss and grain quality studies			
39	Quantifying yield losses caused by rice sheath blight disease.	To estimate the yield loss in rice caused by sheath blight disease under controlled conditions	Yield loss due to rice sheath blight disease at different growth stage will be determined	200
40	Genotype and environmental interaction on neck blast incidence in blast prone area	To understand the pattern of neck blast incidence in relation to variety and environment	Neck blast disease forecasting model will be developed.	30
41	Identification of disease economic threshold level for controlling rice blast	To find out exact critical disease status to take control measures	Optimum time of leaf blast disease management will be identified.	100
42	Development of Early Warning System of rice blast disease	1.To aware the rice growers at least 14 days earlier of blast disease infection. 2.To generate data on the thermal and	Blast disease management purpose	300

		humidity effect on rice disease development.		
43	Measurement of yield loss due to Sheath rot disease of rice	1. To estimate the yield loss of sheath rot 2. To develop yield loss model.	Yield loss model for Sheath rot will be developed	100
44	Estimation of tungro virus incidence & its impact on rice cultivation in Cumilla	1. Instant estimation of yield loss due to major rice disease. 2. To assess the tungro affected area and yield loss due to tungro disease. 3. To evaluate varietal response to tungro disease	Tungro disease management	50
45	Crop Loss Assessment of rice due to major diseases	To calculate the actual crop loss due to major diseases in Barishal region.	Crop loss assessment due to disease will be clearified.	500
46	Seed health status of rice in Bangladesh	1. To know the health conditions of rice seeds available from public and private sectors, and farmers' seed as well; 2.To develop rice seed health standard in Bangladesh	Rice seed health standard in Bangladesh will be developed	50
47	Climate change effect on rice disease development	To generate data on the climate change effect on rice disease development (Climate change project, IWMD).	Rice disease management.	100
48	Development of a yield loss app	Instant estimation of yield loss due to diseases	Yield loss will be estimated.	200
	Project: Management of rice diseases			
49	Determination of residual effect of sheath blight controlling fungicides in rice grain, stem and soil.	To detect the residue of different fungicides in grain, straw and soil samples	Residual existence in rice grain and straw would be determined	100
50	Evaluation of new chemicals against sheath blight diseases of rice	To find out the effective chemicals suitable for ShB disease management.	Chemicals suitable for ShB disease management will be identified.	100

51	Efficacy of *Bacillus cereus* as bacterial biopesticide to manage sheath blight disease	To manage sheath blight disease	Biopesticide for sheath blight disease management will be developed	100
52	Evaluation of new chemical against blast disease of rice.	To find out the effective chemicals suitable for Blast disease management.	Chemicals suitable for blast disease management will be identified	100
53	Estimation of yield loss due to bakanae and blast disease at field level	To estimate yield loss due to rice blast and bakanae disease at field level.	Yield loss will be estimated.	100
54	Integrated Management of Bakanae Disease of Rice	Efficacy of Trichocompost and Bacterial biopesticide to control bakanae disease	Bakanae disease will be managed	100
55	Brown spot disease management under non-stress, saline and char land environment.	To control Brown spot disease	Brown spot disease will be managed	300
56	In vitro and in vivo evaluation of nano mediated fungicides against sheath blight disease	1. To find out appropriate ratio of nano materials and fungicide for controlling sheath blight disease 2. To detect residual effect of NPs in rice	Sheath blight disease will be managed	25
57	Synthesis of AgNPs and ZnONPs using bacterial isolates for controlling ShB and blast	1.To investigate the potency of biosynthesized NPs against blast & sheath blight 2.To detect residual effect of NPs in rice	Sheath blight and blast disease will be managed	100
58	Evaluation of plant extract mediated silver nano particle against bakanae disease.	1. To determine the effect of nano particle on bakanae disease management. 2.To determine the residual effect of NPs.	Plant extract mediated silver nano particle will be validated to manage bakanae disease without having residual effect.	150
59	Extraction of silica NPs from rice husk ash and its application in rice cultivation	To develop silica nano-particles from rice husk ash and its application in rice cultivation.	Effective and eco-friendly disease management practices will be developed.	200
60	Biosynthesis of Nanoprticles using microbes for controlling	1.To synthesize NPs using bacteria. 2. To determine the effect of nano-	Developed Nanoprticles using microbes will be used for controlling major	50

		particles on fungal growth and evaluate their efficacy on rice disease management. 3.To see their stability and longevity in stored condition	diseases of rice	
61	Sustainable management of rice bacterial blight through nano-particles	1.To prepare effective NPs using plant sources and inorganic salts. 2.To evaluate NPs (biosynthesized and synthetic) for BB management. 3. To reduce the quantity of recommended chemicals through NPs mediatrd fungicides.	Developed Nanoprticles using microbes will be used for controlling BB	50
62	Determination of longevity of native antagonistic bacteria in carrier materials	1.To find out a suitable carrier 2.To determine the shelf life of bacterial inoculum in career	Longevity of native antagonistic bacteria in carrier materials will be determined.	50
63	Bioaccumulation and detoxification of As (III) and disease management by *Achromobacter xylosoxidans* in As-contaminated soil (in vitro)	1.To decrease as uptake by spraying *Achromobacter xylosoxidans* bacteria inoc. 2.To find out the major disease escaping capacity by applying *Achromobacter xylosoxidans* in rice field.	Effectiveness of *Achromobacter xylosoxidans* will be determined for disease menegemnet and arsenic detoxification	100
64	Evaluation of biopesticides for rice insect pest management	1.To control leaf folder and stem borer using the developed biopesticide(s). 2.Commercial formulation of the effective biopesticide(s).	Developed biopesticide will be used for insect pest management	150
65	Effect of Trichocompost on nutrient and disease management in rice	1 To find out the efficacy of Trichocompost for K management in rice 2.To observe the effectiveness of Trichocompost for disease management	Effectiveness of Trichocompost for disease management will be identified	200
66	Development of Rice disease diagnosis and management	To develop a farmers' friendly disease diagnosis and management advisory	Disease diagnosis and management software (apps).	200

	platform using artificial intelligence	software.		
77	Precise detection of rice disease through proximal sensing	To detect problems early and to manage diseases precisely.	Early detection of rice diseases.	200
	Mapping and monitoring rice diseases using high-resolution satellite images (PhD work)	1.To build up an unattended mapping system of rice disease 2.To detect high precision rice disease at an early stage 3.To preserve data and make it available for further use.	Detect and map major rice diseases as a preliminary support system for disease management.	200
68	Enabling Farmers in combating pest and diseases in rice crops through Artificial Inetegence	1.To apply Artificial Inelegancy in rice pests diagnoses and management. 2. To determine photosynthetic efficiency after pathogen infection in rice leaves using RGB value (New).	Rice pests diagnoses and management will be done.	100
69	Validation of *Ankuri*© seed disinfector and germinator and its smart restructuring	1.To evaluate field efficacy of *Ankuri* and farmers' use efficiency 2.Development of a smart *Ankuri* for further improvement	Seed germination failure during boro season will be solved.	50
70	Suppression of fungal and bacterial development by hydrogen peroxide	To observe the effect of H_2O_2 on fungal and bacterial development at different concentrations	Effectiveness of H_2O_2 against fungus and bacteria management will be understtod	100
71	Seed borne disease management using microwave treatment	Effectivity to control seed borne fungal pathogens without reducing seed vigor. For more stringent pesticide regulation and improving seed safety.	Seed borne pathogens will be destroyed and seed borne diseases will be managed without pesticide hazardous.	50
72	Effect of ShB controlling fungicides Fungicide on Microbial Community in rice rhizosphere	1.To investigate microbial communities for the use of ShB controlling fungicides 2.To detect the residue of fungicides in soil and plant	Status of microbial communities will be understood after the use of ShB controlling fungicides	100
73	Residual effect of Amistar Top	To know the residual effect of Amistar	Residual effect of Amistar Top 325 SC	25

	325 SC (Azoxystrobin 20% + Difenoconazole 12.5%) in soil	Top 325 SC in soil	in soil will be known	
	Project: Technology Transfer			
74	Up scaling of rice disease(s) management technology followed by field demonstration training.	1.To disseminate effective disease management practices among the farmers. 2.To develop farmers' knowledge on disease identification and management	Disease management practices will be popularized.	1000
75	Training on integrated disease management in changing climate	To build up farmer's awareness on integrated rice disease management	Farmer's awareness will be increased on integrated rice disease management	1000
76	Healthy seedling production in seedling tray for enhancing mechanical transplantation	To enhance mechanical transplantation by producing healthy seedling in seedling tray.	Mechanical transplantation will be enhanced by producing healthy seedling in seedling tray.	50
	Programme Area: Farm Mechanization and Postharvest Technology			
	Farm Machinery and Postharvest Technology Division & Workshop Machinery and Maintenance Division			
	1.0 Development of Agricultural Machines			
	1.1: Evaluating and modifying of BRRI developed machines	• To verify the quality of BRRI machines • To identify the functional problems of farm machines • To improve the performance of farm machines	Ensure to develop an Ideal prototype of modern farm machinery	50.00
	1.2: Design and development of walking type power operated	• To design and develop a power-operated rice transplanter	Prototype of a power operated walking type rice transplanter will be available	2500.00

	rice transplanter	• To test the performance of the developed rice transplanter	for Bangladesh conditions.	
	1.3: Postharvest loss assessment of whole and head feed combine harvester under different soil conditions	• To assess the loss of grain. • To identify a suitable operating system to minimize the loss.	Technical faults of whole and head feed combine harvester will be identified.	50.00
	1.4: Performance evaluation of laser land leveler with the conventional method	• To evaluate the performance of laser land leveler and conventional systems • To find the feasibility of the laser land leveler in Bangladesh	Technical know-how of laser land leveler will be known.	1000.00
	1.5: Identification and fabrication of fast-moving spare parts of combine harvester and rice transplanter enhancing sustainable mechanization in Bangladesh	• To list down the fast-moving spare parts of the different make and model • To identify the strength and quality of the major parts • To take initiative for the fabrication of the parts	Fast-moving spare parts of combine harvester and rice transplanter will be identified.	1000.00
	1.6: Ground pressure and bearing capacity of combine harvester in different soil conditions	• To estimate ground pressure and bearing capacity of combine harvester in different soil conditions • To estimate the required force in cutting, threshing, cleaning, and bagging rice through combine harvester	The different soil parameter ie. ground pressure, Cone penetration resistance, Bulk density of soil etc. may help to design and fabricate ideal prototype of combine harvester in Bangladesh condition.	200.00
	1.7: Design and development of self-propelled fertilizer deep placement applicator	• To design, fabricate and develop a power-operated fertilizer deep placement applicator using the existing developed manual applicator. • To compare with other fertilizer applicators.	Power-operated fertilizer applicator will be developed and manually fertilizer deep placement difficulties will be solved.	300.00
	1.8: Modification of power transmission system of BRRI	• To detect the causes of frequent tearing of hydro tiller chain	Longevity of hydro tiller will be increased.	50.00

	hydro-tiller	• To modify the power transmission system for increasing the longevity of hydro tiller		
	1.9: Design and development of single-row wetland power weeder	• To design, fabricate and develop a power-operated single-row weeder suitable for weeding both in a row-to-row and line-to-line of the lowland and upland fields (line and without line sowing). • To evaluate its performance in the different multi-crop fields. • To compare with other dry and wetland paddy weeders	Power-operated single row paddy weeder, as well as a multi-crop weeder, will be developed	100.00
	1.10: Design and development of a self-propelled multi-rows power weeder for both wet and dry land condition	• To design and fabricate the self-propelled weeder • To evaluate the weeding performance in different locations • To improve the developed weeder based on evaluation • To reduce the weeding cost in rice production	Self-propelled multi-rows power weeder for both wet and dry land condition will be developed	500.00
	1.11: Performance evaluation of BRRI whole feed combine harvester (model no- BRRI WCH 2021) under different soil conditions, crop conditions, and seasons	• To evaluate the performance of BRRI combine harvester in respect of soil condition, crop condition, and seasons • To establish a relationship between the machine performance and plough pan depth of the field • To compare the performance of BRRI combine harvester with the traditional harvesting systems.	BRRI developed whole feed combine harvester would be able to meet the domestic demand and reduce import dependence.	250.00

	1.12: Improvement of a BRRI Head Feed Combine Harvester for mechanized rice cultivation (BRRI HCH2023)	• To design a head feed combine harvester • To manufacture the designed combine harvester prototype • To evaluate the field performance of the developed combine harvester	Ensure suitable combine harvester aimed at solving farmers' problem of harvesting in Bangladesh.	2000.00
	1.13: Performance evaluation BRRI auto seed sower machine for raising mat-type seedlings	• To assess the operational performance of the BRRI Auto Seed Sower Machine • To compare the performance with imported Power Seed Sower Machine raising seedling for mechanical rice transplanter	This technology is viewed as a time-saving solution for efficiently preparing seedling trays for mechanical transplanting and potentially reducing reliance on manual labor.	150.00
	1.14: Performance evaluation of BRRI Head Feed Combine Harvester (Model-BRRI HCH2023)	• To assess the field performance of the developed head feed combine harvester • To compare the performance with imported combine Harvester	BRRI developed head feed combine harvester would be able to meet the domestic demand and reduce import dependence.	150.00
	1.15: Improvement of a BRRI whole feed Combine Harvester (Model BRRI WCH2021)	• To identify areas for improvement in the BRRI Whole Feed Combine Harvester (Model BRRI WCH2021) • To design and fabricate of BRRI whole feed combine harvester based on the performance, repair, and maintenance facility • To evaluate the performance test of the developed combine harvester • To compare the performance with imported combine Harvester	Ensure suitable combine harvester aimed at solving farmers' problem of harvesting in Bangladesh.	25000.00
	1.16: Design, Development, and Fabrication of a BRRI ride-on	• To design and develop of BRRI ride-on Rice transplanter	Ride-on rice transplanter will enhance efficiency and effectiveness in rice	300.00

rice transplanter for mechanical rice planting	• To evaluate the performance test of the developed Rice transplanter • To progress mechanized rice transplanting direct seedlings including direct and precision rice seedling technologies	cultivation and reduce human drudgery.	
1.17: Design and Development of BRRI Auto Seed Sower Machine for raising mat-type seedlings	• To design a BRRI auto seed sower machine to enhance precision and efficiency in raising seedlings in a tray. • To develop a systematic and step-by-step manufacturing process utilizing locally available materials. • To evaluate the operational performance of the seed sower machine, assessing its effectiveness in seed sowing.	Prototype of a Power-Operated Automatic Seed Sower Machine for mat-type seedling for raising mat-type seedlings will be available for Bangladesh condition.	200.00
1.18: Performance Evaluation of the Yanmar Intelligent (Model: 6114R) Combine Harvester	• To evaluate the performance efficiency of the combine harvester. • To assess the yield monitoring, and yield loss in real time.	Technical know-how of the Yanmar Intelligent (Model: 6114R) combine harvester will be known.	500.00
1.19: Design and Development of Paddy Collector	• To design and develop of Paddy collector • To evaluate the performance of the fabricated collector • Compare the collector with the manual method • Disseminate the Paddy collector	A paddy collector will be developed and efficiency of labour increased.	500.00
2.0 Milling and Processing Technology			
2.1: Test, evaluation, and	• To modify and development of a	The combination of de-husker and	300.00

	modification of rubber roll de-husker for commercial use	rubber roll de-husker • To evaluate the performance of paddy de-husker	polisher will be an alternate milling system of auto rice milling.	
	2.2: Design and development of solar seed dryer	• To design, fabricate, and develop a solar dryer • To compare with traditional sun drying of paddy	A suitable solar seed dryer will be developed.	100.00
	2.3: Design and development of a compact rice mill	• To design and fabricate a compact rice mill • To evaluate the performance of fabricated rice mill	A mobile compact rice mill for consumer level will be developed.	1000.00
	2.4: Design and development of a mini rice mill for homestead level using	• To design and develop a mini rice mill suitable for individual household • To evaluate the milling performance using different rice verities under different conditions • To analyze the cost of milling and the pay-back period.	A mini rice mill for homestead level using will be available.	500.00
	2.5: Design, development, and fabrication of recirculating type smart dryer for drying paddy	• To design and develop a recirculating-type smart dryer tailored specifically for paddy drying applications. • To implement advanced sensing and control technologies to create a smart drying system. • To conduct comprehensive testing and validation of the smart dryer prototype to evaluate its performance. • To assess the economic feasibility and potential scalability of the smart dryer technology for adoption in small to medium-scale rice processing	Appropriate drying process and tempering period will be identified for premium quality rice	1000.00

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	facilities.		
	2.6: Design and Development of a Two-Stage Rice Mill	• To design and fabricate a two-stage rice mill • To evaluate the performance of fabricated rice mill • Compare the performance with the engelberg huller	Two-stage rubber roll rice mill for house hold level will be available.	3000.00
	2.7: Design and development of a recirculating type mobile dryer.	• To evaluate the performance of the existing recirculating dryers • To design and fabricate a recirculating type mobile dryer for farm holders • To evaluate the performance of the developed dryer	A recirculating type mobile dryer will be developed for farm holder	750.00
	3.0 Development of stores and storage technology			
	3.1: Effect of ageing on milling performance of premium quality rice	• To observe the milling performance of BRRI dhan50 at different aging	Data will be generated on head rice recovery and cooking parameters.	200.00
	4.0 Renewable Energy Technology			
	4.1: Study on solar energy utilization for small agricultural machinery	• To design a mechanism for solar energy utilization • To evaluate the performance of the developed machine	Small farm machinery (Paddle thresher, open drum thresher, winnower etc.) could be operate.	300.00
	4.2: Improvement and validation of solar energy utilization system for small types of different agricultural machinery	• To improve solar energy utilization system • To improve solar panel carrier • To evaluate the performance of the developed machine using solar energy	Small farm machinery (Paddle thresher, open drum thresher, winnower etc.) could be operate in the field	700.00
	4.3: Design and develop a solar-	• To design an audio player using	User-friendly, smart bird repellent will	250.00

powered smart bird repellent	Arduino software • To identify the scary melodies for granivorous birds • To test the performance	be available that will enhance food security.	
4.4: Design and development of solar power-operated sprayer	• To design and fabricate a solar-power-operated sprayer • To evaluate the performance of the sprayer	Drudgery less smart sprayer will be developed	300.00
4.5: Design and Development of Automated Rodent Trap for Reducing Post-Harvest Losses of Rice	• Design and development of an automated rodent trap • Performance evaluation of the fabricated trap	Eco friendly mouse trap will be developed and postharvest loss will be reduced	300.00
5.0 Popularization of BRRI developed farm machinery and Postharvest technology			
5.1: Industrial and farm-level extension of BRRI machinery and Postharvest technology	• To create awareness and demonstrate the benefit of using BRRI machines among farmers • To motivate the local entrepreneurs to manufacture BRRI-developed machinery	Awareness will be developed to use modern farm machinery	10.00
5.2: Training on operation, repair, and maintenance of farm machinery	• To impart knowledge to the farmers/operators/mechanics/extension workers/entrepreneurs about the effective use of farm machinery • To develop skilled operators and mechanics	Skilled machine operator and mechanic for agricultural machinery operation and maintenance will be developed	3000.00
6.0 Precision Agriculture			
6.1: Detection of Pests Affected Areas in Rice Farming Using Remote Sensing and Machine	• To enhance natural pest control measures for precision rice farming • To limit the environmental hazards	The rice pests affected damaged areas will be detected before creating a hazardous situation in rice farming.	250.00

	Learning Techniques	• To validate the results with ground truth data		
	6.2: Assessing the future rainfall and temperature extremes from CMIP6 GCMs and their potential risk to rice cultivation in Bangladesh	• Assessing future changes in rainfall and temperature extremes based on data from the CMIP6 global climate models (GCMs). • Evaluating the potential risks associated with these changes to rice cultivation in Bangladesh.	The future rainfall and temperature extremes can be predicted which my help to avoid potential risk for rice cultivation in Bangladesh	350.00
	6.3: Developing a high-resolution daily gridded precipitation and temperature data set for Bangladesh during 1961–2020	• Compile high-quality historical rainfall and temperature data. • Preprocess and clean data. • Assess covariates' influence on rainfall patterns. • Develop models using cross-validation. • Homogenize data series. • Interpolate gridded daily data. • Validate and evaluate dataset accuracy. • Adjust the dataset for reliability.	High-resolution gridded dataset (1km) for Bangladesh and accessibility to stakeholders will be known.	500.00
	6.4: Assessing Potential Rice Exposure to Heat Stress in Bangladesh under Different SSPs	• Assess the potential exposure of rice to heat stress in Bangladesh under various Shared Socioeconomic Pathways (SSPs). • Provide valuable insights for agricultural and climate adaptation policies.	Assessment of spatiotemporal changes in rice phenology and identification of hot spots in Bangladesh to heat stress will be known.	500.00
	Program Area: Socio Economics & Policy			

	Agricultural Economics Division			
	Farm Level Adoption and Evaluation of Modern Rice Cultivation in Bangladesh Status: Routine work	• To determine the region-wise adoption rate of different MVs in Aus, T. Aman and Boro seasons, • To estimate the yield of different modern and local rice varieties in different seasons	Regions and different season-wise varietal adoption rates and yields will be delineated.	500
	Prospect and Constraints to Adoption of BRRI Released Modern Rice Varieties in Bangladesh: A Case of Jashore District Status: Continued	• To identify the drivers and constraints of adoption of BRRI released varieties; • To delineate the prospect of BRRI varieties for large scale dissemination at the farm level.	Rice cultivation status in the study area and problems and opportunities of modern technology adoption will be identified.	200
	Estimation of Costs and Return of MV Rice Cultivation at the Farm Level Status: Routine work	• To determine the costs and returns of MV Aus, T. Aman and Boro rice cultivation in Bangladesh, • To estimate the factor and income share of MV rice cultivation in different seasons; and • To evaluate the changes in costs and returns and inputs utilization pattern over the years.	Farmers did not use balanced fertilizers. The total costs of T. Aus and T. Aman rice cultivation were 120847 Tk./ha and 132206 Tk./ha, respectively. On full cost basis the benefit-costs-ratio of T. Aus and T. Aman rice cultivation was 1.13 and 1.23.	500
	Economic Assessment of Mustard Intensification in the Rice Based Cropping Pattern in Bangladesh Status: New	• To estimate the effect of mustard intensification on rice yield and farm income • To evaluate the food security status of mustard intensification households • To estimate the effect of yield and production of the other competitive crops		500

		• To identify the causes of adoption/ dis-adoption of Boro-T. Aman-Mustard cropping pattern. • To suggest policy guidelines based on the findings.		
	Economic Assessment of Mustard Intensification in the Rice Based Cropping Pattern in Bangladesh Status: New	• To estimate the effect of mustard intensification on rice yield and farm income • To evaluate the food security status of mustard intensification households • To estimate the effect of yield and production of the other competitive crops • To identify the causes of adoption/ dis-adoption of Boro-T. Aman-Mustard cropping pattern. • To suggest policy guidelines based on the findings.		
	Exploring livelihood status of rice based small and marginal farm families in selected districts of Bangladesh. Status: New	• to know the socio-economic status of small and marginal farm families in the study areas; • to know the income sources and food consumption behaviors of small and marginal farm families; • to identify opportunities and obstacles of small and marginal farm families for livelihood improvements; • to evaluate the cropping pattern wise profitability of rice production of marginal farm families;		500
	Impact of rice production on	to evaluate whether rice production can		300

	poverty reduction in rural Bangladesh: A panel data analysis Status: New	decrease poverty level in rural farm families in Bangladesh		
	Assessing the Consumption Pattern of Different Food Items in Different Income/Professional Groups Status: New	• To determine the per capita consumption expenditure of different income/ professional groups. • to measure the per capita direct calorie intake of different income/professional groups.		600
	Assessing utilization of Breeder seed in Producing TLS seed at the producer level Status: New	To find out the amount of Foundation and TLS Seed produced at producer's level against the possible level		50
	Effect of demonstration in the adoption of newly released BRRI rice varieties and its impact on rice production Status: Continued	• To assess the magnitude of farmers awareness, interest and adoption about the new rice varieties; • Factor affecting adoption of BRRI released new rice cultivars; and • To identify the problems towards the adoption of BRRI released new varieties	Rice varietal preferences of farmers in study regions will be identified.	200
	Role of women in smallholder rice farms in Bangladesh Status: Continued	• To determine the level of inequality of women in access to productive and economic resources • To determine the extent of women participation in rice farming activities		**100**
	Agricultural Statistics Division			
	Stability analysis of BRRI Varieties	1. To determine the stability index of BRRI varieties	Stability index of BRRI varieties according to seasons	550

Duration: From 2001 to 2024 (Contd.)	2. To estimate location-wise stability index of BRRI varieties 3. To determine the stability index of BRRI varieties according to the growth duration 4. To find out the location-wise yield performance of BRRI varieties at different years. 5. To find out the overall yield performance of BRRI varieties at different locations and years. 6. Season, year and location wise database on BRRI varieties			
Genotype x Environment interaction of BRRI varieties **Duration:** 1 year	To Identify BRRI released rice genotypes that have both high mean yield and stable yield performance across different environments for different ecosystem of Bangladesh	Genotype x Environment Interaction effect of BRRI varieties	330	
Rice database and analysis system **(RDAS)** **Duration:** 1 year	1. To develop a web based integrated framework on 'Rice Database and Analysis System (RDAS) 2. To create map and graph based on rice data.	Automated informative and user-friendly rice database and analysis system (RDAS)	300	
Maintenance of Rice and related Database **Duration:** 1 year	1. To maintain up-to-date computerized information on rice and related crops 2. To determine year wise GR of Rice Production in Bangladesh 3. To maintain up-to-date computerized information on climatic factors both BRRI regional stations and BMD stations data. 4. To make comparison between BRRI	1. Database on rice and related crops. 2. Year wise GR of Rice Production in Bangladesh 3. Database on climatic factors 4. Various climatic maps. 5. Growth rate and trend scenario of area, production and yield of rice in Bangladesh.	300	

		stations and BMD stations data. To produce various maps from these data		
	New edition of Simple Lessons from Biometry **Duration:** 1 year	1. To update and publish a new edition of 'Simple Lesion from Biometry' 2. To incorporate novel experimental designs 3. To incorporate novel analytical techniques for various types of data 4. To incorporate the other topics related to biometry	1. Update and publish a new edition of 'Simple Lesion from Biometry' 2. Incorporate novel experimental designs, topics and analytical techniques for various types of data	300
	Suitability Mapping of BRRI Varieties **Duration:** 1 year	To construct suitability map of BRRI rice varieties (BRRI dhan103 – BRRI dhan106)	1. Suitable and not suitable areas for particular rice varieties	50
	Climate Mapping of Temperature and Rainfall of Bangladesh **Duration:** 1 year	1. To determine expected maximum and minimum temperature and rainfall in different region for rice in Bangladesh. 2. To determine areas of critical maximum and minimum temperature and rainfall map of Bangladesh for rice during the period. 3. To estimate the return period of extreme rainfall and high temperature.	1. Different climatic factors map of Bangladesh 2. Changing Pattern of climatic factors.	50
	Season wise rice area mapping of Bangladesh **Duration:** 1 year	1. To construct season wise rice area map of Bangladesh. 2. To estimate season wise rice area of Bangladesh 3. To validate and compare the rice database from various sources To find out the best source of rice area	1. Season wise rice cultivated area.	200

		data.		
	Projected Climatic Factors (2050) Maps of Bangladesh **Duration:** 1 year	1. To construct projected climatic factors maps of Bangladesh for 2050 2. To determined projected climatic factors value district/division wise of Bangladesh for 2050. 3. To deliver an idea about future climate to researchers and planners	1. Projected climatic factors maps of Bangladesh.	300
	Suitability Mapping of Various Cropping Pattern **Duration:** 1 year	To construct suitability map of various cropping pattern	Suitable and not suitable areas for particular cropping pattern.	300
	Delineation of Rice Area changes in Costal Area of Bangladesh Using Remote Sensing Data and Machine Learning Approach **Duration:** 1 year	1. Delineate the rice area changes over time 2. To quantify the types of land cover that migrated into and out of the rice-growing region.	1. This will give information about the trend of rice area change. Come to know shifting pattern of rice area.	300
	Rice growth monitoring through remote sensing and GIS for smart management **Duration:** 1 year	1. Establish a reliable methodology for monitoring rice growth using RS data and GIS techniques. 2. Create a spatial-temporal model to predict potential rice yield based on the monitored growth stages. 3. Use the monitoring data to optimize resource, including water, fertilizers, and pesticides to enhance overall efficiency and sustainability	1. Develop a detailed methodology document outlining step-by-step procedures for rice growth monitoring using remote sensing data and GIS techniques. Develop a decision support system that helps farmers and stakeholders make informed choices for resource management.	300
	Develop an online integrated platform for collecting rice mapping data **Duration:** 2024 (Contd.)	To developed an online platform for collecting rice mapping data integrating Kobo toolbox server and ODK Mobile apps	An online rice mapping data collection platform	600

Digitalized Tour Bill Management System for BRRI HQ **Duration:** 2024 (Contd.)	To develop a digital tour bill management system for BRRI HQ	A web application for tour bill management system of BRRI HQ		300
Develop a dynamic web application for visualizing and analyzing the rice disease surveillance data **Duration:** 1 year	To Develop a dynamic web application for visualizing and analyzing the rice disease surveillance data	A dynamic web application for visualizing and analyzing the rice disease surveillance data		500
Update the web application to calculate the Stability Index for BRRI Stability Model **Duration:** 2023 (Contd.)	To update the web application to calculate the stability index for BRRI stability model.	An updated web application for calculation the stability index using BRRI stability model.		3.00
Update the Platform for BRRI Developed Management Information System (MIS) **Duration:** 2023 (Contd.)	To update the unique platform for BRRI developed MIS	An updated unique platform for BRRI developed all MIS		1.00
Digitalized Budget Management System of BRRI **Duration:** 1 year	To update the digital budget management system for BRRI	Updated digital budget management system of BRRI		1.00
Digitalized quota management system of BRRI **Duration:** 2021 (Contd.)	To update the digital quota management system for BRRI	Updated digital quota management system of BRRI		3.00
Digitalized new salary management system of BRRI **Duration:** 2020 (Contd.)	To update the digital salary management system of BRRI as user need.	Updated the digital salary management system of BRRI		2.00
Digitalized labour management system of BRRI **Duration:** 2019 (Contd.)	To update Labour Management System (LMSV1) of BRRI	Updated digitalized labour management system of BRRI		7.00
Digitalized Casual Leave Application System	To update the digital Casual Leave Application System for Agricultural	Updated the digital casual leave application management system of		3.00

Duration: 2022 (Contd.)	Statistics Division	Agricultural Statistics Division	
Develop real time dashboard based monitoring system for location-specific insect and disease using artificial intelligence (AI) and Machine Learning Method (MLM). **Duration:** 2024 (Contd.)	1. To develop real time dashboard based monitoring system for location-specific insect and disease using AI and MLM; 2. To determine disease and insect identifying locations through collecting necessary images and reports; 3. To manage, maintain and host web-based application at cloud server.	This platform will give disease diagnosis, management and spatio-temporal reports in time. So crop loss will be minimized gradually.	65.50
Develop an artificial intelligence (AI) based interactive e-Agriculture software & databank for research data. **Duration:** 2024 (Contd.)	1. To develop AI based interactive e-Agriculture software for research data of BRRI. 2. To develop AI based dashboard monitoring system. 3. To develop a big data databank using 4IR technology. 4. To manage and maintain the e-Agriculture software, dashboard monitoring system and databank.	1. AI based interactive e-Agriculture software for research data of BRRI. 2. AI based dashboard monitoring system for BRRI. 3. Big data databank will be developed. 4. Manage and maintain AI based e-Agriculture software, dashboard monitoring system and databank.	9500.40
Digitalized allotment of house Management System of BRRI *(In collaboration with Administration Section)* **Duration:** 2024 (Contd.)	1. To develop the digital allotment of house management system software for BRRI 2. To host the allotment of house management system software at server. 3. To manage and maintain the allotment of house management system software.	1. Digital allotment of house management system software will be developed. 2. Manage and maintain Digital allotment of house management system software.	1100.50
Develop a mobile responsive	1. To develop a new mobile responsive	1. A new mobile responsive website	470.00

	website for BRRI. **Duration:** 2024 (Contd.)	website for BRRI. 2. To manage domain or sub-domain for the new website. 3. To host the new website at server. 4. To manage and maintain the new website.	for BRRI. 2. Domain or sub-domain for the new website.	
	Smart profiling of rice varieties for disaster-prone zones of Bangladesh **Duration:** 2023 (Contd.)	1. To explore mechanism for profiling rice varieties with respect to environmental suitability, physical and physiological characteristics, yield potential and tolerance to abiotic and biotic stresses; 2. To electronically present and disseminate the newly developed smart profiled varieties information through a dynamic web application and mobile app to stakeholders; 3. To manage, maintain and host mobile and web app at server.	1. Provide varietal information through this profiler which will be useful to all stakeholder i.e. farmer, researcher and extension official. 2. An easy comparison of the varieties will develop for a specific environment and quickly picking up the preferred one(s); 3. New ideas will be created in research management. As well as new technologies will be developed. 4. Adopt precision agriculture and automations solutions for choosing right varieties. 5. Manage and maintain smart mobile and web app.	45.00
	Sensor-based rice pest management through Artificial Intelligence (AI) technology of BRRI. **Duration:** 2022 (Contd.)	1. To develop AI based mobile and web App for BRRI. 2. To identify AI scopes in rice research engaging scientists, extension worker and farmers. To manage, maintain and host AI based mobile and web app at server.	• Time, Cost and Visit (TCV) will be less and quality (Q) will be increased. • Adopt precision agriculture and automations solutions to close rice yield gaps. • New ideas will be created in research management. As well as new technologies will be developed. Manage and maintain Ai based mobile and web app.	50.00

	New version of rice knowledge bank (RKB) mobile Apps	1. To develop the new version of RKB mobile apps. 2. To develop a push notification system. 3. To manage and maintain RKB Mobile apps.	1. Disseminate RKB at all regional stations of BRRI as well as in almost all corners of Bangladesh. 2. Extend and update regularly as routine work.	1100.20
	Develop a new website for BRRI.	To develop a new website for na national and international seminars and symposiums. To manage domain or sub-domain for the new website. To host the new website at server. To manage and maintain the new website.	1. A new website for national and international seminars and symposiums. 2. Domain or sub-domain for the new website.	600.00
	"BRRI Alapon" Telephone Directory Mobile App of BRRI. **Duration:** 2018 (Contd.)	1. To develop telephone directory mobile app for BRRI. 2. To communicate through mobile app via voice call, video call, email or SMS. 3. To provide location sharing through mobile app. 4. To provide all types of meeting, seminar etc. notice via SMS through mobile app.	1. Digitalize internal communication system to each other of BRRI. 2. Minimize time, cost and visit (TCV) for sharing instant information using the app.	8.00
	Vehicle Requisition Management System of BRRI. **Duration:** 2017 (Contd.)	• To develop vehicle requisition management system (VRMS) for BRRI. • To inform through SMS, on the basis of demand vehicle at BRRI. • To provide SMS for drivers for confirming their upcoming duty.	• Digitalize Transport division using SMS based VRMS service. • Manage and maintain the VRMS system.	1.00

		• To host VRMS at server.		
	Training on Innovation, Service Process Simplification (SPS) and e-Nothi system for enhancing capacity of BRRI employee. **Duration:** 2017 (Contd.)	1. To provide various training on public service innovation (PSI), SPS and e-Nothi management to BRRI scientists and officers for developing capacity. 2. To bring qualitative changes in the internal research work process and service delivery in BRRI HQ and respective regional stations. 3. To compile various innovative idea through PSI and SPS training for piloting and replication activities.	• Enrich capacity of BRRI scientists and officers through various PSI and SPS training. • Skills of implementation process will be developed through innovative approach.	12.00
	"BRRI Rice Doctor" Apps for BRRI. **Duration:** 2017 (Contd.)	1. To diagnosis insect and pest through rice doctor Apps for BRRI. 2. To manage and maintain rice doctor apps. 3. To host rice doctor Apps at server.	Manage and maintain rice doctor.	5.00
	BRKB Website Management *(In collaboration with training, breeding and others research divisions)*	1. To develop and modify the design of BRKB Website. 2. To manage and maintain BRKB Website through regular updating of the information and documents.	1. Provide more benefit to all users specially farmers, extension workers, researchers etc. 2. Include more information as well as national issues associated with rice production and training.	300.00
	BRRI Web Portal Management.	1. To develop and modify the design of BRRI Web Portal. 2. To manage and maintain BRRI Web Portal through regular updating of the information and documents.	1. New features for BRRI web portal. 2. To increase hosting spaces gradually.	400.00
	Farm Management Division			

	3.1 Project: Rice production management			
1.	**Expt.1.** Influence of different dates of transplanting on growth, yield performance and quality of fine rice varieties. Date of initiation: T. Aman 2022. Duration: 3 years	To confirm best planting time of fine rice varieties for higher yield and quality.	Appropriate transplanting date and variety might be identified for growth, yield performance and quality.	100
2.	**Expt. 2.** Effect of storage time in different storage technologies on quality of rice. Date of initiation: Boro 2022 Duration: 2 years	i) To observe the grain quality of fine rice variety at different storage time and storage technologies. ii) To identify the suitable storage technologies for preservation of rice seed.	Appropriate storage time and storage technologies might be identified for rice variety.	100
3.	**Expt. 3.** Effect of Nitrogen Levels on Protein Quality of Rice at Different Regions. Date of initiation: T. Aman 2023 and Boro 2023-24 Duration: 3 years	To find out the best nitrogen level for protein quality of rice at different regions.	Appropriate nitrogen dose might be identified for growth, yield performance and protein quality of rice at different regions.	450
4.	**Expt. 4.** Influence of weed inference period on the performance and profitability of BRRI dhan89. Date of initiation: Boro 2024-25 Duration: 3 years	i) To confirm the best weed inference period for maximizing yield ii) To find out the profitable weed inference period	Appropriate weed inference period might be identified for growth, yield performance and profitability of BRRI dhan89.	95
5.	**Expt.5.** Efficiency of different commercial rodenticides in rice field. Date of initiation: T. Aman 2024	To select suitable rat control methods for rice field.	Identify suitable rat control method in rice field.	100

	Duration: 2 years			
6.	**Expt.6.** Efficiency of different baits for live trap to control rat in rice field. Date of initiation: T. Aman 2024 Duration: 2 years	To select suitable bait for controlling rat in rice field.	Identify suitable rat control baits for live trap in rice field.	100
	3.2. Project: Labor Management System			
7.	**Expt.2.1** Monitoring labor wage rate at different locations of Bangladesh (Continued) Date of initiation: April 2003 Duration: Continued	To find out the laborers' wage for rice cultivation throughout Bangladesh with food and without food.	The average wage rate throughout the year may be higher than previous years.	100
8.	**Expt.2.2.** Labour efficiency and work quality at different time frame for rice production. Date of initiation: T. Aamn 2024 Duration: 2 years	i) To see the labour efficiency of different labourers. ii) To find out quality of work of different labourers. iii) To find out suitable time frame of a day for quality and efficient work.	Labour efficiency and work quality of different labourers.	100
	3.3. Project: Rice Seed Production			
9.	**Expt. 3.1.** Performance of BRRI Varieties in Seed Production Plots at BRRI Farm. Duration: Continuous	To observe potential yield of BRRI varieties.	Actual yield of a variety will be obtained in farm.	250
	3.4. Project: Management and utilization of resources			
10.	Expt.4.1 Management and Utilization of Land, Agricultural Implements and	To efficient utilization of farm land and labor resources for smoothly running of research activities and seed production at	Better outcome from farm land and labor and smooth operations of farm implements.	1300

	Labor Resources. Duration: Continuous	BRRI farm.		
11.	**Expt. 4.2** Management and Support Services of BRRI. Duration: Continuous	Efficient utilization of resources for smoothly running of research activities and other activities of BRRI.	Smooth management and attractive office premises.	1850
	Program Area: Technology Transfer			
	Adaptive Research Division			
1	**Technology validation**			
1.1	**Advanced Line Adaptive Research Trial (ALART):** Program will be taken as per materials supplied by Plant Breeding and Biotechnology Divisions during Aus 2024, Aman 2024 and Boro 2024-25.	• To evaluate the yield potential and adaptability of the advanced rice genotypes at farmers' field in different agro-ecological zones. • To get feedback information about the advantages and disadvantages of the selected materials from farmers and Extension personnel. • To select suitable material(s) for proposed variety trial (PVT).	Some advanced lines will be selected for PVT	450
1.2	**Validation of polythene covered dry seedbed method in the late Boro growing areas of Bangladesh, Boro 2024-25**	To reduce the seedling mortality in the seedbed due to low temperature.	Seedling mortality will be reduced due tolow temperature stress	30
1.3	Adaptive Trial of Modern Rice Varieties in T. Aman 2024	• Validate the adaptability of modern rice varieties at farmers' field • Investigate the performance of promising varieties compared to popular mega variety	Select suitable variety(s) for target environments for rapid dissemination of promising rice varieties.	40
2	**DISSEMINATION OF**			

	TECHNOLOGIES **2.1 Seed Production and Dissemination Program (SPDP)**			
	2.1 SPDP in B. Aus in *Jhum* systen in 2024 under GOB.	• Rapid dissemination of newly released Aus rice varieties to the farmers • Motivate farmers to produce and preserve quality seeds of modern rice varieties • Increase availability of quality seed at farm level • Exchange seeds from farmers to farmers • Collect feedback information from farmers and DAE personnel about BRRI varieties.	10000kg seed will be produced from which 1000 kg seedwill be preserved for next year cultivation.	80
	2.2 SPDP in Valley (T. Aus) in 2024under GOB		5000kg seed will be produced from which 400 kg seedwill be preserved for next year cultivation	20
	2.3 SPDP in T. Aus 2024		3000kg seed will be produced from which 2000 kg seedwill be preserved for next year cultivation	80
	2.4 Demonstration of BRRI Hybrid dhan7 in T. Aus 2024	Rapid dissemination of BRRI Hybrid dhan7 to the farmers	30000kg seed will be produced from the demonstration	60
	2.5 SPDP in T. Aman 2024 under PARTNER project	• Rapid dissemination of newly released Aman rice varieties to the farmers • Motivate farmers to produce and preserve quality seeds of modern	440000kg seed will be produced from which 40000 kg seed will be preserved for next year cultivation	400

		• Increase availability of quality seed at farm level • Exchange seeds from farmers to farmers		
	2.6 SPDP in T. Aman 2024 under LSTD project		20000kg seed will be produced from which 5000 kg seed will be preserved for next year cultivation	120
	2.7 BRRI Hybrid Variety Demonstration Program during Aman 2024	Rapid dissemination of BRRI Hybrid dhan4 and 6 to the farmers	44000kg seed will be produced from the demonstration	80
	2.8 SPDP in Boro 2024-25 under PARTNER project	• Rapid dissemination of newly released Boro rice varieties to the farmers • Motivate farmers to produce and preserve quality seeds of modern rice varieties • Increase availability of quality seed at farm level • Exchange seeds from farmers to farmers	500000kg seed will be produced from which 40000 kg seed will be preserved for next year cultivation	400
	2.9 SPDP in Boro 2024-25 under LSTD project		10000kg seed will be produced from which 1000 kg seed will be preserved for next year cultivation	120
	2.10 A new model of SPDP in Boro 2024-25	Including seed dealer in the SPDP will help rapid dissemination of newly released BRRI varieties	20000kg seed will be produced from which 2000 kg seed will be preserved for next year cultivation	60
3	Promotional Activities			
	3.1 Farmers' Training on Rice production technology.	☐ To update knowledge and skills of farmers on modern rice technologies. ☐ To create awareness and interest	A total of 3000 participants (farmers and SAAOs of DAE) will trained up and upgraded their knowledge and skill on	40

		among farmers, local leaders, elite persons, NGO workers and extension personnel about BRRI varieties and technologies. ☐ To promote dissemination and get feedback about BRRI technologies from farmers.	modern rice Production technologies.	
	3.2 Field day		Around 5,000 participants including farmers, local leaders and DAE personnel will participate in the field days.	40
	3.3 Seed support program		Around 200kg seedswill be distributed to thefarmersfree of cost other than the SPDP programs.	-
4.0	**Quality seed production of newly released rice varieties**	This seed will be used in demonstration program.	A total of 5.0 tons quality seeds of BRRI varieties will be produced which will be used to conduct research activities and dissemination program of ARD.	40
	Training Division			
	Project 1. Capacity building and technology transfer through training Project leader: Dr. Md. Shahadat Hossain, CSO and Head	To disseminate BRRI developed technologies		
	1.1. Modern rice production technologies training course for BRRI scientists Participants: BRRI Scientist	To train Extension personnel/ BRRI Scientists so that they can- ● Recognize and apply the important concept, principles advanced techniques		25.00

	Duration: 2 month Batch : 01 No. of Participants: 30	of modern rice production. ● Able to identify and solve field problems of rice cultivation. ● Capable to do research planning, program development and report writing on research activities.		
	1.2. Hands on training on modern rice production technologies (Yield maximization) Participants: SAAO of DAE Duration: 1 week Batch : 16 Participants: 480	To train the extension agents so that they can- ● Recognize and apply the important concepts, principles and techniques of modern rice production. ● Identify and solve field problems of rice cultivation and help the farmers to increase productivity.		32.00
	1.3. Training on research data management using spread sheet Participants: BRRI Scientists Duration: 1 week Batch : 2 Participants: 60	● At the end of the course the participants will have developed their skills in; ● Proper data collection methods and ● Organize and analyzed data properly using spread sheet		6.00
	1.4. Training on advance research data management using R studio Participants: BRRI Scientists	● At the end of the course the participants will have developed their skills in; ● Organizing scientific paper ● Preparing each part of the paper to		3.00

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	Duration: 1 week Batch : 2 Participants: 60	communicate scientific information effectively		
	1.5. Modern rice production technologies training for DAE officers Participants: DAE Officrs Duration: One month Batch : 4 Participants: 120	This course will enable participants to: • Learn and recognize the principles and techniques of modern rice production • Identify and solve field problems of rice cultivation and • Help farmers according to need base		80.00
	1.6. Training on bioinformatics Participants: BRRI Scientists Duration: 2 week Batch : 1 Participants: 30	To trained the scientists so that they can • To get introduced to the basic concepts of bioinformatics and its significance in biological data analysis. • Explain about the methods to characterize and manage the different types of biological data. • Classify different types of biological databases.		9.0
II	Project 2. Evaluation of imparted training program. Project Leader: Dr. Md. Shahadat Hossain, CSO and Head	To determine the effectiveness of training program.		

	2.1. Performance of long and short term training programs. Duration: Throughout the year	The purpose of this study is to ● Evaluate the overall training program. ● Assess the trainee's performance. ● Assess the resource speaker performance. ● Identify the training needs, improve future training programs		-
	BRRI Regional Station, Sirajganj			
1.	Long term mustard/potato based cropping effect on weed, soil health and green house gas at Sirajganj	To create different basic data from long term mustard/potato based croppin pattern	Basic data from long term mustard/potato based croppin pattern will be achieved	2.5
2.	Effect of nitrogen scheduling on growth and yield of latest Boro varieties at Sirajganj at late planting situation	To find out the best-suited timing of N fertilizer application at late planting situation for higher yield	Best-suited timing of N fertilizer application at late planting situation for higher yield will be find out	1.0
3.	Effect of aged seedling on growth and yield at late planting situation at Sirajganj	To find out optimum seedling age and effect of aged seedling on growth and yield at late planting situation	Optimum seedling age and effect of aged seedling on growth and yield at late planting situation will be achieved	1.0
4.	Effect of storage material and duration on quality of rice seed	To find out suitable storage matterials for maintaining optimum germination of BRRI dhan87 and BRRI dhan89	Suitable storage matterials for maintaining optimum germination of BRRI dhan87 and BRRI dhan89 will be find out	1.0
5.	Scheduling of potassium fertilization at different growth stages on growth and yield of rice	To find out the best-suited timing of potassium fertilizer application for efficient management	Best-suited timing of potassium fertilizer application for efficient management will be find out	0.5

	BRRI Regional Station, Cumilla			
	Program Area: Varietal Development			
	Project name: Development of Transplanted Aman Rice with high yield along with desirable growth duration, acceptable grain quality and resistance to diseases and insect pests and water stagnation tolerant rice.			
1	Hybridization	Introgression of genes from diverged genetic background into rice varieties/lines for the improvement of standard T. Aman varieties	Desirable growth duration compared to standard check varieties along with >6.0 t/ha yield potential and water stagnant tolerant lines will be developed.	1000 GOB
2	Confirmation of F_1	To confirm the crosses as true hybrid		
3	Growing of F_2 population	Advancement of progenies to develop improved plant type, earliness, acceptable grain quality and high yield potential		
4	Field RGA	Advancement of progenies (F_3 to F_6 and LST) to develop improved plant type, earliness, acceptable grain quality and high yield potential		
5	Observational Yield Trial (OYT)	Initial yield evaluation of advanced lines compared to standard checks		
6	Preliminary Yield Trial (PYT)	Preliminary yield evaluation of advanced lines compared to standard checks		
7	Advanced Yield Trial (AYT)	Confirmation of yield potential in replicated trial and selection of desirable lines compared to standard checks		

8	Maintenance breeding	Conservation of advanced lines and pre-breeding materials		
	Program Area: Pest Management			
1	Survey and monitoring of major rice diseases in Cumilla district	1. To know the prevalence of Major rice disease 2. To assume the rice yield losses due to rice diseases	Management of major rice disease will be developed for increasing rice production and ensure food security.	50 PARTNER
2	Demonstration of rice neck blast disease management technology under farmer's field condition	1. To minimize yield loss due to blast disease 2. To build up farmers awareness on blast disease management		50 GOB/PARTNER
3	Varietal reaction and recovering ability of BRRI released rice varieties	To know the varietal reaction against tungro disease of rice		50 GOB
4	Validation and dissemination of Rice Tungro disease management technology from seedbed in Cumilla region	To validate along with dissemination the management technology of rice tungro disease in Cumilla region		700 LSTD
5	Tracking the infection source(s) of rice false smut disease	To identify whether the seed/soil and/ or the air is/are the carrier of the pathogen or not		50 GOB/PARTNER
6	Evaluation of new chemicals against Blast disease of rice	To find out the effective chemicals suitable for Blast		50 GOB/PARTNER
7	Evaluation of new chemicals against rice sheath blight disease	To find out the effective chemicals suitable for ShB		50 GOB/PARTNER
8	Multi-Location Trial (MLT) of blast resistant advanced lines	To evaluate specific and general adaptability of resistant lines against rice blast disease		100 GOB/PARTNER

9	Evaluation of tungro resistant advanced lines in hot spot areas in Cumilla region	To evaluate the tungro resistant advanced lines in natural farmers field condition.		100 GOB/PARTNER
10	Advisory services to the farmers	To assist farmers for rice production.		50 GOB
	Program Area: Crop-Soil-Water management			
1	Effect of nursery management on the performance of rice variety grown under water stagnant condition.	To find out optimum seed density To find out optimum age of rice seedling in waterlogged condition To identify proper seeding rate in water stagnant condition	**Limiting element,** appropriate fertilizer rate, planting time, seedling management on new rice varieties will be determined.	60 GOB/PARTNER
2	Effect of seedling age and fertilizer management on growth and yield of rice variety.	To find out optimum age of rice seedling to maximize yield. To optimize urea split application with varying seedling age		50 GOB/PARTNER
3	Effect of time of planting on growth and yield of BRRI developed new T. Aman and Boro varieties.	To find out the appropriate time of planting for yield optimization		50 GOB/PARTNER
4	Effects of Potassium fertilization at different growth stages on growth and yield of rice.	To find out the effect of potassium fertilization at different growth stages of Rice		50 GOB/PARTNER
5	Long-term missing element trials for diagnosing the limiting nutrient in soil in BRRI R/S Cumilla	To determine nutrient deficiency problems in soil. To observe long-term yield trend of rice. To evaluate the changes in soil properties under long-term rice culture		70 GOB/PARTNER
6	Effects of N rates on the yield of BRRI released news varieties	To update the N rates of BRRI released new varieties		50 GOB/PARTNER

	in BRRI Cumilla			
7	Effects of P rates on the yield of BRRI released new varieties in BRRI Farm Cumilla	To update the P rates of BRRI released new varieties		50 GOB/PARTNER
8	Effects of K rates on the yield of BRRI released new varieties/ advanced lines in BRRI Farm Cumilla	To update the N rates of BRRI released new varieties/ advanced lines in BRRI Farm Cumilla		50 GOB/PARTNER
9	Determination of appropriate time of DAP application to control Algal growth	To find out the appropriate time of DAP application To control the algal growth in the rice field.		50 GOB/PARTNER
10	Effect of DAP and urea rates on growth and yield of rice	To find out a suitable combination of DAP and Urea for desired rice yield		50 GOB/PARTNER
11	Performance of BRRI dhan102 as affected by concentration of neem oil to be coated with urea in Boro season (New)	To find out the optimum concentration of neem oil to be mixed with urea fertilizer in Boro rice		50 GOB/PARTNER
	Program Area: Socio Economic and Policy			
1	Stability analysis of BRRI released rice varieties	To demonstrate the suitability of BRRI varieties in Cumilla Region	Stability and suitability of BRRI released rice varieties will be determined in greater Cumilla region	50 GOB/PARTNER
	Program Area: Technology Transfer			
1	Field demonstration of different BRRI released new rice varieties in Cumilla region (GoB, PARTNER, LSTD)	To demonstrate and disseminate BRRI varieties in greater Cumilla region		5000 GOB/PARTNER/LSTD
2	Farmer's and SAAOs training on modern rice cultivation and	To increase farmers/SAAOs/Officers knowledge		500 GOB/PARTNER/LS

				TD
3	Field day on modern rice cultivation (GoB, PARTNER, LSTD)	To increase farmers knowledge		20 GOB/PARTNER/LS TD
	Program Area: Rice Farming System			
1	Improvement of Boro-Fallow-T. Aman cropping pattern in Cumilla region.	Increase cropping intensity and productivity through crop intensification in rice-based cropping system	Cropping intensity will be increased and also increased farmer's productivity with an additional crop.	50 GOB/PARTNER/LS TD
2	Varietal improvement of Boro-Aus-T. Aman cropping pattern in Cumilla region	To maximize the productivity and farm income		50 GOB/PARTNER/LS TD
	BRRI Regional Station, Gopalganj			
1.	Collection of local rice landraces	To collect local rice landraces for breeding purposes and conserve in the Genebank of BRRI	Collected germplasm will safely be conserved and documented along with their characters	80000.00
2.	Phenotypic characterization and rejuvenation of newly collected local rice germplasm from Faridpur and Khulna region	To increase seed and characterize rice landraces as per 'germplasm descriptors and evaluation form' of GRSD, BRRI.	Characterized rice landraces will be maintained, documented, and used for breeding purpose	120000.00
3.	Secondary yield trial of deepwater rice germplasm	To evaluate the yield performance of seven deepwater rice germplasm for comparison with standard check	The specific and general adaptability of the dee water rice germplasm as compared with standard checks will be evaluated in on-station conditions at Gopalganj Farm	30000.00
4.	Breeding for developing high-	To develop a breeding population with	The new variety will be developed	120000.00

	yielding shallow flooded deep water and stagnation tolerant rice varieties (Hybridization)	desirable characteristics with emphasis on water stagnation tolerance, anaerobic tillering, high-yielding shallow flooded deepwater Aman rice varieties		
5.	Developing high-yielding homozygous lines from cultivated popular Hybrid rice varieties through FRGA	To develop high-yielding homozygous lines with desirable characters with high-yield	The new variety will be developed	80000.00
6.	Deciphering the genetic potential of native rice (*Oryza sativa* L.) landraces for tolerance to anaerobic germination	i. To evaluate the rice accessions for anaerobic germination tolerance ii. to identify the novel QTLs/ genes for AG-related traits by exploring Bangladeshi landraces	The new materials will be developed and the identified traits will be used for future rice breeding programs.	620000.00
7.	Improvement of Boro-Fallow-Fallow Cropping pattern in Gopalganj District	To increase productivity by improving the existing cropping pattern	Productivity and reduce the cost of production of rice in the Faridpur region (Gopalganj) will be increased	150000.00
8.	Demonstration trial of BRRI-developed HYVs and Hybrid varieties	To disseminate the modern HYVs and Hybrids varieties in Faridpur and Khulna region	Modern HYVs and Hybrids varieties in Faridpur and Khulna region will be disseminated.	1800000.00
	Regional Station, Kushtia			
1.	**Program Area: Varietal Development**			
1.1	Hybridization (New)	To develop breeding lines with high yield potential and desirable growth duration & acceptable grain quality.	One or more advanced breeding lines will be generated.	20 thousand
1.2	Characterization and evaluation of local cultivar/ germplasm	To characterize and evaluate the local cultivar/ germplasm	One or more advanced breeding lines will be found more promising than checks.	20 thousand

1.3	Regional Yield Trial (RYT)	Evaluation of agronomic performance, specific and general adaptability under on station condition	One or more advanced breeding lines will be found higher yielder than checks.	100 thousand
1.4	Advanced Yield Trial (AYT)	Evaluation of agronomic performance, specific and general adaptability under on station condition	One or more advanced breeding lines will be found higher yielder than checks.	100 thousand
1.5	Advanced Line Adaptive Research Trial (ALART)	To evaluate the yield potential and adaptability of the advanced rice genotypes at farmers' field in different agro-ecological zones	One or more advanced breeding lines will be found higher yielder than checks.	270 thousand
2.	**Program Area: Socioeconomic and Policy**			
2.1	Stability Analysis of BRRI varieties	To maintain season, year and location-wise database on the yield performance of BRRI varieties.	One or more Varieties will be found stable in local conditions.	30 thousand
3	**Program Area: Crop-Soil-Water Management**			
3.1	Improvement of irrigation distribution system in Existing Char Land of Kushtia (New)	i)To introduce water-saving technologies (AWD & Fita Pipe) ii)To maximize Water use efficiency	Improved irrigation distribution system in existing char lands of Kushtia facilitating enhanced agricultural practices and productivity in the region.	100 thousand
3.2	Farmers' response to pumping initiation time of Ganges-Kobadak irrigation project for Boro rice irrigation	i) To survey the present Boro establishment window and its impact on the grain yield of Boro rice in the head, middle and tail end of the G-K project area ii) To know the farmer's reaction to the existing pumping time of the G-K irrigation project.	Insights into farmers' responses to the timing of pumping initiation in the Ganges-Kobadak irrigation project, specifically regarding Boro rice irrigation practices.	100 thousand
3.3	Determination of the optimum time of planting of BRRI	To find out the optimum time of planting and seedling age for BRRI dhan87	The identification of the timing that maximizes yield.	30 thousand

	dhan87 for yield maximization at the Kushtia region			
3.4	Effect of Missing Nutrient Elements on Growth and Grain Yield of Rice in BRRI Farm, Kushtia	i)To examine the effects of missing nutrient elements on the growth and grain yield of rice. ii)To determine the residual soil fertility.	The impact of missing nutrient elements on the growth and grain yield of rice cultivated at BRRI Farm in Kushtia will be demonstrated.	30 thousand
3.5	Evaluation of yield performance of BRRI varieties with local/Indian cultivars at Border Zone (New)	To find out the best-performing varieties and causes of farmers' preference	Provide information about the potential superiority or adaptability of either type of cultivar in that specific region.	100 thousand
4.	**Program Area: Rice Farming Systems**			
4.1	Interpolation of Premium Quality and Nutrition-Enriched Rice Varieties in Existing Mustard – Boro – T. Aman Cropping System	i) To increase system productivity and profitability of the existing cropping system ii) To maximize the land use efficiency and production efficiency of the existing pattern	Productivity will be enhanced along with acquiring better nutrition.	30 thousand
4.2	Increasing the system productivity of Boro – Fallow - T. Aman cropping pattern through the inclusion of Mustard in the High Ganges River Floodplain	i)To increase total productivity ii)To increase oil production	The overall system productivity will be increased	150 thousand
4.3	Determination of Optimum Planting Window of Newly Released T. Aman Rice Varieties in Three Cropped Cropping Pattern	To find out the effective rice varieties with appropriate planting time for increasing the yield potential of T. Aman rice.	The ideal planting window for newly released T. Aman rice varieties across three different cropping patterns will be advised.	50 thousand

4.4	Evaluation of different rice-based cropping patterns under agro-forestry systems with exotic date palm (Phoenix dactylifera).	i) To ensure food sufficiency for farm family ii) To increase whole farm productivity	The suitability and productivity of various rice-based cropping patterns within agro-forestry systems will be addressed.	50 thousand
4.5	Survey of rice-based cropping patterns and its improvement in Kushtia districts (New)	i) To create a database of the existing cropping pattern scenario in the Kushtia district ii) To explore the scope of existing cropping pattern	A database detailing the current cropping patterns prevalent in the Kushtia district will be generated.	100 thousand
4.6	Potato intercropping with maize in Maize-T. Aus- T. Aman cropping pattern in char area (New)	i) To increase system productivity and profitability of existing cropping pattern ii) To maximize the land use efficiency	The system productivity and profitability within the current cropping pattern will be increased.	100 thousand
4.7	Adoption of newly released rice variety in Boro- T. Aus- Fallow cropping pattern in char area (New)	To increase system productivity and profitability of existing cropping pattern	the adoption rate of the newly released rice variety within the Boro-T. Aus-Fallow cropping pattern in char areas will be increased	100 thousand
5.	**Program Area: Technology Transfer**			
5.1	Demonstrations of newly released BRRI varieties	To disseminate and popularize the varieties among the farmers in Kushtia	The awareness of adopting new rice varieties among farmers in the Kushtia region.	200 thousand
	Regional Station, Sonagazi			
1.	**Program Area: Varietal Development**			
1.1	Observational Yield Trial (OYT)	To select genetically fixed breeding lines for morpho-agronomic characters having high yield.	Development of high yielding (6 to 7 t/ha) Aus variety with good grain quality for Chattogram and Rangamati regions	15
1.2	Regional Yield Trial (RYT-1, 2,	To evaluate specific and general	Development of high yielding Aus	80

	3 & 4) in Aus 2024	adaptability of the advance breeding lines as compared with standard checks in on-station.	variety with good quality for all region of Bangladesh	
2.	**Program Area: Pest Management**			
2.1	Survey and monitoring of major rice insects in Feni district	1. To know the prevalence of Major rice insects 2. To assume the rice yield losses due to rice insects	Find out the prevalence of Major rice insects	20
3.	**Program Area: Crop-Soil-Water management**			
3.1	Optimizing seedling age of dibbled field for transplanting at Charland	1. To investigate the performance of splitting tillers in dibbled plot 2. To determine suitable seedling age for splitting tillers of dibbled field.	Appropriate seedling age of dibbled rice for transplanting at saline Charland	70
3.2	Optimizing Nitrogen Rate for dibbled Aus rice	1. To investigate the effect N rates on the performance of dibbling Aus rice 2.To determine suitable nitrogen rate for dibbling Aus rice	Appropriate Nitrogen Rate for dibbled Aus rice	70
3.3	Effect of establishment Methods on the Performance of Aus Rice	1.To compare different establishment methods of Aus rice 2.To find out suitable establishment method of Aus rice for better performance	Appropriate Establishment Methods on the Performance of Aus Rice	70
4.	**Program Area: Socio Economic and Policy**			
4.1	Stability analysis of BRRI released rice varieties	1.To investigate the stability of BRRI varieties for specific season. 2.To find out location specific suitable variety(s).	Stability and suitability of BRRI released rice varieties will be determined in the southern region.	50
5.	**Program Area: Technology Transfer**			

5.1	Adaptive Trials of PQR varieties (PQR-KGF project)	1. Validate the adaptability of modern rice varieties at different rice environments 2. Investigate the performance of newly released varieties compared to popular old mega variety 3. Select suitable variety(s) for target environments	Suitable variety(s) for target environments	100
5.2	Demonstration of Modern Rice Varieties: Total demo 255 in 305 bigha) GoB: 210 Demo Hybrid project:20 Demo Partner project: 25 Demo	To demonstrate and disseminate BRRI varieties in greater Chattogram and Rangamati regions.	Rapid dissemination of newly released rice varieties to the farmers	2550
5.3	Farmer's and SAAOs training on modern rice cultivation and disease management technology Total: 16 (GoB & Partner)	To increase farmers/SAAOs/Officers knowledge		400
5.4	Field day on modern rice cultivation (GoB & Partner) Total: 16	To increase farmers knowledge		
5.6	TLS/Quality seed production 10 hacter	Utilize quality seed for conducting Research and Demonstration Provide seeds to different stakeholders to enhance dissemination of modern rice varieties.		150
	Season: Aman 2024-25			
	Program Area: Varietal Development			
1.1	Hybridization	Introgression of genes from diverged genetic background into rice varieties/lines for the improvement of	Development of photosensitive variety with higher yield (7.0 t/ha), slender grain, lodging tolerance for Chattogram and	50

			standard T. Aman varieties	Rangamati regions	
1.2	Confirmation of F_1	To confirm the crosses as true hybrid	do	30	
1.3	Regional Yield Trial (RYT-1-15) in Aman 2024	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station.	Development of high yielding Aman variety with good quality for all region of Bangladesh	300	
1.3	Backcross breeding	To introgress the desirable traits into recurrent parents	do	30	
	Program Area: Pest Management				
2.1	Survey and monitoring of major rice insects in Sonagazi district	1. To know the prevalence of Major rice insects 2. To assume the rice yield losses due to rice insects	Find out the prevalence of Major rice insects	10	
2.2	Reduction of insecticide use in rice production for safe food production	1.To manage insect pests with less or no use of insecticide. 2. To compare insect pests and natural enemy status in insecticide free and insecticide spray field. 3. To investigate the compensation abilities of different rice varieties due to insect damage.	Minimum use of insecticide to safeguard for food production	50	
	Program Area: Crop-Soil-Water management				
3.1	Effect of planting date on the performance of modern rice varieties at southeast Bangladesh	1. To find out the optimum planting date of the rice varieties for better performance 2. To investigate the climatic effect on crop establishment, growth and yield	Appropriate time of planting on new rice varieties will be determined;	20	
3.2	Optimizing management options for aged seedlings of short duration rice variety	1.To investigate the effect of management options on yield and yield components of short duration rice	Suitable management options for aged seedlings of short duration rice variety	20	

		variety. 2.To find out suitable management option for better performance of aged seedling of short duration rice.			
3.3	Effect of late Transplanting on the performance of high yielding short duration rice	To investigate the effect of late transplanting on yield and yield components of the rice genotypes. To identify rice genotypes best suited for late transplanting.	Suitable varieties/lines for late transplanting.		30
3.4	Optimizing Seedling age of high yielding short duration rice	1.To investigate the effect of seedling age on the performance of BRRI dhan75 2.To find out suitable seedling age at transplanting of high yielding short duration rice.	Suitable seedling age of high yielding short duration rice		20
3.5	Determination of potassium rate for saline affected Charland	1. To investigate the performance of modern rice variety under in dibbling planting 2. To determine suitable nitrogen rate for better performance of dibbled rice.	Appropriate potassium rate will be identified in southern region		20
	Program Area: Socio Economic and Policy				
4.1	Stability analysis of BRRI released rice varieties	1.To investigate the stability of BRRI varieties for specific season. 2.To find out location specific suitable variety(s).	Stability and suitability of BRRI released rice varieties will be determined in the southern region.		50
	Program Area: Technology Transfer				
5.1	Adaptive Trials of PQR varieties (PQR-KGF project) Demo=60	1. Validate the adaptability of modern rice varieties at different rice environments 2. Investigate the performance of newly released varieties compared to popular			100

		old mega variety 3. Select suitable variety(s) for target environments		
5.2	Demonstration of Modern Rice Varieties: Total demo 490 in 600 in bigha) GoB: 270 Demo Hybrid project:20 Demo Partner project: 200 Demo	To demonstrate and disseminate BRRI varieties in greater Chattogram and Rangamati regions.		
5.3	Farmer's and SAAOs training on modern rice cultivation and disease management technology (GoB & Partner)	To increase farmers/SAAOs/Officers knowledge		
5.4	Field day on modern rice cultivation (GoB &Partner)	To increase farmers knowledge		
5.5	Breeder seed production 5 hacter	Produce breeder seeds for further seed multiplication. Enrich seed stock of modern rice varieties.		700
5.6	TLS/Quality seed production 3 hacter	Utilize quality seed for conducting Research and Demonstration Provide seeds to different stakeholders to enhance dissemination of modern rice varieties.		420
	Season: Boro 2024-25			
	Program Area: Varietal Development			
1.1	Hybridization	Introgression of genes from diverged genetic background into rice varieties/lines for the improvement of standard Boro varieties	Development of salt tolerant variety with high yield (8.5 t/ha), short duration, slender grain, lodging tolerant & disease resistant	50

1.2	Confirmation of F_1	To confirm the crosses as true hybrid	do		30
1.3	Regional Yield Trial (RYT-1-20) in Aman 2024	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station.	Development of high yielding Boro variety with good quality for all region of Bangladesh		400
	Program Area: Pest Management				
2.1	Survey and monitoring of major rice insects in Sonagazi district	1. To know the prevalence of Major rice insects 2. To assume the rice yield losses due to rice insects	Find out the prevalence of Major rice insects		10
2.2	Reduction of insecticide use in rice production for safe food production	1.To manage insect pests with less or no use of insecticide. 2. To compare insect pests and natural enemy status in insecticide free and insecticide spray field. 3. To investigate the compensation abilities of different rice varieties due to insect damage.	Minimum use of insecticide to safeguard for food production		50
	Program Area: Crop-Soil-Water management				
3.1	Effect of planting date on the performance of modern rice varieties at southeast Bangladesh	1. To find out the optimum planting date of the rice varieties for better performance 2. To investigate the climatic effect on crop establishment, growth and yield	Appropriate time of planting on new rice varieties will be determined;		20
3.2	Management Options for Controlling Algae and Azolla in rice field	1.To evaluate the management options for Algae and Azolla in rice field. 2. To find out suitable management option(s) to control Algae and Azolla.	Suitable management options for Controlling Algae and Azolla in rice field		20
3.3	Determination of potassium rate	1. To investigate the performance of	Appropriate potassium rate will be		20

		modern rice variety under in dibbling planting 2. To determine suitable nitrogen rate for better performance of dibbled rice.	identified in southern region	
3.4	Optimizing Nitrogen rate for Bangabandhu dhan100	1. To evaluate the responses of Bangabandhu dhan100 under a range of nitrogen supplies 2. To investigate the nitrogen use efficiency 3. To find out optimum nitrogen requirement for maximum yield of Bangabandhu dhan100	Appropriate nitrogen rate will be identified	20
	Program Area: Socio Economic and Policy			
4.1	Stability analysis of BRRI released rice varieties	1.To investigate the stability of BRRI varieties for specific season. 2.To find out location specific suitable variety(s).	Stability and suitability of BRRI released rice varieties will be determined in the southern region.	50
	Program Area: Technology Transfer			
5.1	Adaptive Trials of PQR varieties (PQR-KGF project) Demo=60	1. Validate the adaptability of modern rice varieties at different rice environments 2. Investigate the performance of newly released varieties compared to popular old mega variety 3. Select suitable variety(s) for target environments		100
5.2	Demonstration of Modern Rice Varieties: Total demo 490 in 600 in bigha) GoB: 270 Demo	To demonstrate and disseminate BRRI varieties in greater Chattogram and Rangamati regions.		

	Hybrid project:20 Demo Partner project: 200 Demo			
5.3	Farmer's and SAAOs training on modern rice cultivation and disease management technology (GoB & Partner)	To increase farmers/SAAOs/Officers knowledge		
5.4	Field day on modern rice cultivation (GoB &Partner)	To increase farmers knowledge		
5.5	Breeder seed production 7 hacter	Produce breeder seeds for further seed multiplication. Enrich seed stock of modern rice varieties.		980
5.6	TLS/Quality seed production 5 hacter	Utilize quality seed for conducting Research and Demonstration Provide seeds to different stakeholders to enhance dissemination of modern rice varieties.		700
	BRRI Regional Station, Bhanga			
	Program Area: Varietal development, Farming Systems Research, Crop-soil-water management, Socio economics and Technology transfer			
1.	Breeding for developing high yielding Transplanting Aman rice varieties (Hybridization)	To develop breeding population with desirable characters with emphasis on water stagnation tolerance, anaerobic tillering, earliness and good grain quality.	Breeding population with desirable characters e.g water stagnation tolerance, anaerobic tillering, earliness and good grain quality will be developed	100
2.	Breeding for developing high yielding shallow flooded Deep	To develop breeding population with desirable characters of deep water Aman	Breeding population with desirable characters of deepwater Aman rice will	150

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	water rice varieties (Hybridization)	rice	be developed	
3.	Breeding for developing Anoxia tolerant rice varieties	To develop high yielding anoxia and water stagnation tolerant rice genotypes for direct seeding condition to fit Onion/wheat- Jute- Relay T. Aman pattern	Breeding population high yielding anoxia and water stagnation tolerant rice genotypes will be developed	100
4.	Breeding of high yielding rice varieties for high input responsive in single Boro favorable ecosystem	To develop rice varieties for high input responsive in single Boro favorable ecosystem	Breeding population with desirable characters of high input responsive in single Boro favorable ecosystem variety will be developed	100
5.	Confirmation of F_1s	To confirm the crosses as true hybrid	The crosses as true hybrid will be confirmed	50
6.	FRGA	Generation Advancement	Generation will be advanced	50
7.	Line Stage Testing (LST)	Identification of uniform lines based on good plant type, flowering date and grain type	Advance breeding population with desirable characteristics will be developed	50
8.	Observational Yield Trial (OYT)	Selection of genetically fixed breeding lines with desirable characters of deep water/semi deepwater Aman rice having high yield with good plant type	Advance breeding population with desirable characteristics will be developed	50
9.	Collection and Characterization of local rice landraces	To collect and characterize local rice landraces for breeding purpose and conserve in the Genebank of BRRI	Seed and characterize rice landraces will be maintained	50
10.	Identification of QTLs associated with anaerobic germination (AG) tolerance using new anoxia tolerant donor	To identify novel QTLs associated with anaerobic germination (AG) tolerance using new anoxia tolerant donor(s)	Novel QTLs associated with anaerobic germination (AG) tolerance will be identified	100
11.	Demonstration trial of BRRI developed HYVs and Hybrids varieties	To disseminate the modern HYVs and Hybrids varieties in Faridpur region	Modern HYVs and Hybrids varieties in Faridpur region will be disseminated	155

12.	Farmar's Training and Field Day	To increase farmers knowledge	Farmers will know modern rice cultivation techniques	115
13.	Stability analysis of BRRI released rice varieties	To demonstrate the suitability of BRRI varieties in Faridpur region	Performance of BRRI varieties at Faridpur station will be identified	150
14.	Effects of planting time on yield of rice in char land area of Faridpur region	1. To achieve sustainable rice production at char land environment. 2. To adjust planting time for saving/protect *Aus* crop from early flood.	Planting time for saving/protect *Aus* crop from early flood will be adjusted.	100
15.	Effects of planting time on the performance of Modern BRRI varieties in Faridpur region	1. To find out the suitable planting time of modern rice varieties 2. To find out the cut of dates for of modern rice varieties 3. Yield loss assessment due to delay planting.	Planting time for saving/protect Boro crop from early flood will be adjusted.	100
16.	Development of weed control techniques in Boro-Fallow-Fallow cropping pattern	To develop cost effective and eco-friendly weed control practices for sustainable weed management in Boro-Fallow-Fallow cropping systems.	Cost effective and eco-friendly weed control practices in Boro-Fallow-Fallow cropping systems will be developed	100
17.	Effect of herbicide on Azolla infestation in Faridpur region	To reduce the abundance of Azolla at BRRI R/S Bhanga	Suitable herbicide for controlling Azolla will be identified.	150
18.	Effect of Trichocompost on nutrient and disease management in rice	1. To find out the efficacy of Trichocompost for nutrient management in rice 2. To find out the effectiveness of Trichocompost for disease management	Disease management and yield increase of rice by using Trichocompost.	150
19.	Evaluation of different Aman rice varieties under Wheat-Jute-T. Aman cropping pattern in Faridpur region	1. To find out the suitability of newly released Aman rice varieties under Wheat-Jute-T. Aman cropping pattern 2. To increase the system productivity	Suitable rice varieties will be found to fit under Wheat-Jute-T. Aman cropping pattern	200

		and farmers' income		
20.	Validation of improved cropping pattern technology Boro-Transplanted deepwater Aman in the single Boro area of Faridpur region	To increase the system productivity and farmers' income	Single Boro area will be intensified with higher farmers' income	100
21.	Fine tuning of the improved cropping pattern technology Lentil + Muskmelon-Jute-T. Aman in Faridpur region	To increase the system productivity and farmers' income	System productivity and farmer's income will be increased	150
	BRRI Regional Station, Barishal			
01	Morpho-molecular characterization of local germplasms to study anaerobic germination with tillering ability and their yield performance under non-saline tidal submergence condition (2024-2026)-T. Aman season	1.To identify germplasms tolerant to non-saline tidal ecosystems with their yield performance through morpho-molecular analysis. 2. To find out the anaerobic germination with their tillering ability in local germplasm under anaerobic conditions.	May get potential germplasm (s) tolerant to non-saline tidal ecosystems and also able to germinate under anaerobic condition.	2000
02	Fertilizer Management for HYV rice during Aman season under tidal flood situation (2024-25)	To determine suitable fertilizer application method in T. Aman rice under tidal submergence condition	Result will help us to prepare a complete guide line (technology) on fertilizer application in tidal submergence condition	200
03	Management of Algae at Boro season in Barishal region (2024-26)	1. To identify a cost-effective and straightforward method for algae management. 2. To assess the impact of algae on rice growth and yield.	Result will help to prepare a easy guide line (technology) for controlling Algae in Rice field.	200
04	Diversification of a dominant	1.To assess the current status and	Fallow land will be transformed into	1000

	single cropped area (Fallow-Fallow-T. Aman) in Barishal region, Bangladesh. (2024-2028)	challenges of the Fallow-Fallow-T. Aman cropping pattern in Barishal. 2.To identify potential diversification options suitable for the local agroecological context. 3.To evaluate the economic, environmental, and social implications of diversification strategies. 4.To develop recommendations and guidelines for farmers and policymakers to promote diversified cropping systems.	rice cultivable.	
05	Validation and dissemination of BRRI released varieties based on suitability map (2024-2026)	1.To validate varietal suitability map for Barishal region 2.To disseminate BRRI released varieties according to suitability	BRRI released varieties would be possible to spread rapidly with limited	1000
06	Sustainability assessment of BRRI varieties' demonstration in Barishal region	1.To evaluate farmers' feedback regarding varietal demonstration in the following years 2.To assess sustainability of the demonstrations established in Barishal region	The sustainability of the demonstration programs would be able to be found out and based on the results further planning could be possible.	1000
07	Hybridization (T. Aman)	To develop tidal submergence tolerant rice variety	Non saline tidal submergence tolerant rice variety development	100
08	F$_1$ confirmation (T. Aman)	To develop tidal submergence tolerant rice variety	Non saline tidal submergence tolerant rice variety development	100
09	F2 generation (RGA) (T. Aman)	To develop tidal submergence tolerant rice variety	Non saline tidal submergence tolerant rice variety development	100
10	F3 generation (RGA) (T. Aman)	To develop tidal submergence tolerant rice variety	Non saline tidal submergence tolerant rice variety development	100

11	F$_4$ generation (RGA) (T. Aman)	To develop tidal submergence tolerant rice variety	Non saline tidal submergence tolerant rice variety development	100
12	F$_5$ generation (RGA) (T. Aman)	To develop tidal submergence tolerant rice variety	Non saline tidal submergence tolerant rice variety development	100
13	Advanced Yield Trial (AYT-2) (T. Aman)	To develop tidal submergence tolerant rice variety	Non saline tidal submergence tolerant rice variety development	100
14	Upscalling Blast Mangement Practices at Barishal Region	Popularize blast management practices among the stakeholders	Total rice production will be increased	1000
15	Evaluation of New Molecules against Blast Disease Management	Identifying effective new molecule (s) against Blast Disease control.	Blast disease will be controlled successfully	100
16	Characterization of Blast isolates of Barishal region using differential system	Catagorize blast isolates based of their infection pattern in rice.	Durable blast resistant variety will be developed.	500
17	Healthy seedling raising in tray practices during Boro season	Identifying easy and cost-effective techniques of seedling raising in tray.	Mechanical transplantion will be enhanced.	200
18	Survey and Monitoring of Rice disease status at Barishal region	Disease intensity and pattern will be found out.	Disease management strategic plan will be developed.	500
19	Blast resistant trait discovery among tidal coastal germplasm	Blast resistant germplasm will be identified adaptive to tidal coastal ecosystem.	New blast resistant sources will be identified.	500
20	Digitization of Charbadna and Sagordi farm of BRRI R/S, Barishal for converting to SMART farming	Charbadna and Sagordi farm will be digitalized for easy operating of farm activities.	SMART Farm will be developed	100
	BRRI Regional Station, Rajshahi			
1.0	**Varietal Development Program**			
1.1	Hybridization	To develop Jira type grain with lodging tolerance lines	Trait development /pre-breeding materials selection	50

1.2	List of F1's to be confirmed	High yield & acceptable grain type with aroma	With desirable traits seven crosses will be made	100
1.3	Growing RGA Population	Development of drought and cold tolerant rice Development of high yield and acceptable grain quality rice	Around 40,000 genotypes will be selected for further advancement	200
1.4	Purification of local Sampa katari through Head to Row	Purification of local Sampa Katari rice	Three categories of local Sampa Katari cultivar will be purified	50
1.5	Regional Yield Trial	Evaluation of genotypes for specific and general adaptability	Around 20 RYT will be conducted to test the local adaptability	250
1.6	Collection and maintenance of local landraces	To characterize the local genotypes for Rajshahi region and to maintain the local germplasm for using in crossing program	Enriching local germplasm for further research advancement	50
2.0	**Crop-soil-water managemet**			
2.1	Assessing the spatial heterogeneity of soil hydraulic properties in irrigated rice fields in different upazilas of Rajshahi district. Duration: 2024-2026	To quantify the spatial heterogeneity of soil hydraulic properties in irrigated rice fields and to assess how it affects yield gap.	Spatial heterogeneity in soil hydraulic properties, plant water availability, and yield gap will be identified and a better irrigation method will be recommended to address this challenge.	200
3.0	**Rice Farming System**			
3.1	Effect of mustard cultivation on yield of rice	To determine the effect of mustard cultivation on yield of rice	1. Effect of mustard cultivation on yield of rice will be determined 2. Suitable high yielding variety for boro season after mustard cultivation will be selected	100
3.2	Effect of planting date on yield of Late Boro rice	To Know the planting date on yield of Late Boro rice	1. Appropriate transplanting date for late boro will be determined 2. Suitable variety will be identified for late boro	100

	BRRI Regional Station, Satkhira		
1	Evaluation of Saline Tolerant Boro Genotypes at Saline Environment	Objectives: 1. To investigate the performance of salinity tolerant rice genotypes 2. To select suitable variety in different saline environments	Best salinity tolerant rice genotypes can be identified.
2	Determination of Urea Fertilizer Rate for Saline Environments.	To optimize Urea fertilizer rate in different salinity levels	Can identify the optimum dose of Urea in salinity zone.
3	Optimizing Potassium Fertilizer Rate for Coastal Saline Environment.	To find out optimum potassium dose for Boro rice in saline affected area	Can identify the optimum dose of potassium in salinity zone.
4	Potassium Fertilizer Management in Saline Soil	To find out optimum potassium management technique	optimum potassium dose can be identyfy
5	Development and Evaluation of Some Four-crop Cropping Patterns	Objectives: To increase cropping intensity To compare the sustainability of four-crop cropping patter	Cropping intensity increase in salinity zone
6	Determination of Suitable Short Duration T. Aman Variety for Mustard-Boro-Jute-T. Aman Cropping Pattern.	To select suitable T. Aman rice variety for four crop cropping patern in southern area	Can be find out suitable variety for specific cropping pattern
7	Determination of Suitable Seedling Age of T. Aman Rice for Four Crop Cropping Pattern.	To determine suitable seedling age of T. Aman rice for four crop cropping patern.	
8	Suitable Tillage Method for Boro Rice in Gher Ecosystem	To evaluate the performance of rice variety under different tillage systems in Gher.	
9	Determination of Suitable	To know optimum seedling age for gher	

	Seedling Age of Boro Rice for Gher areas.	land		
10	Four Stakeholder Model Demonstration of Boro varieties in Gher Areas of Bangladesh.	To know the adaptability of different rice varieties in nonsaline gher.		
11	Suitable planting time for salinity tolerant Boro rice in saline area	To avoid high salinity stress at the later stages of Boro rice cultivation		
12	Evaluation and suitability of hybrid rice in salinity affected area during Boro season	To find out suitable hybrid rice variety for saline environment		
	BRRI Regional Station, Habiganj			
	Program Area: Varietal Development			
1.1	Project-1: Local germplasm collection, evaluation and pure line selection **Experiment Title:** Pure line selection Duration: 2023-24	1. To characterize and purify local germplasm 2. To identify the best local land race varieties for direct use or deploy in the breeding program	Selection of best local land race varieties for direct use or using in the breeding program		50
1.2	**Project-2: Development of shallow flooded rice for Haor areas Experiment Title:** Hybridization Duration: 2023-24	Introgression of genes from diverged genetic background into rice varieties/lines for the improvement of standard B. Aman varieties	Development of shallow flooded rice varieties (100 cm) for Haor ecosystem		50
1.3	**Project-3: Development of photosensitive varieties suitable for Haor areas**	To develop photosensitive rice varieties for late T. Aman situations of Haor ecosystem	Replacement of BR22 in the late T. Aman situations of Haor ecosystem		50

	Experiment Title: Hybridization Duration: 2023-24			
	Experiment Title: Confirmation of F_1 Duration: 2023-24	To confirm the crosses as true hybrid		50
	Program Area: Pest Management			
2.1	**Experiment Title:** Survey and monitoring of major rice insects in Habiganj district Duration: 2023-24	1. To know the prevalence of major rice insects 2. To assume the rice yield losses due to rice insects	Observing insect pest and natural enemy's population	50
2.2	**Experiment Title:** Integrated management of Bakanae disease of rice. Duration: 2023-24	To control Bakanae disease of Rice	Control of Bakanae disease of Rice	50
2.3	**Experiment Title:** On farm evaluation of Trichocompost in controlling Bakanae disease Duration: 2023-24	To observe efficacy of of Trichocompost in controlling Bakanae Disease	Control of Bakanae disease of Rice at farmers field	50
	Program Area: Crop-Soil-Water management			
3.1	Effect of planting times on BRRI developed latest T Aman varieties	1. To find out the optimum planting time of the rice varieties in Haor areas	Appropriate time of planting on new rice varieties, lodging tolerance, cold tolerance and preharvest sprouting of different rice genotypes will be determined.	60
3.2	Evaluation of latest T Aman rice varieties for lodging tolerance	To determine the lodging characters of rice varieties.		50
3.3	Optimization of planting times	1. To optimize planting time for reducing		60

	of BRRI developed Boro varieties	flash flood risk and cold injury. 2. To observe cold tolerance level of tested rice varieties		
3.4	Characterization and evaluation of rice genotypes for cold tolerance	1. To characterize rice genotypes at natural cold condition. 2. To evaluate rice genotypes at natural cold condition		50
3.5	Evaluation of rice genotypes for preharvest sprouting	1. To identify the pre-harvest sprouting tolerant genotypes		50
	Program Area: Socio Economic and Policy			
4.1	Stability analysis of BRRI released rice varieties	1. To investigate the stability of BRRI varieties for specific season. 2. To find out location specific suitable variety(s).	Stability and suitability of BRRI released rice varieties will be determined.	50
	Program Area: Technology Transfer			
5.1	Demonstration of Modern Rice Varieties (Total demo 1500) **GoB**: Aus: 150 bigha, Aman: 150 bigha, Boro: 200 bigha. **Hybrid Rice Project**: Aus: 30 bigha Aman: 30 bigha, Boro: 40 bigha **PARTNER Project**: Aus: 50, Aman: 200 Acre, Boro: 400 Acre **LSTD Project**: Aus: 50 Acre, Aman: 100 Acre, Boro: 100 Acre	To demonstrate and disseminate BRRI varieties in Sylhet region.	Popularization of BRRI developed latest varieties among the farmers and extension workers	10,000
5.2	Farmer's and SAAOs training on modern rice cultivation and	To increase farmers/SAAOs knowledge	Trained farmers and SAAOs	800

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	disease management technology (GoB, PARTNER & LSTD)			
5.3	Field day on modern rice cultivation (GoB, PARTNER & LSTD) (Total 5000)	1. To disseminate rice production technologies 2. To increase farmers knowledge	Dissemination of rice production technologies	500
5.4	Breeder seed production	Produce breeder seeds for further seed multiplication. Enrich seed stock of modern rice varieties.	Breeder seed	2000
5.5	TLS/Quality seed production	Utilize quality seed for conducting Research and Demonstration Provide seeds to different stakeholders to enhance dissemination of modern rice varieties.	TLS/Quality seed	200
	BRRI Regional Station Rangpur			
1	Development of rice varieties suitable in Rangpur region	Development of high yielding (>=8.0 t/ha) rice varieties giving the thrust is to develop short duration varieties accompanied with tolerance to drought, resistance to major biotic stresses (insect and diseases) and acceptable grain quality	Region specific high yield potential variety will be developed.	250
2	Breeding of Photoperiod-sensitive rice varieties (PSR) for Lowland and Charland ecosystem	To develop moderate photoperiod-sensitive climate smart rice varieties with high yield potential (≥ 8.0 t/ha) with acceptable grain quality.	Moderate photoperiod-sensitive rice varieties with high yield potential (≥ 8.0 t/ha) with acceptable grain quality will be developed for lowland and charland ecosystem	250
3	Breeding for Second Generation Rice (SGR)	Development of high yielding (≥ 8.0 t/ha for T. Aman and ≥ 10.0 t/ha for Boro) rice	High yield potential variety will be developed through ideotype breeding.	250

		varieties by modifying plant type giving the thrust is to develop short duration varieties accompanied with tolerance to drought/cold, resistance to major biotic stresses (insect and diseases) and acceptable grain quality.		
4	Breeding for Basmati Rice	Development of high yielding (≥6.0 t/ha for T. Aman and ≥8.0 t/ha for Boro) rice varieties with improved modified plant type giving the thrust is to develop short duration varieties from diverse genetic background for tolerant to cold, sturdy stem, resistance to major biotic stresses (insect and diseases) and acceptable basmati quality.	High yield potential photo-insensitive basmati type variety will be developed	250
5	Development of hybrid rice parental lines and hybrids	To develop maintainer and restorer lines from diverse genetic origin	BLB and blast resistant hybrid variety will be developed.	550
6	Effect of Time of Planting of Newly Developed BRRI Varieties in Different Regional Stations	Establishment of crop at the right time plays vital role in the performance of rice. Specific agro-climatic conditions of different regions influence the planting time of a variety.	Optimize best planting time for specific agro-climatic conditions	600