

Proposed research Programme 2015-16

Plant Breeding Division

Sl No	Project	Major objectives	Tentative Budget (Thousand Tk.)
	Plant Breeding Division		
01	Project-1 : Development of Upland Rice (Aus) Program leader- Md. Ruhul Amin Sarker Project duration: Ongoing	Development of modern rice genotypes suitable for dry direct seeded upland condition. Target: 4.5 t/ha in less than 100 days	500 GOB
02	Project -2: Development of Transplanted Aus Rice Program leader- Mahmuda Khatun Project duration: on going	Development of varieties with short growth duration, high yield potential and good grain properties Target: 5.5 t/ha in 100 days	500 GOB
03	Project -3: Improvement of rice for shallow flooded and deep water environment Project Leader: KM Iftekharuddaula Project duration: on going	Development of genotypes in combination with slow elongation, high yield and submergence tolerance for shallow flooded deep water sub-ecosystem (flood water depth 0.5-1.0 m) and quick elongation for deep water condition (>2.0 m flood depth).	500 GOB
04	Project-4:Development of Rainfed Lowland Rice (RLR) (T. Aman) Project leader-M A Kader Project duration: on going	Development of genotypes superior to standard varieties and adaptable to rainfed lowland environment in T. Aman season	1200 GOB
05	Development of Tidal submergence Tolerance Rice (T. Aman) Project leader :H U Ahmed Project duration: On going	To develop high yielding varieties with submergence tolerance and intermediate plant height adaptable to tidal non-saline condition for coastal areas.	600(EQSS)
06	Project 6: Program on Development of Salt Tolerant Rice Variety, Boro 2014-15 Project leader: Md. Akhlasur Rahman Project duration: 2014-2018	To develop salt tolerant rice varieties for southern coastal region and Isolation of rice genotypes suitable for coastal zone through farmers' participation (PVS)	7500 GOB, STRASA, IAPP
07	Project-7: Development of Premium Quality Rice (PQR) T. Aman and Boro Project leader- M A Kader/Ratna Rani Mujumder Project duration: on going	Development of extra long grain and small grain with or without aroma into high yielding rice genetic background for domestic use and export.	1600 GOB

Sl No	Project	Major objectives	Tentative Budget (Thousand Tk.)
08	Project 08: Development of rice varieties for favorable boro environment Project leader: P.S Biswas Project duration: on going	Development of improved genotypes with high yield potential, earliness and acceptable grain quality for irrigated ecosystem in Bangladesh. Target: 8.5-9.0 t/ha in 145 days	700 GOB
09	Project 9: Development of cold tolerant rice Project leader: P.S Biswas Project duration: on going	Development of high yielding rice varieties tolerant to cold injury by introducing cold tolerant gene (s).	1200 (IAPP, GOB)
10	Project 10: Development of High Yielding Rice Genotypes With Low Amylose Content Project leader: H Khatun Project duration: on going	Development of high yielding indica rice variety with low amylose content for domestic use particularly for ethnic people and export.	300 GOB
11	Project 11: Development of micronutrient enriched rice (MER) (Boro and T.Aman) Project Leader: P S Biswas Project duration:2015-2018	Development of high yielding rice varieties with improved nutritional quality in terms of high iron and zinc content in polished grain	7800 CIAT-IRRI: HarvestPlus IAPP
12	Project 13: Development of Disease Resistant Rice (T. Aman & Boro) Project Leader: Dr. Mahmuda Khatun Project duration: on going	Development of varieties resistant to Bacterial Blight (BB) and Blast	700 GOB
13	Project 12:Development of Insect Resistance Rice Project Leader: M R A Sarker Project duration: on going	Development of varieties resistant to BPH, WBPH, GM and GLH	600 GOB
14	Project14: Development of Submergence and Water Stagnation Tolerant Rice Project leader: KM Iftekharuddaula Project Duration: 2014-2018	Development of high yielding rice varieties tolerant to submergence (flash flooding) and medium stagnant water (MSW) stresses as flash flooding and water stagnation are the major constraints in the rainfed lowland rice ecosystem in Bangladesh	100 (GOB, STRASA, IAPP)
15	Project 15: Development of drought tolerant rice (IAPP Funded) Project Leader: M A Kader	Development of high yielding rice varieties tolerant to drought stresses in the rainfed lowland rice ecosystem in Bangladesh	7500 (GOB and IAPP)

Sl No	Project	Major objectives	Tentative Budget (Thousand Tk.)
	Project duration: on going		
16	Project 16: Improvement of Rice Varieties/Breeding Lines for Low Water Availability Boro 2015-16 PI: KM Iftekharuddaula Project duration: on going	Development and identification of efficient rice genotypes/varieties which will utilize minimum water with maximum output	100 (GoB and IAPP)
17	Project 17: Development of Green Super Rice (GSR)(Boro and T Amam) Project leader: Helal Uddin Ahmed Project duration: 2014-15	Development of less input but high yield potential with tolerance to different stresses rice varieties	500 GSR
18	Project 18: International Network for Genetic Evaluation of Rice (INGER 2015-16) Project leader: KM Iftekharuddaula Project duration: on going	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.	600 GOB
19	Development and validation of high b β -carotene rice (Golden rice) Project duration: on going	Introgression and evaluation of b β - carotene trait in elite indica varieties.	6240 (IRRI)

Hybrid Rice Division
Proposed Research Program 2015-2016

SL. #	Program area/project with duration	Major Objective(s)	Annual Budget Thousand (Tk.)
	Program area: Varietal development T. Aman season 2015 (July to November)		
Sub-project-1: Breeding for high yield, high amylose content and fine grain containing short duration hybrid rice varieties for rainfed condition			
1.1	Source Nursery	Identification of prospective maintainers and restorers from diverse genetic origin	20,000.00
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.	25,000.00
1.3	Backcross Nursery	Developing CMS lines from identified maintainer by back crossing.	25,000.00
1.4	CMS Maintenance and Evaluation Nursery	Maintain and evaluate of CMS lines	40,000.00

1.5	Development of disease resistant parental lines (BB)	To develop new CMS lines resistance to disease(BB) and selection of heterotic rice hybrids resistance to disease(BB)	30,000.00
1.6	Improvement of parental lines by (B x B) and (R x R) crosses.	To broaden the genetic base of parental lines	25,000.00
Sub-project-2: Breeding for BB resistant hybrid rice variety			
2.1	Screening of existing maintainers and restorers against BB resistance.	To identification of BB resistance maintainers and/or restorers from existing materials.	40,000.00
2.2	Source Nursery	Identification of prospective maintainers and restorers of diversified origin for making experimental rice hybrids.	30,000.00
SL. #	Program area/project with duration	Major Objective(s)	Annual Budget Thousand (Tk.)
2.3	Test cross Nursery	1. Confirmation of maintainers and restorers from the crossed entries. 2. Selection of heterotic rice hybrids. 3. Conversion of prospective maintainers into new CMS lines.	35,000.00
2.4	Backcross Nursery	Developing BB resistant CMS lines from identified maintainer by back crossing.	2,00000.00
Sub-Project-3: Evaluation of parental materials & hybrids:			
3.1	Observational Trial (OT) of experimental hybrids	Selection of promising hybrids	35,000.00
3.2	Preliminary Yield trials of promising hybrids	To study the wider adaptability and yield potentiality of promising hybrids	55,000.00
3.3	Combining ability of A, B & R lines	To select the best combiner (S) in respect of grain yield & yield components	55,000.00
3.4	National Hybrid Rice Yield Trial (NHRYT)	Evaluation of imported hybrids for subsequent selection	Funded by SCA
3.5	Advance line adaptive research trials (ALART)	Selection of promising hybrids for T Aman season	1,50000.00
3.6	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	25,000.00
3.7	Demonstration trials of BRRI released hybrids along with promising hybrids and checks	To evaluate the performances of released hybrids with promising ones	25,000.00

Sub- Project-4: Seed Production of Parental lines and Hybrids:			
4.1	CMS multiplication of promising A line	To produce pure and good quality seed of CMS lines for subsequent use.	1,50000.00
4.2	CMS multiplication of BRR I hybrid dhan1 & BRR I hybrid dhan4	Production of pure and good quality seed of CMS lines.	2,00000.00
4.3	CMS line multiplication of BRR I hybrid dhan2	Production of sufficient quantity quality seeds of CMS lines for subsequent use	55,000.00
4.4	CMS line multiplication of BRR I hybrid dhan3	Production of sufficient quantity quality seeds of CMS lines for subsequent use	55,000.00
4.5	F ₁ seed production of BRR I hybrid dhan3	Production of sufficient quantity quality hybrid seed for subsequent use	2,00000.00
Sl. #	Program area/project with duration	Major Objective(s)	Annual Budget Thousand (Tk.)
4.6	F ₁ seed production of BRR I hybrid dhan4	Production of sufficient quantity quality hybrid seed for subsequent use	2,00000.00
4.7	F ₁ seed production of promising hybrids	Production of sufficient quantity quality hybrid seed of promising hybrids for subsequent use	1,75000.00
4.8	F ₁ seed production of promising hybrids	To produce sufficient quantity of seed for OST and OFT	2,50000.00
4.9	Growth duration differentiation method (GDDM) for synchronization in flowering	To determine proper heading time of parental lines (A &R) of promising hybrids	30,000.00
4.10	Maintainer and restorer lines multiplication of BRR I released hybrids	Production of sufficient quantity quality parental lines for subsequent use	35,000.00
Program area: Varietal development Boro season 2015-16 (November to June)			
Sub-project-1: Breeding for high yield, high amylose content and fine grain containing short duration hybrid rice varieties for dry (irrigated) condition			
1.1	Source Nursery	Identification of prospective maintainers and restorers from diverse genetic origin	25,000.00
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.	30,000.00
1.3	Backcross Nursery	Developing CMS lines from identified maintainer by back crossing.	35,000.00

1.4	CMS Maintenance and Evaluation Nursery	Maintain and evaluate of CMS lines	50,000.00
1.5	Development of disease resistant parental lines (BB)	To develop new CMS lines resistance to disease(BB) and selection of heterotic rice hybrids resistance to disease(BB)	35,000.00
1.6	Improvement of parental lines by (B x B) and (R x R) crosses.	To broaden the genetic base of parental lines	30,000.00
Sub-project-2: Breeding for BB resistant hybrid rice variety			
2.1	Screening of existing maintainers and restorers against BB resistance.	To identification of BB resistance maintainers and/or restorers from existing materials.	45,000.00
Sl. #	Program area/project with duration	Major Objective(s)	Annual Budget Thousand (Tk.)
2.2	Source Nursery	Identification of prospective maintainers and restorers of diversified origin for making experimental rice hybrids.	35,000.00
2.3	Test cross Nursery	1. Confirmation of maintainers and restorers from the crossed entries. 2. Selection of heterotic rice hybrids. 3. Conversion of prospective maintainers into new CMS lines.	40,000.00
2.4	Backcross Nursery	Developing BB resistant CMS lines from identified maintainer by back crossing.	2,00000.00
2.5	Screening of BC ₁ F ₁ populations	To identification of BB resistance maintainers and/or restorers from BC ₁ F ₁ populations	75,000.00
2.6	Pedigree Nursery	To select desirable progenies with emphasis on earliness, intermediate height and high yield potential	50,000.00
Sub-Project-3: Evaluation of parental materials & hybrids:			
3.1	Observational Trial (OT) of experimental hybrids	Selection of promising hybrids	35,000.00
3.2	Preliminary Yield trials of promising hybrids	To study the wider adaptability and yield potentiality of promising hybrids	55,000.00
3.3	Combining ability of A, B & R lines	To select the best combiner (S) in respect of grain yield & yield components	55,000.00
3.4	National Hybrid Rice Yield Trial (NHRYT)	Evaluation of imported hybrids for subsequent selection	Funded by SCA
3.5	Genetic diversity and out crossing potential	To find out the suitable CMS line for higher hybrid seed setting ability	75,000.00

	study of some promising CMS lines		
3.6	Screening parental lines for floral traits that influencing out cross.	To identify suitable parent (s) having out crossing influencing traits for using hybrid rice program.	75,000.00
3.7	Molecular characterization of promising parental lines	To characterize specific traits of parental lines with molecular marker	5,00000.00
3.8	Advance line adaptive research trials (ALART)	Selection of promising hybrids for T Aman season	1,75000.00
3.9	Quality ensure of previous season produced F ₁ and CMS lines through grow out test	To determine purity of parental lines and hybrids of BRRRI released hybrid rice	30,000.00
Sl. #	Program area/project with duration	Major Objective(s)	Annual Budget Thousand (Tk.)
3.10	Demonstration trials of BRRRI released hybrids along with promising hybrids and checks	To evaluate the performances of released hybrids with promising ones	30,000.00
Sub- Project-4: Seed Production of Parental lines and Hybrids:			
4.1	CMS multiplication of promising A line	To produce pure and good quality seed of CMS lines for subsequent use.	1,75000.00
4.2	CMS multiplication of BRRRI hybrid dhan1 & BRRRI hybrid dhan4	Production of pure and good quality seed of CMS lines.	2,50000.00
4.3	CMS line multiplication of BRRRI hybrid dhan2	Production of sufficient quantity quality seeds of CMS lines for subsequent use	60,000.00
4.4	CMS line multiplication of BRRRI hybrid dhan3	Production of sufficient quantity quality seeds of CMS lines for subsequent use	55,000.00
4.5	F ₁ seed production of BRRRI hybrid dhan3	Production of sufficient quantity quality hybrid seed for subsequent use	2,00000.00
4.6	F ₁ seed production of BRRRI hybrid dhan4	Production of sufficient quantity quality hybrid seed for subsequent use	2,00000.00
4.7	F ₁ seed production of promising hybrids	Production of sufficient quantity quality hybrid seed of promising hybrids for subsequent use	1,75000.00
4.8	F1 seed production of promising hybrids	To produce sufficient quantity of seed for OST and OFT	2,75000.00

4.9	Growth duration differentiation method (GDDM) for synchronization in flowering	To determine proper heading time of parental lines (A &R) of promising hybrids	35,000.00
4.10	Maintainer and restorer lines multiplication of BRRI released hybrids	Production of sufficient quantity quality parental lines for subsequent use	40,000.00
4.11	Determination of suitable row ratio and spacing for increasing seed yield in hybrid rice seed production	To find out the optimum row ratio and spacing for new promising combinations for hybrid seed production.	1,50,000.00
Total Budget			= 53,10000.00

(In word fifty three lac and ten thousand taka only)

Biotechnology Division
Proposed Research Program 2015-16

Sl No.	Program area/ Project (Duration)	Major objective	Annual budget (Thousand TK)
Division: Biotechnology			
1	Development of low glycemic index (GI) rice variety through anther culture	To develop low glycemic index rice through anther culture	30.00
2	Development of salt tolerant rice variety through anther culture	To develop salt tolerant, high yield rice through anther culture	3.00
3	Development of aromatic and fine grain rice variety through anther culture	To develop aromatic and fine grain rice lines through anther culture	3.00
4	Development of upland Aus variety through anther culture	To develop short duration, high yielding upland Aus rice variety through anther culture	3.00
5	Development of Swarna type rice variety through anther culture	To develop Swarna type rice variety	2.00
6	Development of somaclone using EMS treated rice seed	To create somaclonal variation towards developing modern rice varieties	3.00
7	Progeny selection	To select the best progeny with high yield and stress tolerance	1.00
8	Observational trials	To select agronomically desirable and high yield potential materials	1.00
9	Primary yield trials (PYT)	To select Agronomically desirable and high yield potential materials	1.00
10	Secondary Yield Trials (SYT)	To select Agronomically desirable and high yield potential materials	1.00
11	Regional yield trials	To evaluate yield potential of advanced breeding in the regional level	3.00
12	Developing rice variety through wide hybridization followed by embryo rescue	To develop different stress tolerant rice variety through wide hybridization	2.00
13	Developing rice variety through wide hybridization followed by anther culture	To develop modern rice variety rice for Aus, Aman and Boro	2.00
14	Development of salt tolerant transgenic rice	To develop salt tolerant transgenic rice lines	6.00
15	Development of drought and salt tolerant transgenic rice	To develop drought and salt tolerant transgenic rice lines	6.00
16	Development of drought and	Introgression of drought and	5.00

	salt tolerant transgenic rice through backcrossing (ABSPII Project)	salinity tolerant <i>TPSP</i> gene into BRRI released varieties through backcrossing for making drought and salinity tolerance transgenic rice lines	
17	Identification of yield enhancement QTLs	To identify yield enhancing QTLs for enhancing grain yield of elite Bangladeshi rice varieties	10.00
18	Identification of QTLs for salinity tolerance both at seedling and reproductive stage	To identify QTLs for salt tolerance both at seedling and reproductive stage	12.00
19	Identification of QTLs for taller seedling height	To identify QTLs for taller seedling height for developing tidal submergence tolerant rice variety	5.00
20	Gene pyramiding for resistance to bacterial blight (BB)	To develop breeding lines possessing two (<i>xa4</i> and <i>Xa21</i>) BB resistance genes through Marker Assisted Selection	1.00
21	Isolation and cloning of salt tolerant gene	To isolate salt tolerant gene	15.00

Genetic Resources and Seed Division

Research Program 2015-2016

SL No.	Program area/Project	Major Objectives	Annual Budget (Lakh TK)
Program Area 01: Varietal Development Program (VDP)			
3	Sub-program area: Rice Germplasm and Seed		
3.1	Rice germplasm management	Collection, characterization (morphological and molecular), evaluation and conservation of rice germplasm to enrich the genebank for rice scientists.	15.00
3.2	Seed production and variety maintenance	Maintenance of the nucleus seed stock and supply of breeder seed as per national demand.	75.00
3.3	Exploratory and genetic studies	Conduct problem related genetic studies for breeder seed and rice germplasm.	24.00
3.4	Documentation of technology	Development of technology packages with seeds and ready reference on genebank	1.00

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Grain Quality and Nutrition Division
Research Programme 2015-2016

Sl. No	Program area/Project with duration	Major Objective	Annual Budget Thousand Tk.
1.	Grain Quality Characteristics for Variety Development		11.0 Lac
	1.1 Determination of physicochemical and cooking properties of rice grain	To determine physicochemical and eating quality of newly developed breeding lines for identifying lines with superior grain quality.	
	1.2. Evaluation of physicochemical properties of BRRI varieties.	To determine physicochemical and cooking qualities of BRRI (recently released) rice varieties for updating the data base.	
	1.3. Evaluation of nutritional quality of BRRI varieties on the basis of cooking time of different soaking condition.	To determine the nutritional quality of minimum cooking time of BRRI released rice varieties owing to save fuel consumption.	
	1.4.Determination of physicochemical and cooking properties of Kanakchul (local) rice grain	To determine the physicochemical and eating qualities of Kanakchul rice grain for identifying superior popping qualities.	
	1.5. Effect of salinity on grain quality and nutritional status of salt tolerant rice varieties.	To evaluate the effect of salinity on physicochemical properties of salt tolerant rice varieties.	
2.	Grain Quality parameters for Consumer Preference		6.0 Lac
	2.1. Evaluation of high zinc rice varieties through sensory evaluation test.	To form a laboratory taste panel of evaluators from the scientists of different research divisions of BRRI, who can evaluate the sensory properties of a rice variety consistently. To evaluate sensory properties	

		of some newly released rice varieties.	
Sl. No	Program area/Project with duration	Major Objective	Annual Budget Thousand Tk.
	2.2. Assessment of rice bran oil extracted from bran of some BRRI varieties under different storage condition.	To extract rice bran oil from different aged rice bran To standardize storage life of rice bran To observe the oil content of rice bran with the time of storage	
	2.3. Determination of chemical and nutritional composition of rice bran oil extracted from different aged bran.	To analyze the chemical and nutritional composition of rice bran oil. To standardize appropriate method of extraction from quality analysis of rice bran oil.	
	2.4. Evaluation of commercial rice bran oil and soybean oil available in the market.	To determine Peroxide Value, Saponification Value, Iodine Number and Fatty Acid composition present in the oil.	
	2.5: Identification of milled rice by DNA fingerprinting.	To genetically identify popular milled rice varieties.	
3.	Nutritional Quality Assessment of Rice.		3.0 Lac
	3.1. Study on bioavailability of Zinc, Iron and estimation of anti-oxidant status in BRRI rice varieties using experimental rat model in 2015.	To evaluate the bio-availability of micronutrients and estimation of antioxidants properties in all BRRI released HYV and hybrid rice.	
	3.2. Estimation of GI (Glycemic index) in BRRI HYV and hybrid rice using experimental rat model in 2015.	To explore low GI (Glycemic index) rice varieties among BRRI released HYV and hybrid rice using rat model.	
4.	Commercial Rice Based Products		5.0 Lac
	4.1. Formulation of rice based biscuit and analyze the nutritional characteristics	To supply fortified/nutrient enrich food products To provide supplement food to regular diet To introduce rice based food product as rice is abundant	

		in Bangladesh.	
Sl. No	Program area/Project with duration	Major Objective	Annual Budget Thousand Tk.
	4.2. γ -Aminobutyric acid (GABA) enriched rice based bioactive product improve health condition to mitigate global climate change effect on health in Bangladesh perspective.	Introducing GABA enriched GBR based suitable rice product for Bangladeshi population.	
	4.3. Efficacy of Alkaloid, Phenolic and Limonoids fractions extracted from Swietenia Mahagoni on insect pest of rice.	To isolate Alkaloid, Phenolic and Limonoids fractions and Their efficacy on rice insect pest.	
	4.4: Survey on BRRi modern varieties used for indigenous rice products.	To find out the popular BRRi varieties used for puffed and flattened rice.	

Agronomy Division
Proposed Research Programme 2015-16

Sl No	Programme area/Project with duration	Major Objective	Annual budget (Taka)
Program Area : Crop-Soil-Water Management			
1	Project: Seeds and Seedlings		
	Expt. 1.1. Effect of different seed bed media on rice seedling growth during Boro season (On going)	To improve the seedling quality under cold spell	50,000/-
	Expt. 1.2. Effect of seed and seedling priming with zinc on seedling establishment, growth and yield of rice in saline soil (New)	To determine the effect of primed seed and seedling to rice establishment and yield	50,000/-
	Expt. 1.3. Role of salicylic acid (SA) on quality seedling production of Boro rice under natural cold stress condition (New)	To find out optimum dose of salicylic acid on quality rice seedling production in Boro season.	50,000/-
	Expt. 1.4. Evaluation of rice transplanter and seedling raising on trays (On going)	To popularize BRRi machineries for minimizing cost of production	1,00000/-

2	Project: Planting Practices		
	Expt. 2.1. Effect of time of planting on growth and yield of advanced lines in Aman and Boro seasons (On going)	To determine suitable time of planting and selection of high yield potential genotypes	50,000/-
	Expt. 2.2. Performance of Boro rice at varying time of planting in saline area of Patuakhali district (On going)	To evaluate the yield performance at varying time of planting	1,00000/-
	Expt. 2.3. Performance of BRRI dhan62 under different spacing and levels of nitrogen (On going)	To know the growth, yield and NUES under different spacing and levels of nitrogen	50,000/-
	Expt. 2.4. Effect of planting density and seedling age of newly BRRI developed long duration rice for yield maximization (On going)	To find out appropriate spacing and age of seedling for yield optimization of long duration rice	50,000/-
	Expt. 2.5. Effect of planting density and seedling age of newly BRRI developed short duration T. Aman varieties for yield maximization (On going)	To find out the appropriate spacing and age of seedling for yield optimization of short duration T. Aman.	50,000/-
	Expt. 2.6. Effect of crop establishment method and nutrient management of newly BRRI developed long duration Boro and T. Aman varieties for yield maximization (On going)	To find out the appropriate crop establishment method and nutrient management for yield optimization of newly BRRI developed long duration Boro and T. Aman varieties	50,000/-
	Expt. 2.7. Effect of crop establishment methods and nutrient management of newly BRRI developed short duration Boro, T. Aman and T. Aus varieties for yield maximization (On-going)	To find out the appropriate crop establishment method and nutrient management for yield optimization of newly BRRI developed short duration Boro, T. Aman and T. Aus varieties.	50,000/-
3	Project: Fertilizer Management		
	Expt. 3.1. Site specific nutrient management in peat soil (New	To find out the response of N, P, K, S and Zn in peat soil	1,00000/-
	Expt. 3.2. Optimization of P fertilizer in peat soil at Gopalganj district (New)	To find out the optimum dose of P in peat soil.	1,00000/-

	Expt. 3.3. Evaluation of urea spray for increasing nitrogen use efficiency (NUE) of Boro rice by different N application methods (New)	To find out suitable urea application techniques and Nitrogen Use Efficiency (NUE) in Boro rice	1,00000/-
	Expt. 3.4. Effect of different rates of nitrogen and vermicompost on growth and yield of rice (On going)	To reduce use of chemical fertilizer and maintain the soil health	50,000/-
	Expt. 3.5. Effect of mycorrhiza inoculation on growth of aerobic rice under water stress condition (On going)	To determine the root colonization, nutrient uptake and growth of aerobic rice in water stress condition.	1,00000/-
	Expt. 3.6. Method of N application and dose in establishment of rice by Rice Transplanter (On going)	To determine N application method in crop establishment by rice transplanter	50,000/-
	Expt. 3.7. Influence of N levels on growth, productivity and quality of premium quality rice (PQR) under AWD irrigation system (New)	To investigate if there any change the grain quality of premium quality rice by different levels of N under AWD irrigation system	50,000/-
	Expt. 3.8. Effect of nitrogen on growth and yield of some drought tolerant rice varieties (On going)	To increase yield of short duration rice following suitable fertilizer management practices	50,000/-
	Expt. 3.9. Validation of nutrient and crop management options for yield maximization of submergence tolerance variety in Rangpur region in T. Aman season (On going)	To identify and recommend appropriate nutrient management and other crop management option of BRRI dhan51 and BRRI dhan52 a submergence tolerant varieties for yield maximization	1,50,000/-
	Expt. 3.10. Validation of different nutrient management options for increasing yield of rice in T. Aus, T. Aman and Boro seasons in tidal flood prone ecosystem (On going)	1. To find out the suitable nutrient management option 2, To increase the nutrient use efficiency	2,00000/-
	Expt. 3.11. Validation of different management options for decreasing salinity effect on rice field in Boro season (New)	To find out the suitable management option in farmer's field	1,00000/-

	Expt. 3.12. Validation of BRR I developed technologies at Pirojpur-Gopalganj- Bagerhat districts (On going)	1. To find out the suitable variety in the project site 2. To popularize BRR I recommended fertilizer and USG	3,00000/-
	Expt. 3.13. Crop productivity improvement by introducing modern variety and fertilizer management in Pirojpur, Gopalganj and Bagerhut region (On going)	Introduction modern variety and BRR I recommended fertilizer in Gopalganj, Pirojpur and Bagerhut areas	1,50,000/-
	Expt. 3.14. Nitrogen management in short duration varieties in rainfed condition (New)	To find out the efficiency of USG for maximum grain yield in rainfed condition	1,00000/-
4	Project: Weed Management		
	Expt. 4.1. Investigation of new weed species in Rice-Mustard-Rice cropping system in Tangail district (New)	1. To find out new weed species in Rice-Mustard-Rice cropping systems 2. To find out appropriate weed control options	1,00000/-
	Expt. 4.2. Weed control of rice established by Rice Transplanter (On going)	To determine suitable weed control method in Boro rice	50,000/-
	Expt. 4.3. The effect of land preparation options for zero plow pan soil for yield maximization in Boro-Fallow-T. Aman cropping pattern (On going)	To determine suitable land preparation options for zero plow pan soil for yield maximization in Boro-Fallow-T Aman cropping pattern	50,000/-
	Expt. 4.4. Effect of different weed management options in USG applied transplanted rice (New)	To find out the lowest cost weed management optimum in transplanted rice	50,000/-
	Expt. 4.5. Effect of continuous application of herbicide on weed species shift and resistance (On going)	1. To identify weed species that shift due to continuous application of herbicide 2. To identify resistance weed species for specific herbicide	50,000/-
	Expt. 4.6. Effect of herbicides on soil microbial population (On going)	To observe the status of microbial population after herbicide application	2,00000/-
	Expt. 4.7. Evaluation of candidate herbicides (On going)	To find out the efficacy of new herbicides	1,00000/-

	Expt. 4.8. Effect of non selective herbicide to control aquatic weeds and consequence of soil properties to rice productivity in Gopalganj district (New)	To find out suitable non selective herbicide for aquatic weed control	1,00000/-
	Expt. 4.9. Validation of cost effective weed management technologies at Pirojpur-Gopalganj- Bagerhat district (On going)	1. To find out the suitable weed management in the project site 2. To popularize BRRRI recommended weed management	2,00000/-
	Expt. 4.10. Validation of different integrated weed control options for yield maximization in Boro season (On going)	To identify appropriate weed management option	1,50,000/-
	Expt. 4.11. Validation of weed control options and crop management of BRRRI dhan56, BRRRI dhan57 and BRRRI dhan62 in drought condition at Rangpur region in T. Aman season (On going)	To identify the appropriate weed and crop management options for yield maximization of BRRRI dhan56, BRRRI dhan57 and BRRRI dhan62 in draught condition	1,50,000/-
	Expt. 4.12. Weed control methods on productivity of direct dry seeded rice in Aus season (On going)	To determine effective weed control method	50,000/-

Soil Science Division
Proposed Research Program for 2015 – 2016

Project/ Exp No.	Project title and Expt	Specific Objectives	Annual budget (lakh Tk.)
Sub-sub program I: Soil Physics and Rice			
I	Soil profile study	To assess the vertical distribution of soil properties	
	1.1: Soil profile study of selected areas/experiments	1. To determine soil properties at variable soil depths for fertilizer and water management	2.0
Sub-sub program II: Soil Fertility and Plant Nutrition			
II.	Fertility assessment of rice soils and nutrient use efficiency in rice	To assess fertility of rice growing areas and determine optimum fertilizer requirement of rice	
	2.1. Determination of N P K fertilizer doses through SSNM for ALART materials (Ongoing)	2. To quantify rice yield responses to added fertilizers 3. To determine optimum doses of N, P, K for ALART materials/newly released varieties.	4.0

	2.2. Nutrient management for growing four crops in a year (New)	4. To increase crop production, 5. To maintain soil fertility and improve nutrient use-efficiency. 6. To determine nutrient depletion/mining.	3.0
	2.3. Effect of nitrogen and potassium on modern rice cultivation (New)	7. To find out suitable ratio of N and K for MV rice cultivation 8. To study N and K dynamics in soil and plant.	3.0
	2.4. Identify appropriate nitrogen and potassium dose to get targeted yield under AWD situation (New)	9. To find out optimum dose of N, P, K nutrients under safe AWD situation (10-20% water saving).	ADB water saving 2 nd phase
III	Micronutrient study	To study the effects of micronutrients on rice yield	
	3.1. Performance of zinc enriched rice varieties under zinc deficient condition (New)	10. To determine Zn uptake pattern 11. To assess the effect of Zn on chlorophyll, soluble protein and its role in enzymatic activities	0.5
Sub-sub program III: Nutritional Disorders in Rice			
IV.	Identification and Management of Nutritional Disorders in Rice	To determine upcoming nutritional disorders in rice under intensive rice cultivation with different fertilizer management practices	
	4.1. Long-term missing element trial at BIRRI regional station (Ongoing)	12. To determine nutrient mining problem on soil fertility and its influence on rice yield, 13. To find out nutrient management options for correcting soil problems	7.0
	4.2. Long-term missing element trial at BIRRI Gazipur (Ongoing)	14. To evaluate changes in soil physical, chemical and biological properties 15. To determine management options for solution of soil problem(s)	1.0
	4.3 Consequences of continuous wetland rice cropping on rice yield and soil health (Ongoing)	16. To evaluate soil fertility and rice yield changes over time 17. To find out mitigation options of soil health	1.2
	4.4. Effect of double/triple rice cropping on rice productivity and soil fertility (Ongoing)	18. To improve land productivity and soil health	3.0

		under intensive cropping system	
	4.5. Validation of BRRRI fertilizer management technology in rice (Ongoing)	19. To disseminate BRRRI developed fertilizer management packages in farmers' field.	IAPP
Sub-sub program IV: Soil and Environmental Problems			
V.	Greenhouse gas emission study	To study GHG emission from rice field	
	5.1. Green House Gas (GHG) Emission Trial at BRRRI	20. To determine GHG emission from rice field under different water and N management.	IFDC
Sub sub program V: Soil Management for Unfavorable Ecosystems			
VI	Management of saline soils	To find out a suitable management package for saline soils	
	6.1. Fertilizer management options for rice production in coastal areas (New)	21. To find out relationship among plant nutrients and soil EC 22. To develop suitable fertilizer management package for rice production in salt affected soil	3.0
	6.2. Mitigation of soil salinity through chemical amendments (New)	23. To find out a suitable chemical amendment for reducing soil salinity and improving crop yield.	1.0
Sub sub program VI: Soil Microbiological Studies			
VII.	Soil Microbiology and Biofertilizer	To study the microbial enzyme activity and nutrient release patterns at different soil layers of long term nutrient management studies	
	7.1. Influence of fertilizer management on microbes and soil health	24. To determine enzyme activity in soil as an indicator of N and P nutrient availability and organic matter decomposition in nutrient cycling 25. To determine soil health and crop productivity	1.5
	7.2. Effect of long term nutrient management on microbial growth at variable soil depth	26. To determine total microbial population 27. To isolate and enumerate beneficial microbe	2.0

	7.3. Formulation and evaluation of multistrain biofertilizer for rice production	28. To formulate a suitable carrier material for growing free-living N fixing and phosphate solubilizing bacteria 29. To determine growth and survival of applied bacteria in the carrier material 30. To determine nutritional quality of the prepared biofertilizer 31. To improve rice yield	2.0
	7.4. Isolation and characterization of plant growth promoting bacteria from saline and acidic soil	32. To enumerate total bacteria, fungi and actinomycetes population 33. To isolate and enumerate beneficial bacteria 34. To characterize beneficial effects such as, IAA production, P solubilization, N-fixing capacity of these isolates.	2.0
	7.5. Bioremediation of Arsenic contaminated paddy soils	35. To isolate arsenic resistant bacteria from As contaminated soil 36. To determine arsenic reclamation capacity of the potential isolates in laboratory and greenhouse conditions	1.5

Irrigation and Water management Division
RESEARCH PROGRAMME 2015-2016

Sl No.	Program area/Project (Duration)	PI & CI	Objectives	Annual budget (Thousand Tk)
Sub -Sub Program I: Water Use Efficiency Improvement in Irrigated Agriculture				
01	Water Requirement		<ul style="list-style-type: none"> • To generate water efficient technologies for rice cultivation 	
	1.1 Determination of physical and hydraulic properties in different soil types 2015-2017	MMZ, MMA, MM & JCB	i) To document the important soil physical properties (bulk density, particle density, hyd. conductivity etc) in different soil profiles ii) To develop a soil moisture characteristics curve	

	1.2 Development of Soil moisture declination model for alternate wetting and drying (AWD) irrigation for Rice cultivation 2013-2016	MMA & MTI	<ul style="list-style-type: none"> i) To study the soil moisture dynamics of AWD irrigation; ii) To develop a model for prediction of soil moisture dynamics; and iii) To predict the time of re-irrigation using the model. 	50
	1.3 Study on the problems and potentials for productivity improvement in the Haor areas through agricultural water management 2015-2017	MMZ, MMA & MTI	<ul style="list-style-type: none"> i) To document the existing status of irrigated agriculture of the Haor area ii) To identify potentials of agricultural productivity improvement through crop and water management iii) To recommend suitable water management practices for the area. 	100
	1.4 Study on the problems and potentials for productivity improvement through Agricultural water management in the Hilly areas 2015-2017	MMA, MMZ & MTI	<ul style="list-style-type: none"> i) To identify potentials of water resources development for agriculture and livelihood improvement in the Hilly area ii) To recommend suitable water management options for productivity and livelihood improvement in the area. 	100
	1.5 Study on water stress tolerance capacity for different advanced rice genotype of BRRI 2015-2017	MTI, SP & MSY	<ul style="list-style-type: none"> i) To quantify the tolerance capacity of soil moisture deficit for different varieties that plant suffers during its growing period through Towfique's drought model; ii) To determine yield of varieties under different water stress condition 	100
	1.6 Optimization of irrigation water for maximum year round production 2014-2016	MMA, MSY	<ul style="list-style-type: none"> i) To investigate the single and integrated effects of date of transplanting and variety on irrigation, yield, water saving, and water productivity, ii) To find out suitable cropping patterns based on Boro and Braus iii) To compare the cost-benefit ratio for different treatments/approach 	150
Sub- Sub Program II: Utilization of Water Resources in Rainfed Environment				
02	Water Management for rice cultivation in climate change situation	•	• To obtain optimum rice yield under changing climatic environment	

	2.1 Terminal drought mitigation through integrated approaches in T. Aman cultivation 2009-2016	MTI, MHA & MBH	i) To determine effect of drought for different transplanting dates; ii) To document impact and cost analysis of supplemental irrigation for timely crop establishment ; and iii) To determine drought severity and its probability at different growth stages of T. Aman.	50
	2.2 Determination of suitable time for application of supplemental irrigation in T. Aman rice 2014-2016	MTI & MHA	i) To determine the relationship between perched water table depletion during critical stages of rice and yield	50
	2.3 Effect of drought on different T. Aman varieties 2011-2018	MMA, MTI & MSY	i) To study the relative drought tolerance of the T. Aman varieties based on the yield performance ii) To findout suitable T. Aman variety for drought prone area	50
	2.4 Rain water harvesting from roof top of BIRRI campus, Gazipur 2015-2018	MTI, MSY & PLCP	i) To determine the total amount of rain water harvested from the roof. ii) To determine the scope of rain water utilization iii) To compute the ground water savings and its economics	100
Sub-Sub Program III: Land Productivity Improvement in the Coastal Environment				
03	Land and Water Resources Use for Sustainable Crop Production		To increase land and water productivity for improving food security and livelihoods in the coastal zones	
	3.1 Assessment of suitable water resources availability for irrigation to increase crop production in tidal areas of Barisal region 2015-2018	MMA, MBH & MTI	i) To monitor the dynamics of surface water salinity in the dry season at different locations of Barisal region ii) To assess the suitability of water for irrigated crop cultivation. iii) To assess the availability of water and potentials for irrigated crop cultivation iv) To assess the constraints and prospects of tidal water utilization for crop production.	100
Sub- Sub Program IV: Sustainable Management of Water Resources				

04	Surface and Ground Water Assessment	•	• To identify the aquifer characteristics and quality of groundwater in Bangladesh and its relationship with rainfall	
	4.1 Monitoring of groundwater fluctuation and safe utilization in different geo-hydrological regions 1979- Continued	MTI, MMZ, MMA, PLCP, SP, MBH & MHA	i) To determine the fluctuation of groundwater level over time and its relationships with rainfall, and ii) To determine water quality for assessing suitability for irrigation.	100
	4.2 Delineation of areas having water shortage during Boro rice cultivation in Northwest Bangladesh 2014-2017	MMA & SP	i) To identify STW areas facing water scarcity during boro season ii) To identify period of water shortage with magnitude, and iii) To assess the possibility of shifting from Boro to alternative crops (Boras/Aus/Non-rice crops)	100
	4.3 Improving low-cost check valve for STW and test its performance in field level 2014-2016	MMZ, MMA & MTI	i) To develop a low-cost check valve for overcoming priming problem of STW, and ii) To find out the suitability in the field level	200
Sub-Sub Program V: Renewable Energy				
05	Renewable energy for irrigation		• To identify some renewable energy sources for irrigation	
	5.1 Effectiveness of solar pump for irrigated rice 2013-2016	PLCP, SY, DH & MTI	i) To evaluate solar pump for energy output, pump discharge and irrigated area, and ii) To investigate multiple use and economic performance of solar pump	800
Sub- Sub Program VI: Technology Validation in the Farmers' Field				
06	Water Management Technologies Demonstration and Dissemination at Farmers' Field		• To increase the irrigation efficiency and water productivity by appropriate management of water through BIRRI developed water management technologies.	
	6.1 Integrated Agricultural Productivity Project		i) To increase water use efficiency ii) To improve water distribution system iii) To minimize irrigation cost	

	6.2 Project Title: Mujibnagar Integrated Agricultural Development Project (MIADP)-IWM Part (On-going)	MTI & MHA	<ul style="list-style-type: none"> i) Development and validation of location specific water management technologies ii) Enhancing crop production by increasing water use efficiency iii) Training of extension personnel and farmers. 	
	6.3 Pirojpur-Gopalganj-Bagerhat Integrated Agricultural Development Project (New)	MTI & SP	<ul style="list-style-type: none"> i) To utilize all available water resources for rice and non-rice crop cultivation. ii) To identify and recommend the most suitable water management practices for the area. 	
	6.4 Improving water use for dry season agriculture by marginal and tenant farmers in the Eastern Gangetic Plains (New)	MMZ, MMA & MTI	<ul style="list-style-type: none"> i) Understanding bio-physical, socio-economic and institutional aspects of groundwater irrigation in the northwest region of Bangladesh. 	
	6.5 Development and dissemination of climate resilient rice varieties for water short areas of South Asia and South-East Asia (TA 8441) (New)	MAA, KMI, MMZ, MAA, MAL & MMK	<ul style="list-style-type: none"> i) Development of water-use-efficient rice genotypes with 10% more yield than the check variety BRRI dhan28 in irrigated ecosystem under transplanted AWD conditions ii) Development of high yielding aerobic rice genotypes under dry direct-seeded condition of Boro season, in addition with tolerance with root knot nematode iii) Identification of appropriate nutrient and water management practices for AWD and aerobic rice systems iv) Analyze the soil for major and minor nutrient and nematode population built up at on-station aerobic field experiments v) Evaluate various aerobic rice based crop rotation to identify high return crop rotations for farmers as well as that help to maintain better soil health vi) Seed production for promising AWD genotypes. 	

	6.6 Community water management for improving food security, nutrition and livelihoods in the polders of the coastal zone of Bangladesh (New)	MTI & SP	i) To improve water management infrastructure inside the polders and promote water management in synchrony with polder ecosystem services and improved cropping systems ii) To adopt water management practices by the farmers iii) To adopt more productive, profitable, diverse and resilient cropping systems (“improved cropping systems”) by the farmers iv) To adopt new livelihood activities made possible as a result of improved water management, such as: cage fish culture; production of small nutritious fish in rice fields; quality seed production of high yielding varieties of rice, wheat, mungbean and sesame by the women	
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Plant Physiology Division
Proposed Research Program 2015-16

Sl. No.	Program area	Major objective	Annual budget (Thousand Tk.)
1.	<i>Project: Salinity Tolerance</i>		
1.1	Screening for salinity tolerance of BIRRI Gene Bank germplasms at seedling stage	To find out new sources of salinity tolerance at seedling stage.	50 (GOB)
1.2	Screening for salinity tolerance of advance breeding lines at seedling stage	To identify the tolerant breeding lines at seedling stage.	50 (GOB)
1.3	Characterization of Advanced Breeding Lines at different salinity stress for whole growth period	1. To know the level of tolerance of different genotypes. 2. To identify the safe level of soil and water salinity for growing the genotypes.	75 (GOB)
1.4	Identification of salt tolerance mechanisms of Rice	To study the salt tolerance mechanisms of BIRRI variety at different growth stage.	100 (GOB)
1.5	Mapping QTLs for salinity tolerance of Ashfal balam at seedling stage	1) To map QTLs from Ashfal balam for seedling stage salinity tolerance. 2) To find out the possible	550 (GCP & GOB)

		mechanisms contributing tolerance at seedling stage.	
1.7	Mapping QTLs for salinity tolerance of Ashfal balam at reproductive stage	1) To map QTLs from Ashfal balam for reproductive stage salinity tolerance. 2) To find out the possible mechanisms contributing tolerance at reproductive stage.	200 (GOB)
1.8	Effect of salinity on seed germination and seedling emergence in rice (<i>Oryza sativa</i> L.)	To check the level tolerances at germination and post-germination growth stages.	50 (GOB)
1.9	Effect of salinity on seedling growth in early vegetative phase of rice (<i>Oryza sativa</i> L.)	To check the level tolerances at early vegetative growth phase of rice.	50 (GOB)
2	<i>Project: Submergence tolerance</i>		
2.1	Characterization of rice germplasm for flash flood submergence tolerance	1. To identify tolerant germplasm for 2 weeks of complete submergence. 2. To observe elongation capacity under complete submergence. 3. To identify better recovery ability germplasm.	50 (GOB)
2.2	Observation of phenological development and recovery period of rice varieties at different submergence condition	1. To observe the phenological development under normal and complete submergence. 2. To find out the recovery period under complete submergence.	75 (GOB)
2.3	Evaluation of submergence tolerant rice in different flooding condition	To find out the survivability and recovery ability of submergence tolerant rice.	75 (GOB)
2.4	Characterization of some rice genotype for medium stagnation	1. To identify tolerant germplasm for stagnation flooding condition. 2. To observe tillering ability under stagnation flooding.	100 (GOB)

2.5	Characterization of deep water rice at two different environments	1. To identify tolerant germplasm for deep flooding condition. 2. To observe elongation under deep flooding.	100 (GOB)
3	<i>Project: High Temperature Tolerance</i>		
3.1	Marker assisted selection for introgression of spikelet fertility loci (<i>qSF4.1</i>) from N22 in to two Bangladeshi mega rice variety BRRI dhan 28 and 29	To develop heat tolerant BRRI dhan28 and 29 by introgressing spikelet fertility loci through MABC.	500 (GOB)
3.2	Screening rice germplasm and breeding lines towards the development of heat tolerant variety	To identify new heat tolerant donor and advance breeding lines.	300 & 200 lakh (BARC & GOB)
4	<i>Project: Drought Tolerance</i>		
4.1	Screening germplasm for drought tolerance at reproductive phase	To identify rice genotypes tolerant to drought stress at reproductive phase.	100 (GOB)
4.2	Performance of some genotypes under drought stress at reproductive stage	1. To evaluate physiological performance of some genotype under drought stress condition. 2. To determine the yield and yield components.	50 (GOB)
5	<i>Project: Cold Tolerance</i>		
5.1	Screening for cold tolerance at seedling stage under natural condition	To identify rice genotypes this can tolerate low temperature at seedling stage.	50 (GOB)
5.2	Evaluation of rice genotypes selected from IRTON for cold tolerance	To identify cold tolerant rice genotypes at natural condition.	75 (GOB)
5.3	Characterization and evaluation of advanced rice genotypes for cold tolerance at natural condition	To observe cold tolerance of advanced rice genotypes for whole growth period at natural condition.	75 (GOB)
5.4	Demonstration of polythene cover seed bed technique in Rangpur region (IAPP Project activities)	To show the impact of polyethylene cover on Boro seedling raising for mitigation of cold injury and to disseminate the technology.	300 (IAPP)
6	<i>Project: Seed Physiology</i>		

6.1	Dormancy and viability test of BRRI varieties grown in Aus, Aman and Boro season	To determine the dormancy and viability period of rice varieties in Aus, Aman and Boro season.	50 (GOB)
7	<i>Project; Growth studies</i>		
7.1	Photo-sensitivity test of BRRI released T. Aman varieties	To know the photo-sensitivity of recently released T. Aman varieties.	50 (GOB)
7.2	Characterization of Aus germplasm as affected by apical dominance	To identify aus germplasm for faster vegetative growth with prolong grain filling stage. ii. To determine yield and yield components.	150 (GOB)
8	<i>Project: Climate and Rice</i>		
8.1	Investigation of CO ₂ -responsive genotypes from Bangladeshi rice germplasms through planting geometry pre-screening technique	1. To identify best CO ₂ -responsive genotypes through low planting density method. 2. To quantify responsiveness through low planting density.	50 (GOB)
8.2	Weather station data recording, transfer, storage and maintenance	To collect, transfer and storage of automatic and manual weather station data.	20 (GOB)

Entomology Division

Proposed Research Programme, 2015-2016

(TK. In thousand)

Sl. No.	Programme area / Project with duration	Year of initiation	Major Objective	Annual budget
1.	Project : Survey & Monitoring of Rice Arthropods		To determine the incidence and abundance patterns of insect pests and their natural enemies at BIRRI farm and in different AEZs for better management of rice pests.	1000
	1.1 Pest monitoring in BIRRI Farms	1972 (contd.)	To study the insect pest and their natural enemy incidence at BIRRI farm and to create a database to develop a forecasting system	150
	1.2 Insect pests and natural enemies in light traps	1972 (contd.)	To study the pest and their natural enemy incidence patterns in rice fields and to create a database to develop a forecasting system.	150
	1.3 Construction of epidemiology information interchange system for migratory disease and insect pests of rice.	July 2013	Establishment of a sustainable multinational collaboration network for the management of migratory rice planthoppers and associated viruses to reduce their incidences below the threshold level in Asian countries.	700
	1.4 Pests and natural enemies survey and monitoring in Gopalganj, Pirojpur and Bagerhat (Integrated Agricultural Project for Gopalganj, Pirojpur and Bagerhat)	New	To determine the incidence and abundance patterns of insect pests and their natural enemies in the selective areas	-
	1.5 Survey of rice insect pests in selected AEZ's of Bangladesh		To find the incidence patterns of the major rice insect pests and their natural enemies in different agro-ecological zones and to examine relationship between biotic and abiotic factors on their abundance.	200
2.	Project: Studies on rice insect pest and natural enemy ecology		To study the ecology and development of insect pest of rice.	700
	2.1 Studies on the biology of green mirid bug.	New	To know the biology of green mirid bug.	200
3.	Project: Biological Control of rice insect		To evaluate the role of natural enemies in controlling rice insect pests.	200

	Pests			
	3.1 Conservation of natural enemies through ecological engineering approaches	New	To conserve natural enemies through ecological engineering approaches	200
4.	Project : Crop Loss Assessment		To determine relationship between pest damage levels and yield losses.	500
	4.1 Relationship between gall midge damage and yield loss.	New	To determine the yield loss potential of different rice varieties against gall midge damage.	300
	4.2 Incidence of rice leaf folder and its damage effect on rice grain yield.	New	To know the incidence of rice leaf folder and its effects on yield	300
5.	Project : Evaluation of chemicals and botanicals against rice insect pests		To evaluate the effectiveness of different botanicals and determine efficacy of different insecticides against major rice insect pests.	300
	5.1 Test of different insecticides against major insect pests.	1972 (contd.)	To evaluate the effectiveness of commercial formulations of different insecticides against major insect pests of rice.	300
	5.2 Evaluation of sex pheromone against major insect pest (YSB, LF).	New	To know the incidence of rice leaf folder and its effects on yield	100
	5.3 Studies on resurgence of brown planthopper, <i>Nilaparvata lugens</i> (sta ¹) and its management in Bangladesh		To find out the causes of resurgence of brown planthopper in Bangladesh	PhD work
	5.3.1 Effect of different doses of selected insecticide on resurgence development	New	To find out the dose of insecticide for the cause of resurgence development	“
	5.3.2 Effect of different formulation of insecticide on resurgence development	New	To know the effect of insecticide formulation on resurgence development	“
	5.3.3 Effect of insecticide application method on resurgence development	New	To find out the proper way of insecticide application to manage the resurgence	“
6.	Project : Integrated Pest Management	(New)	Study on the different aspects of management of rice insect pest.	380

	6.1 Validation of BRRRI recommended practices for the management of major insect pests of rice.	2012 (New)	To demonstrate BRRRI recommended practices for successful management of major insect pests of rice	380
	6.2 Management of brown planthopper by configuration and geometry of rice planting	2015 (New)	To manage brown planthopper (BPH) in the field by planting method To evaluate the efficacy of double nozzle sprayer in the field o determine the yield for planting geometry and configuration To determination the spray swath of double nozzle sprayer	200
7.	Project: Host Plant Resistance		Identification of resistant sources against rice insect pests.	800
	7.1 Screening of rice germplasm against BPH, WBPH and GLH, Hispa	1972 (Contd.)	To identify resistant rice germplasm against BPH, WBPH and GLH	200
	7.2 Screening of germplasm materials for resistant sources against gall midge (GM)	2002 (Contd.)	To identify resistance sources against GM	200
	7.3 Screening of F ₂ population against BPH, WBPH and GLH	2002 (Contd.)	To develop MVs using known resistant parents.	100
	7.4 Screening of F ₂ population against gall midge (GM)	2002 (Contd.)	Isolation of resistant progeny against GM.	100
	7.5 Evaluation of Advance lines for resistance against BPH, WBPH and GLH	1972 (Contd.)	To evaluate level of resistance against BPH, WBPH and GLH	100
	7.6 Pest reaction of BRRRI released varieties against major insect pests	New	To evaluate level of resistance against major insect pests	100
8.	Project: Vertebrate pest management		Management of rat in the rice field	
	8.1: Study on the barn owl (<i>Tyto alba</i>) and their biology for sustainable rat management.	New	- to know the biology and feeding preference of the Barn Owl(s), - to develop and explore mass rearing technique for Owl, - to find out suitable nest and suitable height for preying, and - to understand food habit for the Owl.	200

Plant Pathology Division
Research Program 2015-2016

Sl. No.	Programme area/Project	Major objectives	Annual Budget (1000TK)
Programme Area: Pest Management (Plant Pathology)			
01.	Survey and monitoring of rice diseases in selected areas	To investigate the present status of different rice diseases in different climatic environments.	600
02.	Confirmation of the standard differential set of blast isolates	To confirm the reaction patterns of selected standard differential blast isolates with blast resistant genes.	200
03.	Identification of new blast races across the country	To investigate the potential existence of new races of <i>Pyricularia oryzae</i> in Bangladesh.	500
04.	Pathotypic and genetic diversity of <i>Rhizoctonia solani</i> AG1-IA	The objectives are (i) to estimate the genetic diversity of <i>R. solani</i> AG1-IA using ITS region sequences; (ii) to examine differentiation in aggressiveness of the isolates using seedling/plant assays in the greenhouse/field; and (iii) to determine the relationship between geographic origin and the pathogenic as well as genetic variability of <i>R. solani</i> AG1-IA populations.	500
05.	Molecular characterization of bakanae causing fungi in Bangladesh	To find out the fungi associated with Bakanae disease of rice in Bangladesh.	500
06.	Pyramiding major blast resistant gene(s) in susceptible rice variety/lines	To introgress major resistant gene(s) into the selected cultivars to develop isogenic lines and pyramiding the genes in the same background to develop durable blast resistance.	700
07.	Pyramiding of major BB resistant gene(s) in susceptible rice variety/lines	To introgress major resistant gene(s) into the selected cultivar to develop durable blast resistant.	700
08.	Purification of locally improved Aus variety Mala through pure line selection	To develop suitable T. Aus variety for tidal non-saline sub-ecosystem in Barisal region.	300
09.	Evaluation of blast resistant multiline	To check resistant reactions and	200

	varieties of IR64	performance of multiline varieties.	
10.	Evaluation of blast resistant multiline varieties of IR49830 in tidal non-saline ecosystem of Barisal	To evaluate the yield potential of blast resistant IR49830.	150
11.	Recovering ability of recently released T. Aman varieties to tungro under natural condition	To know the varietal resistance against RTV.	30
12.	BB resistance and yield performance of selected breeding lines	Evaluation of yield performance of the lines along with BB resistance.	200
13.	Screening of rice germplasm against blast, bakanae & BB disease	To identify the source of resistance against blast, bakanae and bacterial leaf blight diseases of rice.	600
14.	Introgression of Blast resistant genes into BRRI dhan47	To develop durable blast resistant variety harbouring <i>Pi40</i> and <i>Pi9</i> .	500
15.	Screening of rice germplasm and breeding for Ufra resistance	To identify ufra resistant sources from the existing germplasms.	200
16.	Screening of rice germplasm and breeding for root knot resistance (ADB Project)	To identify root-knot resistant sources from the existing germplasms.	200
17.	Development of mass inoculation technique of false smut disease	To develop mass screening technique against false smut disease.	50
18.	Studies on disease development and management of rice false smut disease	To understand the disease development factors and effective management of false smut disease	50
19.	Distribution, severity and yield loss of false smut in Bangladesh and development of a qualitative modeling framework	To identify current status of false smut in Bangladesh and its geographical distribution, to develop yield loss assessment model and to identify the factors associated with false smut spread.	500
20.	Integrated approach on rice false smut disease management	To develop integrated management option for controlling false smut disease.	200
21.	Studies on identification of seedling blight pathogens and its management	Raising of healthy seedling in trays Identification of the causal organisms Incidence of the disease across the seasons Management of the disease	200
22.	Impact of seedling-blight affected seedlings on growth and yield of rice	To investigate the effect of seedling blight on seedling quality, growth and yield of rice.	200
23.	Effect of soil and seedling treatment on False smut disease development	To know the efficacy of both soil and seedling treatment for controlling	250

		false smut disease	
24.	Chemical control of grain spot disease of rice	To identify suitable chemicals to control grain spot disease.	200
25.	Validation of tray seedling raising (TSR) technique at farmers' level	To develop disease free seedling raising technique in trays and field To know the difficulties, suitability or sustainability of raising seedling in trays instead of field and the farmers' attitude	300
26.	Evaluation of advance breeding materials against blast, BB and RTV disease of rice	To identify the source of resistance against blast, BB and RTV.	50.0
27.	Evaluation of new chemicals against blast, ShB, and bacterial blight of rice	To find out the effective chemicals suitable for blast, ShB and BB control.	50.0
28.	Demonstration on integrated rice disease management in farmers' field under IAPP project	To increase farmers' skill on rice disease management.	680
29.	Training on rice disease management and healthy seed production under MIAD project	To train up farmers on rice disease management and healthy seed production.	300
30.	Field demonstration of integrated management of major rice diseases (PGB project)	To scale up disease management technologies in the farmers field and healthy seed production.	400
31.	Training on Rice Disease Management (PGB project)	To train up farmers on rice disease management	300
32.	Management of Sheath blight disease utilizing <i>Trichoderma harzianum</i> (PGB project)	The study aims to promote higher yields by improving physico-chemical properties of soil and suppressing sheath blight. Another objective is to evaluate water hyacinth as valuable compost by supplying plant nutrients.	200

Rice Farming Systems Division
Research Program 2015-16

Sl. No.	Program /Project	Major Objective	Annual budget (lakh Tk)
Programme Area: Rice Farming Systems			
01	1. Rice Farming Systems Division		
	Project 1: Survey	To create farming systems database for Bangladesh.	82.00

Activity 1.1. Study on cropping pattern of Bangladesh and harnessing opportunities for improvement	To create database of existing cropping system in different regions of Bangladesh, MV rice coverage under different cropping pattern, major constraints to further adoption of MV rice and other crops to increase productivity, explore the scope of improvement of existing cropping pattern and create cropping pattern map using GIS tools.	80.00
Activity 1.2. Study of integrated production system of Sorjan method in Barisal region	Characterize existing production system of Sorjan, identify and prioritize problems hindering productivity of Sorjan system and identify scope for increasing productivity of the Sorjan system by inclusion of high value fish and appropriate vegetable and fruit system	2.00
Project 2: Development of Resource Conservation Technologies	To generate and evaluate resource saving farming systems technologies for increasing farm income	1.00
Expt. 2.1. Evaluation of minimum tillage and crop residue retention in Wheat-Mungbean-T.Aman cropping system	To evaluate the productivity of Wheat-Mungbean-T.Aman cropping pattern in the context of conservation agriculture	1.00
Project 3. Development of Cropping Systems and Component Technologies for Favorable Environment (Irrigated condition)	To develop agro-economically profitable cropping patterns and component technologies for Favorable Environment (irrigated condition)	12.50
<i>Expt. 3.1. Development of integrated vegetables, fish and fruit system for shallow mini pond</i>	<i>To develop farming system technology for diversifying and maximizing productivity using aquatic systems</i>	0.50
Expt. 3.2. Long-term effect of three crop cropping patterns on the agro-economic productivity and soil health.	To determine the long-term implications of Potato-Boro-T. Aman, Maize-Mungbean-T. Aman and Boro-T. Aus-T. Aman cropping patterns on: i) System productivity ii) Economic return and iii) Soil health.	0.80
Expt. 3.3. Development of high	To increase income of the farm	1.00

intensity cropping pattern for Kushtia region	families through optimizing cropping intensity	
Expt. 3.4. Evaluation of maize intercropping with vegetables in maize based cropping pattern in Chuadanga	To identify the <i>suitable intercrop combination to improve the Maize-Fallow-T.Aman and Maize -Sweet gourd-T.Aman cropping pattern</i>	0.90
Expt. 3.5. Performance of different types of seed bed in Aman and Boro seasons	To evaluate different types of seed bed for comparing the quality of seedlings and its impact on yield in Aman and Boro seasons	0.20
Expt. 3.6. Effect of fertilizer management on double transplanted rice under T. Aman-Boro cropping system	To determine optimum fertilizer management for double transplanted rice	0.35
Expt. 3.7. Validation of fertilizer management options for major crops in Kushtia region	To compare the different fertilizer management options in Aman, Boro rice, maize and wheat under different cropping patterns in Kushtia region	4.00
Expt. 3.8. Determination of fertilizer dose for Mustard/Potato-Boro-T. Aman cropping patterns	To determine the fertilizer dose for Mustard/Potato-Boro-T. Aman cropping pattern through omission plot technique	1.20
Expt. 3.9. Validation of four crop cropping pattern in Kushtia region	To verify the performance of four crop cropping pattern in Kushtia region	0.80
Expt. 3.10. Inclusion of Rabi crops in Boro- Fallow-T. Aman cropping pattern in medium highland ecosystem	To increase total production by inclusion of a Rabi crop in the existing cropping system	0.85
Expt. 3.11. Inclusion of summer vegetables after Boro rice in Mustard-Boro-T. Aman cropping pattern	To evaluate the performance of summer vegetables in Mustard-Boro-T. Aman cropping pattern and increase productivity	0.60
Expt. 3.12. Evaluation of BRRI dhan48 as late Boro rice in Mustard-Boro-T. Aman cropping system	To find out the performance and appropriate seedling age of BRRI dhan48 as late Boro rice after mustard	0.50
Expt. 3.13. Evaluation of BRRI dhan48 as late Boro rice in Potato-Boro-T. Aman cropping system in medium highland irrigated ecosystem	To find out the performance and appropriate seedling age of BRRI dhan48 as late Boro rice after potato	0.80
Project 4. Development of Cropping Systems and Component	To develop agro-economically profitable cropping patterns and	1.80

Technologies for Deep water ecosystem	component technologies for Deep water ecosystem	
<i>Expt. 4.1. Validation of DWR+Fish-Boro system for DWR ecosystem</i>	To validate farming system technology for diversifying and maximizing production of DWR ecosystem	0.60
Expt. 4.2. Improvement of relay cropping of Aman with jute in Wheat-Jute-Relay Aman cropping pattern in shallow deep water rice ecosystem	To increase the total productivity of the Wheat-Jute/Aman (Relay) cropping pattern by adopting appropriate Aman (relay) variety and fertilizer management option	1.20
Project 5. Development of Cropping Systems and Component Technologies for Saline environment	To develop agro-economically profitable cropping patterns and component technologies for saline environment	8.30
Expt. 5.1. Development of cropping pattern for different gradients of saline soil	To evaluate the performance and diversify the rice based cropping patterns in different gradients of saline soil	2.00
Expt. 5.2. Evaluation of sunflower variety and spacing under different gradient of salinity	To find out suitable variety and optimum plant population for higher productivity of dibbled sunflower in the saline soils	0.80
Expt. 5.3. Evaluation of fertilizer management in Rice-Dibbled sunflower cropping sequence under different gradients of salinity	To optimize the fertilizer dose of Rice-Dibbled sunflower cropping sequence and enhance the productivity of the system	1.50
Expt. 5.4. Evaluations of agronomic options for increasing the productivity of Boro rice in saline soils	To Identify suitable agronomic options for boro rice in saline soils and increase productivity of boro rice under T. Aman-Fallow-Boro cropping sequence	1.50
<i>Expt. 5.5. Validation of integrated rice, fish and vegetables system in Ghers</i>	To diversify and maximize the productivity and to monitor the fertility status of the ghers	2.50
Project 6. Development of Cropping Systems and Component Technologies for Non Saline Tidal Environment	To develop agro-economically profitable cropping patterns and component technologies for non saline tidal environment	6.00
Expt. 6.1. Evaluation of musk melon intercropping with Rabi crops in three crop system in tidal non saline ecosystem	To validate musk melon intercropping for increasing the productivity of three crop system	1.60
Expt. 6.2. Development of three crop systems for medium high tide wetland non saline ecosystem	To intensify diversify and increase productivity of the double cropped cropping system	1.25

Expt. 6.3. Development of year round vegetables production practices in <i>Sorjan</i> system	To increase production and make vegetables available round the year	0.60
Expt. 6.4. Adaptive trial of BIRRI Boro rice varieties	To evaluate the suitable Boro rice varieties and demonstrate the production technique to increase coverage and the productivity of existing system	0.85
Expt. 6.5. Demonstration of USG application in Boro rice	To disseminate the USG use in farmer's fields to save urea and increase yield	0.55
Expt. 6.6. Evaluation of three crop cropping pattern for Barisal region	To assess the suitability and productivity of three crop system	1.15
Project 7. Development of Improved Cropping Systems for drought prone area	To develop agro-economically profitable cropping patterns and component technologies for drought prone area	0.40
Expt. 7.1. Evaluation of rice-based cropping pattern in partially irrigated ecosystem	To evaluate the performance of recently released BIRRI Aman varieties in Vegetables-Mungbean-DS Aman cropping system	0.40
Project 8. Development of Cropping Systems for Haor area	To develop agro-economically profitable cropping patterns and component technologies for haor area	0.85
<i>Expt. 8.1. Evaluation of double transplanting in Boro rice at Habiganj haor area under Boro-Fallow-Fallow cropping pattern</i>	To evaluate the performance of double transplanted rice, avoid the risk from early flash flood and to maximize the productivity.	0.85
Project 9. Crop Modeling	To generate future scenario of rice based cropping systems	3.10
Expt. 9.1. Evaluation of different cropping patterns for APSIM model validation	To evaluate different cropping sequence for APSIM validation	3.10
Project 10. Validation and Delivery of cropping of Systems Technology	To disseminate agro-economically profitable farming systems technologies under different ecosystem	35.00
Activity 10.1. Validation of improved cropping patterns for greater Kushtia	To increase the system productivity and income of the farmers through introduction of improved cropping patterns	20.00
Activity 10.2. Development and validation of intensified cropping pattern for Northern region	To validate and diversify the rice based cropping patterns and to increase income of the farm families through adoption of	15.00

		improved cropping pattern	
	Project 11. Capacity building and technology transfer	To improve the knowledge base of extension personnel and farmers	2.30
	Activity 11.1. Farmers' training on different cropping systems activities	To improve capacity of the farmers for enhancing adoption of cropping system technologies	1.50
	Activity 11.2. Field days on different cropping systems activities	To motivate farmers for adoption of technologies	0.80
	Project 12. Research and Development under cross cutting issues	To improve the productivity of different farming system component	5.00
	Activity 12.1. Performance of exotic date palm (<i>Phoenix dactylifera</i>) in homestead and agro-forestry systems	To increase diversity in date palm, proper use of in- and around homestead area and to increase the productivity of existing agro-forestry system	5.00

Agricultural Economics Division
Research Program 2015-16

Sl. No.	Program area/Project with duration	Major Objectives	Annual budget (Tk.)
Sub-sub Program: I. Rural Institution & Economic Consequences			
3.1	Farm Level Adoption and Evaluation of Modern Rice Cultivation in Bangladesh Duration: July, 2015 - June, 2016 (Routine work)	<ul style="list-style-type: none"> ✓ 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; and ✓ To determine the socio-economic and varietal constraints to the adoption of MV rice in different regions. 	5,00,000.00
3.2	Establishing Rice Heritage Archives at Bangladesh Rice Research Institute (BRRI) Duration: July, 2015-June, 2018	<ul style="list-style-type: none"> ✓ To collect evidences of rice heritage in the geographical context of Bangladesh; ✓ To review the chronological development of rice culture and heritage in Bangladesh; and ✓ To develop a plan for establishing rice heritage archives at BRRI and suggest policy guidelines for its operation and maintenance. 	25,00,000.00

Sub-sub Program: II. Production Economics			
3.3	Estimation of Costs and Return of MV Rice Cultivation at the Farm Level Duration: July, 2015 - June, 2016 (Routine work)	<ul style="list-style-type: none"> ✓ 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. 	5,00,000.00
3.4	Tracking of Climate Resilient Rice Varieties Developed by BRRI and its Socio - Economic Performances at the Farm Level Duration: July, 2014-June, 2017	<ul style="list-style-type: none"> ✓ To record the socioeconomic profile of rice growers in the stress prone areas; ✓ to determine the adoption rate and yield of different stress tolerant rice varieties and compare productivity, profitability and technical efficiency of stress tolerant BRRI varieties with other varieties; and ✓ to identify the constraints and suggest policy recommendations. 	4,00,000.00
Sub-sub Program: III. Rice Marketing & Price Policy			
3.5	Value Chain Analysis of Rice Bran and Bran Oil in Bangladesh: An Economic Investigation Duration: July, 2015 - June, 2016	<ul style="list-style-type: none"> ✓ Examine the present status of bran produced by different rice mills and future prospects of bran oil production and marketing in Bangladesh; ✓ Sketch the value addition process and supply chain of rice bran and bran oil; and ✓ Estimate the share of margin of different agents in the value and supply chain of bran oil in Bangladesh. 	1,00,000.00
Sub-sub Program: IV. Agricultural Policy & Development			
3.6	Impact of Farmers Training on Rice Production Duration: July, 2015 - June, 2016	<ul style="list-style-type: none"> ✓ To identify the socio-economic profile of farmers received rice production training; ✓ To determine the effectiveness of training on rice production at farm level; and ✓ To suggest improved farmers training modules for better production practices. 	1,00,000.00

3.7	Impact of Rice Production Training on DAE Personnel (SAAOs) Duration: July, 2015 - June, 2016	<ul style="list-style-type: none"> ✓ To evaluate the socio-economic profile of SAAOs who received rice production training; ✓ To assess the impact of rice production training on SAAOs and its effectiveness at farm level to dissemination BIRRI technologies; and ✓ To suggest guidelines for improvement of SAAOs training curriculum/module. 	75,000.00
3.8	Impact of Seasonal Credit on MV Boro Rice Cultivation in Some Selected Areas of Bangladesh Duration: July, 2015 - June, 2016	<ul style="list-style-type: none"> ✓ To assess the socio-economic profile of seasonal loan receiver for rice production; ✓ To determine the relative profitability of rice production between loan receivers and non-receivers; and ✓ To identify problems faced by the farmers in getting loan 	1,00,000.00
3.9	Social Dynamics of Gender Role in Rice Value Chain and Decision Making at Root level Duration: July, 2015 - June, 2016	<ul style="list-style-type: none"> ✓ To measure the extent of gender participation in the rice value chain and decision making process; and ✓ To understand the social obstacles and mind-set against women empowerment. 	1,00,000.00

Agricultural Statistics Division
Proposed Research Programme_2015-16

SN	Programme area/ Project	Major Objective	Annual Budget (lac TK.)
Program area: Socio-economics and Policy			
1.	Stability Analysis of BIRRI Varieties	<ol style="list-style-type: none"> 1. To determine the stability index of BIRRI proposed and released varieties 2. To generate season, year and location-wise database on BIRRI varieties. 	4.50
	1.1 Study on G X E interaction of BIRRI varieties	<ol style="list-style-type: none"> 1. To standardize/validate the model for stability analysis 2. To determine the stability index of BIRRI varieties 3. To maintain season, year and location-wise database on BIRRI varieties. 	2.50
	1.2 Stability and Adaptability of BIRRI Released Aus Varieties in Different Locations of	<ol style="list-style-type: none"> 1. To identify high yielding Aus rice varieties having wide adaptation and/or specific adaptation to environment and 	2.00

	Bangladesh	2. To assess the environmental interaction for their yield stability and adaptability across different environments.	
2.	Multivariate Analysis of BRRV Varieties	1. To determine factors affecting farmers' and consumers' preference to a rice variety. 2. To maintain up-to-date computerized information on rice and related crops.	3.00
	2.1 Development and validation of producer, consumer and producer cum consumer preference model to rice varieties	1. To determine factors affecting producers' decision on varieties for rice cultivation 2. To determine factors affecting for consumer's preference to rice varieties 3. To validate producers', consumer's and producer cum consumer preference model to different rice varieties	2.00
	2.2 Maintenance of rice and rice related variable database	1. To maintain up-to-date computerized information on rice and related crops.	1.00
3.	Crop Modeling	1. To assess the impact of climate factors on rice production using ARIMAX and regression model. 2. To develop a suitable model for forecasting daily crop weather for sustainable boro rice production.	10.50
	3.1 Impact Assessment of Climatic Factors on Rice Production in Bangladesh	1. To assess the impact of climate factors on rice production using ARIMAX and Regression model 2. To identify the best fitted ARIMAX and Regression model for rice production 3. To forecast and compare rice production in Bangladesh using the best fitted ARIMAX and Regression model	0.50
	3.2 Seasonal Weather Forecasting for Boro Rice Production in Bangladesh	1. To develop a suitable model for forecasting daily crop weather for sustainable boro rice production. 3. To enrich the technical capacity for crop monitoring by daily weather forecasting.	10
4.	Utilization of Geographical Information System (GIS) in Rice Research	1. To create a geo-referenced database of BRRV varieties 2. To construct adoption and	3.50

		<p>productivity maps of BRRV varieties in Bangladesh</p> <ol style="list-style-type: none"> To spatially identify the submergence areas suitable for growing BRRV varieties To construct station wise probability curves of weather variables. To construct station wise return period for the estimates of weather variable To construct surface maps for the estimates of weather variables. 	
	4.1 Suitability mapping of newly released BRRV rice varieties	1. To construct suitability map of newly released BRRV rice varieties.	1.00
	4.2 Identification of submergence areas for growing newly developed BRRV varieties	<ol style="list-style-type: none"> To construct the submergence area map used for rice cultivation. To delineate submergence areas suitable for growing newly developed submergence tolerant BRRV varieties. 	1.00
	4.3 Probability Mapping of Temperature (Maximum & Minimum) and rainfall at different growth stages of Aus, Aman and Boro rice.	<ol style="list-style-type: none"> To determine the expected maximum, minimum temperature and rainfall in different region of Bangladesh To determine the areas of critical maximum and minimum temperature and rainfall for rice on map of Bangladesh during the period and To estimate the return period of rainfall and high temperature above critical level at reproductive phase in rice growing areas. 	1.50
5.	Information and Communication Technology (ICT)	1. To manage and maintain ICT at Bangladesh Rice Research Institute.	16.00
	5.1 Mobile Apps of BRKB	<ol style="list-style-type: none"> To develop “Mobile apps of BRKB”. To host BRKB under play store or server. To manage and maintain BRKB apps through regular updating of the information and documents. 	2.00
	5.2 e-Tender system of BRRV	1. To introduce the online tendering system to facilitate the	2.50

		<p>procurement process of BRR I.</p> <ol style="list-style-type: none"> To participate in the local and international tender/procurement of BRR I. To ensure adequate infrastructures and enhance skills and awareness of both the procuring officials and the tenderers. To increase transparency and competition and minimize the processing time and effort. 	
5.3	Anti Virus Security Protection of BRR I	<ol style="list-style-type: none"> To protect BRR I server security. To protect, update and clean server and personal computer of BRR I regularly. 	4.00
5.4	Management Information System (MIS) of BRR I	<ol style="list-style-type: none"> To manage and maintain BRR I MIS. To get BACKUP of MIS (9 modules) every day. 	2.00
5.5	BRR I Website (Web Portal) Management	<ol style="list-style-type: none"> To develop the blank pages and modify the design of BRR I Website. To manage and maintain BRR I Website through regular updating of the information and documents. 	1.50
5.6	Management of BRR I network and internet connectivity	<ol style="list-style-type: none"> To increase the bandwidth connectivity from 12 Mbps to 16 Mbps or more. To manage and maintain BRR I internet connectivity. 	1.50
5.7	Video Conference system of BRR I	<ol style="list-style-type: none"> To develop “Video conference system of BRR I” for administration, all divisional head and regional station head of BRR I. To develop “Video conference system of BRR I” for research and administration works. 	1.50
5.8	Digital Signature System of BRR I	<ol style="list-style-type: none"> To develop “Digital Signature System of BRR I” for all divisional head, regional station head and section head of BRR I. To develop “Digital Signature System of BRR I” for research and administration works. To increase proper integrity, accountability and confidentiality 	0.50

		of all departments of BRRI.	
5.9	Heritage of BRRI	<ol style="list-style-type: none"> 1. To develop “Heritage” for all retired scientists, officers, staffs and all labours of BRRI. 2. To develop “Heritage “for research and administration works. 3. To create and stimulate awareness amongst the present employees of BRRI about ex. Scientists and officer’s great activity. 	0.50

Farm Management Division

Research Program 2015-16

Sl. No.	Program area/Project (Duration)	Major Objectives	Annual Budget (Lak. TK)
	1. Program Area: Socioeconomic and Policy		
03	Farm Management Division		
	<ul style="list-style-type: none"> • 3.1.Project : Rice production management 		
	<ul style="list-style-type: none"> • Expt.1. The influence of seedling age on tiller production, yield and yield components of rice 	-To determine the tillering pattern, yield and yield components of rice as affected by seedling age	0.25
	<ul style="list-style-type: none"> • Expt.2. Seed quality of different T. aman rice as affected by rainfed condition in ripening phase 	-To investigate the seed quality of T. aman rice as affected by drought at ripening phase	0.25

	<ul style="list-style-type: none"> • Expt.3. Effect of quality seed and farmers' seed for seed production and; yield gap between quality seed and farmers' seed used plots. <p>TLS, Breeder, 4-5 local farmers' seed of following varieties from Barisal / Rangpur,/ Rajshahi, / Satkhira,/ Khulna,/ Barisal, /Rangpur,/ Rajshahi will be collected</p> <ol style="list-style-type: none"> 1. <u>Rice variety for Boro</u> BRRIdhan 28/ BRRIdhan 29/ BRRIdhan47 2. <u>Rice variety for T.Aman</u> BR 11 / BR 22 / BR 23 / BRRIdhan40 / BRRIdhan41/ BRRIdhan 56 	<p>-To identify the seed effect on probable yield gap between quality seed and farmers' seed.</p> <p>Seek the possibilities to increase rice yield through quality seed that could be useful at policy level.</p>	0.50
	<ul style="list-style-type: none"> • Expt.4. Effect of foliar spray of MOP and elemental S for spot free seed production 	<p>-To evaluate the effectiveness of foliar spray of MOP & S on grain spotting.</p>	0.25
	<ul style="list-style-type: none"> • Expt.5. Effect of tillage operation on the productivity and profitability of rice cultivation 	<p>- To findout the suitable tillage operation for boro rice cultivation</p>	0.25
	<ul style="list-style-type: none"> • Expt.6. Effect of Fungicide and Water Stress on the Natural Incidence of Neck Blast (<i>Pyricularia Oryzae</i>) in Boro Rice 	<p>-To investigate whether the natural incidence of neck blast (a) increases an event of post-flowering water stress (b) can be effectively prevented by using chemical fungicide(s)</p>	0.25
	<ul style="list-style-type: none"> • Expt.7. Agronomic management of rice sheath blight disease in natural condition for seed production 	<p>- To identify individual and interaction effect of different option of sheath blight disease management in seed production</p>	0.25
	3.2. Project: Cost of production		
	<ul style="list-style-type: none"> • Expt. 1. Cost and return of HYV rice cultivation at BRRIGazipur farm. 	<p>-To determine cost and return of HYV rice cultivation at the prevailing situation</p>	0.50
	3.3. Project: Survey and development of data base for labor management.		

	<ul style="list-style-type: none"> Expt.1. Monitoring the laborers' wage rate for rice cultivation around different locations of Bangladesh. 	-To document farmers' labor management practices for rice cultivation	1.00
	<p>3.4. Project: Management and utilization of land and other resources.</p> <p>These include:</p> <ul style="list-style-type: none"> Seed production, management of land, labor, farm implements, flower garden, irrigation and drainage etc 	-Better utilization of farm land and other resources for smooth running of research activities of BRRI	50.0
			Total= 53.50
	For BRRI- Sonagazi Regional Station		
	<ul style="list-style-type: none"> Expt.1. 1. Effect of different planting methods on the performance of different aus varieties in the south-eastern part of Bangladesh <p>Planting methods: Broadcasting, Line sowing and Dibbling</p> <p>Variety: Binnatoa, Bailam, Bhadura and BRRI dhan 43</p>	-To find out the most suitable planting method and aus variety for maximizing yield in the coastal region Bangladesh	0.50

RESEARCH PROGRAM FOR THE YEAR' 2015-16

Farm Management Division

Sub program: Farm Management

Sub-Sub-Program: Rice Production Management

Project Leader: KPH

Project 1. Rice Production Management

Expt.1. 1. The influence of seedling age on tiller production, yield and yield components of rice

Rationale:

Tillering ability of rice may be influenced by seedling age that affects yield components and yield (Quyén et al. 2004). Researches found that generally younger seedling performs better than others of seedling age (Pasuquin et al 2008).

Objective: i) To determine the tillering pattern, yield and yield components of rice as affected by seedling age

Principal Investigator: KPH

Co-Investigator (s): MRM and MMR

Location: BIRRI farm, Gazipur.

Season: T. aman and Boro

Date of initiation: T. aman' 14

Date of completion/ (Duration): 4 years (Cont.)

Materials and Methods:

Treatments:

T1= 10 days old seedling

T2= 15 days old seedling

T3= 20 days old seedling

T4= 25 days old seedling

T5= 30 days old seedling

T6= 35 days old seedling

T7= 40 days old seedling

Transplanting 1 seedling per hill. Spacing, fertilizer and other intercultural operation as BIRRI recommendation.

Design: RCB; Rep: 3

Variety: BIRRI dhan 46 in T. aman and BIRRI dhan 29 in Boro season

Plot size: 4 m X 4 m

Data to be collected:

- i) **Tiller count every 7 days interval transplanting to maturity**
- ii) **Number of effective tiller, panicle length**
- iii) **Yield components and yield**

Expected Output: Tiller number, yield and yield components may increase with decreasing seedling age.

Budget: 0.25 lakh

Abbreviation:

KPH = Krishna Pada Halder, CSO and Head; MRM=Md. Rezaul Manir, SO

MSI= Md. Sirajul Islam, PS0;

SI=Subrima Islam, SO

Expt.1. 2. Seed quality of different T. aman rice as affected by rainfed (drought) in ripening (seed formation) phase

Rationale: Seed quality of rice depends on the rainfall, temperature, relative humidity, solar radiation etc during different growth phases specially reproductive and ripening phases (Nokkoul et al., 2011). Generally T.aman rice is affected by terminal drought during later stage of reproductive and ripening phases that affect seed formation (Xangsayasane, et. al., 2014).

Objective: i) To investigate the seed quality of rice that are affected by rainfed produced in different planting dates

Principal Investigator: KPH

Co-Investigator (s): MRM, MMR, and MMR¹

Location: BRRI farm, Gazipur and BRRI farm Sonagazi

Season: T. aman

Date of initiation: T. aman' 14

Date of completion/ (Duration): 4 years (Cont.)

Materials and Methods:

Treatments:

Factor A: Planting dates (D)
D1= 15 Aug
D2= 10 Sep
Factor B: Variety (V)
V1= BRRI dhan40
V2= BRRI dhan41
V3= BRRI dhan46

Design: RCB

Rep: 3

Plot size: 3 m X 3 m

Data to be collected:

- i) Flowering age (Days to 50% flowering), Day to maturity,
- ii) Yield and yield components
- iii) Seed germination %, High density grain, Seedling Vigor index,
- iv) Data of rainfall, maximum and minimum temperature will be collected from Plant Physiology Division

Expected Output: Seed quality *i.e.* germination percentage, grain weight and seedling vigor may be affected due to rainfed or unavailable moisture during ripening stage.

Budget: 0.25 lakh

Expt.1.3. Effect of quality seed and farmer's seed for seed production and; yield gap between quality seed used plot and farmers' seed used plots.

Rationale: Seeds are the important in improving yields of rice (Diaz et al, 1998). Seeds carry the genetic characteristics for successful crop production. It is important that clean and healthy seeds be used as planting materials in order to increase rice productivity. Contaminated seeds generally results in poor germination, poor seedling vigor that produce unhealthy crop. The deterioration of the seed vigor in rice crop accounted for 20% of the yield losses (Shenoy et al, 1988). One of the most important determinants of seed quality is varietal purity. It is significantly influence the crop yield besides affecting the production practices (Seshu and Dadlani, 1989). In most of the cases farmers do not purchase certified seed or pure seed or TLS. Most of the farmers grow their own seeds or exchange their seeds of available varieties with other farmers (Diaz et al, 1994).

Objective(s):

- i) To identify the seed effect on probable yield gap between quality seed and farmers seed.
- ii) Seek the possibilities to increase rice yield through quality seed that could be useful at policy level.

Principal Investigator: KPH

Co-Investigator (s): MRM, MMR and MSI

Location: BRRRI HQ.

Season: Aman and Boro

Date of initiation: Boro 2012-13

Date of completion/ (Duration): 5 years

Materials and Methods:

Treatments:

T1= Breeder seed of BRRRI

T2= Truthfully Labeled Seed of BRRRI

T3, T4, T5, T6 = Four to five local farmers' seed from Barisal, Rangpur, Rajshahi, Satkhira, Khulna, Barisal, Rangpur, Rajshahi and others

Variety (for T aman season)

BR 11, BR 22, BR 23, BRRRI dhan40, BRRRI dhan41, BRRRI dhan 56 BRRRI dhan 56

Variety (for Boro season)

BRRRI dhan28 ; BRRRI dhan29 ;BRRRI dhan47

Design: RCB

Rep: 3

Plot size: 4m X 2.5m

Data to be collected:

- i) Germination percentage before sowing
- ii) Yield and yield components of rice

- iii) Yield difference between Breeder seed and farmers seed
- iv) Yield difference between TLS and farmers seed
- v) Yield difference between Breeder seed and TLS

Expected Output: Yield of farmers seed used plot may be lower than TLS and breeder seed used plots.

Budget: 0.50 lakh

Expt 1.4. Effect of foliar spray of MOP and elemental S for spot free seed production.

Rationale: Brown Spot is a fungal diseases that infects the coleoptiles, leaves, leaf sheath, panicle branches, glumes and spikelets. When infection occurs in seed, unfilled grains or spotted or discoloured seed are formed. High humidity (>92.5%), leaf wetness and temperature (24-30 °C) are favourable condition for disease development (Picco and Radoli,2002). Application of CaSiO₂ slag led to a 32% reduction of brown spot incidence (Datoff et al., 1991). Deficiency of K enhanced susceptibility to brown spot (Ou SH, 1987).

Objective: To evaluate the effectiveness of foliar spray of MOP & S on grain spotting.

Principal Investigator: MSI

Co-Investigator(s):SI, MRM, KPH

Location: BRRRI farm,Gazipur.

Season: Aman and Boro

Date of initiation: Aman 2013

Date of completion/(Duration): 3years

Methodology:

Treatments:

T₁ : RF+ MOP (60 g/10L H₂O) Spray at complete panicle emergence of milking stage & 2nd spray 15 days after 1st spray.

T₂ : RF+ Elemental S (Thiovit) at 60 g/ 10L H₂O same as above.

T₃ : RF+ 60 gMop+60 g Thiovit in 10 L water

T₄ : RF+ Folicular Spray

T₅ : RF+ BRRRI recommended practice

T₆ : RF+ No spray +No MOP

Row to row distance: 25m×15m or 20m×15m

Variety: BR 3

Design: RCB

Rep:3-4 reps

Plot size:3m×3m or 3m×4 m

Data collection :

- 1.Grain spot incidence
- 2.Yield & Yield component
- 3.Extent of discolouration(proportion)
- 4.sterility
- 5.1000gwt
- 6.Plot Yield
- 7.Fertile tiller &Total tiller

Expected Output: Recommended fertilizer and MOP spray at heading stage and 15 days after heading may be useful for spot free seed production.

Budget: 0.25 lakh

Expt. 1.5. Effect of tillage operation on the productivity and profitability of rice cultivation

Rationale:

In Bangladesh use of power tiller and hydro tiller instead of country plough for land preparation has been increasing to meet the acute draft power shortage. These are suitable for labour saving, maintaining timely for better quality of land preparation in a desired depth of tilling. Conventional tillage is a soil management system that depends on tillage to control all weeds and volunteer crop plant before planting (Stobbe, 1990). Conservation tillage is a soil management system that leaves the soil surface resistant to erosion and conserves soil moisture. Conservation tillage methods include zero or no tillage, minimum or reduced tillage, and mulch or stubble mulch tillage (Felsot et al., 1988). Deep ploughing destroys the plough pan. So to protect plough pan different tillage practice under conservation tillage may be investigated.

Objective: To findout the suitable tillage operation for boro rice cultivation

Principle investigator : Mohammad Rezaul Manir (MRM)

Co-investigator(s): Krishna Pada Halder (KPH), Subrima Islam(SI)

Location: BRRRI farm, Gazipur

Season: T. aman and Boro

Date of initiation: 2015-16

Date of completion/ (Duration): 4 years (Cont.)

Materials and Methods:

Treatment:

T ₁ = Normal cultivation practice in farm (Ploughing by CP/PT/HT followed by laddering as per requirement)
T ₂ = Applying herbicide followed by one ploughing by PT/HT and laddering
T ₃ = Removal of straw/grass by hand and one ploughing

Design: RCB ; **Replication:** 3

Variety : BRRRI dhan49, BRRRI dhan58

Plot Size: 10m X 4m

Date to be collected:

1. Yield components and yield
- II. Economic analysis.

Expected Output: Better tillage practices may increase the crop productivity, improve soil fertility and develop plough pan and reduce cost of production and increase BCR

Budget: 0.25 lakh

Expt.1.6. Effect of fungicide and water stress on the natural incidence of neck blast (*Pyricularia Oryzae*) in boro rice

Rationale: Rice blast caused by *Pyricularia oryzae* is one of the most important diseases of rice. Scientists of BRRI reported that the incidence or severity of this disease increases an onset on post-flowering water stress. In addition fungicides are used in control of blast disease as a post-infection control option. The efficacy of fungicidal pre-treatment to prevent the natural blast incidence

Objective: To investigate whether the natural incidence of neck blast

(a) Increases following an event of post-flowering water stress

(b) Can be effectively prevented using chemical fungicide(s)

Principal Investigator: Subrima Islam(SI)

Co-Investigator(s): KPH, MAL,MSI, MRV,MMR

Location: BRRI farm ,Gazipur.

Season: Boro

Date of initiation: Boro 14- 15

Date of completion/(Duration): 2years

Methodology:

Treatments:

T ₁ = Nativo 75WG (2 sprays at 10 Days Interval at flowering stage) + No water stress
T ₂ = Nativo75WG (2 " at 10 Days " " ") + Post-flowering water stress
T ₃ = Trooper 75WG (2 " at 10 Days " " ") + No water stress
T ₄ = Trooper 75WG (2 " at 10 Days " " ") + Post-flowering water stress
T ₅ = Control (No Fungicide + No water stress)
T ₆ = Control (No Fungicide + Post-flowering water stress)

Row to row distance: 20m× 20m

Variety:BRRI dhan29

Design: Factorial in RCBD

Replication: 5

Plot size: 3m×3m

Data collection:

- Incidence and severity of neck blast
- Data of yield and yield component

Expected Output: Irrigation management and use of fungicides may be useful for controlling the blast disease

Budget: **0.25 lakh**

Expt. 1.7. Agronomic management of rice sheath blight disease in natural condition for seed production

Objective: To identify individual and interaction effect of different option of sheath blight disease management in seed production

Rationale: Rice sheath blight, caused by the soil-borne pathogen *Rhizoctonia solani* Kühn, is a major disease of rice. The fungus is known to overwinter in debris in form of sclerotia and removal of debris can potentially reduce the inocula source and minimize the chance of natural infection. It is usually controlled using chemical fungicide and balanced fertilization.

Principal Investigator: SI

Co-Investigator(s): KPH, MSI, RB, MRM

Location: BRRI farm, Gazipur.

Season: Aman

Date of initiation: Aman'15

Date of completion/(Duration): 3 years

Methodology:

Treatments:

Factor A:
D ₁ : Without removal of floating debris(FD)
D ₂ : Removal of floating debris(FD)
Factor B:
m ₁ : All MOP at basal
m ₂ : Folicur spray at PI (1 st spray+ 2 nd 15 DAT 1st spray)
m ₃ : ½ MOP at basal + ½ MOP at MT
m ₄ : All MOP basal+Folicur spray
m ₅ : No Mop+No fungicide

Row to row distance: 20m× 20

Variety: BR11

Design: Split Plot

Replication: 3

Plot size: 3m×3m

Data collection:

1. Incidence of Sheath blight
2. Lesion height(LH)
3. Plant height(PH)
4. %sterility of panicles
5. Yield components
6. 1000

Expected output: Improve cultural practices along with fungicides may be useful for control

sheath blight disease.

Budget: 0.25 lakh

Project 2. Cost of Production

Project Leader: KPH

Expt. 2.1. **Cost and return of HYV rice cultivation at BRRI Gazipur farm.**

Rationale: Rice cultivation is the primary employment activity in Bangladesh (IRRI, 1980). Due to rapid population growth and urbanization, the cultivable land is decreasing day by day.

Hence the demand for more rice has placed heavy pressure on farmers and agricultural researchers to intensify rice production systems. Cultivation of modern varieties (MV) of rice can increase the yield per unit area but the cost of cultivation of rice increasing year after year due to increase of input cost (Razzaque and Rafiquzzaman, 2007)

Objective(s): i) To determine cost and return of HYV rice cultivation at the prevailing situation

Principal Investigator: **KPH**

Co-Investigator (s):, MRM

Location: **BIRRI Gazipur farm.**

Season: Aus/ Aman/ and Boro

Date of initiation: Boro'08-09

Date of completion: Continued

Materials and Methods:

A piece of land (minimum one bigha) will be selected. Cost of labor for different operations, input cost etc will be recorded.

Data to be collected:

- i) Labor requirement for each operation.
- ii) Amount of inputs and output.
- iii) Total production of rice and straw.
- iv) Determination of cost and return.

Expected output: *The cost of production per kg of rice highest in aus season followed by aman season and may be lowest in boro season.*

Budget: 0.50 lakh

Sub-Sub-Program: Labor Management

Project 3: Survey and development of data base for labor management.

Objective(s): i) Proper planning and utilization of laborers for rice production.

Project Leader: KPH

Expt 3. 1. **Monitoring the laborers' wage rate for rice cultivation around Bangladesh.**

Objective(s): **To document laborers' wage rate for better management and future planning for rice cultivation.**

Principal Investigator: KPH

Co-Investigator (s): MRM and MSI

Location: Different locations of Bangladesh.

Season: Aus, Aman and Boro

Date of initiation: April ' 2003

Date of completion: Continued

Materials and Methods:

A pre-set proforma will be used for collecting data.

Data to be collected: Problems and prospects of farm management in the farms.

Expected output: *The average wage rate throughout the year may be higher than previous years*

Budget: **0.50 lakh**

Sub-Sub-Program: Management Activities

Project 4. Management and utilization of land and other resources.

These include:

Rice seed production (TLS), Breeder seed production in collaboration with GRS division

Others: Management of land, labor, farm implements, flower garden, irrigation and drainage etc

Objective: i) **Better utilization of farm land and other resources for smooth running of research activities of BRRI.**

Project Leader: **KPH**

Principal Investigators: KPH

Co-Investigator (s): MRM and MSI

Location: BRRI farm

Season: Aus, Aman and Boro

Date of initiation: 1985

Date of completion: This will be done in each year (Continued)

Data to be recorded: Related data will be collected

Expected output: These are for the better outcome from farm land and researches

Budget: 50.0 lakh

Project 3. Rice Production Management (Sonagazi)

Exp.3.1. Effect of different planting method and variety on the yield and labor requirements for rice cultivation in the coastal region of Bangladesh

Objective: To find out the most suitable planting method and variety for maximizing yield of Aus rice in the coastal region of Bangladesh

Principle investigator: Md. Mamunur Rashid, SO (FMD), BRRI, Sonagazi

Co-Investigator (s):DR. M R Islam and K P Halder

Location: BRRI farm, Sonagazi

Season: Aus

Date of initiation: Aus 15

Date of completion/ (Duration): 3 years (Cont.)

Materials and Methods: (For Aus Season)

Treatments:

Factor A: Planting method
M ₁ = Broadcasting
M ₂ = Line sowing
M ₃ = Dibbling
M ₄ = Transplanting
M ₅ = Transplanting by splitting tillers
Factor B: Variety
V ₁ =BRRI dhan65
V ₂ =BRRI dhan43
V ₃ =BRRI dhan48

Design: RCB

Rep: 3

Variety: 3

Plot size: 5m x 5m

Data to be collected:

1. Yield Component and Yield
2. Straw yield
3. Weed infestation (types, dry weight)
4. Maximum tiller per square meter
5. LAI at flowering
6. Number of labor and time requirement for each operation
7. Calculation of cost and return

Exp.3.2. Effect of different planting method and variety on the yield and labor requirements for rice cultivation in the coastal region of Bangladesh

Objective: To find out the most suitable planting method and variety for maximizing yield of Aman rice in the coastal region of Bangladesh

Principle investigator: Md. Mamunur Rashid, SO (FMD), BRRI, Sonagazi

Co-Investigator (s):DR. M R Islam and K P Halder

Location: BRRI farm, Sonagazi

Season: T. Aman

Date of initiation: Aman 15

Date of completion/ (Duration): 3 years (Cont.)

Materials and Methods: (For Aman Season)

Treatments:

Factor A: Planting method
M ₁ = Broadcasting
M ₂ = Transplantng
Factor B: Variety
V ₁ =BRRI dhan41
V ₂ =BRRI dhan49
V ₃ =BRRI dhan46
V ₄ = BRRI dhan34

Design: RCBD(2 Factorial)

Rep: 3

Variety:4

Plot size: 5m x 5m

Data to be collected:

1. Yield Component and Yield
2. Number of labor and time requirement for each operation
3. Calculation of cost and return

Expt.3.3. Evaluation of yield performance and stability of HYV Boro Rice Variety of Bangladesh in Charland Coastal Area

Objective: 1.To select suitable Boro rice variety
2. To select suitable HYV Boro rice in charland region

Principle investigator: Md. Mamunur Rashid, SO (FMD), BRRI, Sonagazi

Co-Investigator (s): DR. M R Islam and K P Halder

Location: BRRI farm, Sonagazi

Season: Boro

Date of initiation: Boro 14-15

Date of completion/ (Duration): 3 years (Cont.)

Materials and Methods:

Date of seeding: Nov. 2014

Date of transplanting: Jan. 2015

Seedling age: 40-45 days

No. of seedling: 2-3/hill

Planting method: Transplanting

Variety: 36 varieties (BRRI and BINA)

Design: RCB

Rep: 3

Plot size: 4m x 4m

Data to collected: Day to flowering and maturity, Lodging, Insect infestation, Disease infestation, Phenotypic acceptance, Plant height, Yield and Yield components, LAI at flowering, filled and unfilled grain per panicle, Straw Yield etc.

Expt.1. 1. Effect of different planting methods on the performance of different aus varieties in the south-eastern part of Bangladesh.

Objective: i) **To find out the most suitable planting method and aus variety for maximizing yield in the coastal region Bangladesh.**

Principal Investigator: Md. Mamunur Rashid SO, Farm (BRRI- Sonagazi)

Co-Investigator (s): Head, BRRI Sonagazi and KPH

Location: BRRI farm, Sonagazi

Season: Aus

Date of initiation: Aus 14

Date of completion/ (Duration): 4 years (Cont.)

Materials and Methods:

Treatments:

Factor A: Planting methods
M1= Broadcasting
M2= Line sowing
M3= Dibbling
Factor B: Variety
V1= Binnatoa
V2= Bailam
V3= Bhadura
V4= BRRI dhan 43

Design: RCB (Factorial)

Rep: 3

Variety:

Plot size: 4 m X 4 m

Data to be collected:

- iv) **Soil salinity data at seedling emergence, tillering, PI, heading, seed formation stages**
- v) **Yield components and yield**
- vi) **Number of labor and time requirement for each operation**
- vii) **Calculation of cost and return**

Expt.1. 1. **Different methods of urea application and methods of weed control in respect to labor utilization for rice cultivation.**

Objective: i) **To determine the relative profitability of different methods of urea application and weed control method in relation to labor utilization for rice cultivation**

Principal Investigator: KPH

Co-Investigator (s): MMR and MRM

Location: BRRI farm, Gazipur.

Season: Boro

Date of initiation: Boro' 14-15

Date of completion/ (Duration): 4 years (Cont.)

Materials and Methods:

Treatments:

Factor A: N-Application method
PU= Prilled urea broadcasting in 3 equal splits at recommended dose (125 kg N /ha)
PU1= Apply prilled urea by applicator at 12 DAT as 72 % of recommended dose (90 kg N/ha)
USG=Apply urea super granules by applicator at 12 DAT as 90 kg N /ha

Factor B: Weed control method
W ₁ = Herbicide REFIT at recommended dose + Hand weeding at 45 DAT
W ₂ = Herbicide Super Clean at recommended dose + Hand weeding at 45 DAT
W ₃ = Hand weeding at 15, 30 and 45 DAT

Design: RCB

Rep: 3

Variety: BRRI dhan 28

Plot size: 5 m X 5 m

Data to be collected:

i) Labor requirement for each operation ii) Data of yield components and yield

iii) Cost and return

Expt.1.3. Determination of plough pan status of BRRI rice fields

Objectives:

1. To detect plough pan position/layer in rice fields
2. To measure the resistance capacity of plough pan
3. To prepare a map of rice field based on plough pan status

Principal Investigator: Md. Mamunur Rahman (FMD)

Co-Investigators: K. P. Halder (FMD), M. R. Manir (FMD), M. A. Hossain (WMMD), one scientist from soil science division, one scientist from FMPHT division, Dr. Ismail (ASD)

Location: BRRI farm, Gazipur.

Season: Boro and T. Aman

Date of initiation: T. Aman, 2014

Date of completion/ (Duration): 5 years

Materials and Methods:

- Data on cone penetration resistance of all the rice fields of BRRI, Gazipur, HQ farm will be collected using cone penetrometer (Proving Ring Cone Penetrometer) maintaining 10 meter interval.
- Depth of plough pan and plough pan resistance capacity will be determined based on cone penetration resistance of soils.
- Based on the field data, a representative map of BRRI rice field will be prepared for sustainable rice cultivation and future research purpose.

Data collection: Data will be collected at three field conditions-

1. After land preparation (1-3 days after land preparation)
2. During crop stand (at water saturation or water stand condition, after 1 month of final land preparation)

3. Just after/before crop harvest (± 7 days of crop harvest when soil moisture will be suitable to measure soil cone penetration resistance)

Expt.1.4. Determination of suitable soil-plough-pan resistance for rice cultivation at BRRI HQ farm

Objectives:

1. To measure effect of different plough pan resistance on yield and some physiological traits of rice
2. To estimate water and fertilizer response (loss) against different level of plough pan
3. To determine suitable plough pan resistance (cone penetration resistance) for rice cultivation

Principal Investigator: Md. Mamunur Rahman (FMD)

Co-Investigators: K. P. Halder (FMD), M. A. Hossain (WMMD), one scientist from plant physiology division, one scientist from agronomy division, one scientist from soil science division, one scientist from FMPHT division and one scientist from irrigation and water management division.

Location: BRRI Gazipur farm.

Season: Boro and T. Aman

Date of initiation: Boro 2014-15

Date of completion/ (Duration): 4 years

Materials and Methods:

- After collection of cone penetration resistance of BRRI HQ rice fields, experimental plots will be selected from different cone penetration resistance.
- A fertilization model will be used to minimize nutrient effect on rice plant morphology and physiology of different experimental plots.
- Water percolation rates and fertilizer leaching loss will be specially observed. Crop response and degree of effect against different cone penetration resistance will be observed aiming to suggest a suitable plough pan for rice.

Data on the following parameters will be collected:

1. Root growth (depth)
2. Water loss by percolation
3. Nutrient loss rate by leaching

4. Yield and yield contributing characters

Expt 3. 1. Labor efficiency as affected by direct supervision for rice cultivation

Objective(s): To find out the effect of different period of direct supervision of labor on labor efficiency

Principal Investigator: KPH

Co-Investigator (s): MRM

Location: BRRRI Gazipur farm

Season: Aman and Boro

Date of initiation: Aman' 2011

Date of completion/ Periods: 3 years

Materials and Methods:

Treatments

T1= Continuous direct supervision
T2=80% time direct supervision of T1
T3=60% time direct supervision of T1
T4=40% time direct supervision of T1
T5=20% time direct supervision of T1
T6= No direct supervision

These treatments will be applied in all the operations (Transplanting to harvesting and storing) of rice cultivation. At least fifty square meter land for each treatment will be taken.

Data to be collected: 1) Working area (m^2 /labor/hr) will be calculated for all the operation as per treatment. 11) Yield data 11) Cost and return

Farm Machinery and Postharvest Technology Division

Proposed Research Programme 2015-2016

Project / Exp. No	Title (Project/Experiment)	Objectives (General/Specific)	Budget Tk (Lac)
01	Development of Agricultural Machines	<ul style="list-style-type: none">• Development of farm machinery adaptable to rice eco-system• Reduction of human drudgery	17.80

Project / Exp. No	Title (Project/Experiment)	Objectives (General/Specific)	Budget Tk (Lac)
1.1	Evaluating and modifying of BRRRI developed machines	<ul style="list-style-type: none"> To verify the quality of BRRRI machines To identify the functional problems of farm machines To improve the performance of farm machines 	1,00,000/-
1.2	Effect of settling period of soil on performance of Rice Transplanter	<ul style="list-style-type: none"> To optimize the settling period for proper functioning of the selected rice transplanters in different types of soil 	1,00,000/-
1.3	Design and development of power operated hand reaper	<ul style="list-style-type: none"> To harvest cereal crops To evaluate the performance in comparison with sickle harvesting. 	60,000/-
1.4	Development of a inclined plate type seeder machine	<ul style="list-style-type: none"> To design and fabricate a inclined plate seeder machine To evaluate the performance of inclined plate type seeder machine. 	50,000/-
1.5	Modification and evaluation of mechanical rice transplanter for different tillage condition	<ul style="list-style-type: none"> To evaluate the mechanical transplanter in both puddle and un-puddle conditions To identify problems of mechanical rice transplanter To develop the rice transplanter for different tillage practices. 	2,00,000/-
1.6	Study on seedling strength and soil bonding capacity with different filler and base materials for mechanical transplanting	<ul style="list-style-type: none"> To raise seedling with different base and filler materials To measure seedling strength To observe the soil bonding capacity 	2,00,000/-
1.7	Development of a manual rice transplanter	<ul style="list-style-type: none"> To fabricate a manually operated pull type rice transplanter To evaluate the performance of the manual transplanter 	50,000/-

Project / Exp. No	Title (Project/Experiment)	Objectives (General/Specific)	Budget Tk (Lac)
1.8	Design and development of a pull type granular urea applicator	<ul style="list-style-type: none"> To develop a manually operated pull type three rows granular urea applicator To observe the performance of the applicator 	50,000/-
1.9	Design and development of a head feed power thresher	<ul style="list-style-type: none"> To develop a head feed thresher To conduct test of the thresher for its performance and capacity To compare the performance with BRRI existing thresher 	1,00,000/-
1.10	Design and development of a hill dispensing seeder	<ul style="list-style-type: none"> To develop a hill dispensing seeder 	1,00,000/-
1.11	Study the effect of N ₂ application method on crop performance	<ul style="list-style-type: none"> To observe the N₂ application method on crop performance To compare different N₂ application method To analyze the cost of production of rice 	50,000/-
1.12	Development of seedling raising techniques for different varieties to combat cold temperature	<ul style="list-style-type: none"> To raise seedling under different graded and color polythene shade To observe the effect of different graded polythene and color on seedling quality To find out suitable graded polythene and optimum time of covering for quality seedling 	50,000/-
1.13	Design and development of BRRI panicle thresher	<ul style="list-style-type: none"> To add cleaning and bagging facility To improve the threshing capacity 	2,00,000/-

Project / Exp. No	Title (Project/Experiment)	Objectives (General/Specific)	Budget Tk (Lac)
1.14	Design and development of Mini Combine harvester	<ul style="list-style-type: none"> To fabricate a combine harvester To evaluate the performance of the combine harvester and compare with imported machine 	10,00,000/-
1.15	Design and development of Single and double row conical weeder	<ul style="list-style-type: none"> To design, fabricate and develop a Single and double row conical weeder suitable for weeding in lowland To compare with other wet land weeder 	1,50,000/-
1.16	Development of a power operated chopper	<ul style="list-style-type: none"> To develop power operated chopping machine To enhance the performance of chopper 	1,00,000/-
1.17	Modification of drum seeder	<ul style="list-style-type: none"> To develop a manually operated pull type drum seeder To observe the performance of the newly developed drum seeder 	1,00,000/-
02	<i>Milling and Processing Technology</i>	<ul style="list-style-type: none"> To reduce loss, improve quality and addition of value to the farm products 	3.50
2.1	<i>Comparative performance of different types of mechanical dryer</i>	<ul style="list-style-type: none"> To evaluate the performance of different types of mechanical dryer 	1,00,000/-
2.2	Study on milling recovery of BRRV varieties under different drying rate and degree of polishing	<ul style="list-style-type: none"> To find out optimum drying rate of BRRV varieties for maximum milling yield and head rice recovery To determine optimum degree of polishing in terms of physical quality To study the economics of different drying and degree of polishing 	1,00,000/-

Project / Exp. No	Title (Project/Experiment)	Objectives (General/Specific)	Budget Tk (Lac)
2.3	Design and development of bin type dryer	<ul style="list-style-type: none"> • To design and development of a bin type dryer • To evaluate the performance of bin type dryer 	1,00,000/-
2.4	Design and development of solar dryer	<ul style="list-style-type: none"> • To design, fabricate and develop solar dryer • To compare with traditional sun drying of paddy 	1,00,000/-
2.5	Improvement of air blow type engelberg huller mill	<ul style="list-style-type: none"> • To design and development of cyclone separator for collection husk and bran • To design and fabricate air blowing type rice mill for commercial use • To test and evaluation modified air blowing type rice mill 	2,00,000/-
2.6	Test and evaluation of Collapsible Dryer	<ul style="list-style-type: none"> • To evaluate the performance of Collapsible dryer in the BRRI drying yard • To fabricate collapsible dryer with the locally available materials 	50,000/-
2.7	Improvement of rice de-husking and polishing technology	<ul style="list-style-type: none"> • To evaluate the performance of paddy de-husker • To separate husk and bran from rice by attaching paddy de-husker • To evaluate the air blow mill in terms of capacity and power consumption and milling recovery 	3,00,000/-
03	Development of stores and storage technology	<ul style="list-style-type: none"> • To increase shelf life of rice in store 	0.60
3.1	Study the storage quality under different degree of milled rice	<ul style="list-style-type: none"> • To study the quality deterioration of milled rice stored in different storage structure • To find the feasibility of storage structure 	1,00,000/-
3.2	Development of a metal storage structure	<ul style="list-style-type: none"> • To design and fabricate a metal silo for storing cereal grain 	1,00,000/-

Project / Exp. No	Title (Project/Experiment)	Objectives (General/Specific)	Budget Tk (Lac)
04	Renewable Energy Technology	<ul style="list-style-type: none"> • Development of renewable energy extraction technologies from solar, agri-residues and waste products 	8.0
4.1	Physical and thermo-chemical characterization of rice husk	<ul style="list-style-type: none"> • To investigation the physical and thermo-chemical properties of rice husk from BIRRI developed 10 varieties 	1,00,000/-
4.2	Biogas generation from household waste	<ul style="list-style-type: none"> • To Produce of biogas from kitchen wastages 	1,50,000/-
4.3	Characterization of different briquettes originated from agricultural residue	<ul style="list-style-type: none"> • To prepare briquettes from rice straw and husk • To measure the calorific value of the briquettes • Proximate analysis of the briquettes 	1,00,000/-
4.4	Efficient utilization of solar energy in irrigation, farm machinery operation and electricity supply to household	<ul style="list-style-type: none"> • Develop energy efficient solar irrigation system. • Utilization of off-peak period of solar energy in operating farm machinery, rice mill, flour mill and supply water to households. 	191,60,000/-
4.5	Development of a Downdraft Gasifier	<ul style="list-style-type: none"> • To design and fabricate a downdraft gasifier • To generate producer gas from rice husk • To study the performance of downdraft gasifier 	1,00,000/-
05	Popularization of BIRRI developed farm machinery and Postharvest technology	<ul style="list-style-type: none"> • Awareness build up about the benefit of using BIRRI machines among the farmers • Motivation of the local manufacturer to manufacture the BIRRI agricultural machinery 	14.00

Project / Exp. No	Title (Project/Experiment)	Objectives (General/Specific)	Budget Tk (Lac)
5.1	Industrial and farm level extension of BRRRI machinery and Postharvest technology	<ul style="list-style-type: none"> • To create awareness and demonstrate the benefit of using BRRRI machines among the farmers • To motivate the local entrepreneurs to manufacture BRRRI developed machinery 	10,00,000/-
5.2	Training on operation, repair and maintenance of BRRRI farm machinery	<ul style="list-style-type: none"> • To improve the operational skill of farm machinery operators/driver/farmers • To sharpen knowledge of end users on safety, repair & maintenance and management 	10,00,000/-
5.3	Field Trial and Demonstration of Promising Farm Machinery and Technology to the LFS Farmers	<ul style="list-style-type: none"> • To create awareness among the LFS farmers to use farm machinery in their farming operation 	5,00,000/-
5.4	Mid-term evaluation of FMTD project machinery	<ul style="list-style-type: none"> • To identify the problems of BRRRI developed machines • To investigate the repair and maintenance practice status • To study the extent use of machinery by the farmers 	1,00,000/-
5.5	Field trial, training and dissemination program on BRRRI farm machineries at Mujibnagar Integrated Agricultural Development Project (MIADP) area	<ul style="list-style-type: none"> • To create awareness and demonstrate the benefit of using BRRRI machines among the farmers • To motivate the local entrepreneurs to manufacture BRRRI developed machinery 	10,00,000/-
5.6	Field trial, training and dissemination program on BRRRI farm machineries at Pirojpur-Gopalganj-Bagerhat Integrated Agricultural Development Project.	<ul style="list-style-type: none"> • Enhancement of crop productivity and reduce production cost of rice • To create awareness among the farmers to use farm machinery in their farming operation • To develop skilled operator on agricultural machineries at farm levels 	10,00,000/-

Project / Exp. No	Title (Project/Experiment)	Objectives (General/Specific)	Budget Tk (Lac)
5.7	Field Trial and Demonstration of Promising Farm Machinery and Technology to the LFS Farmers	<ul style="list-style-type: none"> To create awareness among the LFS farmers to use farm machinery in their farming operation 	5,00,000/-

**Workshop Machinery and Maintenance
Research Programme 2015-16**

Sl. No.	Programme area: Farm Mechanization and Post-harvest Technology	Major Objectives	Annual budget Thousand Tk.
1	Design and development of power transmission system of a self-propelled power unit for multiple use	<ul style="list-style-type: none"> To design a gearbox with mechanism of two forward and a backward speed To design a chassis of a power unit 	100.00
2	Design, development, and modification of self-propelled reaper	<ul style="list-style-type: none"> To develop user friendly self-propelled reaper To evaluate the performance of the reaper 	200.00
3	Design and development of a power tiller operated grain cleaner	<ul style="list-style-type: none"> To design and develop a power tiller operated grain cleaner To incorporate safety measures with power tiller operated grain cleaner 	25.00
4	1.4 Title: Design and development of fungal spore collector	<ul style="list-style-type: none"> To develop fungal spore collector To evaluate the performance of fungal spore collector 	25.00
5	Modification of reaper travelling wheel for wet-land condition	<ul style="list-style-type: none"> To design the suitable wheel for wet-land condition To evaluate the newly designed wheel at wet-land as well as dry-land condition 	50.00
6	Determination of tilling efficiency of power tiller at selected areas of Bangladesh	<ul style="list-style-type: none"> To determine the optimum tillage depth for maximum paddy yield To identify the amount of fuel consumption according to tillage depth 	100.00

7	Feasibility study of solar energy use in agricultural machinery	<ul style="list-style-type: none"> To study the suitability of solar energy use in agricultural machinery To evaluate the aptness of solar energy use in agricultural machinery 	200.00
8	Modification of hydro tiller for better maneuverability	<ul style="list-style-type: none"> To detect the causes of frequent tearing of hydro tiller chain To modify the power transmission system for increasing longevity of hydro tiller 	50.00
9	Development of management system for farm machinery maintenance	<ul style="list-style-type: none"> To maintain maximum performance of the machinery, automobiles and equipments To utilize them efficiently at any time 	100.00

Adaptive Research Division

Proposed Research Program: 2015-2016

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
Project 1: Validation of Technologies PL: Dr. Md. Shafiqul Islam Mamin		Validate the advanced technologies at farm level	Project Total
1.	Varietal development	On-farm evaluation of advanced breeding lines.	2425
1.1	Advanced Lines Adaptive Research Trial (ALART)	i. To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh. ii. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	
1.1.1	ALART during T. Aus, 2015 2 Advanced lines and 2 Standard checks- BR26 & BRRI dhan48. 11 locations: BRR HQ, Naogaon, Rangpur, Barisal, Chittagong, Kushtia, Moulvibazar, Shatkhira, Bagerhat, Sherpur & Khagrasoni.	To recommend rainfed T. Aus genotypes based on ALART result.	225

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
	PI: Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists		
1.1.2	ALART during T. Aman, 2015 (Bacterial Blight Resistant, BBR) 1 Advanced line and 1 susceptible check- BR11, 1 resistant check- BRR1 dhan31. 12 locations: Gazipur, Rajshahi, Rangpur, Thakurgaon, Dinajpur, Barisal, Chittagong, Sherpur, Habigonj, Khulna, Feni & Satkhira PI: Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists	To recommend T. Aman (BBR) genotypes based on ALART result.	300
1.1.3	ALART during T. Aman, 2015 (Micronutrient Enriched Rice, MER) 3 advanced lines and 3 standard checks- BR25, BRR1 dhan32 & BRR1 dhan39. 12 locations: Gazipur, Rajshahi, Rangpur, Thakurgaon, Dinajpur, Barisal, Chittagong, Sherpur, Habigonj, Khulna, Feni & Satkhira PI: Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists.	To recommend T. Aman (MER) genotypes based on ALART results.	300
1.1.4	ALART during T. Aman 2015 (Rainfed Lowland Rice, RLR). 4 advanced lines and 3 standard checks- BRR1 dhan39, BRR1 dhan57 & BRR1 dhan62. 12 locations: Gazipur, Rajshahi, Rangpur, Thakurgaon, Dinajpur, Barisal, Chittagong, Sherpur, Habigonj, Khulna, Feni & Satkhira. PI: Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists.	To recommend T. Aman (RLR) genotypes based on ALART results.	350
1.1.5	ALART during T. Aman, 2015 (Flash Flood Submergence, FFS). 2 advanced lines and 2 standard checks- BRR1 dhan49 & BRR1	To recommend T. Aman (FFS) genotypes based on ALART results.	200

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
	<p>dhan52. 10 locations: Gazipur, Jamalpur(2), Rangpur, Nilphamari, Sylhet, Kurigram, Habiganj, Gaibandha & Lalmonirhat.</p> <p>PI: Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists.</p>		
1.1.6	<p>ALART during T. Aman, 2015 (Hybrid Rice, HR)</p> <p>2 advanced lines and 3 standard checks- BRRI hybrid dhan4, BRRI dhan39 & BRRI dhan49. 12 locations: Gazipur, Rajshahi, Rangpur, Thakurgaon, Dinajpur, Barisal, Chittagong, Sherpur, Habigonj, Khulna, Feni & Satkhira.</p> <p>PI: Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists.</p>	To recommend T. Aman (Hybrid) genotypes based on ALART results.	250
1.1.7	<p>ALART during Boro, 2016 Advanced lines/checks will be supplied in coming Boro 2015-16 season after completing VDP meeting from Plant Breeding Division.</p>	To recommend advanced genotypes for PVT during Boro season.	800
Project 2: Dissemination of Technologies PL: Dr. Md. Shafiqul Islam Mamin		Conducting on-farm trials for dissemination of newly released rice production technologies.	800
2.1	Seed Production and Dissemination Program (SPDP) under GoB	Rapid dissemination of BRRI varieties through quality seed production by the farmers' themselves.	
2.1.1	<p>SPDP during B. Aus 2015.</p> <p>Var: BR24 and BRRI dhan43 Locations: Rajbari, Magura & Narail</p> <p>PI: MHR Mukul CI: B Karmakar and MF Islam</p>	<p>i. To enhance adoption and dissemination of BRRI released B. Aus rice varieties.</p> <p>ii. To get feedback information from the Farmers' and DAE personnel about the demonstrated rice varieties during Aus season.</p>	30

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
2.1.2	<p>SPDP during T. Aus 2015.</p> <p>Var: BRRI dhan48 and 55 Locations: Sherpur, Netrakona, Rajbari, Gazipur</p> <p>PI: B Karmakar CI: Other scientists of ARD</p>	<p>i. To enhance adoption through dissemination of BRRI released T. Aus rice varieties.</p> <p>ii. To get feedback information from the farmers' and DAE personnel about the demonstrated rice varieties during Aus season.</p>	50
2.1.3	<p>Rice Cultivation in Jhum and Vally of Hill.</p> <p>Var. in Jhum (As B.Aus): BR24, BRRI dhan27 & 55 Var. in Vally (As T. Aus): BRRI dhan48 Locations: Bandorban, Rangamati and Khagrachori PI: MF Islam CI: MHR Mukul and MR Biswash</p>	To increase the productivity of existing jhum cultivation by introducing BRRI released HYV of Aus rice.	140
2.1.4	<p>SPDP with USG application during T. Aman 2015.</p> <p>Var: BR22, BR23, BRRI dhan38, 41, 49, 52, 53, 54, 56, 57 & 62.</p> <p>Locations: 23 upazilas under 14 districts (Shatkhira, Jessore, Khulna, Bagerhat, Habigonj, Sylhet, Moulovi Bazaar, Dinajpur, Chaittagong, Gaibandah, Rajbari, Netrokona, Sherpur & Cox's Bazar)</p> <p>PI: B Karmakar CI: Other ARD scientists.</p>	<p>i. To enhance adoption through dissemination of BRRI released varieties during T. Aman season.</p> <p>ii. To get feedback information from the farmers' and DAE personnel about the demonstrated rice varieties during T. Aman season.</p>	280
2.1.5	<p>SPDP with USG application during Boro 2016.</p> <p>Var: BRRI dhan47, 50, 58, 60, 61, 63, 64, 67 & 69 (Different varieties in different locations) Locations: Gaibandah, Rajbari, Netrokona, Chapai Nobabgonj, Panchagor, Chaittagong, Cox's</p>	<p>i. To enhance adoption and dissemination of BRRI released varieties during Boro season.</p> <p>ii. To get feedback information from the Farmers' and DAE personnel about the demonstrated rice varieties during Boro season.</p>	300

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
	Bazar Bhola, Khulna, Shatkhira, Jessore, Bagerhat.		
2.2	Integrated Agricultural Productivity Project (IAPP)	Validation and dissemination of location specific rice production technologies in northern drought prone and southern coastal regions of Bangladesh.	1100
2.2.1	SPDP in Barisal and Rangpur regions of the country during T. Aus, 2015. Var (Barisal and Rangpur regions): BRRI dhan48 & 55 Locations (Barisal and Rangpur regions): Barisal, Patuakhali, Rangpur and Lalmonirhat. PI: Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists	To disseminate BRRI varieties suitable for Barisal and Rangpur regions during T. Aus season.	100
2.2.2	SPDP with USG application in northern and southern regions during T. Aman, 2015. Var. (Rangpur region): BRRI dhan56, 57 & 62. Var. (Barisal region): BRRI dhan41, 44 & 54. Locations (Rangpur region): Rangpur, Nilphamari, Kurigram & Lalmonirhat. Locations (Barisal region): Barisal, JhaloKathi, Patuakhali & Borguna. PI: Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists	To disseminate BRRI varieties suitable for Barisal and Rangpur regions during Aman season.	300
2.2.3	SPDP with USG application in southern and northern regions during Boro, 2016.	To disseminate BRRI varieties suitable for Barisal and Rangpur regions during Boro	400

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
	<p>Var. (Rangpur region: BRRIdhan58, 60 & 63. Var. (Barisal region): BRRIdhan47, 61 & 67. Locations(Rangpur region): Rangpur, Nilphamari, Kurigram & Lalmonirhat. Locations (Barisal region): Barisal, JhaloKathi, Patuakhali & Borguna.</p> <p>PI: Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists</p>	<p>season.</p>	
2.2.4	<p>Adaptive trials on BRRI varieties in southern and northern regions during T. Aus 2015</p> <p>Var. (Rangpur region): BRRIdhan43, 48, 55, 56 & local check. Var. (Barisal region): BRRIdhan27, 48, 55, 65 & Local check. Locations (Rangpur region): Rangpur & Lalmonirhat. Locations (Barisal region): Barisal & Patuakhali PI: Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists</p>	<p>1. To evaluate the adaptability of BRRI varieties in Barisal and Rangpur regions and get feedback information from the farmers about the tested varieties during Aus season.</p> <p>2.To select location specific suitable varieties and encourage farmers to cultivate the BRRI varieties during Aus season.</p>	100
2.2.5	<p>Adaptive trials on BRRI varieties in southern and northern regions during T. Aman, 2015.</p> <p>Var. (Rangpur region): BRRIdhan49, 56, 57, 62 & local check. Var. (Barisal region): BRRIdhan41, 44, 52, 54 & local check. Locations (Rangpur region): Rangpur, Nilphamari, Kurigram & Lalmonirhat. Locations (Barisal region): Barisal, JhaloKathi, Patuakhali & Borguna.</p> <p>Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists</p>	<p>1. To evaluate the adaptability of BRRI varieties in Barisal and Rangpur regions and get feedback information from the farmers about the tested varieties during Aman season.</p> <p>2. To select location specific suitable varieties and encourage farmers to cultivate the BRRI varieties during Aman season.</p>	140

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
2.2.6	<p>Adaptive trials on BRRi varieties in southern and northern regions during Boro, 2016.</p> <p>Var. (Rangpur region): BRRi dhan50, 58, 59, 60, 63 & local check. Var. (Barisal region): BRRi dhan47, 61, 64, 67, 69 and local check. Locations (Rangpur region): Rangpur, Nilphamari, Kurigram & Lalmonirhat. Locations (Barisal region): Barisal, JhaloKathi, Patuakhali & Borguna. PI: Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists</p>	<p>1. To evaluate the adaptability of BRRi varieties in Barisal and Rangpur regions and get feedback information from the farmers about the tested varieties during Boro season.</p> <p>2. To select location specific suitable varieties and encourage farmers to cultivate the BRRi varieties during Boro season.</p>	160
2.3	Mujibnagar Integrated Agricultural Development Program (MIADP)	Increasing BRRi developed HYV adoption in south-west areas of the country.	600
2.3.1	<p>SPDP under MIADP during T. Aus, 2015</p> <p>Var: BRRi dhan48 Locations: Jhenaidah, Chuadanga, Meherpur, Kushtia. PI: Mr. Rafiqul Islam, PSO CI: Other ARD Scientists</p>	To disseminate BRRi varieties during T. Aus season in the MIADP project implementing areas.	150
2.3.2	<p>SPDP with USG application during T. Aman, 2015.</p> <p>Var: BRRi dhan49, 57 & 62. Locations: Jhenaidah, Chuadanga, Meherpur, Kushtia. PI: Mr. Rafiqul Islam, PSO CI: Other ARD Scientists</p>	To disseminate BRRi varieties during T. Aman season in the MIADP project implementing areas.	200

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
2.3.3	SPDP with USG application under MIADP during Boro, 2016. Var: BRRI dhan60, 63 & 69. Locations: Jhenaidah, Chuadanga, Meherpur, Kushtia. PI: Mr. Rafiqul Islam, PSO CI: Other ARD Scientists	To disseminate BRRI varieties during Boro season in the MIADP project implementing areas.	250
2.4 Enhancing Quality Seed Supply (EQSS)		Increasing rice production through quality seed.	450
2.4.1	QSPDP with USG application during T. Aman, 2015. Var: BRRI dhan49, 52 & 57. Locations: Norshingdi, Kishorgonj, Tangail, Mymensing & Gazipur. PI: Md. Rafiqul Islam, PSO CI: Other ARD Scientists	To encourage the farmers for production, processing and storage of quality rice seeds in participatory approach during T. Aman season.	200
	QSPDP with USG application during Boro, 2016. Var: BRRI dhan63, 64 & 69. Locations: Norshingdi, Kishorgonj, Tangail, Mymensing & Gazipur. PI: Md. Rafiqul Islam, PSO CI: Other ARD Scientists	To encourage the farmers for production, processing and storage of quality rice seeds in participatory approach during Boro season.	250
Project 3: Promotional activities PL: Dr. Md. Shafiqul Islam Mamin		To update knowledge and skill of farmers on modern rice cultivation technology.	2000
3.1	Farmers' Trainings on modern rice production technologies under GoB, IAPP, MIADP & EQSS during Aus 2015, Aman 2015 & Boro 2016. PI: Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists	i. To train the farmers on different aspects of modern rice production methods. ii. To improve the farmers' knowledge and skill on modern rice production technologies. ii. To create farmers' awareness about recently developed technologies.	1400
3.2	Field Days under GoB, IAPP, MIADP & EQSS during Aus 2015, Aman 2015 & Boro 2016.	1. To create awareness and interest among farmers, local leaders, elite persons, NGO workers and DAE personnel	600

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
	PI: Dr. Md. Atiqul Islam, PSO CI: Other ARD Scientists	about BRRRI varieties and technologies. 2.To promote dissemination and get feedback about BRRRI technologies from farmers.	
Project 4: Enrichment of own seed stock PL: Dr. Md. Shafiqul Islam Mamin		Production of BRRRI varieties in different growing seasons.	125
4.1	Seed production of newly released and other popular BRRRI varieties during Aus, 2015, Aman 2015 and Boro 2016. Location: BRRRI Farm, Gazipur T. Aman 2015: BRRRI dhan34, 37, 41, 44, 46, 49, 52, 53, 54, 56, 57, 62, 66,& 70 Boro 2016: BRRRI dhan45, 47, 50, 55, 58, 59, 60, 61, 63, 64, 67, 68 & 69 PI: Mr. Rafiqul Islam, PSO CI: MR Biswash	To produce quality seeds of BRRRI released promising and popular rice varieties for conducting adaptive research trials throughout the country during Aus, Aman and Boro seasons.	125

Grand total (GOB, IAPP, MIADP & EQSS) = Tk.7375 Thousand.

Training Division

Proposed Research Program 2015-2016

Sl. No.	Program area	Major Objective	Expected output	Budget (lac TK)
I	Program Area : Technology Transfer Program Performing Unit : Training Division			
	1. Capacity building and technology transfer through training Project leader: Dr. Md. Islam Uddin Mollah C.I.: Dr. Shahadat Hossain, PSO Ms. Shahnaz Perveen, SSO	To enriched the knowledge of extension agents and scientists. To disseminate BRRRI developed technologies		

	<p>1.1. Rice Production Training Course P.I. :Dr. Md. Islam Uddin Mollah, CSO Participants: BRRIScientist Duration: 2 month Batch : 01 No. of Participants: 30</p>	<p>To train new BRRIScientists so that they can-</p> <ul style="list-style-type: none"> • Recognize and apply the important concept, principles advanced techniques 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. 	<p>Knowledge of new BRRIScientists on rice production, research planning, and execution, data analysis and report writing will be increased.</p>	<p>15.00</p>
	<p>1.2. Modern Rice Production Technologies. Participants: SAAO of DAE Duration: 1 week Batch : 30 Participants: 600</p>	<p>To train the extension agents so that they can-</p> <ul style="list-style-type: none"> • 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. 	<p>Trained SAAO will be able to identify and solve field problems of rice cultivation and help the farmers for increasing total rice production.</p>	<p>36.00</p>
	<p>1.3. Three days Training on Quality Rice Seed Production (EQSSP). Participants: DAE officers No. of participants: 400 Duration: 3 days Batch: 20</p>	<p>i)To increase the knowledge of the participants about quality seed production. ii)To increase the use of quality seed production.</p>	<p>Knowledge of the participants about quality seed production and storage will be enriched. Supply and use of quality rice seed in rice production will be increased at farmers level.</p>	<p>15.00</p>
	<p>1.4. Training on Rice Production Technologies (IAPP) Participants: CF and SAAO of DAE from project area No. of participants: 140 Duration: 1 week Batch: 7</p>	<p>To train the extension agents and project personnels so that they can-</p> <ul style="list-style-type: none"> • 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 	<p>Knowledge of the participants about rice production technologies will be enriched. Identification and solution of field problems about rice production will be easy.Rice production will be increased in the project area.</p>	<p>9.00</p>

		productivity in the project areas.		
	1.5. Modern rice production technologies for farmers Participants: Farmers No. of part: 600 Duration : 1 day Batch : 20	To train the farmers so that they can- <ul style="list-style-type: none"> • Apply the important techniques of modern rice production • Identify and solve the field problems of rice production 	Trained farmers will be able to increased their rice production.	3.00
	1.6. Special training on specific issues related to rice production Requested/demanded by different project of BRRI, IRRI, DAE and NGOs.	-	-	-
II	2. Evaluation of imparted training program Project Leader: Dr. Md. Islam Uddin Mollah			
	2.1. Performance of long and short term training programs. Duration: Throughout the year	The purpose of this study is to <ul style="list-style-type: none"> • Evaluate the overall training program. • Assess the trainees' performance. • Assess the resource speaker performance. • Identify the training needs and improve future training programs 	This will help improvement of training course and method of training.	-
III	3. BRKB and its improvement. Project Leader: Dr. Md. Islam Uddin Mollah			
	3.1. Development and Utilization of Bangladesh Rice Knowledge Bank Duration: Throughout the year	<ul style="list-style-type: none"> • Add new training materials to BRKB compendium. • Develop new fact sheets of different needs. • Prepare new materials for BRKB 	Recent information about rice technologies will be available.	5.00