Research Program 2016-17

Plant Breeding Division

Proposed Research Program 2016- 2017

Sl. No.	Program area/ Project with duration	Major Objective	Annual Budget Thousand Tk.
1.1	Development of Upland Rice (Broadcast Aus)	Development of genotypes suitable for dry direct seeded (upland rice) condition at drought prone environment with emphasis on quick seedling emergence, vigorous growth, plant architecture for lodging tolerance and earliness.	500
1.2	Development of Transplant Aus rice	Development of high yield potential varieties with short growth duration, good grain qualities and tolerance to major diseases and insect pests along with adaptation capability under partially irrigated condition condition.	550
1.3	Development of shallow flood tolerant rice	Development of improved genotypes with slow elongating plant type for 1.0m flood depth	300
1.4	Development of RainfedLowland Rice (RLR)	Development of genotypes superior to standard varieties and adaptable to rainfed lowland environment in T. Aman season.	1600
1.6	Development of salt tolerant rice	Development of salt tolerant varieties suitable for the saline prone coastal areas in Aus, Amanand Boroseasons	1600.00 (GOB STRASA, TRB)
1.7	Development of Premium Quality rice	Development of aromatic and non-aromatic fine quality rice with national (Kalizira/Chinigura/ BRRI dhan34 type) and international (Basmati/Banglamati/ SoruBalam type) standards for domestic use and export.	1600.00
1.8	Development of Rice Varieties for Favorable Boro Environment	Development of improved genotypes with high yield potential (≥8.0 t/ha), earliness (130-135 days) and acceptable grain quality for irrigated ecosystem in Bangladesh.	1000.00

Sl. No.	Program area/ Project with duration	Major Objective	Annual Budget Thousand Tk.
1.9	Development of cold tolerant rice	Development of short duration varieties accompanied with cold tolerance for irrigated ecosystem in Bangladesh.	1000.00
1.10	Development of micronutrient enriched rice	Development of high yielding rice varieties with high iron and zinc content to improve nutritional quality of rice	100.00 CIAT-IRRI: HarvestPlus IAPP
1.11	Development of high beta-carotene rice (Golden Rice)	Development of high yielding rice varieties with enhanced provitamin A content to improve nutritional quality of rice	6400.00
1.12	Development of insect resistant rice	Development of rice varieties resistant to BPH, WBPH, GLH and GM	500.00
1.13	Development of disease resistant rice	Development of varieties resistant to BB, RTV & Blast	1600.00
1.14	Development of submergence tolerant rice	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.	1000.00 (STRASA, TRB)
1.15	Development of drought tolerant rice	Development of high yielding rice varieties tolerant to drought stresses in the rainfed lowland rice ecosystem in Bangladesh.	1200.00
1.16	Development of low water aerobic rice varieties	Development of rice varieties adaptable to low water environment	300.00 (ADB, Water Saving)
1.17	Development of Green Super Rice	Development of less input but high yield potential with tolerance to different stresses (biotic & abiotic)	700.00 (GSR)
1.18	International network for genetic evaluation of rice (INGER)	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	200.00

Biotechnology Division

Proposed Research Program 2016-17

Sl No.	Program area/ Project	Major objective	Annual budget (in Lakh Taka)
Program area: Biotechnology			
1	Development of low glycemic index (GI) rice variety through anther culture	To develop low glycemic index rice through anther culture	2.00
2	Development of salt tolerant rice variety through anther culture	To develop salt tolerant, high yield rice through anther culture	2.00
3	Development of premium quality rice through anther culture	To develop premium quality rice lines through anther culture	2.00
4	Development of upland Aus variety through anther culture	To develop short duration, high yielding upland Aus rice variety through anther culture	1.00
5	Development of Swarna type rice variety through anther culture	To develop Swarna type rice variety	2.00
6	Development of antioxidant enriched black rice variety through anther culture	To develop antioxidant enriched black rice	3.0
7	Development of somaclone using EMS treated rice seed	To develop modern rice varieties	3.00
8	Progeny selection	To select the best progeny with high yield and desirable traits	1.00
9	Observational trials	To select agronomically desirable and high yield potential materials	1.00
10	Preliminary yield trials (PYT)	To evaluate initial yield potential of advanced breeding lines	1.00
11	Secondary Yield Trials (SYT)	To evaluate further yield potential of advanced breeding	1.00
12	Regional yield trials (RYT)	To evaluate yield potential of advanced breeding in the regional level	3.00
13	Developing rice variety through wide hybridization followed by embryo rescue	To develop different stress tolerant rice variety through wide hybridization	2.00
14	Developing rice variety through wide hybridization followed by anther culture	To develop modern rice variety rice through wide hybridization	2.00
15	Development of salt tolerant transgenic rice	To develop salt tolerant transgenic rice lines	6.00
16	Development of drought and salt	To develop drought and salt	6.00

	tolerant transgenic rice	tolerant transgenic rice lines	
17	Identification of yield enhancement QTLs	To identify yield enhancing QTLs for enhancing grain yield of elite Bangladeshi rice varieties	1.00
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	10.00
19	Identification of QTLs for taller seedling height	To identify QTLs for taller seedling height for developing tidal submergence tolerant rice variety	3.00
20	Gene pyramiding for resistance to bacterial blight (BB)	To develop breeding lines possessing BB resistance genes (*Xa4,xa13* and *Xa21*) through Marker Assisted Selection	2.00
21	Isolation and cloning of salt tolerant genes	To isolate salt tolerant genes	10.00

GRS Division

Research Program 2016-2017

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 conservation and management • Collection of rice germplasm. • Rejuvenation and conservation of rice germplasm. • Morphological and molecular characterization of rice germplasm. etc.	Collection, characterization, conservation and rejuvenation of rice germplasm to enrich the Genebank of BRRI and its sharing with rice researchers	9.70
3.2	Seed production and variety maintenance • Nucleus seed production. • Breeder seed production and distribution. • Maintenance of BRRI recommended HYVs and	Maintenance of the nucleus seed stock and supply of breeder seed as per national demand.	76.55

	LIVs. etc.		
3.3	Exploratory and genetic studies • Genetic divergence study of local rice germplasm. • Identification of QTLs for heat and anaerobic germination (AG) tolerance of selected rice germplasm of Bangladesh. • DNA fingerprinting of Wild Rice. etc.	Conduct problem related genetic studies for breeder seed and rice germplasm.	24.10
3.4	Seed technology packages • Storage potential of HYV, hybrid parental lines and hybrid variety of rice. etc.	Development of technology packages with seeds and ready reference on genebank status	0.60

Hybrid Rice Division

Proposed Research Program 2016-2017

SL.	Experiments	Major Objective(s)	Amount Budget Thousand Tk.
Program Area: Varietal Development Project: Development of parental materials for high yield, high amylose content and fine grain containing hybrid rice variety Duration: 2016-2017			
1.1	Source Nursery	Identification of prospective maintainers and restorers from diverse genetic origin	30,000.00
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.	40,000.00
1.3	Backcross Nursery	Developing CMS lines from identified maintainer by back crossing.	60,000.00
1.4	CMS Maintenance and Evaluation Nursery	Maintain and evaluate of CMS lines	70,000.00
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)	80,000.00
1.6	Improvement of parental lines by (B x B) and (R x R) crosses.	To broaden the genetic base of parental lines	50,000.00

Project-2: Breeding for BB resistant hybrid rice variety Duration: 2016-17 Program leader- Anowara Akter			
2.1	Screening of existing maintainers and restorers against BB resistance.	To identification of BB resistance maintainers and/or restorers from existing materials.	50,000.00
2.2	Source Nursery	Identification of prospective maintainers and restorers of diversified origin for making experimental rice hybrids.	30,000.00
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.	50,000.00
2.4	Backcross Nursery	Developing BB resistant CMS lines from identified maintainer by back crossing.	2,00000.00
Project-3: Evaluation of parental materials & hybrids Duration: 2016-2017 Program leader- Program leader- Anowara Akter			
3.1	Observational Trial (OT) of experimental hybrids	Selection of promising hybrids	50,000.00
3.2	Preliminary Yield trials of promising hybrids	To study the wider adaptability and yield potentiality of promising hybrids	60,000.00
3.3	Combining ability of A, B & R lines	To select the best combiner (S) in respect of grain yield & yield components	60,000.00
3.4	National Hybrid Rice Yield Trial (NHRYT)	Evaluation of imported hybrids for subsequent selection	Funded by SCA
3.5	Quality ensure of previous season produced F_1 and CMS lines through grow out test	To determine purity of parental lines and hybrids of BRRI released hybrid rice	30,000.00
3.6	Demonstration trials of BRRI released hybrids along with promising hybrids and checks	To evaluate the performances of released hybrids with promising ones	20,000.00
Project-4: Seed Production of Parental lines and Hybrids Duration: 2016-2017 Program Leader: Md. Hafizar Rahman			
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 BRRI hybrid dhan1	Production of pure and good quality seed of CMS lines.	2,00000.00

	& BRRI hybrid dhan4		
4.3	CMS line multiplication of BRRI hybrid dhan2	Production of sufficient quantity quality seeds of CMS lines for subsequent use	75,000.00
4.4	CMS line multiplication of BRRI hybrid dhan3	Production of sufficient quantity quality seeds of CMS lines for subsequent use	75,000.00
4.5	F_1 seed production of BRRI hybrid dhan3	Production of sufficient quantity quality hybrid seed for subsequent use	1,00000.00
4.6	F_1 seed production of BRRI hybrid dhan4	Production of sufficient quantity quality hybrid seed for subsequent use	1,00000.00
4.7	F_1 seed production of promising hybrids	Production of sufficient quantity quality hybrid seed of promising hybrids for subsequent use	1,00000.00
4.8	F_1 seed production of promising hybrids	To produce sufficient quantity of seed for OST and OFT	2,00000.00
4.9	Growth duration differentiation method (GDDM) for synchronization in flowering	To determine proper heading time of parental lines (A &R) of promising hybrids	25,000.00
4.10	Nucleus seed production of BRRI hybrid dhan1 & BRRI hybrid dhan4	To produce parental lines nucleus seeds of BHD1 & BHD4	60,000.00
4.11	Nucleus seed production of BRRI hybrid dhan2	To produce parental lines nucleus seeds of BHD2	60,000.00
4.12	Nucleus seed production of BRRI hybrid dhan3	To produce parental lines nucleus seeds of BHD3	60,000.00
4.13	Maintainer and restorer lines multiplication of BRRI released hybrids	Production of sufficient quantity quality parental lines for subsequent use	30,000.00

Grain Quality & Nutrition Division

Proposed Research Programme 2016-2017

Sl.No.	Programme area/ project with duration	Major Objective	Annual budget Thousand Tk.

Varietal Development			
1. Grain Quality Characteristics for Variety Development			
1.1	Determination of physicochemical and cooking properties of rice grain (Year round)	To help to develop data base on physicochemical cooking and eating qualities of grain for newly developed breeding lines.	**250**
1.2	Evaluation of Physicochemical properties of newly released BRRI varieties (Year round)	To determine physicochemical and cooking qualities of recently released BRRI developed rice varieties for updating the data base.	**50**
1.3	Determination of physicochemical and cooking properties of Kanakchul (Year round)	To determine the physicochemical and eating qualities of Kanakchul rice grain for identifying superior popping qualities.	**50**
2. Grain Quality parameters for consumer preference			
2.1	Nutritional quality and organoleptic properties of rice based food product (Year round)	To determine the quality of rice based biscuit To assess the acceptability of rice based biscuit to determine the shelf-life of rice based biscuit	**100**
3. Nutritional Quality Assessment of Rice			
3.1	Effect of different degree of milling on the retention of micro nutrient of BRRI released high Zinc varieties (Year round)	To find out the optimum milling time and percent degree of milling thus retains most micronutrient.	**100**
3.2	Mineral and vitamin profiling of BRRI varieties (Year round)	To maximize the conversion of rice starch to resistant starch using different cooking and cooling method.	**250**
3.3	In vivo experiment on glycemic index of differently processed rice (Year round)	To account the effect of differently processed rice such as un-parboiled, parboiled, pressure parboiled and double parboiled rice on glycemic response in rat model.	**300**

3.4	Determine an appropriate processing method for increase the concentration of resistant starch (RS) of cooked rice (Year round)	To maximize the conversion of rice starch to resistant starch using different cooking and cooling method.	**150**
3.5	Identification of rice genotypes having low heavy metal uptake ability at seeding stage (Year round)	To assess the heavy metal uptake in rice plant by different rice cultivars. To assess the dose response uptake of heavy metals on different rice genotype. To identify low heavy metal uptake rice genotype.	**300**
3.6	Comparative Study on Heavy metals (Cd,Pb,Cr,As) in rice grain of industrial & non industrial area of Gazipur (Year round)	To quantification of heavy metal in irrigated water, soil and rice grain.	**50**
3.7	Evaluation of commercial rice bran oil and soybean oil available in the market (Year round)	To determine the peroxide value, saponification value, iodine number and fatty acid composition present in the oil	**50**
3.8	Evaluation of amino acid composition of high, intermediate and low brown rice protein (Year round)	To determine lysine and other amino acid content in rice cultivars because lysine is the first limiting essential amino acid in cereal proteins.	**50**
4. Commercial Rice Based Products			
4.1	Physicochemical, cooking and sensory properties related to quality of rice noodles (Year round)	To standardize a laboratory-scale method for making rice noodles, To evaluate physicochemical cooking and sensory quality of rice noodles	**50**
4.2	Determination of physicochemical properties and quality of puffed popped and flattened rice from newly released BRRI varieties (Year round)	To identify the physical quality of puffed, popped and flattened rice To determine the nutritional value of puffed, popped and flattened rice.	**100**
4.3	Survey on indigenous rice products of BRRI modern varieties (Year round)	To find out the popular BRRI varieties are used for producing puffed and flattened rice.	**100**

Agronomy Division

Proposed Research Programme 2016 – 2017

Sl. No.	Programme area/ Project with duration (Crop-Soil-Water management)	Major Objective(s)	Taka (lac)
1.	Seeds and Seedlings		
	1.1 Effect of different modified seed bed technique to produce quality seedling (New)	To develop seedling production technique in unfavorable condition	0.5
	1.2 Role of salicylic acid (SA) on quality seedling production of Boro rice under natural cold stress condition (On going)	To find out the effective dose of SA that can produce high quality rice seedlings in Boro season	0.5
2.	Planting Practices		
	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	2.0
	2.2 Yield maximization through efficient water management in irrigated ecosystem (New)	To reduce cost of production and increase grain yield of rice	0.5
	2.3 An investigation into the photosynthesis and LAI of population densities and seedling ages of long duration Boro, and T. Aman varieties for yield contribution (New)	To find out the photosynthetic rate and LAI of different spacing and age of seedling for yield optimization of long duration Boro, T. Aman and T. Aus Varieties	1.0
	2.4 An investigation into the planting density and seedling age of newly BRRI developed short duration T. Aman varieties for yield maximization (New)	To find out the appropriate spacing and age of seedling for yield optimization of short duration T. Aman varieties	0.5
	2.5 Effect of crop establishment method 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	1.5
3.	Fertilizer Management		
	3.1 Yield maximization of Boro rice through adjustment of ratio of N Splitting (New)	To increase N use efficiency of rice for higher yield	0.5
	3.2 Yield maximization of short duration T. Aman rice through adjustment of ratio of N splitting (New)	To increase N use efficiency of rice for higher yield	0.5
	3.3 Response of Swarna varieties to different fertilizer management options (New)	To find out suitable Swarna cultivar that produce satisfactory grain yield with poor management	0.5
	3.4 Influence of integrated nutrient on the growth and yield of BRRI dhan69 (New)	To determine the combined effect of organic and inorganic fertilizers	0.5

		on the growth and yield of BRRI dhan69.	
	3.5 Role of nutrient management on spikelet fertility/sterility reduction of CN-6 (New)	To reduce the spikelet sterility through nutrient supplementation in rice	1.0
	3.6 Effect of organic and inorganic fertilizer management on dry matter production, tillering pattern and grain yield of transplanted rice (New)	To observe dry matter production, tillering pattern and maximize grain yield of rice under varying fertilizer management from organic and inorganic sources	0.5
4.	Weed Management		
	4.1 Effect of seed priming on weed competitiveness and productivity of aerobic rice (New).	To observe weed suppression ability and growth and yield of aerobic rice under different primed seed.	0.5
	4.2 Bio-efficacy and phytotoxicity of pre and post emergence herbicides in aerobic rice (New)	To find out the cost effectiveness and phytotoxicity of different herbicides to rice plants under aerobic soil conditions	0.5
	4.3 Investigate the weed control affectivity of Post emergence herbicides at late growth stage of weed in field condition (New)	To control weed at late post stage of transplanted rice.	0.5
	4.4 Effect of different weed management options in USG applied transplanted rice (On going)	To find out the lowest cost weed management optimum in transplanted rice	0.5
	4.5 Relative study on weed control efficiency and economics of BRRI multi row power weeder and BRRI weeder (New)	To compare WCE and economics of BRRI multi-row power weeder and BRRI weeder	1.0
	4.6 Mixed weed flora management by new molecule herbicides in transplanted and direct seeded rice (New)	To determine efficacy of new molecule herbicides in transplant and direct seeding condition	0.5
	4.7 Effect of continuous application of herbicide on weed species shifting and resistance (On going)	To identify weed species that shift due to continuous application of herbicide and to identify resistance weed species for specific herbicide	0.5
	4.8 Effect of herbicides on soil microbial population (On going)	To observe the status of microbial population after herbicide application.	0.5
	4.9 Screening of crop residues for weed control efficiency in rice (New)	To find out the weed control efficiency of various crop residues	0.5
	4.10 Weed control methods on productivity of wet direct seeded rice in Aus season (On going)	To determine effective weed control method	0.5
	4.11 Evaluation of candidate herbicides (On going)	To find out the efficacy of new herbicides	1.0
5.	PGB Project Activities		

	5.1 Intensification the productivity of single Boro cropping pattern through integrated SDWR+fish culture during Aman season in Gopalganj area (On going)	To increase cropping intensity and productivity by inclusion of semi DWR + fish in Aman season	2.0
	5.2 Evaluation of modern rice varieties in Pirojpur-Gopalganj-Bagerhat area under IADP-PGB project (On going)	To demonstrate new rice varieties in the farmers field	5.0
	5.3 Site specific nutrient management in peat soil (On going)	To find out the response of N, P, K, S and Zn in peat soil	2.0
	5.4 Optimization of P fertilizer in peat soil at Gopalganj district (On going)	To find out the optimum dose of P in peat soil	2.0
	5.5 Relay cropping with jute and T. Aman at Gopalganj (New)	To find out the suitable variety relay with jute	2.0
	5.6 Crop productivity improvement by introducing modern variety and fertilizer management in Pirojpur, Gopalganj and Bagerhut region (On going)	Introduction modern variety and BRRI recommended fertilizer in project areas	5.0
	5.7 Cost effective weed management in T. Aman and Boro rice (On going)	To demonstrate cost effective weed management in the farmers field	5.0
	5.8 Cost effective fertilizer management in T. Aman and Boro rice (On going)	To demonstrate cost effective fertilizer management in the farmer's field	5.0
	5.9 Effect of non-selective herbicide to control aquatic weeds in Gopalgonj district(On going)	i. To investigate appropriate herbicide for aquatic weed control ii. To find out cost effective weed management	1.0
	5.10 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.	1.0

Irrigation and Water management Division

PROPOSED RESEARCH PROGRAMME 2016-2017

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		To generate water efficient technologies for rice cultivation	

	1.1 Determination of physical and hydraulic properties in different soil types Duration: 2015-2017	MMZ, MMA, MMH & 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	50
	1.2 Development of Soil moisture declination model for alternate wetting and drying (AWD) irrigation for Rice cultivation Duration: 2013-2016	MMA & MTI	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 Duration: 2015-2017	MMZ, MMA & MTI	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 Duration: 2015-2017	MMA, MMZ & MTI	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 Duration: 2015-2017	MTI, SP & MSY	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 Duration: 2014-2016	MMA, ABMZH & MBH	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
	1.7 Study on the performance evaluation of Ganges-Kobadak (G-K) irrigation project after six decades of its initialization Duration: 2016-2019	MHA	i) To investigate the present actual irrigation coverage ii) To identify constraints of the project and iii) To make some recommendations for better performance based on constraints analysis	50
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 Duration: 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 Duration: 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 Duration: 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 BRRI campus, Gazipur Duration: 2015-2018	MTI, MSY & MBH	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
	2.5 Maximum Utilization of Rainwater in Potato- T. Aus- T. Aman Cropping Pattern Duration: 2016-2019	MSY, MBH & MTI	i) To find out suitable planting time of T. Aus for maximum use of rain water	50
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 Duration: 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
	3.2 Design and installation of non-return valve (NRV) for tide water harvestingto cultivate Boro rice in non-saline areas of Barisal region Duration: 2016-2019	MBH, PKK, ABMZH & MTI	i) To conserve tidal water for Boro rice cultivation ii) Intensification of cropping pattern by utilizing conserved water	200
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 Duration: 1979-Continued	MTI, MMZ, MMA, ABMZH, 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 Duration: 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 (Braus/Aus/Non-rice crops)	100
	4.3 Improving low-cost check valve for STW and test its performance in field level Duration: 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
	4.4. Waste water irrigation for crop production Duration: 2015-2018	SP, MMA & MTI	i) To delineate the sources of waste water ii) To determine the quality of waste water and suitability for irrigation iii) To develop a mechanism for storing and irrigating waste water iv) To determine the irrigation coverage by waste water	200
	4.5: Development of suitable method for safe ground water recharge Duration: 2016-2019	MBH, ABMZH, MMZ & MTI	i) Determination of a safe method for artificial groundwater recharge ii) Identify qualities and microbial activities of artificial recharged water	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 Duration: 2013-2016	MBH, SY, ABMZH & MTI, DH,	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 BRRI developed water management technologies.	
	6.1 Pirojpur-Gopalganj-Bagerhat Integrated Agricultural Development Project (New)	MTI & SP	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.	
	6.2 Improving water use for dry season agriculture by marginal and tenant farmers in the Eastern Gangetic Plains (New)	MMZ, MMA & MTI	i) Understanding bio-physical, socio-economic and institutional aspects of groundwater irrigation in the northwest region of Bangladesh.	
	6.3 Development and dissemination of climate resilient rice varieties for water short areas of South Asia and South-East Asia (TA 8441) (On going)	MAA, KMI, MMZ, MAI, MAL & MMK	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.	
	6.4 Community water management for improving food security, nutrition and livelihoods in the polders of the coastal zone of Bangladesh (On going)	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	

Plant Physiology Division

Proposed Research Program 2016-2017

Crop-Soil-Water Management Program area				
Project 1: Salinity Tolerance				
Sl. No.	Name of experiments	Duration	Major Objectives	Annual budget (Thousand Tk.)
1.1	Exploring new sources of salinity tolerance from BRRI Gene Bank collections at seedling stage (TRB-Project)	March, 2016-Dec., 2017	To find out new sources of salinity tolerance from Bangladeshi germplasms at seedling stage.	TRB 3,00
1.2	Screening for salinity tolerance of advance breeding lines, INGER materials and anther cultured materials at seedling stage during T. Aman and Boro season	April, 2016-Feb., 2017	To check the level of tolerance of advanced breeding lines at seedling stage	2,00
1.3	Characterization of advanced breeding lines at different salinity stress for whole growth period during T. Aman and Boro season	July, 2016-April, 2017	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.	2,00
1.4	Physiological characterization of tolerant germplasms for whole growth period salinity tolerance (TRB-Project).	July, 2016-March, 2017	To find out the physiological traits associated with tolerances at different growth stages and their association with other growth stages.	TRB 2,00
1.5	Mapping QTLs for salinity tolerance of Ashfal balam at seedling stage.	July, 2015-June, 2017	1. To map QTLs from Ashfal balam for seedling stage salinity tolerance. 2. To find out the possible mechanisms contributing tolerance at seedling stage.	2,00
1.6	Mapping QTLs for salinity tolerance of Ashfal balam at reproductive stage	July, 2015-June, 2017	1. To map QTLs from Ashfal balam for reproductive stage salinity tolerance. 2. To find out the possible mechanisms	3,00

			contributing tolerance at reproductive stage	
Project 2: Submergence Tolerance				
2.1	Characterization of rice genotypes for flash flood submergence tolerance	March, 2016-Nov., 2016	1. To identify tolerant germplasm for 2 weeks of complete submergence 2. To observe elongation capacity under complete submergence 3. To identify germplasm with better recovery ability	1,00
2.2	Evaluation of some submergence tolerant genotypes at different submergence period and normal environmental condition	March, 2016-Nov., 2016	1. To observe the phenological development differences 2. To determine yield and yield contributing parameter differences at different submergence period and normal environmental condition	2,00
2.3	Screening of some rice genotypes for medium stagnation	March, 2016-Dec., 2016	1. To identify tolerant germplasm for water stagnation condition 2. To observe tillering ability under water stagnation conditions	2,00
2.4	Screening of some advanced breeding lines for anaerobic germination	March, 2016-Sep., 2016	To find out the best genotypes for anaerobic germination	50
2.5	Performance of some advanced breeding lines under deep water condition	March, 2016-Dec., 2016	To find out the elongation ability under deep water condition	1,00
Project 3: Drought Tolerance				
3.1	Screening germplasm for drought tolerance at reproductive phase	July, 2016-April, 2017	To identify rice germplasm tolerant to drought stress at reproductive phase.	5,00
3.2	Performance of F_2 materials under drought stress at reproductive stage in the rainout shelter	July, 2016-Feb., 2017	To evaluate F_2 materials under control drought condition in the rainout shelter.	2,00
3.3	Screening germplasm/advanced lines for deep rooting ability	Aug., 2016-Dec., 2016	To identify genotypes having deep rooting ability.	2,00
3.4	Screening aerobic Aus lines	Aug.,	To identify genotypes	2,00

	for deep rooting ability	2016-Nov., 2016	having deep rooting ability	
3.5	Performance of GSR materials under drought stress at reproductive stage in the rainout shelter	July, 2016-April, 2017	To evaluate GSR materials under control drought condition in the rainout shelter.	2,00
Project 4: Heat Tolerance				
4.1	Marker assisted introgression of spikelet fertility loci from N22 in to two Bangladeshi mega rice variety BRRI dhan28 and BRRI dhan29 (CSISA-project)	2013-2018	To develop heat tolerant BRRI dhan28 and BRRI dhan29 by introgressing spikelet fertility loci through MABC	5,00
4.2	Screening rice germplasm and breeding lines towards the development of heat tolerant variety	Feb., 2016-Sep., 2016	To identify new heat tolerant donor and advance breeding lines	BARC and GOB 4,00
Project 5: Cold Tolerance				
5.1	Exploring new sources of cold tolerance from BRRI Gene Bank collections at seedling stage (TRB-Project)	Oct., 2016-Feb., 2017	To identify rice genotypes which can tolerate low temperature at seedling stage	3,00
5.2	Characterization and evaluation of some selected rice Genotypes for cold tolerance	Oct., May,	To identify cold tolerant rice geno types at natural condition	2,00
5.3	Evaluation of some rice genotypes for reproductive stage cold tolerance at natural condition	Oct., May, 2017	To identify cold tolerant rice genotypes at natural condition	2,00
Project 6: Growth studies				
6.1	Expt. 6.1: Photo-sensitivity test of BRRI realesed T. Aman varieties	April, 2016-Dec., 2016	To know the photo-sensitivity of recently released T. Aman varieties	1,00
6.2	Physiological characterization of CO_2-responsiveness of	2015-2017	1. To find out the traits associated with CO_2-responsiveness of the	5,00

	Bangladeshi rice germplasms through planting geometry technique.		selected candidates 2. To quantify responsiveness through low planting density 3. To assess the underlying physiology for better responsiveness	
6.3	Physiological characterization of Aus germplasm	April, 2016-Dec., 2016	1. To identify high yielding Aus genotype 2. To find out effect of breaking apical dominance on tillering and yield	2,00
6.4	Physiological dissection of growth behavior and allied high yielding traits of three best varieties in the Aman season	June, 2016-Dec., 2016	1. To distinguish tillering pattern and their contribution to grain yield 2. To compare growth behavior responsible for yield differences. 3. To determine related high yielding traits contributed higher yield for each of the variety	2,00
6.5	Determination of growth stages of the latest Boro varieties as affected by sowing time	Oct., 2016-Oct., 2017	To investigate the duration of different developmental stages of varieties when seeded at different time in Boro season	1,00

Project 7: Crop Weather Information				
7.1	Automatic weather station data recording, transfer, storage and maintenance	2016-2017	To collect, transfer, storage and provide of automatic weather station data	1,00
7.2	Manual weather station data recording, storage and maintenance	2016-2017	To collect, storage and provide of different weather data	2,00

Soil Science Division

Proposed Research Program for 2016 – 2017

Project/ Exp No.	Project title and Expt	Specific Objectives	Annual budget (lakh Tk.)
Sub-sub program I: Soil Fertility and Plant Nutrition			
I.	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	
	1.1. Determination of N P K fertilizer doses through SSNM for ALART materials (Ongoing)	• To quantify rice yield responses to added fertilizers • To determine optimum doses of N, P, K for ALART materials/newly released varieties.	4.0
	1.2. Nutrient management for growing four crops in a year (New)	• To increase crop production, • To maintain soil fertility and improve nutrient use-efficiency. • To determine nutrient depletion/mining.	3.0
	1.3. Effect of nitrogen and potassium on modern rice cultivation (New)	• To find out suitable ratio of N and K for MV rice cultivation • To study N and K dynamics in soil and plant.	3.0
	1.4. Nitrogen and potassium doses fort targeted yield under AWD situation (T. Aman)	• To find out optimum dose of N, P, K nutrients under safe AWD situation (10-20% water saving).	ADB water saving 2nd phase
II	Micronutrient study	To study the effects of micronutrients on rice yield	
	2.1. Performance of zinc enriched rice varieties under zinc deficient condition (Boro and T. Aman)	• To determine Zn uptake pattern • To assess the effect of Zn on chlorophyll, soluble protein and its role in enzymatic activities	1.5
Sub-sub program II: Nutritional Disorders in Rice			
III.	Identification and Management of Nutritional Disorders in Rice	To determine upcoming nutritional disorders in rice under intensive rice cultivation with different fertilizer management practices	

	3.1. Long-term missing element trial at BRRI regional station (Ongoing)	• To determine nutrient mining problem on soil fertility and its influence on rice yield, • To find out nutrient management options for correcting soil problems	7.0
	3.2. Long-term missing element trial at BRRI Gazipur (Ongoing)	• To evaluate changes in soil physical, chemical and biological properties • To determine management options for solution of soil problem(s)	1.0
	3.3Consequences of continuous wetland rice cropping on rice yield and soil health (Ongoing)	• To evaluate soil fertility and rice yield changes over time • To find out mitigation options of soil health	1.2
	3.4. Effect of double/triple rice cropping on rice productivity and soil fertility (Ongoing)	• To improve land productivity and soil health under intensive cropping system	3.0
	3.5.Validation of BRRI fertilizer management technology in rice (Ongoing)	• To disseminate BRRI developed fertilizer management packages in farmers' field.	IAPP
Sub-sub program III: Integrated Nutrient Management			
IV.	Integrated Nutrient management for intensive rice cropping	To increase rice productivity with sustainable soil health.	
	4.1. Integrated nutrient management for double and triple rice cropping for maximizing productivity(On going)	• To improve land productivity and soil health under intensive cropping system	3.0
	4.2. Performance of vermicompost and poultry manure on Rice yield and soil health(On going)	• To find out the effect of poultry manure and vermicompost with chemical fertilizers on yield and yield attributes of rice and its impacts on soil nutrient status and uptake of micronutrients by rice plants.	2.0

	4.3. Organic and inorganic fertilizer management effect on physical properties of a soil under rice-rice system (New)	• To assess the changes of inorganic carbon and nitrogen content, physical and hydraulic properties of the soil with long-term applications of organic and inorganic fertilizer under rice–rice cropping system	1.0
	4.4. Comparative study on the effects of organic and chemical fertilizer on rice production (New)	• The best organic fertilizer will be identify in terms of nutrient composition (N, P, K) and physical form will be used to evaluate its' effects compared to chemical fertilizer on rice production.	1.0
	4.5. Effects of Long term Organic Amendments on Quantity/Intensity Parameters and buffering of Potassium in Grey Terrace Soil (New)	To assess the K supplying power soils amended with different organic materials	1.0
Sub-sub program III: 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 BRRI	• 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. Effect of gypsum on soil salinity and rice yield in coastal areas (Ongoing)	• To find out suitable dose of gypsum for reducing soil salinity and increasing rice yield in salt affected soil • To investigate the dynamics of Na, K, Ca, Mg, S, P and EC of the saline soil amended with gypsum.	3.0
	6.2. Evaluation of salt tolerant rice varieties in salt affected soil (Ongoing)	• To evaluate the performance of salt tolerant varieties at different levels of soil salinity • To study the nutrient dynamics in soil and plant at	1.0

		different growing periods having different solar radiation and temperature	
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. Effect of long term nutrient management on soil microbial properties (New)	• To determine the effect of long term nutrient management on beneficial soil bacteria • To identify the beneficial bacteria populations from long-term nutrient management experiments.	1.5
	7.2. Evaluation of bio-organic fertilizers in soil plant system (New)	• To evaluate bio-organic fertilizer and its efficacy to promote rice plant growth and yield. • To standardize the dose of bio-organic fertilizer and chemical fertilizer for rice yield maximization.	2.0
	7.3. Isolation and characterization of plant growth promoting bacteria from saline and acidic soil	• To enumerate total bacteria, fungi and actinomycetes population • To isolate and enumerate beneficial bacteria • To characterize beneficial effects such as, IAA production, P solubilization, N-fixing capacity of these isolates.	2.0
	7.4. Bioremediation of Arsenic contaminated paddy soils	• To isolate arsenic resistant bacteria from As contaminated soil • To determine arsenic reclamation capacity of the potential isolates in laboratory and greenhouse conditions	1.5
	7.5. Soil processes as influenced by temperature (New)	• to asses changes of microbial population and community in different temperature regime	1.5

		• to determine nutrient mineralization rate from organic and chemical fertilizer	
	7.6. Determination of nutrient mineralization rate from different organic material during composting (New)	• to determine C, N, P, K and S mineralization rate from different organic material • to determine stability and suitability of compost for rice production	1.0

Entomology Division

Research Programme: 2016 –17

Project No.	Programme area/Project with duration	Major objectives	Annual budget Thousand TK
1.	Project : Survey & Monitoring of Rice Arthropods	To determine the incidence and abundance patterns of insect pests and their natural enemies at BRRI farm and in different AEZ's for better management of rice pests.	1200
1.1	Pest monitoring in BRRI Farms (Duration: 1972-till to date)	To study the insect pest and their natural enemy incidence at BRRI farm and to create a database to develop a forecasting system.	150
1.2	Insect pests and natural enemies in light traps (Duration: 1972 - till to date)	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. (Duration: 2013 to 2016)	Establishment of a sustainable multinational collaboration network for the management of migrating 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	To determine the incidence and abundance patterns of insect pests and	600

	Gopalganj, Pirojpur and Bagerhat (PGB project) (Duration: 2016 to 2017)	their natural enemies in the selected areas.	
1.5	Survey of rice insect pests in selected AEZ's of Bangladesh (Duration: 1972 to present)	To find the incidence patterns of major insect pests and their natural enemies in different Agoro-ecological Zones (AEZs) to examine the relationship between biotic and abiotic factors on their abundance.	200
1.6	Develop bioclimatic models to forecast the dynamics of rice insect pests (Duration: 2016 to 2018)	To develop, validate, demonstrate and assist rice growers to adopt an integrated system for the management of rice insect pests.	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 (Duration: 2015 to 2018)	To know the biology of green mirid bug.	200
2.2	Generate demographic parameters of rice weevil (Duration: 2016 to 2017)	To develop life history information on rice weevil fed on rice for demographic analysis. To determine the population parameters including the survivorship and rate of increase of rice weevil.	200
3.	Project: Biological Control of rice insect Pests	To evaluate the role of natural enemies in controlling rice insect pests.	200
3.1	Conservation of natural enemies through ecological engineering approaches (Duration: 2014 to 2018)	To conserve natural enemies through different ecological managements	200
3.2	Monitoring of larval parasitism of rice leaffolder (RLF) (Duration: 2016 to 2018)	To understand the efficacy of natural enemies against rice leaffolders.	100
3.3	Perching as a tools for insect pests management (Duration: 2016 to	To know the effects of perching on insect pests and it's natural enemies.	100

	2018)		
3.4	Functional response of predator (carabid beetle, spider and frog) against planthoppers (Duration: 2016 to 2018)	To predict mechanisms underlying predator-prey behavior to improve the practical predictive potential of predator candidates for biological control. To evaluate effectiveness of predators against target pest.	200
3.5	Studies on entomogenous fungi to control BPH (Duration: 2016 to 2018)	To isolate the fungi from naturally infected insects. To identify the mechanism / pathogenicity of entomogenous fungi against BPH. To explore suitable media for mass production of the entomogenous fungi and its use in BPH management.	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 (Duration: 2014 to 2016)	To determine the yield loss potential of different rice varieties against gall midge damage.	200
4.2	Incidence of rice leaf folder and its damage effect on rice grain yield (Duration: 2016 to 2018)	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 (Duration: 1972 - till to date)	To evaluate the effectiveness of commercial formulations of different insecticides against major insect pests of rice.	300
5.2	Effect of selected botanicals (Neem and mahogany) on major rice pests (Duration: 2016 to 2018)	To identify effectiveness of eco-friendly plant materials (Mahogany and Neem) against major rice insect pests (SB, LF and BPH).	100
5.3	Studies on resurgence of brown planthopper, *Nilaparvata*	To find out the causes of resurgence of brown planthopper in Bangladesh.	PhD work

	lugens(stål) and its management in Bangladesh (Duration: 2015 to 2018)		
5.3.1	Effect of different doses of selected insecticide on BPH resurgence (Duration: 2015 to 2018)	To find out the doses of insecticide for the cause of resurgence development.	PhD work
5.3.2	Effect of different formulation of insecticide on BPH resurgence (Duration: 2015 to 2018)	To know the effect of insecticide formulation on resurgence development.	PhD work
5.4	Evaluation of sex pheromone against major insect pest (yellow stem borer and leaffolder) (Duration: 2016 to 2018)	To know efficacy of sex pheromone To know the incidence of yellow stem borer and leaffolder	100
6.	Project : Integrated Pest Management	Study on the different aspects of management of rice insect pest.	380
6.1	Validation of BRRI recommended practices for the management of major insect pests of rice (IAPP) (Duration: 2012 to 2016)	To demonstrate BRRI recommended practices for successful management of major insect pests of rice.	380
6.2	Management of BPH by configuration and geometry of rice planting (Duration: 2015 to 2016)	To manage BPH in field by planting method. To evaluate the efficacy of double nozzle sprayer in the field.	200
7.	Project: Host Plant Resistance	Identification of resistant sources against rice insect pests.	200
7.1	Screening of rice germplasm , advance line and F_2materials against major insect pests (Duration: 1972- till to date)	To identify resistant rice germplasm against major insect pests.	400
7.2	Screening of rice germplasm advance	To identify resistance sources against	300

	lines and F_2 materials against rice gall midge (GM) (Duration: 2002 -till to date)	GM.	
7.3	Pest reaction of BRRI released varieties against major insect pests (Duration: 2016 to 2017)	To evaluate level of resistance of different BRRI varieties against major insect pests.	100
8.	Project: Vertebrate pest management	Management of rat in rice field.	
8.1	Study on the barn owl (*Tyto alba)* and their biology for sustainable rat management (Duration: 2016 - till to date)	To know the biology and feeding preferences of the barn owl(s). To develop and explore mass rearing technique of owl. To find out suitable nest and suitable height for preying. To understand food habit of the owl.	300

Plant Pathology Division

Proposed Research Program for 2016– 17

Sl. No.	Programme area/Project	Major objectives	Annual Budget (1000TK)
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 pattern 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 *Pyricularia oryzae* in Bangladesh	500
04.	Pathotypic and genetic diversity of *Rhizoctoniasolani* AG1-IA	(i) To estimate the genetic diversity of *R. solani* 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	500

		well as genetic variability of *R. solani* AG1-IA populations.	
05.	Molecular characterization of Bakanae causing fungi in Bangladesh	To find out the fungi associated with Bakanae disease of rice in Bangladesh	500
06.	Molecular characterization and distribution of Rice Tungro Bacilliform (RTB) and Rice Tungro Spherical (RTS) virus in Bangladesh	To identify the major tungro strains and their distribution in Bangladesh.	200
07.	Development of differential system of *Xanthomonas oryzae* pv. *oryzae* and study on its molecular diversity	To identify a standard differential set of isolates of *X*. *oryzae* pv. *Oryzae*; To know the diversity of *X*. *oryzae* pv. *oryzae*	500
08.	Pyramiding of major Blast resistant gene(s) in susceptible rice variety/lines	To introgress major resistant gene(s) into the selected cultivar to develop durable blast resistant variety	700
09.	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 BB resistant variety	700
10.	Purification of locally improved Aus variety Mala through pure line selection	To identify suitable T. Aus variety for tidal non-saline sub-ecosystem in Barisal region	300
11.	Evaluation of blast resistant multiline variety of IR64	To check resistant reactions of multilines variety	200
12.	BB resistance and yield performance of selected breeding lines	To evaluate yield performance including BB resistance	200
13.	Screening rice germplasm against Bakanae disease	To identify the source of resistance against bakanae disease of rice	600
14.	Screening rice breeding lines against Blast and Sheath Blight diseases	To identify the source of resistance against blast and sheath blight diseases of rice.	600
15.	Introgression of Blast resistant genes into BRRI dhan47	To develop durable blast resistant variety harboring *Pi40* and *Pi9*	500
16.	Screening of breeding lines and germplasms against BB	To identify resistant source(s) against BB	950
17.	Identification of major blast resistant genes in rice germplasm (zhoom rice)	To find out blast resistant source(s) of *Pish*, *Pita*, *Pita-2*, *Pib*, *Pi9*, *Piz*, and *Pi40*	200
18.	Phenotypic screening of	To identification of candidate	200

	widely cultivated rice variety for identification of novel blast resistant sources	accessions that can be deployed as donors in rice breeding programs	
19.	Correlation between Leaf and neck blast and its impact on yield	To observe interaction between leaf and neck blast and asses the yield loss	50
20.	Development of inoculation technique for panicle blast disease	To easily identify resistance sources under field condition at mature stage	100
21.	Reaction of BB in different nutritional status	To know the growth response of BB in different nutritional supplement	200
22.	Recovering ability of recently released T. Aman varieties to tungro under natural condition	To know the varietal resistance against RTV	30
23.	Distribution, Severity and Yield Loss of false smut disease of rice 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
24.	Epidemiological study of rice false smut disease	To measure the disease development pattern across the season; To identify major weather variables influencing the disease	100
25.	Integrated approach on rice false smut disease management	To develop integrated management option for controlling false smut disease	200
26.	Studies on identification of seedling blight pathogens and its management	To identify the causal organisms To study the incidence of the disease across the seasons To manage the disease	200
27.	Impact of seedling-blight affected seedlings on growth and yield of rice	To investigate the effect of seedling blight (SB) on seedling quality, growth and yield of rice	200
28.	Effect of soil and seedling treatment on False smut disease development	To know the efficacy of both soil and seedling treatment for controlling false smut disease	250
29.	Chemical control of grain spot disease of rice	To identify suitable chemicals to control grain spot disease	200
30.	Validation of healthy seedling raising technique at farmers' level	Efficacy of disease free seedling raising technique in trays and field To know the difficulties/suitability of raising seedling in trays instead of field	300

		and the farmers' attitude	
31.	Management of Bakanae disease through integrated approach	To find out the organic amendments for controlling bakanae disease	100
32.	Management of Kresek (*Xanthomonasoryzae* pv. *oryzae*) in rice seedling	To identify suitable control measure for controlling Kresek disease of rice	50
33.	Efficacy of biopesticides against sheath blight of rice	To investigate the effect of biopesticides against fungal growth *in-vitro* To investigate the effect of bio-pesticides in disease reduction, plant growth and yield	100
34.	Isolation, screening and identification of effective microbes against *R. solani* causing sheath blight sheath of rice	To isolate antagonistic fungi and bacteria from different sources To test their potency against *R. solani* To characterize and identify the effective microbes	100
35.	Application of fungicides to control rice false smut disease.	To identify the time of fungicide application and to find out its frequency in order to control rice false smut disease.	100
36.	Evaluation of new chemicals against Blast, ShB, False smut, Bakanae and BB diseases of rice	To find out the effective chemicals suitable for Blast, ShB, False smut, Bakanae and Bacterial blight diseases	400
37.	Training on rice disease management and healthy seed production (MIAD project)	To train up extension personnel and farmers on rice disease management and healthy seed production	200
38.	Field demonstration of integrated management of major rice diseases (MIAD project)	To demonstrate disease management package at farmers' field	200
39.	Field demonstration of integrated management of major rice diseases (PGB project)	To demonstrate disease management package at farmers' field	300
40.	Training on Rice Disease Management (PGB porject)	To train up farmers on rice disease management and healthy seed production	200
41.	Management of Sheath blight disease utilizing *Trichodermaharzianum* (PGB project)	To investigate the efficacy of *Trichodermaharzianum*	200
42.	Identification of crop damage phenomenon by red eelworm and their management (PGB project)	To identify whether red eelworm cause significant crop damage or not and formulate sound management strategy to control the pathogen if they are	100

		pathogenic.	

Rice Farming Systems

Proposed Research Program 2016-17

Sl. No.	Program /Project	Major Objective	Annual budget (lakh Tk)
01	1. Rice Farming Systems Division		
	Project 1: Survey	To create farming systems database for Bangladesh.	80.00
	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
	Project 2: Development of Resource Conservation Technologies	To generate and evaluate resource saving farming systems technologies for increasing farm income	2.50
	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
	Expt.2.2. Evaluation of establishment method of Mustard-Boro-T. Aman cropping pattern in medium highland ecosystem	To find out the effect of establishment method on rice, non-rice and soil properties	1.50
	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	9.95
	Expt 3.1.Rice variety for sustainable productivity of Boro-Fallow-T. Aman cropping	To evaluate the short duration Aman variety for sustaining the productivity and long term	0.50

	system	feasibility of rice variety of Boro-Fallow-T. Aman cropping pattern.	
	Expt. 3.2. Development of integrated vegetable**s, fish and fruit** system for shallow mini pond	To develop farming system technology for diversifying and maximizing productivity using aquatic systems	0.50
	Expt. 3.3. 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. 3.4.Evaluation of vegetables intercropping in maize based cropping pattern in Chuadanga	To indentify the suitable intercrop combination to improve the Maize-Fallow-T.Aman and Maize -Sweet gourd-T.Aman cropping pattern	0.90
	Expt. 3.5. 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. 3.6. Validation of four crop cropping pattern in Kushtia region	To verify the performance of four crop cropping pattern in Kushtia region	0.80
	Expt. 3.7. 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. 3.8. 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. 3.9. 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. 3.10. Evaluation of BRRI dhan48 as late Boro rice in Potato-Boro-T. Aman cropping	To find out the performance and appropriate seedling age of BRRI dhan48 as late Boro rice	0.80

	system in medium highland irrigated ecosystem	after potato	
	Expt. 3.11. Evaluation of Potato-Boro-T. Aman cropping pattern in Rangpur region	To minimize yield loss and maximize the productivity of Boro rice through adoption of new variety after potato	2.5
	Project 4. Development of Cropping Systems and Component Technologies for Deep water ecosystem	To develop agro-economically profitable cropping patterns and component technologies for Deep water ecosystem	1.80
	Expt. 4.1. 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	11.50
	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 tillage and crop establishment method in rice-mustard-rice cropping systems	To compare the productivity and resource uses of rice-mustard-rice adopting reduced tillage and mechanized transplanting with conventional practice.	2.00
	Expt.5.3. Validation of agronomic options in Boro rice under Boro-Fallow-T. Aman cropping pattern in saline soils	To validate the effect of variety and seedling age in Boro rice in saline gher and non-gher area	2.00
	Expt. 5.4. Evaluation of integrated rice, fish and vegetables system in saline ghers	To evaluate the salt tolerant rice varieties, validate the feasibility of vegetables in the dykes in saline ghers.	3.00
	Expt. 5.5. Validation of integrated rice, fish and vegetables system in **Ghers**	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	4.85
	Expt. 6.1. Evaluation of	To validate musk melon	1.60

	intercropping system in tidal non saline ecosystem	intercropping for increasing the productivity of three crop system	
	Expt. 6.2. Validation 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 *Sorjan* system	To increase production and make vegetables available round the year	0.60
	Expt. 6.4. Adaptive trial of BRRI 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
	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 BRRI 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
	Expt 8.1. System productivity increase through rice-duck farming	i) To increase total productivity and maintain soil fertility of the rice field.	1.50
	Expt 8.2. Rice fish culture in low-land area for increasing farm productivity	To increase total productivity of the system	1.50
	Expt. 8.3. Validation of double transplanting at low lying area (haor **area)** under Boro-Fallow-Fallowcropping pattern	To evaluate the performance of double transplanted rice, avoid the risk from early flash flood and to maximize the productivity.	0.50
	Expt 8.4. Productivity increase through improved Aroids-T. Aman cropping pattern	i) To increase productivity of the system	0.80

	Project 9: Validation and Delivery of cropping of Systems Technology	To disseminate agro-economically profitable farming systems technologies under different ecosystem	20.50
	Activity 9.1. 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
	Expt. 9.2. Validation of Tomato-Mungbean-DS Aman cropping pattern in Rajshahi region	To validate agro-economic performance of the pattern	0.50
	Project 10. Capacity building and technology transfer	To improve the knowledge base of extension personnel and farmers	2.30
	Activity 10.1. Farmers' training on different cropping systems activities	To improve capacity of the farmers for enhancing adoption of cropping systemtechnologies	1.50
	Activity 10.2. Field days on different cropping systems activities	To motivate farmers for adoption of technologies	0.80
	Project 11. Research and Development under cross cutting issues	To improve the productivity of different farming system component	5.00
	Activity 11.1. Performance of exotic date palm (*Phoenix dactylifera*) 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 Statistics Division

Proposed Research Programme_2016-17

SN	Program area/ Project	Major Objective	Annual Budget (lac TK.)
1.	Stability Analysis of BRRI Varieties	1. To determine the stability index of BRRI released varieties 2. To generate season, year and location-wise database on BRRI varieties. 3. To identify high yielding rice varieties having wide adaptation and/or specific adaptation to environment	4.50
	1.1 Experiment/Study: Study on G X E interaction of BRRI varieties (In collaboration with pl. Breeding div., Plant Physiology div., ARD and all R/S)	1. To determine the stability index of BRRI varieties 2. To maintain season, year and location-wise database on BRRI varieties.	2.50
	1.2 Experiment/Study: Stability and Adaptability of BRRI Released Aus Varieties in Different Locations of Bangladesh (In collaboration with Agronomy Div. and BRRI Regional Stations)	1. To identify high yielding aus rice varieties having wide adaptation and/or specific adaptation to environment and 2. To assess the environment and variety interaction and varietal adaptability across different the environments 3. To determine the stability index of the variety using the BRRI developed stability model.	1.50
2.	Multivariate Analysis of BRRI Varieties	1. To identify consumers' perception towards BRRI released rice varieties. 3. To find out the acceptability and assess the regional yield performance, major problems and farmer preference for cultivation of BRRI dhan62 and BRRI dhan72 in Bangladesh. 3. To maintain up-to-date computerized information on rice and related crops.	4.00
	1.1 Experiment/Study: Assessment of consumer's preference for BRRI released rice varieties in Bangladesh (In collaboration with Agril. Econ. Div., GQN and GRS)	1. To find out the most important attributes that consumers consider when purchasing rice. 2. To identify consumers' perception towards BRRI released rice varieties. 3. To determine the attributes for which consumers are willingness to pay for BRRI	1.50

SN	Program area/ Project	Major Objective	Annual Budget (lac TK.)
		released rice varieties	
	1.2 Experiment/Study: Prospects of BRRI dhan62 cultivation in Bangladesh	1. To find out the acceptability of BRRI dhan62 in Bangladesh. 2. To assess the regional yield performance of BRRI dhan62. 3. To identify the major problems of BRRI dhan62 with respect to farmers perspectives. 4. To determine farmer's preference for cultivation of BRRI dhan62 in Bangladesh.	1.50
	2.3 Activity: Maintenance of rice database	To maintain up-to-date information on rice and related crops	1.00
3.	Crop Modeling	1. To enrich the technical capacity for crop monitoring using daily weather forecasting. 2. To identify the location specific BRRI released rice varieties in Bangladesh. 3. To estimate Standardized Precipitation Index (SPI), drought index (DI) for different threshold values of rainfall of all meteorological stations in Bangladesh.	11.00
	3.1 Experiment/Study: Seasonal Weather Forecasting for Rice Production in Bangladesh (In collaboration with Plant Physiology Div., Entomology Div., Plant Pathology Div., Soil Science Div., Agril. Econ. Div., IWM Div. and All R /S of BRRI)	1. To develop a suitable model for forecasting seasonal weather 2. To enrich the technical capacity for crop management using seasonal weather forecasting	10.00
	3.2 Experiment/Study: Effects of edaphic and climatic factors on yield of BRRI released varieties in Bangladesh	1. To identify the location specific BRRI released rice varieties in Bangladesh 2. To assess the possible change in yield of BRRI released rice varieties due to differentedaphic and climatic factors	1.00

	3.3 Experiment/Study: Identification of Drought Prone Area in Bangladesh through Standardized Precipitation Index (SPI) and Markov Chain Model (In collaboration with IWM Div.)	1. To explore yearly and seasonal variability of drought based on different threshold level of rainfall. 2. To estimate Standardized Precipitation Index (SPI), drought index (DI) for different threshold values of rainfall for all meteorological stations in Bangladesh. 3. To characterize the drought prone region of Bangladesh. 4. Construct different types of GIS Maps according to drought prone area in Bangladesh.	
4.	Utilization of Geographical Information System (GIS) in Rice Research	1. To construct suitability and zonal map of newly released BRRI rice varieties. 2. Mapping Groundwater depth, variability and flow direction of groundwater study area.	3.00
	4.1 Experiment/Study: Rice zoning of BRRI varieties (In collaboration with Plant Breeding Div., Soil Science Div., ARD and RFS Div.)	1. To construct suitability map of newly released BRRI rice varieties. 2. To construct upazila wise zonal map of newly released BRRI rice varieties.	2.00
	4.2 Experiment/Study: Identification of suitable area of irrigated Boro rice based on groundwater level (In collaboration with IWM Division)	1. To determine depth, variability and flow direction of ground water study area. 3. To identify impact of groundwater depth on Boro rice production 4. Identify vulnerable area of Boro rice with respect to groundwater fluctuation of the study area.	1.00
5.	Capacity building through Training	To train up BRRI scientists on experimental data analysis using statistical software.	2.0
	5.1 Activity: Training Program on "Experimental Data Analysis"	1. To train up BRRI scientists on experimental data analysis using Statistical software. 2. To make BRRI scientists self dependent on experimental data analysis. 3. To developed skills on research planning, program and report writing.	2.0
6.	Information and Communication Technology (ICT)	To manage and maintain ICT at BRRI	
	6.1 Activity: LAN and internet connectivity of BRRI regional station (R/S).	1. To setup Local Area Network (LAN) for all regional station of BRRI. 2. To setup Internet connectivity for all regional station of BRRI. 3. To manage and maintain LAN & Internet connectivity of BRRI regional station.	10.0

	6.2 Activity: Online application system of BRRI	1. To develop "e-Application System Software (e-ASS)". 2. To host "e-ASS" under national data center server. 3. To manage and maintain "e-ASS" through regular updating of the information and documents.	5.50
	6.3 Activity: e-File management system of BRRI	1. To setup "e-File Management Software" for administration, Accounts and finance division of BRRI for establishing e-Governance. 2. To setup "e-File Management Software" for maintaining and reporting the results of financial transaction.	2.00
	6.4 Activity: Mobile Apps of "RKB" (Rice Knowledge Bank)	1. To develop the blank pages and modify the design of "RKB". 2. To manage and maintain "RKB" through regular updating of the information and documents.	2.00
	6.5 Activity: e-Tender system of BRRI	1. To introduce the online tendering system to facilitate the procurement process of BRRI. 2. To participate in the local and international tender/procurement of BRRI. 3. To ensure adequate infrastructures and enhance skills and awareness of both the procuring officials and the tenderers.	2.50
	6.6 Activity: BRKB Website Management	1. To develop the blank pages and modify the design of BRKB Website. 2. To manage and maintain BRKB Website through regular updating of the information and documents.	2.00
	6.7 Activity : Management Information System (MIS) of BRRI	1. To Manage and maintain MIS of BRRI 2. To get BACKUP of MIS (9 modules) every day.	1.50
	6.8 Activity: BRRI Web Portal Management	1. To develop the blank pages and modify the design of BRRI Web Portal. 2. To manage and maintain BRRI Web Portal through regular updating of the information and documents.	1.50
	6.9 Activity: Management of BRRI network and internet connectivity	1. To increase the bandwidth connectivity from 35 Mbps to 40 Mbps or more. 2. To manage and maintain ICT network of BRRI.	1.50

	6.10 Activity: Facebook Group "BRRI Networks" update, maintenance and extension	1. To increase and stimulate awareness to all visitors of facebook group through 'BRRI Networks'. 2. To extend, manage, update and maintain 'BRRI Networks' regularly. 3. To promote all activities, where only official interactions, various problems and theirs solutions can be post.	0.50
	6.11 Activity: Digital Signature Certificate of BRRI	1. To make digital service in BRRI for initiating e-File management 2. To develop proper integrity, accountability and confidentiality 3. To develop e-Administration using digital signature certificate	1.50
	6.12 Activity: Web mail and Group mail of BRRI	1. Develop Web mail and Group mail id with password as require for all scientists and officers of BRRI. 2. To manage, maintain and update regularly as routine work web mail and group mail of BRRI.	0.50
	6.13 Activity: Personal Data Sheet (PDS) of BRRI	1. To develop "Personal Data Sheet (PDS)" database for all scientists, officers and stuffs of BRRI. 2. To get BACKUP of "Personal Data Sheet (PDS)" database regularly. 3. To manage and maintain PDS database through regular updating of the information and documents.	0.50
	6.14 Activity: Video Conference System of BRRI	1. To develop "Video Conference System of BRRI" for administration, all divisional head and regional station head of BRRI. 2. To develop "Video conference system of BRRI" for research, administration works and innovative interactions.	20.00
	6.15 Activity: Heritage of BRRI	1. To develop and preserve all past document as digital document named "Heritage" for all scientists, officers, staffs and all workers of BRRI. 2. To manage and maintain BRRI Heritage through regular updating with the information and documents.	0.50

Agricultural Economics Division

Proposed Research Program 2016-17

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, 2016 - June, 2017 (Routine work)	✓ To determine the region-wise adoption rate of different MVs in Aus, T. Aman and Boro, seasons; ✓ To estimate the yield of different modern and local rice varieties in different seasons; and, ✓ To determine the socio-economic and varietal constraints to the adoption of MVs in different regions.	5,00,000.00
Sub-sub Program: II. Production Economics			
3.2	Estimation of Costs and Return of MV Rice Cultivation at the Farm Level Duration: July, 2016 - June, 2017 (Routine work)	✓ To determine the costs and returns of MV Aus, T. Aman and Boro rice cultivation in Bangladesh; ✓ To estimate the factor and income share of MV rice cultivation in different seasons; and, ✓ To evaluate the changes in costs and returns and inputs utilization pattern over the years.	5,00,000.00
3.3	Tracking of Climate Resilient Rice Varieties Developed by BRRI and its Socio -Economic Performances at the Farm Level Duration: July, 2014- June, 2017	✓ 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
3.4	Rice Cultivation in Newly Independent Enclaves of Bangladesh: A field level	✓ To examine the adapted rice production practices and	4,00,000.00

	investigation Duration: July, 2016- June, 2018	technologies including variety ; ✓ To investigate the process of getting inputs and selling outputs; ✓ To identify the constraints of rice production in the claves; and, ✓ To recommend policy measures	
Sub-sub Program: III. Rice Marketing & Price Policy			
3.5	Marketable and Marketed Surplus of Rice in Selected Areas of Bangladesh Duration: July, 2016 - June, 2018	✓ To estimate marketable and marketed surplus of paddy/ rice by farm size; ✓ To examine the factors responsible for household's marketed surplus; and, ✓ To suggest policy implication for improving marketed surplus of rice in Bangladesh.	4,00,000.00
3.6	Effectiveness of *Boro* Rice Procurement Program in Some Selected Areas of Bangladesh Duration: July, 2016 - June, 2018	✓ To examine the present structure and functions of paddy/rice procurement program in Bangladesh; ✓ To evaluate the performance of the public paddy/rice procurement program; ✓ To observe farmer's and miller's perception about the public procurement system of rice and evaluate its benefit for the respective stakeholders; and, ✓ To find out the drawbacksof the program.	5,00,000.00
Sub-sub Program: IV. Agricultural Policy & Development			

3.7	Performance Evaluation of Rice-based Post-harvest Technologies: Evidence from Gender Lens Duration: July, 2016 - June, 2017	✓ To evaluate the implication of improved rice based post-harvest technologies intervention in terms of reducing losses and increasing farm productivity from gender perspectives; ✓ To assess the impact of post-harvest technologies on receiver and non-receiver; ✓ To enlist the best indigenous practice/knowledge, if any, related to post-harvest activities in a particular crop across the sites; ✓ To identify the major problems and constraints faced by the farmers, especially women; and, ✓ To suggest policy implications for reducing losses as well as increasing farm productivity.	8,00,000.00
3.8	Policy Advocacy for Averting Rice Price Fall at Immediate Harvesting Period Duration: July, 2016 - June, 2017	✓ To investigate the bottle-neck for rice price fall after immediate harvesting; and, ✓ To suggest policy advocacy for averting rice price fall.	2,00,000.00
3.9	Constraints of Agricultural Credit and Its Impact on Rural Farm Household Welfare in Bangladesh Duration: July, 2016 - June, 2017	✓ To provide an overview of rural credit market and credit constraints; ✓ To identify the factors affecting households access to formal credit; and, ✓ To evaluate the effects of credit constraints on rural farm household welfare	5,50,000.00

3.10	Impact of Rice Production Training on DAE Personnel (SAAOs) Duration: July, 2016 - June, 2017	✓ 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 BRRI technologies; and, ✓ To suggest guidelines for improvement of SAAOs training curriculum/module.	75,000.00

Farm Management Division

Table 3: Proposed Research Program 2016-17

Sl. No.	Program area/Project (Duration)	Major Objectives	Annual Budget (Lak. TK)
	1. Program Area: Socioeconomic and Policy		
03	Farm Management Division		
	• 3.1.Project : Rice production management		
	• 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
	• Expt.2. Seed quality of different T. aman rice as affected by rain fed condition in ripening phase	-To investigate the seed quality of T. aman rice as affected by drought at ripening phase	0.25

	• Expt.3. Effect of quality seed and farmers' seed for seed production and; yield gap between quality seed and farmers' seed used plots TLS, Breeder, 4-5 local farmers' seed of following varieties from Barisal / Rangpur,/ Rajshahi, / Satkhira,/ Khulna,/ Barisal, /Rangpur,/ Rajshahi will be collected 1. <u>Rice variety for Boro</u> <u>BRRI dhan 28/</u> BRRI dhan 29/ BRRI dhan47	-To identify the seed effect on probable yield gap between quality seed and farmers' seed. Seek the possibilities to increase rice yield through quality seed that could be useful at policy level.	0.50
	• Expt.4. Effect of tillage operation on the productivity and profitability of rice cultivation	- To find out the suitable tillage operation for boro rice cultivation	0.25
	• Expt.5. Agronomic management of rice sheath blight disease in natural condition for seed production	To identify individual and interaction effect of different option of sheath blight disease management in seed production	0.25
	• Expt.6. Effect of organic matter on soil properties and yield of rice	1) To find out the effect of kitchen waste and bio-slurry on yield of rice 2) To evaluate the better source of organic matter for improvement of rice soil health	0.25
	• Expt.7. Effect of different organic decomposer on the growth and yield of rice	1) To evaluate the different organic decomposer on the growth and yield of rice	
	• Expt.7.1. Enhancement of disease tolerance and crop growth through application of organic herbs /decomposer	i)To evaluate the effectiveness of organic herbs /decomposer ii) To enhance disease tolerance and crop growth	0.25
	• Expt.7.2. Improvement of spikelet fertility through application of bio-decomposer	i) To evaluate the effective ness of organic decomposer. ii) To improve spikelet fertility.	0.25

	• Expt.7.3. Slenderness of bold grain rice using decomposers	i) To evaluate the effectiveness of organic decomposer ii) To improve slenderness of bold grain	0.25
	• Expt.7.4. Yield maximization through application of bio-decomposers	i) To evaluate the effectiveness of bio-decomposer ii) To maximize the grain yield	0.25
	3.2. Project: Survey and development of data base for labor management.		
	• 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
	3.3. Project: Management and utilization of land and other resources. These include: • 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= 53.75

Farm Machinery and Postharvest Technology Division

Proposed Research Programme 2016-2017

(In lakh Tk.)

SI. No.	Programme area/ Project with duration	Major Objective	Annual budget
1.	Development of Agricultural Machines	• Development of farm machinery adaptable to rice eco-system • Reduction of human drudgery	
1.1	Evaluating and modifying of BRRI developed machines Duration: 01-07-1998 to 30-06-2016	• To verify the quality of BRRI machines • To identify the functional problems of farm machines • To improve the performance of farm machines	1.0
1.2	Design and development of a head feed power thresher Duration: 01-07-2013 to 2017	• To develop a head feed thresher	1.0
1.3	Development of seedling raising technique for mechanical tranplanter in cold season Duration: 01-07-2015 to 2018	• To observe the effect of different soil media • To observe the effect of covering material • To observe the mat formation in different treatment combination	0.5
1.4	Design and development of Single and double row conical weeder Duration: 01-07-2014 to 30-06-2017	• To design, fabricate and develop a Singleand double row conical weeder suitable for weeding both in lowland and upland fields • To compare with other dry and wet land weeder	1.5
1.5	Development of a inclined plate type seeder machine Duration: 01-07-2015 to 30-06-2017	• To design and fabricate a inclined plate seeder machine • To evaluate the performance of inclined plate type seeder machine	0.5
1.6	Development of power operated rice transplanter Duration: 01-07-2015 to	• To fabricate transplanter • To evaluate the performance of locally fabricate power rice transplanter	0.5
1.7	Design and development of a pull type granular urea applicator Duration: 01-07-2015 to 30-06-2018	• To develop a manually operated pull type three rows granular urea a pplicator • To observe the performance of the applicator	0.5
1.8	Design and development of Mini Combine harvester Duration: 01-07-2015 to 30-06-2016	• To fabricate a combine harvester • To evaluate the performance of the combine harvester and compare with imported machine	10.0

SI. No.	Programme area/ Project with duration	Major Objective	Annual budget
1.9	Modification of drum seeder Duration: 01-07-2015 to	• To develop a manually operated pull type drum seeder • To observe the performance of the newly developed drum seeder	1.0
1.10	Development of handle type manual rice transplanter for small farmers Duration: 01.07.2016 to 30.06.2017	• To develop a hill dispensing seeder	1.5
1.11	Development of manual seed sower machine for raising mat type seedling Duration: 01.07.2016 to 30.06.2017	• Design and fabrication of manual seeds sower machine • Performance evaluation of seeds sower machine	1.0
1.12	Performance evaluation of power operated seed sower machine Duration: 01.07.2016 to 30.06.2018	• To observe the performance of the seed sower machine • To calibrate the sower machine for different rice variety.	1.0
1.13	Test and modification of reaper binder Duration: 01.07.2016 to	• To evaluate the performance of the binder • To identify the functional problems	3.0
1.14	Field evaluation of minimum tillage unpuddle rice transplanting Duration: 01.07.2016 to	• To compare the agronomic performance • To identify the problem	2.0
1.15	Modification and Evaluation of Closed Drum Thresher Duration: 01.07.2016 to	• To develop power operated chopping machine • To enhance the performance of chopper	2.0
2.	Milling and Processing Technology	• To reduce loss, improve quality and addition of value to the farm products	
2.1	Comparative performance of different types of mechanical dryer Duration: 01-07-2014 to 30-06-2016	• To evaluate the performance of different types of mechanical dryer	1.0
2.2	Design and development of solar dryer Duration: 01-07-2014 to 30-06-2017	• To design, fabricate and develop a batch type solar dryer • To compare with traditional sun drying of paddy	1.0
2.3	Design and development of bin type dryer	• To design and development of a bin type dryer	1.0

SI. No.	Programme area/ Project with duration	Major Objective	Annual budget
	Duration: 01-07-2016 to 30-06-18	• To evaluate the performance of bin type dryer	
2.4	Improvement of air blow type engelberg huller mill Duration: 01-07-2015 to 30-06-2017	• 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	2.0
2.5	Test, evaluation and modification rubber roll de-husker Duration: 01-07-2015 to 30-06-2018	• To modify and development of a rubber roll de-husker • To evaluate the performance of paddy de-husker	3.0
2.6	Study the milling recovery of long grain rice varieties in commercial mill Duration: 01.07.2016 to 30.06.2018	• To compare the milling recovery of processed rice in different rice mill • To evaluate head rice and broken rice percentage	3.0
3.	Development of stores and storage technology	• To increase shelf life of rice in store	
3.1	Study the storage quality under different degree of milled rice Duration: 01-07-2015 to 30-06-2018	• To study the quality deterioration of milled rice stored in different storage structure • To find the feasibility of storage structure	1.0
4.	Renewable Energy Technology	Development of renewable energy extraction technologies from solar, agri-residues and waste products	
4.1	Study bio-gas production and storage for commercial use Duration: 01.07.2016 to 30.06.2018	• To produce biogas from cow dung / agri-residues / waste product • To store biogas for commercial use	1.0
4.2	Study the briquette production from rice byproduct Duration: 01.07.2016 to 30.06.2018	• To prepare briquettes from rice straw and husk • Characterization of different briquettes originated from agricultural residue • To measure the calorific value of the briquettes	1.0
5.	Popularization of BRRI developed farm machinery and Postharvest technology	• Awareness build up about the benefit of using BRRI machines among the farmers • Motivation of the local manufacturer to manufacture the BRRI agricultural machinery	

SI. No.	Programme area/ Project with duration	Major Objective	Annual budget
5.1	Industrial and farm level extension of BRRI machinery and Postharvest technology Duration: continuous programme	• To create awareness and demonstrate the benefit of using BRRI machines among the farmers • To motivate the local entrepreneurs to manufacture BRRI developed machinery	10.0
5.2	Training on operation, repair and maintenance of BRRI farm machinery Duration: continuous programme	• To improve the operational skill of farm machinery operators/driver/farmers • To sharpen knowledge of end users on safety, repair & maintenance and management	10.0
5.3	Field trial, training and dissemination program on BRRI farm machineries at Pirojpur-Gopalgonj-Bagerhat Integrated Agricultural Development Project Duration: 01-07-2014 to 30-06-2017	• 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	10.0

Workshop Machinery and Maintenance

Proposed Research Programme 2016-17

Sl. No.	Prorgramme 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	• 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	• 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	• To design and develop a power tiller operated grain cleaner • To incorporate safety measures with power tiller operated grain cleaner	25.00

4	Design and development of fungal spore collector	• 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	• 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	• 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	• 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	• 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	• To maintain maximum performance of the machinery, automobiles and equipments • To utilize them efficiently at any time	100.00
10	Study on adoption level of agricultural machinery in farmers' field	• To investigate on adoption level of farm machinery by the farmers • To disseminate the benefits of farm machinery use over traditional method	150.00
11	Survey on status and constraint of farm machinery used in farmer's field at selected areas	• To investigate the machinery used by the farmers • To identify the problems of theses machinery to use it • To find out the machinery demand of the farmers.	150.00

Adaptive Research Division

Proposed Research Program: 2016-17

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.	2960
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	1.1. ALART (B. Aus), 2016 4 Advanced lines and 1 Standard checks- BRRI dhan42. 09 locations: Gazipur, Naogaon, Natore, Rajshahi, Kushtia, Chuadanga, Faridpur, Habiganj, Sylhet PI: Md. Rafiqul Islam, PSO, ARD CI: Other ARD Scientists, Scientists PBD and RS	To recommend rainfed B. Aus genotypes based on ALART result.	210
1.1.2	ALART (T. Aus), Comilla-Region, 2016 2 Advanced line and 1 susceptible check- BRRI dhan48. 09 locations: Gazipur, Comilla, Chandpur, B. Baria, Feni, Noakhali, BRRI RS Comilla PI: Dr. Md. Atiqul Islam, PSO, ARD CI: Other ARD Scientists, Scientists PBD and RS	To recommend rainfed T. Aus genotypes based on ALART result.	250

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
1.1.3	ALART, B. Aman (DWR) 2016 4 advanced lines and 2 standard checks- Hobigonj Aman 1, local ck. 09 locations: Sylhet Habigonj Faridpur Gopalganj Shirajganj, Tangail Pabna Shunamganj Natore PI: Dr. Md. Humayun Kabir, PSO, ARD CI: Other ARD Scientists, Scientists PBD and RS	To recommend B. Aman (DWR) genotypes based on ALART results.	300
1.1.4	ALART, Biotechnology, T. Aman 2016 2advanced lines and 1 standard checks- BRRI dhan49. 10 locations: Gazipur Sherpur Natore Sylhet Khulna Feni Chittagong Jessore Rangpur Barisal. PI: Dr. Md. Atiqul Islam, PSO, ARD CI: Other ARD Scientists, Scientists PBD and RS	To recommend T. Aman (Biotechnology) genotypes based on ALART results.	350
1.1.5	ALART, Micronutrient Enriched Rice (MER), T. Aman 2016 5advanced lines and 3standard checks- BRRI dhan39 & BRRI dhan49 & BRRI dhan72. 10 locations: Gazipur Sherpur Natore Sylhet Khulna Feni Chittagong Jessore Rangpur Barisal. PI: Dr. Md. Atiqul Islam, PSO, ARD	To recommend T. Aman (MER) genotypes based on ALART results.	200

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
	CI: Other ARD Scientists, Scientists PBD and RS		
1.1.6	ALART, Rainfed Lowland Rice-1 (RLR-1), T. Aman 2016 3 advanced lines and 1 standard checks- BRRI dhan39 10 locations: Gazipur Sherpur Natore Sylhet Khulna Feni Chittagong Jessore Rangpur Barisal PI: Dr. Md. Atiqul Islam, PSO, ARD CI: Other ARD Scientists, Scientists PBD and RS.	To recommend T. Aman (RLR-1) genotypes based on ALART results.	250
1.1.7	ALART, Rainfed Low land Rice-2 (RLR-2) during T. Aman, 2016 2 Advanced lines/ 2 checks Lal swarna, Local swarna 08 Locations: Gazipur, Rajshahi, Panchogar Naogaon Chapai Nababgonj Nilphamari Thakurgaon Rangpur PI: Dr. Md. Humayun Kabir, PSO, ARD CI: Other ARD Scientists, Scientists PBD and RS	To recommend T. Aman (RLR-2) genotypes based on ALART results.	250
1.1.8	ALART, Rainfed Low land Rice-3 (RLR-3) during T. Aman, 2016 5Advanced lines/ 2 checks BR11 and BRRI dhan49 08 Locations: Gazipur, Rajshahi, Panchogar Naogaon Chapai Nababgonj Nilphamari Thakurgaon Rangpur PI: Dr. Md. Humayun Kabir, PSO, ARD CI: Other ARD Scientists, Scientists PBD and RS	To recommend T. Aman (RLR-3) genotypes based on ALART results.	250
1.1.9	ALART (Boro) 2017	Some advanced lines will be	900

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
	Advanced lines/Checks will be supplied by Plant Breeding, Biotechnology and Hybrid Rice Divisions in coming November after Varietal Development Program area meeting. PI: PSO, ARD (selected later) CI: Other ARD Scientists, Scientists PBD and RS	recommended for Proposed Variety Trial (PVT) from which a few lines will be released as varieties.	
Project 2: Dissemination of Technologies PL: Dr. Md. Shafiqul Islam Mamin		Conducting on-farm trials for dissemination of newly released rice production technologies.	3160
2.1	Seed Production and Dissemination Program (SPDP) (Note: Other technologies such as USG, Poultry manure will be included with SPDP) under GoB	Rapid dissemination of BRRI varieties through quality seed production by the farmers' themselves.	
2.1.1	SPDP, B. Aus 2016 under GOB Var: BRRI dhan43 and BRRI dhan65 Locations:Rajbari (Sadar & Kalukhali); Magura (Mohammadpur & Shailikupa) Sylhet (Bishanath and Golapganj) PI: MHR Mukul CI: B Karmakar and R Islam	i. To enhance adoption and dissemination of BRRI released B. Aus rice varieties. ii. To get feedback information from the Farmers' and DAE personnel about the demonstrated rice varieties during Aus season.	170
2.1.2	Rice Cultivation in Jhum and Vally of Hilly Areas under GOB . Var: Jhum (As B.Aus): BRRI dhan43, BRRI dhan65 (1 bigha/variety) in Vally (As T. Aus): BRRI dhan55 (1 bigha) Locations:Bandorban (Sadar and Roanchari), Rangamati (Sadar and Kapti) and Khagrachori (Sadar, Dighinala, Matiranga and	i.To enhance adoption through dissemination of BRRI released Aus rice varieties in the hill (Jhum) and valley of Hill. To increase the productivity of existing jhum cultivation by introducing BRRI released HYV of Aus rice ii. To get feedback information from the	200

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
	Mohalchari) PI: Dr. Md. H Kabir CI:B karmakar, MHR Mukul R Barua and MR Biswash, ARD	farmers' and DAE personnel about the demonstrated rice varieties during Aus season.	
2.1.3	SPDP, T Aus 2016 under Transforming Rice Breeding (TRB) Project Varieties and locations: 1 bigha/variety/upazila (4 bighas in cluster) Locations:Rajshahi, Chuadanga PI: Dr. Biswajit Karmakar, SSO, ARD, BRRI, Gazipur. CI: Mr. Bulbul Ahmed, SO, TRB project, ARD, BRRI, Gazipur	To enhance adoption through dissemination of BRRI released Aus rice varieties in the project areas	140
2.1.4	SPDP with USG application during T. Aman 2016. Var: BRRI dhan34, 41, 49, 52, 54, 56, 57, 62, 66, 71, 72 & 73. Locations: 32 upazilas under 16 districts (Gaibandah , Thakurgaon, Panchaghar, Chapai Nawabganj, Naogoan, Khulna, Jessore, Jhalokathi, Pirojpur, Gazipur, Rajbari, Netrokona, Sherpur, Chaittagong, Cox's Bazar & Sylhet) PI: Dr. Md. Humayun Kabir, PSO, ARD CI: Other ARD scientists.	i. To enhance adoption through dissemination of BRRI released varieties during T. Aman season. ii. To get feedback information from the farmers' and DAE personnel about the demonstrated rice varieties during T. Aman season.	400

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
2.1.5	SPDP with USG application during T. Aman, 2016 under MIADP. Var: BRRI dhan49, 57 & 62. Locations: Jhenaidah, Chuadanga, Meherpur, Kushtia. PI: B. Karmakar CI: Other ARD Scientists	To disseminate BRRI varieties during T. Aman season in the MIADP project implementing areas.	250
2.1.6	SPDP, T. Aman 2016 under Transforming Rice Breeding (TRB) Project Varieties and locations: 1 bigha/variety/upazila (4 bighas in cluster) Locations: 14 upazilas under 14 districts. (Rajbari, Netrakona, Mymensingh, Khulna, Satkhira, Rajshahi, ChapaiNawabganj, Naogoan, Dinajpur, Comilla, Chittagong, Cox'sbazar, Sylhet&Moulivibazar). PI: Dr. Biswajit Karmakar, SSO, ARD, BRRI, Gazipur. CI: Mr. Bulbul Ahmed, SO, TRB project, ARD, BRRI, Gazipur	To enhance adoption through dissemination of BRRI released Aus rice varieties in the project areas	400
2.1.7	SPDP with USG application during Boro 2017. Var: BRRI dhan47, 58, 60, 63, 67, 68, 69 & 74 (Different varieties in different locations) Locations: 18 upazilas under 17 districts (Gopalgonj, Sherpur, Rajbari,	i. To enhance adoption and dissemination of BRRI released varieties during Boro season. ii. To get feedback information from the Farmers' and DAE personnel about the demonstrated rice varieties during Boro season.	600

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
	Netrokona, Khulna, Chaittagong, Gazipur, Dinajpur, Cox's Bazar, Comilla, Sylhet, B.Baria, Bogra, Panchagor, Bhola, Noagoan & Gaibandha) PI: MHR Mukul CI: Other ARD Scientists		
2.1.8	SPDP, Boro 2017 under Transforming Rice Breeding (TRB) Project Varieties and locations: 1 bigha/variety/upazila (4 bighas in cluster) Var: BRRI dhan58, 63, 67, 69 & 74 (Different varieties in different locations) Locations: 10 upazilas under 8 districts. (Netrakona, Mymensingh, Khulna, Jessore, Comilla, Chittagong, Cox'sbazar, Sylhet&Moulivibazar). PI: Dr. Biswajit Karmakar, SSO, ARD, BRRI, Gazipur. CI: Mr. Bulbul Ahmed, SO, TRB project, ARD, BRRI, Gazipur	To enhance adoption through dissemination of BRRI released Aus rice varieties in the project areas	1000
Project 3: Promotional activities PL: Dr. Md. Shafiqul Islam Mamin		To update knowledge and skill of farmers on modern rice cultivation technology.	1600
3.1	Farmers' Trainings on modern rice production technologies under GoB, MIADP & TRB during Aus 2016, Aman 2016 & Boro 2017. 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.	1000

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (Thousand Tk.)
3.2	Field Days under GoB, MIADP & TRB during Aus 2016, Aman 2016 & Boro 2017. . PI: B. Karamkar CI: Other ARD Scientists	1.To create awareness and interest among farmers, local leaders, elite persons, NGO workers and DAE personnel about BRRI varieties and technologies. 2.To promote dissemination and get feedback about BRRI technologies from farmers.	600
Project 4: Enrichment of own seed stock PL: Dr. Md. Shafiqul Islam Mamin		Production of BRRI varieties in different growing seasons.	150
4.1	Seed production of newly released and other popular BRRI varieties during Aus, 2016, Aman 2016 and Boro 2017. Location: BRRI Farm, Gazipur T. Aman 2016: BRRI dhan34, 49, 52, 54, 56, 57, 66, 70, 71, 72, 73, 75, 76 & 77 Boro 2017: BRRI dhan28, 29, 50, 58, 60, 63, 67, 69 & 74. PI: B. Karmakar CI: MR Biswash	To produce quality seeds of BRRI released promising and popular rice varieties for conducting adaptive research trials throughout the country during Aus, Aman and Boro seasons.	150

Grand total (GOB, MIADP & TRB) = Tk.7870 Thousand.

Training Division

Proposed Research Program 2016-2017

Sl. No.	Program area	Major Objective	Annual budget (lac TK)
I	1. Training Need Assessment	To assess the need and expectations of the participants from the training.	
II	2. Capacity Building and Technology Transfer Through Training	• To enrich the knowledge of the participants on rice production technologies. • To disseminate BRRI developed technologies through extension personnel	
	2.1 Rice production and communication training course for BRRI scientists. Participants: BRRI Scientists Duration: 2 month Batch : 01 No. of Participants: 30	To enrich knowledge of the trainees on: • Modern rice production technologies • Identification of field problems of rice cultivation and its solutions • Research planning and execution • Data collection, analysis and interpretation • Report/scientific article writing and presentation • Service rule and job description and • Help extension personnel for quick dissemination of rice production technologies	15.00
	2.2. Training on modern rice Production technologies (regular). Participants: SAAO of DAE Duration: 1 week Batch : 30 Participants: 900	To train the extension agents so that they can: • Able to use and disseminate modern rice production technologies and ▪ Identify and solve the field problems of rice	36.00

		cultivation and help the farmers to increase productivity.	
	2.3. Training on rice production and data collection. Participants: Scientific Assistant of BRRI Duration: 1 week Batch : 2 Participants: 40	This course will enable participants to: • Learn and recognize the basic concepts, principles and techniques of modern rice production • Identify and solve field problems of rice cultivation and • Collect data properly from the experimental plot.	3.00
	2.4. Training on quality rice seed production and storage. Participants: DAE/ NGO Officers No. of participants: 200 Duration : 3 day Batch : 10	• To increase the knowledge of the participants about quality seed production and • To increase the use of quality seed in rice production.	7.50
	2.5. Training on rice pest management Participants: BRRI Scientists No. of participants: 100 Duration : 1 week Batch : 5	• To increase knowledge of pest (weeds, insects and diseases) management in rice ecosystem. • To identify the pest in the field and • To increase ability to solve pest problems in rice field.	6.00

	2.6 Training on experimental design and data analysis. Participants: BRRI Scientists No. of participants: 40 Duration : 5 days Batch : 2	The train personnel will be able to: ▪ Recognized basic statistical concepts ▪ Utilize different experimental design properly in the field ▪ Use different statistical tools for data analysis ▪ Report/scientific article writing and presentation.	2.40
	2.7 Modern rice production training for the Imam of mosques Participants: Imam of different mosques of Bangladesh No. of part: 100 Duration : 3 days Batch : 5	To trained the Imam of different mosques of Bangladesh so that they can- • Acquire knowledge on modern rice production technologies and • Able to disseminate rice production technologies among the general farmers through their common lectures.	4.00
	2.8 Farmers training on modern rice production technologies Participants: Farmers No. of participants: 600 Duration : 1 days Batch : 20	To trained the farmers so that they can- • Apply the modern techniques of rice production and • Identify and solve the field problems of rice production.	3.00
	2.9 Special training on specific issues related to rice production Requested/demanded by different project of BRRI, IRRI. DAE and NGOs	Objectives depends on the requested courses.	-
III	Evaluation of Imparted Training Program..	• Evaluate the overall training program • Assess the trainees' performances and • Assess the resource speaker performances.	
IV	3. BRKB and its Improvement.	• Add new training materials to BRKB compendium	-

		• Develop fact sheets of different new technologies.	

BRRI Regional Station Comilla
Proposed Research Programme 2016-2017

Sl. #	Experiment	Major Objectives	Annual Budget ('000 Tk)
Program Area 01: Varietal Development Program (BRRI R/S Program) (Yield 5.5 t/h T Aus, 6.5/h T Aman			
1	Advanced line Adaptive Research Trial (ALART) (Comilla Region) 2 genotype along with 01 check	Evaluation of the yield potential and adaptability of advanced breeding lines at farmers' field for development of variety suitable for Comilla region	20
2	Advanced Yield Trial (AYT) Comilla 4 varieties along with 01 local check	Evaluation of existing BRRI released Aus varieties at farmers' field for adaptability and suitablility for Comilla region	30
3	Observational trial (OT) 4 local germplasm (kanak tara, dalihaitta, namchara & IR50)	Evaluation of local germplasm	20
4	Hybridization 33 parents will be used	To introgress genes from diverse genetic background for the improvement of standard varieties	30
5	F_1 confirmation 26 crosses	Confirmation of crosses with introgression of genes for earliness, colored grain, clustered grain, strong stem and long panicle	20
6	Growing of F_2 population 37 crosses	To select progenies with emphasis on earliness, plant type, grain type, no. of effective tiller and high yield potential than the standard varieties	20
7	Pedigree Nursery- Sixty five crosses consisted of 212, 287, 177, 262 & 10	To select progenies from the segregating populations with emphasis on plant type, earliness, grain type, grain colour, tolerance to lodging and good in phenotype over the standard varieties	50

	progenies respectively in $F_{3,}$ $F_{4,}$ F_5 F6 & F7 progenies.		
8	Observational trial (OT) 65 genotypes along with 4 checks	To select genetically fixed lines with uniform plant height, heading, plant type, and grain type along with high yield potential.	20
9	Preliminary Yield Trial (PYT)#1 Comilla 8 genotypes along with 2 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
10	PYT#2 (selected from IRLON) 20 genotypes along with 4 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
11	PYT#3 (MAGIC INDICA Module 1, 2014) 34 genotypes along with 3 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
12	PYT#4 (MAGIC INDICA Module 2,2014) 10 genotypes along with 3 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
13	PYT#4 (MAGIC Plus module 1) 10 genotypes along with 3 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
14	PYT#4 (MAGIC Plus Module 2) 20 genotypes along with 3 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
15	PYT#5 (MAGIC GLOBAL Module 1) 14 genotypes along with 3 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
16	PYT#6 (MAGIC GLOBAL Module	Initial yield evaluation and selection of desirable lines compared to standard checks	20

	2) 13 genotypes along with 3 checks		
17	PYT#7 (MAGIC INDICA Module 1, 2015) 20 genotypes along with 3 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
18	PYT#8 (MAGIC INDICA Module 2, 2015) 11 genotypes along with 3 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
19	Secondary Yield Trial (SYT)#1(from PYT# 1) 8 genotypes along with 4 checks	Confirmation of yield evaluation in a replicated trial and selection of desirable lines compared with standard check	30
20	Advanced Yield Trial (AYT) AYT # (Com) 6 genotypes along with 3 check	Evaluation of advanced breeding lines for development of variety suitable for Comilla region.	20
21	Advanced Yield Trial (AYT) AYT #1 (RLR) 6 genotypes along with 3 check	Evaluation of advanced breeding lines for development of variety suitable for Comilla region.	20
22	Advanced Yield Trial (AYT) AYT #2 (PQR) 6 genotypes along with 3 check	Evaluation of advanced breeding lines for development of variety suitable for Comilla region.	20
23	Advanced Yield Trial (AYT) AYT #3 (PQR) 3 genotypes along with 3 check	Evaluation of advanced breeding lines for development of variety suitable for Comilla region.	20

24	Advanced Yield Trial (AYT) AYT #4 (DR) 4 genotypes along with 4 check	Evaluation of advanced breeding lines for development of variety suitable for Comilla region.	20
25	Advanced Yield Trial (AYT) AYT #5 (MER-LS) 2 genotypes along with 2 check	Evaluation of advanced breeding lines for development of variety suitable for Comilla region.	20
26	Advanced Yield Trial (AYT) AYT #6 (Stagnant water) 14 genotypes along with 1 check	Evaluation of advanced breeding lines for development of variety suitable for Comilla region.	20
27	Advanced Yield Trial (AYT) Farmers' field AYT # 1(RLR) 3 genotypes along with 02 check	Evaluation of advanced breeding lines in farmers' field for development of variety suitable for Comilla region during T. Aman season	30
28	Advanced Yield Trial (AYT) Farmers' field AYT # 1(PQR) 4 genotypes along with 02 check	Evaluation of advanced breeding lines in farmers' field for development of variety suitable for Comilla region during T. Aman season	30
29	Evaluation of GSR-MST 15 genotypes along with 01 check	Evaluation of the lines	20
30	Evaluation of GSR Super Yield 31 genotypes along with 01 check	Evaluation of the lines	20
31	Breeder seed and TLS production BR22, BRRI dham32, BRRI	To increase of breeder seeds and TLS of T.Aman varieties in season with target amount.	600

	dham48, BRRI dhan49,BRRI dham62 & BRRI dhan75		
32	Display of T. Aman varieties Varieties 36	Demonstration of farmer & visitors	40
Program Area 01: Varietal Development Program (HQ)			
33	Observational trial (OT) 73 genotypes along with 3 checks	To select genetically fixed lines with uniform plant height, heading, plant type, and grain type along with high yield potential.	20
34	Preliminary Yield Trial (PYT)#1 Comilla 14 genotypes with 1 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
35	Preliminary Yield Trial (PYT)#1 Comilla 19 genotypes with 1 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
36	Regional Yield Trial (RYT) RYT#1 (Biotech) 6 genotypes with 1 checks	Evaluation of the breeding lines for yield potential and adaptability test under different agro-climatic conditions of Bangladesh	30
37	Regional Yield Trial (RYT) RYT # 1 2 genotypes with 1 checks	Evaluation of the breeding lines for yield potential and adaptability test under different agro-climatic conditions of Bangladesh	30
38	Observational trial (OYT) BB 9 genotypes along with 3 checks	To select genetically fixed lines with uniform plant height, heading, plant type, and grain type along with high yield potential	20
39	Observational trial (OYT) Drought 144 genotypes along with 3 checks	To select genetically fixed lines with uniform plant height, heading, plant type, and grain type along with high yield potential	20
40	Observational trial (OYT) RLR	To select genetically fixed lines with uniform plant height, heading, plant type, and grain type along with high yield	20

	90 genotypes along with 5 checks	potential	
41	Preliminary Yield Trial (PYT)#1 BB 8 genotypes with 2 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
42	Preliminary Yield Trial (PYT)#1 BB 10 genotypes with 2 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
43	Preliminary Yield Trial (PYT)#1 Drought 25 genotypes with 3 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
44	Preliminary Yield Trial (PYT)#1 RLR 28 genotypes with 2 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
45	Preliminary Yield Trial (PYT)#2 RLR 39 genotypes with 2 checks	Initial yield evaluation and selection of desirable lines compared to standard checks	20
46	Regional Yield Trial (RYT) RYT #1 (RLR) 1 genotypes with 3 checks	Evaluation of the breeding lines for yield potential and adaptability test under different agro-climatic conditions of Bangladesh	30
47	Regional Yield Trial (RYT) RYT #2 (RLR) 6 genotypes with 2 checks	Evaluation of the breeding lines for yield potential and adaptability test under different agro-climatic conditions of Bangladesh	30
48	Regional Yield Trial (RYT) RYT #3 (RLR) 6 genotypes with 3checks	Evaluation of the breeding lines for yield potential and adaptability test under different agro-climatic conditions of Bangladesh	30
49	Regional Yield Trial (RYT) RYT #4 (RLR)	Evaluation of the breeding lines for yield potential and adaptability test under different agro-climatic conditions of	30

	3 genotypes with 2checks	Bangladesh	
50	Regional Yield Trial (RYT) RYT #5 (RLR) 2 genotypes with 1 checks	Evaluation of the breeding lines for yield potential and adaptability test under different agro-climatic conditions of Bangladesh	30
51	Regional Yield Trial (RYT) RYT #1 (PQR) 6 genotypes with 4 checks	Evaluation of the breeding lines for yield potential and adaptability test under different agro-climatic conditions of Bangladesh	30
52	Regional Yield Trial (RYT) RYT #2 (PQR) 10 genotypes with 1checks	Evaluation of the breeding lines for yield potential and adaptability test under different agro-climatic conditions of Bangladesh	30
53	Regional Yield Trial (RYT) RYT #3 (PQR) 6 genotypes with 3 checks	Evaluation of the breeding lines for yield potential and adaptability test under different agro-climatic conditions of Bangladesh	30
54	Regional Yield Trial (RYT) RYT # (MER) 4 genotypes with 3 checks	Evaluation of the breeding lines for yield potential and adaptability test under different agro-climatic conditions of Bangladesh	30
55	Regional Yield Trial (RYT) RYT # (GSR) 3 genotypes with 4 checks	Evaluation of the breeding lines for yield potential and adaptability test under different agro-climatic conditions of Bangladesh	30
56	Proposed Variety Trial (PVT) RLR 1 genotypes with 1 checks	Evaluation of promising genotypes by field evaluation of NSB team for releasing as a new variety	40
Programmme Area 02: Crop Soil Water Management (BRRI R/S Comilla owm Programme)			
57	Study on herbicide tolerance of BRRI released varieties in Aman season (new).	To find out the phytotoxic effect of herbicide on different BRRI released varieties and its consequences on yield.	30
58	Effect of spacing and seedling number	To increase yield of BRRI dhan69 by adjusting spacing and seedling number.	60

	on growth and yield of BRRI dhan69 in Boro and Aman season.	onal trial)	
Programmme Area 02: Crop Soil Water Management (HQ)			
59	Updating fertilizer doses through SSNM (Side Specific Nutrient Management) for BRRI released varieties	1.To quantify rice yieldresponsesto fertilizer application 2.To determine the optimum doses of N,P,K,S and Zn for ALART materials/newly released varieties	50
60	Long-term effects of some macro and micronutrients on yield and nutrition of upland rice	1. Determine nutrient deficiency problems in soil through missing elements techniques. 2. To see long-term yield trend of rice under different nutrients managements 3. To evaluate the effect the changes in soil physical, chemical and biological properties under long-term fertilization	60
61	Nutrient management for growing four crops in a year	To increase the cropping intensity in Bangladesh	50
62	Effect of spacing on yield	To find out the effect of spacing on yield performance of newly released varieties	50
Programmme Area 03: Rice Farming System (BRRI R/S Comilla)			
63	Agro-economic evaluation of cropping patterns for medium high land and their impact on soil health	To identify agro-economically profitable cropping patterns for medium high land in Comilla region To assess the impact of the cropping patterns on soil health	60
Programmme Area 04: Pest Management (BRRI R/S Comilla)			
64	Integrated rice false smut disease management	To find out effective control measure option of the disease To understand the epidemiology of the disease To know the effect of N on disease progress.	50
65	Evaluation of advanced breeding lines against Tungro disease	To check the resistance to tungro disease in Bangladesh condition and to evaluate the yield potential	30
66	Reaction and recoverability of latest T. Aman	To know the varietal performance against rice tunro disease.	50

	BRRI varieties to tungro disease under natural condition		
Programmme Area 05: Socil-Economic and policy (HQ)			
67	Stability Analysis of BRRI Varieties in Aman Season	Evaluation of BRRI developed T. aman varieties to determine the stabiliComilla)ty index.	30
Programmme Area 06: Technology Transfer (BRRI R/S)			
68	Variety demonstration (BRRI dhan75, BRRI dhan 34, BR10)	To increase quality seed and demonstrate newly released varieties	50
69	Variety dissemination (BR10) 800kg seed Only seed help	To increase quality seed and productivity in T Aman-Fallow, Boro-Fallow-T Aman cropping system in Comilla region	_
70	Demonstration of BRRI dhan62 and BRRI dhan72	To increase quality seed and demonstrate newly released (Zinc enriched) varieties in Comilla region	

BRRI Regional Station Barisal

Proposed Research Programme 2016-2017

Sl no	Programme area/Project with duration	Major Objective	Budget Thousand Tk
Programme area/Project with duration: Regional Station, 2015-2016			
1	Development of Multi-trait Advance Breeding Lines for Tidal Areas	- Tall seedling(60 cm) and intermediate plant type (120-150cm) - High yield	200
2	Improvement of T. Aus Rice for Adapted to Barisal Region	-Collection of local germplasm and selection of potential parents for varietal development	100
3	Development of Varieties for Tidal Submergence of T. Aman Rice	-To develop tidal submergence tolerant varieties	200
4	Regional Yield Trial (RYT) for high yielding rice	-To test the yield potential and adaptability of advanced lines for Rainfed lowland Rice	100
5	Advanced Line Adaptive Research Trial (ALART)	-To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological conditions. -To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	100
6	Proposed Variety Trial (PVT)	-To observe the performance of PVT materials under rainfed lowland condition	50
7	Screening of rice germplasms and breeding for Ufra resistance	-To identify ufra resistant sources from germplasms and evaluation of resistant materials.	20
8	Demonstration of blast disease management of rice at farmers' field	-Enhancement of rice yield through blast disease management practices	40
9	Survey of rice diseases (and insect pest) in different districts of Barisal Region	-To know the seasonal occurrence, distribution and severity of major diseases and insect pests -To understand the management strategy of some major diseases and	50

Sl no	Programme area/Project with duration	Major Objective	Budget Thousand Tk
		insect pests	
10	Efficacy of new chemical against blast disease of rice	-To find out new chemicals effective against Blast	40
11	Integrated approach to control false smut disease of rice	-To find out appropriate control measure of rice false smut	40
12	Explore Potential Irrigation Water Source for Boro Cultivation in Barisal Region	-Quantify the availability of irrigation water -Identify the key problems for utilizing suitable water in boro cultivation -Quantify area coverage by the available water in Boro season.	100
13	Effect of missing element on rice yield	-To find out the yield limiting nutrient factor of rice	40
14	Stability analysis of BRRI released rice varieties	-To observed the yield performance of BRRI released rice varieties	50
15	Demonstration, seed production and scaling up of MV rice in Barisal region under PGB-IADP	-To demonstrate the yield performance and suitability of modern rice varieties in Barisal region -To popularize the BRRI released rice varieties and other technologies	200
16	On farm Seed multiplication of latest BRRI released varieties for dissemination purpose in next cropping season	To multiply the modern rice varieties upon availability of seeds at BRRI Barisal farm	100
16	Research program under TRB	-Objectives of TRB	
17	Breeder seed production	-To produce breeder seed	200
18	Hybrid seed production	-To disseminate BRRI released Hybrid varieties to farmers of Barisal region	100
19	Training and Field Days	-To train up farmers of Barisal Region	250

BRRI Regional Station Sonagazi

Proposed Research Programme 2016-17

Sl. No	Programme area/Project with duration	Major Objective	Annual Budget Thousand Tk
Disease and insect pest survey/Pest Management			
1	Monitoring of rice diseases and insect pests in Chittagong, Chittagong Hill Tracts Regions and BRRI Farm Duration: Year round	To study the rice diseases, insect pests and their natural enemy incidence patterns and to create a database.	100
Studies on rice insect pest and natural enemy ecology/Pest Management			
2	Incidence of insect pests and natural enemies in light trap relation to climate change Duration: Year round	To study the pest and their natural enemy incidence patterns in rice fields and to create a database.	50
Crop loss assessment/Pest Management			
3	Effect of new fungicides on management of rice blast disease Duration: T. Aman and Boro 2016-17	To determine the efficacy of different fungicides on the management of rice blast disease.	20
Nutrient Management/Crop Soil Water Management			
4	Effect of integrated nutrient management on growth and yield of Aus rice in charland coastal area Duration: Aus 2016	To identify proper nutrient management practice through organic and inorganic ammendments in charland area.	20
5	Determination of cutoff date of late transplanting Aman varieties in charland coastal area Duration: T. Aman 2016	To determine the proper time of planting for obtaining higher yield and photoperiod sensitivity of different T. Aman rice varieties.	20

Sl. No	Programme area/ Project with duration	Major Objective	Annual Budget

			Thousand Tk
6	Effect of spacing on yield performance of Boro rice under aerobic system of cultivation Boro: 2016-17	To find out the best spacing for maximizing yield under aerobic system of cultivation.	30
7	Long-term missing element trial for diagnosing the limiting nutrient in soil Duration: Open	To identify the yield limiting nutrient if any in the soils of BRRI Sonagazi Farm.	60
Varietal Development			
8	Survey on indigenous rice products of BRRI modern varieties Duration: Year round	To find out the popular BRRI varieties used for producing puffed and flattened rice.	50
9	Survey on ethnic/indigenous rice varieties in Chittagong and Chittagong Hill Tracts Regions Duration: Year round	To find out the popular ethnic/indigenous rice varieties bearing medicinal value.	150
10	Yield trials (RYT, PVT) Duration: Year round	To verify yield and ancillary characters of advanced Breeding lines.	400
Technology Transfer			
11	Seed production and distribution program Duration: Year round	To produce and distribute newly released BRRI varieties at farmers' level of Chittagong and Chittagong Hill Tracts Regions.	1000
12	Training and Field Days Duration: Year round	To train up farmers of Chittagong and Chittagong Hill Tracts Regions.	150

BRRI Regional Station Rajshahi

Proposed Research Programme 2016-2017

Sl. No.	Program area/Project (Duration)	Major Objective(s)	Budget (000 Tk.)
	VIII. Regional Station (Rajshahi)		
1.	**Disease and insect pest survey**		
	1.1 Survey and Monitoring of Rice Diseases and Insect Pests (Continuous)	To determine the incidence and abundance patterns of diseases, insect pests and their natural enemies at BRRI farm and in different AEZs for better management of rice pests	100
	1.2 Incidence of rice insect pests and their natural enemies in light traps in relation to climate change	To study the pests and their natural enemies incidence pattern in light trap and to create a database.	50
2.	**Crop-Soil-Water management**		
	2.1 Long-term missing element trial at BRRI, Rajshahi	To determine the nutrient deficiency problem (s) if any in BRRI Rajshahi farm soil though missing elements approach	100
	2.2 Soil fertility assessment at BRRI Rajshahi farm soil	To quantify the fertility level at BRRI Rajshahi farm soil	50
	2.3 Nitrogen Management in drought tolerant rice varieties at drought prone area	To observe the effect of USG on grain yield in drought prone area	100
3.	**Variety Development/ Host Plant Resistance**		
	3.1 Hybridization program	To develop high yielding genotypes with earliness, tolerant to drought, diseases & insects and acceptable grain quality	100
	3.2 Tolerance reaction of BRRI varieties against major diseases and insect pests	To evaluate level of resistance against major disease and insect pests	100
	3.3 Pure line selection among different Swarna varieties adopted in Rajshahi Region	To purify and maximum possible improvement over the farmers cultivated Swarna varieties To observe and compare the yield performance among Swarna varieties along with BRRI varieties	100
	3.4 Validation of BRRI released drought resistant varieties under drought	Evaluation of BRRI released drought resistant varieties for testing their yield adaptability under drought ecosystem	100

	ecosystem		
4.	**Rice Farming Systems**		
	4.1 Long term effect of different cropping patterns on the agro-economic productivity and soil health	To determine the long-term implications of different intensive copping patterns on; System productivity, Economic return and Soil health.	75
	4.2 Evaluation of crop productivity and soil health under strip tillage in maize-mungbean-rice system	To identify the extent of resource conservation and soil health due to strip tillage system	150
	4.3 Farmers' participatory evaluation of different cropping patterns using the short duration crop varieties	To evaluate the profitable copping pattern under farmers field condition To increase copping intensity using the short duration crop varieties	150
	4.4 Evaluation of Jute-T. Aman relay cropping pattern in Rajshahi and Sirajganj district	To observe the yield performance of T. Aman (BRRI dhan39) in Jute-T. Aman pattern at Rajshahi and Sirajganj district	200
5.	**Technology Transfer**		
	5.1 Seed production and distribution program	To distribute newly released BRRI varieties at farmer's level of Rajshahi Region.	1000
	5.2 Training and Field Days	To train up farmers of Rajshahi Region	250

BRRI Regional Station Satkhira

Proposed Research Programme 2016-2017

Sl. No.	Programme area/ Project with duration	Major Objective	Annual budget (Lac Tk.)
01.	Effect of time of planting on growth and yield of Boro rice under saline environment (2016-19)	To find out suitable planting time for Boro rice in saline condition	1.0
02.	Determination of nutrient requirements of Boro rice for saline gher (2014-17)	To find out optimum fertilizer management option of Boro rice for saline gher	1.0
03.	Determination of nutrient requirements of Boro rice for non saline gher (2014-17)	To find out optimum fertilizer management option of Boro rice for non saline gher	1.0
04.	Validation of Boro rice varieties for saline gher (Open)	To identify suitable Boro rice varieties for saline gher	1.0
05.	Validation of Boro rice varieties for non saline gher (Open)	To identify suitable Boro rice varieties for non saline gher	1.0
06.	Validation of T. Aman rice varieties for saline gher (Open)	To identify suitable T. Aman rice varieties for saline gher	1.0
07.	Validation of short duration T. Aman rice varieties for intensive	To identify suitable T. Aman rice varieties for high cropping intensity area	1.0

	cropped area (2016-17)		
08.	Development of four crop system (2016-19)	i) To develop four cropped cropping pattern and diversify the production system ii) To increase cropping intensity and farm income	2.0
09.	Improvement of total productivity of gher system (2016-19)	i) To maximize resource utilization and diversify the production system ii) To increase system productivity and farm income	2.0
10.	Evaluation of different cropping patterns in saline area of south-west coastal region (2016-19)	i) To intensify crop production in single T. Aman in saline environment ii)To diversify crop production and increase farm income	2.0
11.	Integrated rice and fish cultivation in saline gher (2016-19)	i) To exploit resource utilization and elevate total productivity ii) To increase farm income and improve the livelihood	2.0
12.	Stability analysis of BRRI varieties (Open)	To determine the stability index of BRRI released varieties	1.5
13.	Seed production and dissemination program (Open)	**i)** To build up farmers capacity for quality seed production as well as quality seed use ii) To disseminate BRRI varieties	2.0
14.	Farmer's Training/Field day (Open)	i) To improve the farmer's knowledge and skill on rice production technologies ii) To create farmer's awareness for enhancing the dissemination of BRRI developed technologies	2.0
15.	Breeder seed production (Open)	To produce Breeder seeds of BRRI released promising varieties and supply to GRS Division, BRRI Gazipur	9.0
16.	TLS seed production of BRRI released promising varieties (Open)	i) To produce quality seeds of BRRI released promising varieties ii) To make available and meet up the seed demand of farmer's under Khulna and Jessore region	2.0

Proposed Research Programme 2016-2017

Sl. No.	Programme area/ Project with duration	Major Objective	Annual budget (Lac.Tk.)
17.	Proposed Variety Trial-1 (Disease Resistant Rice) (2016-17)	On-farm evaluation of proposed line by the NSB team for the recommendation of release as a new variety	0.3
18.	Proposed Variety Trial-2 (Rainfed Lowland Rice-RLR) (2016-17)	On-farm evaluation of proposed line by the NSB team for the recommendation of release as a new variety	0.3
19.	Development of tidal tolerant rice variety (2016-17)	To identify water stagnation and tidal tolerant genotypes for seedling and reproductive stage	1.0
20.	Development of water stagnation tolerant rice variety (2016-17)	To identify water stagnation tolerant genotypes for seedling and reproductive stage	1.0
21.	Regional Yield Trial-1 (Development of Short duration	To evaluate specific and general adaptability of the advance breeding lines as compared	0.5

	high yielding rice) (2016-17)	with standard checks in on-station condition	
22.	Regional Yield Trial-1 (Development of Rainfed Lowland Rice-RLR) (2016-17)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition	0.5
23.	Regional Yield Trial-2 (RLR) (2016-17)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition	0.5
24.	Regional Yield Trial-3 (RLR) (2016-17)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition	0.5
25.	Regional Yield Trial-4 (RLR) (2016-17)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition	0.5
26.	Regional Yield Trial-5 (RLR) (2016-17)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition	0.5
27.	Regional Yield Trial-6 (RLR) (2016-17)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition	0.5
28.	Regional Yield Trial-7 (RLR) (2016-17)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition	0.5
29.	Regional Yield Trial-1 (Development of Premium Quality Rice-PQR) (2016-17)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition	0.5
30.	Regional Yield Trial-2 (PQR) (2016-17)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition	0.5
31.	Regional Yield Trial-3 (PQR) (2016-17)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition	0.5
32.	Regional Yield Trial-1 (Development of Micronutrient Enriched Rice-MER) (2016-17)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition	0.5

Proposed Research Programme 2016-2017

Sl. No.	Programme area/ Project with duration	Major Objective	Annual budget (Lac.Tk.)
Transforming Rice Breeding (TRB)-BRRI Project			
33.	(Observational Trial-OT) (2016-17)	Identification of advance lines suitable for saline environment	2.0
34.	Observational Trial (OT) by using Salinity Tolerance Breeding Nursery (STBN) (2016-17)	Identification of advance lines suitable for saline environment	2.0
35.	Preliminary Yield Trial (PYT) (2016-19)	Initial yield evaluation of advance lines in replicated trail in saline field condition	2.0
36.	Secondary Yield Trial (SYT) (2016-17)	Confirmation of yield potential of selected materials in replicated trial in saline field condition	2.0
37.	Participatory Varietal Selection (PVS) (2016-17)	Selection of suitable genotypes by participating farmers suitable for saline field condition	2.0
Stress Tolerant Rice for Africa and South Asia (STRASA-Salinity)			
38.	Pedigree Nursery for salt Tolerance	Selection of progenies from segregating population for salinity tolerance	2.0
39.	Observational Trial (OT) of BRRI	Selection of homogeneous breeding lines	2.0

	dhan49 NILs derived from BRRI dhan49/ FL478 cross (2016-17)	with uniform plant height, heading, acceptable grain quality having high yield potential with good plant type and free from false smut infestation	
40.	Participatory Varietal Selection (PVS) of Green Super Rice (GSR) (2016-17)	Selection of suitable genotypes by participating farmers suitable for saline field condition	2.0
41.	Green Super Rice (GSR) seed production (2016-17)	To produce Green Super Rice (GSR) seeds of some promising selected lines	2.0
Integrated Agricultural Development Project for Pirojpur-Gopalganj-Bagerhat (IADP-PGB)			
42.	Evaluation of intercropping system in tidal non saline ecosystem (2014-2017)	To develop intercropping system for increasing total productivity of three crop system	2.0
43.	Validation of three crop systems for medium high tide wetland non-saline ecosystem (2014-2017)	i) To intensify and diversify the double cropped cropping system ii) To increase the total productivity	2.0
44.	Validation of Aus based cropping pattern for medium high tide wetland non-saline ecosystem (2016-2017)	i) To intensify and diversify the double cropped cropping system ii) To increase the total productivity	2.0
45.	Improve productivity through rice-fish system (2016-2017)	(i) To maximize land productivity and increase farm income (ii) To exploit resource use efficiency	2.0
46.	Development of year round vegetables production practices in *Sorjan* system (2015-2017)	To increase production and make vegetables available round the year	2.0
47.	Adaptive trial of BRRI released rice varieties (2014-2017)	To evaluate the suitable Boro rice varieties and demonstrate the production technique to increase coverage and the productivity of existing system	1.0
48.	Demonstration of USG application in Boro rice (2014-2017)	To disseminate the USG application in farmer's fields to efficient use of urea and increase yield	1.0
49.	Demonstration trial of BRRI rice varieties (2013-2017)	To demonstrate the production technique to increase coverage and the productivity of existing rice production system	0.5

BRRI Regional Station Rangpur

Proposed Research Programme 2016-17

Sl.No.	Program area/Project with duration	Major Objectives	Annual budget (000) TK.
1.	Introducing improve cropping pattern for increasing cropping intensity and productivity in Rice-Rice system (On going)	i) To increase the cropping intensity and productivity ii) To improve soil health iii) To increase the income	50 per year
2.	Performance of hybrid and inbred rice at late planting situation (Braus) after potato harvest in Rangpur (On going)	To evaluate the performance of hybrid and inbred rice varieties at late planting situation after potato harvest	50 per season
3.	Performance evaluation of Swarna under different fertilizer combinations (On going)	To find out the suitable Swarna cultivar that gave satisfactory grain yield with poor management.	20 per season

4.	Evaluation of BRRI dhan48 as late Boro rice in Potato-Boro-T. Aman cropping system in medium highland irrigated ecosystem (On going)	i) To find out suitability of BRRI dhan48 in late Boro season ii) To find out appropriate seedling age of rice after potato	50 per year
5.	Effect of nutrient management and application pattern on newly developed *Sub1* genotypes (On going)	i) To find out the appropriate dose and application pattern after flood water recession ii) To enhance the survival percent and grain yield	50 per season
6.	Effect of time of submergence for transplanting rice on survival, recovery and yield of rice in T. Aman (New)	To investigate the suitable time of submergence at different DAT for survival, recovery and yield under flash flood submergence condition.	50 per season
7.	Observational Trial (OT) of BRRI dhan49 NILs under RLR ecosystem in Rangpur region (New)	Selection of homogeneous breeding lines with uniform plant height, heading, acceptable grain quality having high yield potential with good plant type and free from false smut infestation.	20 per season
8.	Demonstration of newly released BRRI varieties of T. Aus, T. Aman and Boro seasons in Rangpur region (On going)	i) To demonstrate the yield performance and adaptability of new varieties ii) To know the farmer's reaction about new varieties	50 per season
9.	Socio economic factors for increasing tobacco cultivation in Rangpur region (on going)	i) To know the causes for increasing tobacco cultivation ii) To identify the socio-economic & environmental impact	20 per season

BRRI Regional station Bhanga

Proposed Research Programme 2016-2017

Sl. No.	Programme area/Project with duration	Major objective	Annual budget (Thousand Tk.)
1.	Varietal Development Programme Expt. 1. F1 Confirmation (Breeding for shallow flooded Deep water rice)	Confirmation of the crosses as true F1 for generation of improved genotypes in combination with slow elongation and high yield for shallow flooded deep water sub-ecosystem (flood water depth 0.5-1.25 m).	20
2.	Expt. 2. F1 Confirmation (Breeding for developing high yielding rice varieties for single	Confirmation of the crosses as true F1 to develop breeding	30

	Boro cropping pattern)	population with higher yield potential, tall plant along with earliness and acceptable grain quality for single Boro cropping pattern of Faridpur region.	
3.	Expt. 3. Breeding for developing high yielding rice varieties for single Boro cropping pattern (Hybridization)	To develop breeding population with higher yield potential, tall plant along with earliness and acceptable grain quality for single Boro cropping pattern of Faridpur region.	40
4.	Expt. 4. Regional Yield Trials (RYT)	To evaluate specific and general adaptability of the advance breeding lines as compared to standard check varieties in on-station condition	500
5.	Expt. 5. Proposed Variety Trial (PVT)	On-farm evaluation of proposed line by the NSB	50
Sl. No.	Programme area/Project with duration	Major objective	Annual budget (Thousand Tk.)

		Team for the recommendation of release as a new variety	
	<u>Rice Farming System Research Programme</u>		
6.	Expt.1. Evaluation of Aman establishment time as relay cropping with jute in Wheat-Jute-Relay Aman cropping pattern in shallow deep water rice ecosystem (Duration: 2015-2016)	To increase the total productivity of the Wheat-Jute/Aman (Relay) cropping pattern by determining the appropriate time of relay cropping of short and medium long duration Aman rice variety.	200
7.	Expt. 2. Identification of potential rice variety in Wheat/Onion-Jute-Relay Aman cropping pattern under shallow deep water rice ecosystem (Duration: 2016-2017)	i. To identify the potential rice variety in Wheat-Jute-Relay Aman cropping pattern. ii.To increase the total productivity of the Wheat-Jute-Relay Aman cropping pattern.	200
8.	<u>Technology Transfer Programme</u> Activity 1. Demonstration of modern rice varieties in Aman and Boro seasons in greater Faridpur region	To demonstrate new rice varieties in the farmers' fields.	500 (PGB-IADP (BRRI Part))
9.	Activity 2. Farmers' Training	To train up farmers about modern rice production technologies	100 (PGB-IADP (BRRI Part))
10.	Activity 3. Breeder Seed Production of BRRI dhan28 and BRRI dhan29	To use as a source for production of Foundation Seed	600
11.	Activity 4. Truthfully Labeled Seed (TLS) Production of newly released rice varieties	Dissemination of newly released rice varieties for possible adoption by the farmers	300

BRRI Regional Station Habigang

Proposed Research programme 2016-2017

Sl.No.	Programme area/ project with duration	Major objectives	Annual budget (Thousand Tk)
Varietal Development			
Deepwater rice Project:Improvement of Deepwater Aman, 2016			
1	Preliminary Yield Trial	To evaluate yield and ancillary characters of advanced lines in shallow flooded condition	100.00
2	Secondary Yield Trial-1	To evaluate promising genotypes in natural shallow flooded condition	100.00
3	Secondary Yield Trial-2	To select high yielding deepwater aman rice lines incorporating genes for high yield into intermediate tall plant type	
4	Regional Yield Trial	Intermediate tall deepwater rice genotypes suitable for shallow flooded deepwater areas will be selected.	100.00
5	Advanced Lines Adaptive Research Trial (ALART)	Adaptable line/lines will be selected	300.00
Aman Rice Improvement programme, T. Aman			
1	Regional Yield Trial	Verification of yield and other agronomic characters of advanced lines in different regional stations	300.00
2	Advanced Yield Trial	On-farm verification of yield and other agronomic characters of advanced lines	100.00
Improvement of aerobic Aus rice			
1	ALART	Adaptable line/lines suitable for direct seeding will be selected	300.00
2	Growing F_3 Population	F_4 population will be selected for developing high yield potential T Aus lines	100.00
2.Crop-Soil-Water Management Program			
1	Nitrogen response of advance line BRH 11-9-11-4-5B in rice- fallow-fallow cropping pattern.	To select the optimum N dose for the advance line in the single crop area.	50.00
2	Potassium response of advance line BRH 11-9-11-4-5B in rice- fallow-fallow cropping pattern.	To select the optimum K dose for the advance line in the single crop area.	50.00
3	Effect of Vermi-compost on Boro rice	To increase rice yield in single cropped area through INM practices	70.00

	yield.	and to maintain soil fertility without sacrificing yield.	
4	Fertilizer management for two Boro advance lines in haor area.	To increase yield with increasing fertilizer doses for single crop area for the two lines.	50.00
5	Fertilizer management for high yielding premium quality rice.	To select the optimum yield with different doses of fertilizer for the two premium rice varieties in haor region.	60.00
6	Fertilizer management for promising deep water lines	To select better fertilizer management option for deep water rice	40.00
7	Yield maximization through INM practices in T. Aman season.	To increase rice yield in double rice area through INM and to maintain soil fertility.	80.00
8	Survey and diagnosis of nutrient deficiencies and toxicities in rice soils at Sylhet region.	To identify the nutrient deficiencies or toxicities in rice soils at farmers level and to mitigate the soil problem for increasing rice yield.	120.00
9	Long-term missing element trial for diagnosing the limiting nutrient in soil.	To identify the yield limiting nutrient if any in the soils of BRRI Habiganj farm.	60.00
3. Pest Management Programme			
Survey and Monitoring Rice Insect pests			
1	Insect pests monitoring at BRRI Farm, Habiganj	To study the insects and their natural enemy incidence at BRRI Farm and to create a database to develop forecasting system	100.00
2	Incidence of insect pests and natural enemies in light traps	To study the insect pest and their natural enemy incidence at BRRI farm Habiganj and to create a database to develop a forecasting system	50.00
3	Survey of rice insect pests in Sylhet Region	To find the incidence pattern of major rice insects in Sylhet region and to examine relationship between biotic and abiotic factors on their abundance	100.00
4	Conservation of natural enemies through ecological engineering approaches	To conserve natural enemies through different ecological engineering approaches	200.00
4. Rice Farming System			
1	Validation of rice fish culture in low-land areas for increasing farm productivity.	To increase total farm productivity and to compare the yield of fish cultured rice with mono cultured rice.	150.00
2	System productivity increase through rice-duck farming.	To increase total productivity and to evaluate the reduction cost of cultural management practices.	150.00

3	Productivity increase through improved Aroids –T. Aman cropping pattern.	To increase crop production in the cropping pattern and to increase farmer's income.	80.00
5. Technology Transfer			
1	Demonstration of newly released Aus, T.Aman and Boro varieties	To demonstrate the performance of newly BRRI released Aus, T. Aman and Boro rice varieties to the farmers field	100.00
2	Farmers' training and Field days for Aus, T. Aman and Boro	To deliver the knowledge about the modern rice cultivation techniques to the farmers	300.00
3	Breeder seed production	To produce quality Breeder seeds at BRRI farm Habiganj	1000.00
4	Truthful level seed production (TLS)	To produce locally popular TLS seeds and to ensure quality seeds to the local farmers	500.00

BRRI Regional station Kushtia

Proposed Research Programme 2016-2017

Sl. No	Programme area/ Project with duration	Major Objective	Annual budget Thousand TK.
Expt. 1	Study on the performance evaluation of Ganges-Kobadak (G-K) irrigation project after six decades of its initialization (New)	1.To investigate the present actual irrigation coverage 2.To identify constraints of the project and 3.To make some recommendations for better performance based on constraints analysis	100
Expt. 2	Cropping pattern: Validation of four cropped cropping pattern in irrigated ecosystem in Kushtia region. 1. Mustard (BARI Sarisha14)-Mungbean (BARI Mug6)-T. Aus (BRRI dhan48)-T. Aman (BRRI dhan57) 2. Mustard (BARI Sarisha14)-Mungbean (BARI Mug6)-T. Aus (BRRI dhan48)-T. Aman (BRRI dhan62) 3. Boro (BRRI dhan28)- Fallow-T. Aman (Swarna) (Check) OR Boro (BRRI dhan28)-T. Aman (Swarna)+Relay Mustard (Local) (Check)	To increase system productivity and diversity	50

Expt. 3	Terminal drought mitigation through integrated approaches in T. Aman cultivation (On going) Variety: BR11, BRRI dhan33 and BRRI dhan71 Treatment T_1: Approach 1: Variety: A long (BR11) and two short duration (BRRI dhan33 and BRRI dhan71) Aman Approach 2: Transplanting dates: timely transplanting for low risk drought during critical period of the crop. Approach 3: Supplemental irrigation if necessary Approach 4: Levee management Treatment T_2 : Rainfed	1.To determine effect of drought for different transplanting dates 2.To document impact and cost analysis of supplemental irrigation for timely crop establishment, and 3.To determine drought severity and its probability at different growth stages of T. Aman	40
Expt .4	Determination of Suitable time for application of supplemental irrigation in T. Aman Season (On going) Treatments: T_1= application of Supplemental irrigation when water level goes 15 cm below ground surface T_2= application of Supplemental irrigation when water level goes 25 cm below ground surface T_3= application of Supplemental irrigation when water level goes 35 cm below ground surface	To determine the relationship between perched water tables depletion during critical stages of rice and grain yield.	30
Expt. 5	Demonstrations of newly released BRRI varieties	To disseminate and popularize the new varieties among the farmers at Kushtia region	50
Expt. 6	Evaluation of Relay cropping of Aman with Jute in greater Kushtia region	To observe the yield performance of relay Aman with Jute	40