Research Program (2018-2019)

VARIETAL DEVELOPMENT PROGRAM PROGRAM AREA

PLANT BREEDING DIVISION

Proposed Research Program 2018-19

SN	Program Area/Project	Major Objective	Annual Budget (Thousand Tk.)
1	Development of Upland Rice (Broadcast Aus)	Development of varieties in combination of multiple traits such as quick seedling emergence and vigorous growth, short growth duration (90-95 days), tolerance to lodging, drought and pre-harvest sprouting and good eating quality.	1000000/-
2	Development of Transplanted Aus (T. Aus) Rice	Introgression of earliness, pre-harvest sprouting tolerance and tolerance to high temperature into high yielding varieties for developing rice varieties with slender grain, short growth duration and resistance to major diseases under field condition.	1500000/-
3	Improvement of rice for shallow flooded & Deep Water environment	Generation of genotypes in combination with slow elongation, high yield and submergence tolerance for shallow flooded deep water sub-ecosystem (flood water depth 0.5-1.0 m).	1500000/-
4	Development of Rainfed Lowland Rice (RLR) (T. Aman)	Introgression of genes from diverged genetic background for the improvement of standard T. Aman varieties.	3000000/-
5	Development of Salt Tolerant Rice for T. Aman and Boro	Introgression of salinity tolerant traits/ gene (s) in high yielding varieties suitable for RLR and irrigated Boro ecosystem.	6000000/-
6	Development of Premium Quality Rice (PQR) for T. Aman and Boro Season	Introgression of genes for small & long slender grain with aroma, photosensitivity and Anti-oxidant property into high yielding genetic background for the development of national and international grade aromatic rice.	5000000/-
7	Development for Micronutrient Enriched Rice (ZER) for T. Aman & Boro	Development of new genotypes with high iron and zinc content along with resistance to major insect pests and diseases, and acceptable grain quality.	500000/-
8	Development of Insect Resistant Rice (IRR)	Introgression of genes of BPH and gall midge into high yielding rice genetic background.	2000000/-

	for T. Aman & Boro		
9	Development of Disease Resistant Rice (BB, Blast & RTV) for T. Aman and Boro	Introgression of high yield, lodging tolerance and disease resistance trait for BB, Blast & RTV.	2000000/-
10	Development of Submergence and Water Stagnation Tolerance Rice	Introgression of submergence and medium stagnant water tolerant genes into modern genetic background with high yield potential, short/long growth duration, weakly/strongly photoperiod sensitivity, grain quality etc.	2500000/-
11	Development of Drought Tolerant Rice for T. Aman Season	Introgression of drought tolerance gene into high yielding rice genetic background.	3000000/-
12	Development of Green Super Rice Project (GSR) for T. Aman and Boro Season	Development of Green Super Rice (GSR) varieties with less input potential and better yield performance.	3000000/-
13	Development for Golden rice for T. Aman & Boro	Development of new genotypes with high Beta Carotene (Vitamin-A) content along with resistance to major insect pests and diseases, and acceptable grain quality.	5000000/-
14	Development of Super High Yielding rice for T. Aman and Boro Season	Introgression of high yielding traits with better plant type and acceptable grain quality.	2000000/-
15	Development of favorable Boro Rice	Development of new genotypes based on the farmers and consumers preference with better plant type and major insect and disease resistance.	2500000/-
16	Development of Cold Tolerance Boro Rice	Introgression of cold tolerance gene into high yielding rice genetic background.	2000000/-
17	Development of Water Saving Rice	Development of new rice genotypes based on water use efficiency with better plant type and major insect and disease resistance.	1500000/-
18	Development of hill Rice	Introgression of genes responsible for waxy and sticky cooking quality into high yielding rice genetic background.	1000000/-
19	Development of Heat Tolerant Rice	Introgression genes for high temperature tolerance into high yielding varieties for developing rice varieties with short growth duration.	1000000/-
20	International Network For Genetic Evaluation of Rice (INGER)	Promising genotypes will be selected after evaluation and will be used as parent materials and also will be included in yield trial.	500000/-
Total Budget (Thousand Tk.) : 51000000/-			

Hybrid Rice Division

Proposed Research Program 2018-2019

SL.	Program area/Project	Major Objective(s)	Expected output	Annual Budget (Thousand Tk)
1.1	**Source Nursery**	Identification of prospective maintainers and restorers from diverse genetic origin	Maximum number of crosses with diverse genetic origin will be initiated	100000/-
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.	Prospective maintainer and restorer will be identified	100000/-
1.3	Backcross Nursery	Developing CMS lines from identified maintainer by back crossing.	New promising adaptable and stable CMS lines will be developed	150000/-
1.4	CMS Maintenance and Evaluation Nursery	Maintain and evaluate of CMS lines	Genetic purity of CMS lines will be maintained	200000/-
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)	Disease resistant parental lines will be developed	200000/-
1.6	Improvement of parental lines by (B x B) and (R x R) crosses.	To broaden the genetic base of parental lines	New recombinant maintainer and restorer lines will be developed	50000/-
Project-2: Breeding for BB resistant hybrid rice variety				
2.1	Screening of existing maintainers and restorers against BB resistance.	To identification of BB resistance maintainers and/or restorers from existing materials.	BB resistant maintainer and restorer lines will be identified	200000/-
2.2	Source Nursery	Identification of prospective maintainers and restorers of diversified origin for making experimental rice hybrids.	Maximum number of crosses with diverse genetic origin will be initiated	50000/-
2.3	Test cross Nursery	1. Confirmation of maintainers and restorers	New maintainer and restorer lines with BB resistant will be identified	100000/-

		from the crossed entries. 2. Selection of heterotic rice hybrids. 3. Conversion of prospective maintainers into new CMS lines.		
2.4	Backcross Nursery	Developing BB resistant CMS lines from identified maintainer by back crossing.	BB resistant CMS lines will be developed	2500000/-
Project-3: Evaluation of parental materials & hybrids				
3.1	Observational Trial (OT) of experimental hybrids	Selection of promising hybrids	Promising hybrids will be selected	100000/-
3.2	Preliminary Yield trials of promising hybrids	To study the wider adaptability and yield potentiality of promising hybrids	New hybrids of promise will be selected	150000/-
3.3	Multilocation trials of promising hybrids	To find out suitable and adaptable promising hybrids across different environment	New hybrids of promise will be selected	250000/-
3.4	Combining ability of A, B & R lines	To select the best combiner (S) in respect of grain yield & yield components	Specific and general combiner parental lines and magnitude of heterosis will be identified	100000/-
3.5	National Hybrid Rice Yield Trial (NHRYT)	Evaluation of imported hybrids for subsequent selection	Promising hybrids will be selected for national seed board approval	Will provide by SCA
3.6	Quality ensure of previous season produced F_1 and CMS lines through grow out test	To determine purity of parental lines and hybrids of BRRI released hybrid rice	Confirmation of purity of produced parental and hybrid seeds	50000/-
3.7	Demonstration trials of BRRI released hybrids along with promising hybrids and checks	To evaluate the performances of released hybrids with promising ones	Season wise adaptability of released and some exotic hybrids will be identified	50000/-
Project-4: Seed Production of Parental lines and Hybrids				
4.1	CMS multiplication of promising A line	To produce pure and good quality seed of CMS lines for subsequent use.	Sufficient quantity of CMS line seeds will be available for further use	250000/-

4.2	CMS multiplication of BRRI hybrid dhan1 & BRRI hybrid dhan4	Production of pure and good quality seed of CMS lines.	Sufficient quantity of CMS line seeds of BRRI hybrid dhan1 and BRRI hybrid dhan4 will be available for further use	250000/-
4.3	CMS line multiplication of BRRI hybrid dhan2	Production of sufficient quantity quality seeds of CMS lines for subsequent use	Sufficient quantity of CMS line seeds of BRRI hybrid dhan2 will be available for further use	150000/-
4.4	CMS line multiplication of BRRI hybrid dhan3	Production of sufficient quantity quality seeds of CMS lines for subsequent use	Sufficient quantity of CMS line seeds of BRRI hybrid dhan3 will be available for subsequent use	200000/-
4.5	CMS line multiplication of BRRI hybrid dhan5	Production of sufficient quantity quality seeds of CMS lines for subsequent use	Sufficient quantity of CMS line seeds of BRRI hybrid dhan5 will be available for subsequent use	200000/-
4.6	CMS line multiplication of BRRI hybrid dhan6	Production of sufficient quantity quality seeds of CMS lines for subsequent use	Sufficient quantity of CMS line seeds of BRRI hybrid dhan6 will be available for subsequent use	150000/-
4.7	CMS line multiplication of proposed variety BRRI hybrid dhan7	Production of sufficient quantity quality seeds of CMS lines for subsequent use	Sufficient quantity of CMS line seeds of BRRI hybrid dhan7 will be available for subsequent use	200000/-
4.8	F_1 seed production of BRRI hybrid dhan2	Production of sufficient quantity quality hybrid seed for subsequent use	Sufficient quantity of F_1 seeds of BRRI hybrid dhan2 will be available for subsequent use	200000/-
4.9	F_1 seed production of BRRI hybrid dhan3	Production of sufficient quantity quality hybrid seed for subsequent use	Sufficient quantity of F_1 seeds of BRRI hybrid dhan3 will be available for subsequent use	500000/-
4.10	F_1 seed production of BRRI hybrid dhan4	Production of sufficient quantity quality hybrid seed for subsequent use	Sufficient quantity of F_1 seeds of BRRI hybrid dhan4 will be available for subsequent use	250000/-
4.11	F_1 seed production of BRRI hybrid dhan5	Production of sufficient quantity quality hybrid seed for subsequent use	Sufficient quantity of F_1 seeds of BRRI hybrid dhan5 will be available for subsequent use	500000/-
4.12	F_1 seed production of BRRI hybrid dhan6	Production of sufficient quantity quality hybrid seed for subsequent use	Sufficient quantity of F_1 seeds of BRRI hybrid dhan6 will be available for subsequent use	250000/-
4.13	F_1 seed production of BRRI hybrid dhan7	Production of sufficient quantity quality hybrid seed for subsequent use	Sufficient quantity of F_1 seeds of BRRI hybrid dhan7 will be available for subsequent use	300000/-

	(Proposed)			
4.14	F_1 seed production of promising hybrids	To produce sufficient quantity of seed for OST and OFT	Sufficient quantity of F_1 seeds of promising hybrids will be available for subsequent use	500000/-
4.15	Growth duration differentiation method (GDDM) for synchronization in flowering	To determine proper heading time of parental lines (A &R) of promising hybrids	Season wise proper heading time will be determined	50000/-
4.16	Nucleus seed production of BRRI hybrid dhan1 & BRRI hybrid dhan4	To produce parental lines nucleus seeds of BHD1 & BHD4	Purified parental line seeds will be produced with genetic purity for further use.	100000/-
4.17	Nucleus seed production of BRRI hybrid dhan2	To produce parental lines nucleus seeds of BHD2	Purified parental line seeds will be produced with genetic purity for further use.	100000/-
4.18	Nucleus seed production of BRRI hybrid dhan3	To produce parental lines nucleus seeds of BHD3	Purified parental line seeds will be produced with genetic purity for further use.	100000/-
4.19	Nucleus seed production of BRRI hybrid dhan5	To produce parental lines nucleus seeds of BHD5	Purified parental line seeds will be produced with genetic purity for further use.	100000/-
4.20	Nucleus seed production of BRRI hybrid dhan6	To produce parental lines nucleus seeds of BHD6	Purified parental line seeds will be produced with genetic purity for further use.	100000/
4.21	Maintainer and restorer lines multiplication of BRRI released hybrids	Production of sufficient quantity quality parental lines for subsequent use	Availability of promising maintainer and restorer line seeds will be ensured	100000/-

Genetic Resources and Seed Division (GRSD)

Proposed Research Program 2018-2019

SL No.	Program area/Project with duration	Major Objectives	Annual Budget (Thousand Tk)
3	**Rice Germplasm and Seed**		
3.1	Rice germplasm conservation and management	Collection, characterization, documentation, conservation and rejuvenation of rice germplasm to enrich the Genebank of BRRI and its sharing with rice researchers	1210.0
3.2	Seed production and variety maintenance	Maintenance of nucleus seed stock and production for supplying breeder seeds as per National demand and MOU/LOA with seed growers.	7595.0
3.3	Exploratory and genetic studies	Conduct problem related genetic studies for breeder seed and rice germplasm.	710.0
3.4	Seed technology packages	Exploratory and genetic studies of seed technology for recommending as rice seed production technology.	100.0
3.5	Out research activities	Visit to breeder and foundation seed production farms to ensure the quality of produced seed.	100.0

Grain Quality and Nutrition Division

Proposed Research Programme 2018-2019

Sl. No.	Programme area/ project with duration	Major Objective	Annual budget Lakh Tk.
1. Grain Quality Characteristics for Variety Development			
1.1	Determination of physicochemical and cooking properties of rice grain (Cont.)	To help to develop data base on physicochemical, cooking and eating qualities of grain for newly developed breeding lines.	2.5
1.2	Evaluation of Physicochemical properties of newly released BRRI varieties (Cont.)	To determine physicochemical and cooking qualities of (recently released) BRRI developed rice varieties for updating the database.	0.5
1.3	Determination of physicochemical properties of Black rice (Cont.)	To determine physicochemical and cooking qualities of Black rice cultivars from different sources in	2.5

		Bangladesh.	
2: Grain Quality parameters for consumer preference			
2.1	A survey of rice grain quality in Bangladesh: Consumer preference (New).	To identify scientific reasons of preferring local varieties over HYV in terms of grain quality and nutrition.	1.5
2.2	Physicochemical, cooking and textural properties of some traditional and aromatic/ premium rice cultivars and their interrelationship (New).	To explore the physiochemical, cooking, and textural characteristics of 12 traditional and aromatic rice cultivars grown in Bangladesh and develop their interrelationship.	2.5
2.3	Analysis of ferulic acid (FA) in Bangladeshi rice varieties in association of biochemical evaluation on burning effects of RBO in vivo rat experiment (New).	To evaluate on appropriate analysis methodology and study amount of FA and their relation to nutrition properties in rice.	1.0
3: Nutritional Quality Assessment of Rice			
3.1	Effect of different degree of milling on the retention of micronutrient of BRRI released high Zinc varieties (Cont.)	To find out the optimum milling time and percent degree of milling thus retains most micronutrient.	1.0
3.2	Study on the effect of protein content on the basis of regional variation in Boro season, 2017-2018 (Cont.)	To determine the protein content for regional variation of BRRI released Boro varieties.	1.5
3.3	Mineral and Vitamin profiling of BRRI varieties (Cont.)	To explore mineral and water soluble vitamin compositions such as Zn, Fe, Ca, P, $VitB_1$ and $VitB_2$ of BRRI HYVs.	3.0
3.4	Determine an appropriate processing method for increase the concentration of resistant starch (RS) of cooked rice (Cont.)	To maximize the conversion of rice starch to resistant starch using different cooking and cooling method.	0.5
3.5	Identification of rice genotypes having low heavy metal uptake ability at seedling stage (Cont.)	• To assess the heavy metal (Pb and Cd) uptake in rice plant by differe nt rice cultivars. • To assess the dose response uptak e of heavy metals (Pb and Cd) on different rice genotype. • To identify low heavy metal (Pb a nd Cd) uptake rice genotype.	0.5
3.6	Study on antioxidative and anticancer properties of pigmented (black, red, purple) rice varieties in Bangladesh (Cont.)	• Extraction and identification of an thocyanin from different Banglad eshi pigmented rice varieties. • Anti-carcinogenic effects by obser	Project funded (2.0)

		ving the anti-proliferative activity in cancer cells. • Anti-oxidant enzyme activity in th e lysates of cultured cells by estim ating activities of detoxifying enz ymes. • Anti-diabetic effects by measurin g serum glucose and insulin levels in type 2 diabetic rats. • Anti-inflammatory effects by esti mating serum levels of IL-4, IL-6 and TGF-beta.	
3.7	Detection and quantification of heavy metals and toxins in rice bran, bran oil and de-oiled rice bran	• Survey on rice bran oil (RBO) industries, associated rice bran (RB) and de-oiled rice bran (DORB) supply rice mills • Understanding the status of RB, RBO and DORB contamination and impact on human and animal health in Bangladesh • Determination of the presence of heavy metals in RB, RBO and DORB • To identify the microbial association and toxin production level in RB, RBO and DORB	Special fund of MoA (12.0)
Project-4: Commercial Rice Based Products			
4.1	Physiochemical, cooking and sensory properties related to quality of rice noodles (Cont.)	• To standardize a laboratory-scale method for making flat rice noodles. • To study genotype variation in physiocochemical cooking and sensory properties of rice flour in relation to noodle quality. • To identify the physical specific characteristics responsible for producing superior quality of rice.	0.5
4.2	Determination of physicochemical properties and quality of puffed, popped and flattened rice from newly released BRRI varieties (Cont.)	• To identify the physical quality of puffed, popped and flattened rice. • To determine the nutritional value of puffed, popped and flattened rice.	1.0
4.3	Survey on indigenous rice products of BRRI modern varieties.	To find out the popular BRRI varieties are used for producing	1.5

		puffed and flattened rice.	
4.4	Study on glycemic and NEFA status of energy dense rice biscuits developed by BRRI in healthy human (New).	• To study the glycemic status of EDRB developed by BRRI in healthy subjects. • To study the non-esterified fatty acid (NEFA) status of EDRB developed by BRRI in healthy subjects.	1.0
4.5	Value addition and standardization of nutritional level in selected food items to mitigate malnutrition (New).	• Survey on dietary pattern of street children in capital city, Dhaka. • Formulation of low cost rice based nutraceutical food items. • Impact evaluation studies of formulated rice based foods.	NATP funded (22.0)

CROP SOIL WATER MANAGEMENT PROGRAM AREA

Agronomy Division

Research Program, 2018-2019

Sl. No.	Title	Objective(s)	Annual Budget (Thousand Tk)
01. Seeds and Seedlings			
1.1	Effect of quality seedling on yield maximization of Boro rice (new)	i) To investigate the effectiveness of seedbed protection methods for securing seedlings during cold spell and ii) To find out the consequence of seedling raising method on grain yield and to identify the most appropriate time of sowing for cold management	50,000/-
1.2	Seedbed management in cold spell situation and it's effect on field duration and yield (new)	To select suitable and farmer's friendly technique (s) for raising good quality seedling in cold spell situation during Boro season	50,000/-
02. Planting Practices			
2.1	Improvement of soil health in four crops pattern through	i) To validate BRRI developed 4 crops systems ii) To increase the cropping intensity and productivity	100,000/-

	agronomic management (on going)	iii) To improve the soil health	
2.2	Effect of date of planting on growth and yield of advanced lines (on going)	To determine suitable time of planting and selection of high yield potential genotypes	50,000/-
2.3	Effect of planting date on growth and yield of BRRI released varieties in Aman and Boro seasons in different regions of Bangladesh (on going)	i) To determine the cutoff date for planting in different location. ii) To determine suitable date of planting.	50,000/-
03. Fertilizer Management			
3.1	Nitrogen management for BRRI dhan71 with aged seedlings at variable time of planting (new)	To find out optimum nitrogen rate for aged seedlings of BRRI dhan71	50,000/-
3.2	Effect of N management at the reproductive phase of rice (on going)	To verify whether top dressing of urea is useful or harmful after PI stage for inbred rice	50,000/-
04. Weed Management			
4.1	Weed persistence, crop resistance and phytotonic effects of new molecule herbicides in transplanted rice (on going)	To identify the phytotonic effect of herbicides on weed and crop growth for sustained rice production.	50,000/-
4.2	Evaluation of candidate herbicides (on going)	To find out the efficacy of new herbicides	50,000/-
4.3	Study on bio-efficacy and varietal sensitivity of different herbicides (new)	i) To evaluate the growth and yield response of some selected popular Boro and T. Aman rice varieties to the recommended rate of some available rice herbicides and ii) To find out the most tolerant rice variety or varieties to herbicides under transplanted condition.	50,000/-
05. Yield Maximization			
5.1	Fertilizer rescheduling for	i) To determine optimum fertilizer application time	50,000/-

	maximizing Boro yield under cold spell situation (new)	for maximum grain yield ii) To identify suitable combination of N+K application rate and time	
5.2	Yield maximization of T. Aus rice through integrated crop management at variable time of planting (new)	To maximize growth and yield of T. Aus varieties	50,000/-

Irrigation and Water Management Division

RESEARCH PROGRAMME 2018-2019

Sl No.	Program area/Project with duration	Major objectives	Annual budget (Thousand Tk)
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 2015-2017	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 Automated Alternate Wetting and Drying Irrigation System for Rice production 2018-2020	To save irrigation water To use water efficiently for improving water productivity To introduce digital irrigation system in rice cultivation	200
	1.3 Technique for Using Basin Water for Elevated Land Rice Cultivation during Dry Season in Haor Area 2018-2020	i) To bring elevated land under boro cultivation ii) To improve land productivity iii) To develop a technique for using basin water of haor during dry season	100
	1.4 Study on the problems and potentials for productivity improvement in the Haor areas through agricultural water management 2015-2019	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

	1.4 Study on the problems and potentials for productivity improvement through Agricultural water management in the Hilly areas 2015-2018	i) To identify potentials of water resources development for agriculture and livelihood improvement in the Hilly area ii) To recommend suitable water management options for productivity and livelihood improvement in the area.	100
	1.5 Study on water stress tolerance capacity for different advanced rice genotype of BRRI 2015-2018	i) To quantify the tolerance capacity of soil moisture deficit for different varieties that plant suffers during its growing period through Towfique's drought model ii) To determine yield of varieties under different water stress condition	100
	1.6 Optimization of irrigation water for maximum year-round production 2014-2017	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 Optimization of irrigation water use for Boro cultivation under different establishment methods 2017-2020	i) To compare the irrigation requirement and productivity under different methods of Boro cultivation ii) To find out problems of Boro cultivation under non-conventional water management practices iii) To find out suitable method of Boro cultivation under water limiting conditions	200
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 Rain water harvesting from roof top of BRRI campus, Gazipur 2015-2019	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

	2.2 Agricultural drought forecasting for mitigating drought in T. Aman rice 2017-2022	i) To determine drought using forecasted rainfall and evaporation ii) To mitigate drought by applying supplemental irrigation iii) To determine suitability of drought model for forecasting iv) To determine yield performance after mitigating drought	200
III: Land Productivity Improvement in the Coastal Environment			
03	**Land and Water Resources Use for Sustainable Crop Production**	• To increase land and water productivity for improving food security and livelihoods in the coastal zones	
	3.1 Assessment of suitable water resources availability for irrigation to increase crop production in tidal areas of Barisal region 2015-2018	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 Water resources assessment during dry season crop cultivation in selected polders of coastal region 2017-2020	i) To delineate suitable water resources during dry season ii) To determine the amount of fresh water available for crop production during the period, and iii) To assess the cultivated area by different cropping pattern based on water resources	100
	3.3 Use of less saline water resources for increasing cropping intensity in Barisal region 2017-2019	i) To bring fallow land under Boro cultivation ii) To improve crop and land productivity in the region	200
IV: Sustainable Management of Water Resources			
04	**Surface and Ground Water Assessment**	• To identify the aquifer characteristics and quality of groundwater in Bangladesh and its relationship with rainfall	

	4.1 Monitoring of groundwater fluctuation and safe utilization in different geo-hydrological regions 1979- to be Continued	i) To determine the fluctuation of groundwater level over time and its relationships with rainfall ii) To determine water quality for assessing suitability for irrigation.	100
	4.2 Delineation of areas having water shortage during Boro rice cultivation in Northwest Bangladesh 2014-2017	i) To identify STW areas facing water scarcity during boro season ii) To identify period of water shortage with magnitude iii) To assess the possibility of shifting from Boro to alternative crops (Braus/Aus/Non-rice crops)	100
	4.3 Waste water irrigation for crop production 2015-2018	To delineate the sources of waste water To determine the quality of waste water and suitability for irrigation To develop a mechanism for storing and irrigating waste water To determine the irrigation coverage by waste water	200
	4.4 Development of suitable method for safe ground water recharge 2016-2019	Determination of a safe method for artificial groundwater recharge, and Identify qualities and microbial activities of artificial recharged water	200
V: Renewable Energy			
05	**Renewable energy for irrigation**	• To identify some renewable energy sources for irrigation	
	5.1 Evaluation of smallholder surface water solar irrigation system for crop production 2017-2020	i) To assess the suitability of solar pump for surface water irrigation ii) To evaluate the technical and economic performance of solar powered centrifugal and submersible pumps for smallholder iii) To assess the suitability of trolley or portable type PV panel structure iv) To determine the maximum command area covered by the pumps, and v) To analyze the feasibility of the pumps for rice cultivation	350
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 Improving water use for dry season agriculture by marginal and tenant farmers in the Eastern Gangetic Plains 2015-2018	i) Determine existing water resources and sustainable utilization for irrigation from tanks and groundwater ii) Determine the socio-economic, structural and institutional constraints to sustainable water use iii) Determine and evaluate approaches for access to water for irrigation focusing on using renewable technologies and alternate approaches to land tenure and their impact on livelihoods and resilience iv) Facilitate long term up-scaling and out-scaling of approaches and alternative opportunities	
	6.2 Cropping system intensification in the salt-affected coastal zones of Bangladesh and West Bengal, India (LWR/2014/73) 2016-2019	i) Develop a regional scale understanding of the surface water and groundwater resources, recharge/discharge mechanisms and trends in the case study polders. ii) Develop a detailed understanding of the salt and water dynamics of the polders and develop pre-monsoon and post-monsoon groundwater abstraction regimes that improve groundwater quality and availability during the dry season. iii) Develop detailed understanding of crop production responses to various improved polder water management strategies. iv) Test suitable cropping options and polder water and salt management strategies (developed in ii and iii) through field evaluation and co-learning with farmers	
	6.3 Modelling Climate Change Impact on Agriculture and Developing Mitigation and Adaptation Strategies for Sustaining Agricultural Production in Bangladesh 2015-2018	i) Assessment and characterization of climatic variability and climate change	

PLANT PHYSIOLOGY DIVISION

Research program 2018-2019

1: Salinity Tolerance			
Sl No.	**Program Area/ Project with duration**	**Objectives**	**Annual budget (Thousand Tk)**
Salinity tolerance			
1	Exploring new sources of salinity tolerance from BRRI Gene Bank collections at seedling stage Date of initiation: March 2018 Date of completion: December 2018	To find out new sources of salinity tolerance from Bangladeshi germplasms at seedling stage.	1.00
2	Characterization for salinity tolerance at seedling and reproductive stage during T. Aman season Date of initiation: April, 2018 Date of completion: February, 2019	To identify salt tolerant advance breeding lines/genotypes at seedling stage	0.50
3	Characterization of advanced breeding lines at salinity stress for whole growth period during Boro season Date of initiation: 2018 Date of completion: 2019	To know the level of tolerance of different genotypes. To identify the safe level of soil and water salinity for growing the genotypes	3.00
4	Physiological and biochemical characterization of identified salt tolerant genotypes Date of initiation: July 2018 Date of completion: March 2019	To characterize the physiological and biochemical parameters of the genotypes at seedling stage.	2.00
5	Phenotypic evaluation of $F_{2:3}$ lines at the seedling stage under saline condition. Date of initiation: July 2018 Date of completion: March 2019	To study the physiological and agronomic traits of the lines at seedling stage.	1.00
6	Characterization of some breeding lines at reproductive phase under saline condition Date of initiation: July 2018 Date of completion: March 2019	To characterize the genotypes at reproductive phase.	5.00
Submergence tolerance			
7	Identification of rice germplasm for two weeks flash flood submergence tolerance Date of initiation: March, 2018 Date of completion: December 2018	To identify tolerant germplasm and breeding lines for 2 weeks complete submergence To observe elongation capacity under complete submergence	1.00

		To identify germplasm with better recovery ability	
8	Identification of breeding lines for flash flood submergence tolerance Date of initiation: June, 2018 Date of completion: December 2018	To identify tolerant for 16 days or more complete submergence To observe elongation capacity under complete submergence To identify breeding lines with better recovery ability	2.00
9	Impact of Submergence duration on growth and yield of Submergence tolerant BRRI varieties. Date of initiation: June, 2018 Date of completion: December 2018	To observe the plant growth parameter and To evaluation yield performance under different submergence duration.	1.00
10	Screening for stagnant flooding tolerance of advance breeding lines and germplasm at whole growth period during T. Aman season Date of initiation: July'2018 Date of completion: December 2018	1. To identify tolerant germplasm for water stagnation condition 2.To observe tillering ability under water stagnation conditions	1.00
Drought tolerance			
11	Confirmation of performance for ALART/ RYT /AYT materials under drought stress at reproductive stage Starting date: July' 2018 Expected ending date: December' 2018	To evaluate of ALART/ RYT /AYT materials under control drought condition in the net house.	5.00
12	Screening germplasm for drought tolerance at reproductive phase Date of initiation: March, 2018 Date of completion:April, 2019	To identify rice germplasm tolerant to drought stress at reproductive phase.	2.00
13	Evaluation of previously selected germplasm under drought stress at reproductive phase in the rain-out shelter Starting date: July, 2018 Expected ending date: December, 2019	To find out the correlation of field performance of tested genotypes with the performance under control drought condition in the rain-out shelter	3.00
14	Physiological and biochemical characterization of advance breeding lines	To assess the effect of drought stress on growth and yield of the tested	3.00

	under drought stress at reproductive phase Starting date: July, 2018 Expected ending date: March, 2019	genotypes To identify the physiological traits associated with drought tolerance.	
Heat Tolerance			
15	Marker-assisted introgression of spikelet fertility loci (*qHTSF4.1*) from N22 in to two high yielding rice variety BRRI dhan48 and BRRI dhan58 Status: (On-going)	To develop heat tolerant BRRI dhan48 and BRRI dhan58 by introgressing spikelet fertility loci through MABC.	5.00
16	Generation advance and selection of progenies of spikelet fertility introgression lines at BC_3F_3 stage of BRRI dhan28 and BRRI dhan29 background Status: On-going	To fix the spikelet fertility QTL and background loci to develop heat tolerant BRRI dhan28 and BRRI dhan29.	1.00
17	Screening rice germplasm and breeding lines for heat tolerance Date of initiation: 2018	To identify new heat tolerant donor and advanced breeding lines.	2.00
18	Generation advance of heat introgression lines in the background of BRRI dhan28 and BRRI dhan29. Status : Continuation of previous works.	To select homozygous and high yielding lines.	2.00
19	Evaluation of heat introgression lines for yield at field condition. Season- Late boro season	To determine yield performance.	1.00
Cold Tolerance			
20	Exploring new sources of cold tolerance from BRRI Gene Bank collections at seedling stage Date of initiation: 2018	To identify rice genotypes which can tolerate low temperature at seedling stage.	1.00
21	Screening for seedling stage cold tolerance of advanced breeding lines Date of initiation: 2018	To identify advanced breeding lines which can tolerate low temperature at seedling stage.	2.00
22	Screening for reproductive stage cold tolerance of some selected rice genotypes at artificial condition Date of initiation: October 2018 Date of completion: May 2019	To identify rice genotypes which can tolerate low temperature at reproductive stage.	4.00
23	To identify rice genotypes which can tolerate low temperature at reproductive stage Date of initiation: October 2018 Date of completion: May 2019	To identify cold tolerant rice genotypes at natural condition.	5.00
24	Mapping QTLs for cold tolerance of	To develop mapping population for	2.00

	Mineasahi at reproductive stage.	mapping QTLs from Mineasahi	
Growth studies			
25	Photo-sensitivity test of some advanced breeding lines and recently BRRI released modern T. Aman varieties Date of initiation: 2018	To determine photoperiod induction cycle	1.00
26	Determination of growth stages of some rice varieties as affected by sowing time Date of initiation: 2018	To investigate the duration of different developmental stages of long and short duration rice varieties when seeded at different time in boro season. To find out the required degree-days for determination of panicle initiation of short, long duration rice varieties.	1.00
Yield Maximization			
27	Trait discovery for improving yield potential of current high-yielding ideotype Date of initiation: 2017 (on-going)	To identify morpho-physiological traits towards improvement of current high-yielding ideotype for higher yield.	8.00
Crop Weather Information			
28	Automatic weather station data recording, transfer, storage and maintenance. Status: On-going Date of initiation: 2012	Automatic weather station data recording, transfer, storage and maintenance.	8.00
29	Manual weather station data recording, transfer, storage and maintenance. Status: On-going	To collect, transfer and storage of different weather data.	1.00
		Total	74.5

Soil Science Division

Proposed Research Program 2018– 2019

Sl No.	Program Area/Project	Major Objectives	Annual budget ('000' Tk.)
1	Increase N use efficiency through nanotechnology	To increase NUE by urea-HA nanohybrid over PU or polymer coated fertilizer	500
2	Study on Nitrogen Mineralization rate of Guti-urea and Prilled-urea through Applicator in Boro Rice	To compare the N-mineralization rate To increase N use efficiency	150
3	Fertilizer Management for High Yielding Premium Quality Rice	To find out the suitable fertilizer combination for increasing yield and quality of premium rice	200
4	Nutrient management for growing four crops in a year	To increase crop production, To maintain soil fertility and improve nutrient use-efficiency. To determine nutrient depletion/mining.	500
5	Determination of N fertilizer doses for ALART materials/new BRRI varieties	To determine optimum N doses for ALART materials /newly released varieties.	400
6	Effect of nitrogen and potassium rates on modern rice cultivation	To find out the suitable combination of N and K for MV rice cultivation To study the N and K dynamics in soil and plant.	400
7	Performance of BRRI rice varieties under P deficient soil	To find out P efficient rice varieties	200
8	Assessment of micronutrient status from some selected paddy soils of Bangladesh	Characterization of soil related to micronutrient status of single, double and triple rice cropped area.	400
9	Nutrient management for diversified cropping in Bangladesh (NUMAN)	Develop and test tools for sustainable nutrient management for intensively cropped areas of north-west Bangladesh, the emerging cropping systems based on CA and for coastal zone soils of southern Bangladesh.	ACIAR and KGF
10	Long-term missing element trial at BRRI regional station	To determine nutrient mining problem on soil fertility and its influence on rice yield To find out nutrient management options for correcting soil problems	700

11	Long-term effect of organic and inorganic nutrients on yield and yield trend of lowland rice	To evaluate changes in soil physical, chemical and biological properties To determine management options for solution of soil problem(s)	200
12	Consequences of continuous wetland rice cropping on rice yield and soil health	To evaluate soil fertility and rice yield changes over time To find out mitigation options of soil health	120
13	Delineating rice yield limiting soil factors for some selected paddy soils of Bangladesh	To identify rice yield limiting factors of selected paddy soils in Habiganj, Faridpur, Rangpur and Gazipur To find out an appropriate nutrient package for maximum rice yield.	200
14	Identification of yield limiting nutrients of rice using Diagnosis and Recommendation Integrated System (DRIS)	To determine the nutritional factors limiting productivity and identify the most limiting nutrient(s) that should be applied to improve and stabilize the yield of rice in the different areas of Bangladesh.	120
15	Determination of Critical Limit of Nutrients for Major Soils and Crops	Delineation of the present status of different nutrients in calcareous, non-calcareous, piedmont and terrace soils of AEZ 18, 19 and 20. Determination of critical limit of P, K, S, Zn and B for different soils and rice crop.	NATP
16	Integrated nutrient management for double and triple rice cropping for maximizing productivity	To improve land productivity and soil health under intensive cropping system.	300
17	Performance of vermicompost and poultry manure on Rice yield and soil health	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.	200
18	Organic and inorganic fertilizer management effect on physical properties of a soil under rice-rice system	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	100
19	Long-term organic and inorganic amendment effects on soil phosphorus adsorption-desorption, availability and fractions of wetland rice soil	To evaluate P adsorption and desorption isotherms in flooded rice soil after long-term fertilizations. To investigate long-term fertilization effect on soil P fractions.	200

20	Effects of long term organic amendments on Quantity/Intensity parameters and buffering capacity of potassium in Grey Terrace Soil	To assess the K supplying power soils amended with different organic materials	200
21	Quantification of methane gas emission from farmers rice field under different water management practices	To determine methane emission from farmers' rice field under AWD and CSW conditions. To develop a technology for increased crop productivity with reduced negative environmental impacts.	IRRI
22	Mitigating Greenhouse Gas (GHG) emissions from Rice-based Cropping Systems through Efficient Fertilizer and Water Management	To quantify GHG emission from rice-based cropping system under different water and N management. To develop a technology for increased crop productivity with reduced negative environmental impacts.	KGF
23	Climate Smart Agricultural Practices for Crop Production in Bangladesh	To find out of greenhouse gas emission by using Cool Farm Tool Beta-3	IRRI
24	Effect of different organic sources for amelioration of industrial polluted area of Sreepur, Gazipur	To characterize the bio- physio-chemical properties of heavy metal polluted industrial area of Sreepur, Gazipur. To determine the mineralization rate of OMs in heavy metal polluted soil To determine the effect of OM on crop yield and soil health	KGF
25	Effect of biochar on rice yield and soil health	To study the effect of biochar on rice yield, soil health and GHG emission.	200
26	Evaluation of bio-organic fertilizer for the improvement of rice yield and soil health	To evaluate the efficacy bio-organic fertilizer for growth and yield of rice. To assess the impact of bio-organic fertilizer on soil health	500
27	Soil and plant processes as influenced by temperature	To determine the influence of temperature on nutrient mineralization from INM and chemical fertilizer amended soil To asses changes of microbial population and beneficial microbial community under varied temperature regimes and fertilizer management practices in this soil	200
28	Isolation and characterization of methanogens from paddy field	To isolate methanogens from paddy field and decomposed organic sources To determine the efficacy for methane	1000

		production of the isolates To identify potential methanogens	

PEST MANAGEMNT PROGRAM AREA

Entomology Division

Proposed Research Programme 2018-2019

Project No.	Title Project / Experiment	Objectives (General/specific)	Budget (lakh 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.	
	1.1 Pest monitoring in BRRI farm.	To study the insect pests and their natural enemy incidence at BRRI farm and to create a database to develop a forecasting system.	1.5
	1.2 Insect pests and natural enemy in light trap.	To study the pest and their natural enemy incidence patterns in rice fields and to create a database to develop a forecasting system.	1.5
	1.3 Construction of epidemiology information interchange system for migratory disease and insect pests of rice.	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.	7.0
	1.4 Survey of rice insect pests in selected AEZ's of Bangladesh.	To find the incidence patterns of major insect pests and their natural enemies in different Agro-ecological zones (AEZs) to examine the relationship between biotic and abiotic factors on their abundance.	2.0
	1.5 Development of bioclimatic models to forecast the dynamics of rice insect pests.	To develop, validate, demonstrate and assist rice growers to adopt an integrated system for the management of rice insect pests.	2.0
	1.6 Survey of gall midge incidence in selected areas.	To know the incidence pattern of gall midge.	2.0
2.	**Project: Bio-ecology of rice insect pest and natural enemy**	To study the ecology and development of insect pest of rice.	
	2.1 Response of insect pests to elevated salinity in soil and aquatic condition.	To know the effects of salinity on insect pests incidence of rice plant.	2.0
	2.2 Behavioral adaptation of RLR against global warming.	To identify the effects of temperature elevation on life cycle of rice leaf roller.	2.0
	2.3 Impact of Climate Change on Ecosystem Services (Pest Control and Rice Production).	Understand the impact of climate change on pest control and rice production services vulnerable to future climate change.	4.0
	2.5 Identification of gall midge	To identify available gall midge biotype(s).	2.0

Project No.	Title Project / Experiment	Objectives (General/specific)	Budget (lakh Tk.)
	biotype(s) in Bangladesh.		
3.	**Project: Biological control of rice insect pests**		
	3.1 Conservation of natural enemies through ecological engineering approaches.	To conserve natural enemies through ecological engineering approaches.	2.0
	3.2 Functional response of predator (carabid beetle/ spider/frog) against planthoppers.	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.	2.0
	3.3 Study on entomogenous fungi to control BPH.	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.	2.0
4.	**Project : Crop Loss Assessment**	To determine relationship between pest damage levels and yield losses.	
	4.1 Relationship between gall midge damage and yield loss.	To determine the yield loss potential of different rice varieties against gall midge damage.	2.0
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.	
	5.1 Test of different insecticides against major insect pests.	To evaluate the effectiveness of commercial formulations of different insecticides against major insect pests of rice.	3.0
	5.2 Effect of selected botanicals (neem and mahogany) on major rice pests.	To identify effectiveness of eco-friendly plant materials (Mahogany and Neem) against major rice insect pests (SB, RLR and BPH).	1.0
	5.3 Fumigation action of botanical oils against rice stored grain insects.	To find out the effective plant-derived insecticidal compounds against stored grain pests.	1.5
	5.4 Farmers perception in pesticide use.	To evaluate small-scale farmers' practices and knowledge with regard to pesticide use To identify the determinants of their behavior.	1.5
6.	**Project: Host plant resistance**	Identification of resistant sources against rice insect pests.	
	6.1 Screening of rice germplasm, advance line and F_2 materials against major insect pests.	To identify resistant rice germplasm against major insect pests.	4.0
	6.2 Hybridization for the development of planthopper resistant rice variety.	To develop BPH resistant rice variety.	5.0
	6.3 Identification of BPH resistant	To identify BPH resistant germplasm.	4.0

Project No.	Title Project / Experiment	Objectives (General/specific)	Budget (lakh Tk.)
	sources from local germplasm.	To characterize BPH resistant germplasms using BPH resistant linked markers.	
	6.4 Identification of resistant sources against gallmidge.	To identify GM resistant germplasm. To characterize GM resistant germplasms using GM resistant linked markers.	4
7.	**Project: Integrated pest management**	Reduction of chemical pesticide and safe food management.	
	7.1 Use of solar light trap for insect pests management in crop field.	To test the efficacy of BRRI solar light trap for insect pest management in rice and vegetable fields.	3.0
	7.2 Use of sex pheromone to control rice leafroller, *C. medinalis.*	To test the efficacy of sex pheromone against leafroller in rice field To control rice leaf roller without insecticide.	1.0
	7.3 ধানের ফলন বৃদ্ধিতে কীটতত্ত্ব গবেষণাগার আধুনিকায়ন	১। ধানের পোকামাকড় গবেষণায় আধুনিক ও উন্নতমানের যন্ত্রপাতি সংগ্রহকরণ। ২। ক্ষতিকর রাসায়নিক কীটনাশকের ব্যবহার কমিয়ে ধান উৎপাদন। ৩। কীটতত্ত্ব বিভাগের গ্রীণ হাউসের উন্নয়ন ও আধুনিকায়ন। ৪। জলবায়ু পরিবর্তনের ফলে পোকামাকড়ের আক্রমণ ও ক্ষতির মাত্রা সম্পর্কিত পূর্বাভাস মডেল তৈরী করণ। ৫। নতুন উন্নত জাত উদ্ভাবনের জন্য বাদামি গাছফড়িং (ইচঐ) প্রতিরোধি দেশীয় ধানের জাত ও জিন সনাক্ত করণ।	৭৫৫.০
8.	**Project: Vertebrate pest management**	Management of rat in rice field.	
	8.1 Eco-friendly rodent management through owl conservation.	To study the bio-ecology of available owl species and their mass rearing techniques. To upscale the developed techniques and buildup public awareness on owl conservation for sustainable rat management.	49
	8.2 Test of efficacy and modification of different rat management options.	To develop effective and eco-friendly rice rat management techniques.	2

Plant Pathology Division

Proposed Research Program for 2018– 19

Sl. No	Programme area/Project	Major objectives	Annual Budget (1000TK)
	Programme Area: Pest Management (Plant Pathology)		
1.	Survey and monitoring of rice diseases in selected areas	To investigate the present status of different rice diseases in different climatic environments	600
2.	Diversification and evolution of avirulence genes in the field isolates of *Pyricularia oryzae*	To confirm the evolution of new pathotypes in Bangladesh	100
3.	Pathotypic and genetic diversity of *Rhizoctonia solani* 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 well as genetic variability of *R. solani* AG1-IA populations	500
4.	Molecular characterization of bakanae causing fungi in Bangladesh.	To find out the fungi associated with bakanae disease of rice in Bangladesh	500
5.	Molecular detection 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
6.	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*;	500
7.	Detection and confirmation of blast resistance genes in land races using differential system and allelism tests.	To characterize the land races against blast disease	200
8.	Infection ability of rice and wheat blast pathogen on different hosts.	To find the pathogenic diversity of Blast pathogen on two different hosts	50
9.	Isolation and identification of rice kernel bunt pathogens and their pathogenicity test– another emerging disease of rice.	To isolate and identify of causal agent of Kernel bunt disease.	30
10.	Effect of drought tolerant microbes (*Pseudomonas* spp. and *Trichoderma* spp.) on drought response of rice	To identify potential microbes for drought tolerance in rice	50
11.	Exploring new sources of resistance and pyramiding blast resistant gene in Boro rice.	To find new source of major resistant gene(s) against blast disease in the native land races.	1000

12.	Screening of advanced rice breeding lines and land races against Blast and Sheath Blight diseases	To identify the source of resistance against blast and sheath blight diseases of rice.	100
13.	Evaluation of blast resistant multiline variety of IR64.	To check resistant reactions of multilines variety	50
14.	Introgression of Blast resistant genes into BRRI dhan47	To develop durable blast resistant variety harboring *Pi40* and *Pi9*	100
15.	Identification of major blast resistant genes in zhoom rice.	To find out blast resistant source(s) of *Pi genes*	100
16.	Exploring new source of blast resistance in native rice germplasm	To identify new sources of resistance from upland rice germplasm	50
17.	Development of blast resistant varieties using differential system and molecular markers	To develop blast resistant varieties for Bangladesh	200
18.	Improvement of BRRI varieties for resistance to blast and bacterial blight diseases using marker assisted backcross breeding	To develop durable resistant cultivars through pyramiding of both BB and blast genes (broad spectrum resistance)	200
19.	Identification of resistant sources and gene pyramiding of bacterial blight and blast Resistance into the background of BRRI dhan29 through MAS	To identify bacterial blight and blast resistance sources.	100
20.	Pyramiding of major BB resistant gene(s) in susceptible rice variety/ lines.	To introgress major BB resistant gene(s) into the selected cultivar for durable resistance.	300
21.	BB resistance and yield performance of selected breeding lines	To evaluate yield performance including BB resistance	100
22.	Gene detection of bacterial blight (BB) resistance in local rice cultivars using phenotypic and molecular studies	To identify BB resistant genes in native cultivars	100
23.	Detection of major resistant genes and pyramiding of bacterial blight resistance into parental lines of hybrid rice using MABC	To screen available maintainers and restorers against differential isolates of BB.	200
24.	Screening of breeding lines and germplasms against BB	To identify resistant source(s) against BB	950
25.	Screening of rice germplasm against Bakanae disease	To identify the source of resistance against bakanae disease of rice.	50
26.	Screening of land races against Sheath Blight diseases	To identify the source of resistance against sheath blight diseases of rice.	100
27.	Linkage and QTL mapping of tungro resistance in rice	To identify significant QTLs with linked marker for tungro resistance in rice land race Kumragoir	700
28.	Development of prebreeding materials for tungro resistance	To develop tungro resistant advanc lines	200
29.	Development of inoculation technique for false smut disease	To identify the resistant/tolerant variety and the effective fungicide for rice false	30

		smut (RFSm) disease	
30.	Identification of the primary source of natural infection of rice false smut disease	To understand the disease cycle of RFSm in nature.	50
31.	Effects of RFSm contaminated seeds on quality	To validate, seed contaminated by RFSm affects the attributes of seed quality	30
32.	Diagnoses of physical environment and pathogen biology responsible for rice blast disease outbreak in Bangladesh and build up awareness to the stakeholders (NST)	To diagnose the reasons of rice blast outbreak and build up awareness to the stakeholders.	200
33.	Investigation of grain quality and nutritional status of rice infected by major diseases	To determine the grain quality in terms of seed health, nutritional value and physicochemical properties.	50
34.	Developing an algorithm between the severity of sheath rot disease and yield reduction in rice	To develop an algorithm associating the levels of severity of sheath rot disease and reduction of yield in rice panicles	30
35.	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	200
36.	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
37.	Combating seedling blight disease through raising healthy rice seedling	To test the efficacy of disease free seedling raising technique in trays and field	1000
38.	Digitalization and restructuring of *Ankuri*	To optimize and digitalize *Ankuri* for seed germination and hot water seed treatment	800
39.	Evaluation of commercial biopesticides against major rice diseases	To screen the effective biopesticides for rice diseases	50
40.	Isolation of effective bacterial isolates for management of sheath blight disease	To test the efficacy of disease free seedling raising technique in trays and field	50
41.	Application of nanotechnology for rice disease management in Bangladesh	To optimize and digitalize *Ankuri* for seed germination and hot water seed treatment	100
42.	Management of Sheath blight disease utilizing *Trichoderma harzianum*	To screen the effective biopesticides for rice diseases	100
43.	Identification of crop damage phenomenon by red eelworm and their management	To isolate an identify the effective isolates against sheath blight disease	500
44.	Identification of potential bio-control agents and formulation of biopesticides against Bakanae disease of rice	To test the efficacy of disease free seedling raising technique in trays and field.	1500

45.	Evaluation of new chemicals against Blast, Bacterial blight, Sheath blight, False smut, Sheath rot and Bakanae diseases of rice	To find out the effective chemicals suitable for Blast, ShB, False smut, Bakanae and Bacterial blight diseases	200
46.	Integrated management of blast disease for enhancing rice production in relation to climate change	To minimize yield loss due to blast disease To build up farmers awareness on blast disease management	800

FARM MACHINERY AND MECHNIZATION PROGRAM AREA

Farm Machinery and Postharvest Technology Division

Proposed Research Programme 2018-2019

Sl. No	Programme area /Project with duration	Major Objective	Annual budget (Thousand Tk.)
01	Development of Agricultural Machines	• Development of farm machinery adaptable to rice eco-system • Reduction of human drudgery	**58,00,000.00**
1.1	Evaluating and modifying of BRRI developed machines Duration : 1998-2018	• To verify the quality of BRRI machines • To identify the functional problems of farm machines • To improve the performance of farm machines	50,000.00
1.2	Design and development of a head feed power thresher Duration : 2013-2018	• To develop a head feed thresher	1,00,000.00
1.3	Design and development of whole feed mini combine harvester Duration : 2015-2018	• To assess combine harvester field performance, general condition, durability, repair and maintenance requirements • To check the fuel consumption and hourly production of the combine harvester under different working conditions • To obtain operator views regarding suitability of combine harvester.	15,00,000.00
1.4	Design and development of head feed mini combine harvester Duration : 2015-2018	• To design a head feed combine harvester • To manufacture the designed combine harvester prototype • To carryout field performance test of the developed combine harvester prototype	15,00,000.00
1.5	Development of manual seed sower machine for raising mat type seedling Duration : 2016-2018	• Improvement of manual seeds sower machine • Performance evaluation of seeds sower machine	1,00,000.00

Sl. No	Programme area /Project with duration	Major Objective	Annual budget (Thousand Tk.)
1.6	Performance evaluation of power operated seed sower machine Duration : 2016-2018	• To observe the performance of the seed sower machine • To calibrate the sower machine for different rice variety • To calibrate the sower machine at different days of sprouting	1,00,000.00
1.7	Design and development of a reaper binder Duration : 2017-2019	• To evaluate the performance of the binder • To identify the functional problems	3,00,000.00
1.8	Field evaluation of minimum tillage unpuddled mechanized rice transplanting Duration : 2016-2018	• To compare the agronomic performance • To identify the problem	2,00,000.00
1.9	Incorporation of prilled urea deep placement mechanism in the rice transplanter Duration: 2017-2019	• To develop a technology for dispensing seedling and prilled urea simultaneously • To incorporate the impeller type (force mode) prilled urea deep placement mechanism in the walking type rice transplanter • To test the field performance of the technology • To save the fertilizer application time and cost	3,00,000.00
1.10	Development and validation of BRRI prilled urea applicator (BPUA) for mechanically transplanted rice Duration : 2017-2019	• To modify the BRRI prilled urea applicator for 30 cm line to line spacing of mechanically transplanted rice • To calibrate the fertilizer dose • To observe the yield and yield contributing parameters	1,00,000.00
1.11	Design and development of fertilizer deep placement (FDP) mechanism for existing rice transplanter Duration : 2018-2021	• To design and development of power transmission mechanism from engine to the applicator for both walking and riding type rice transplanter • To design and attach adjustable type fertilizer dispensing mechanism in the rice transplanter • To design skid, furrow opener and covering mechanism for fertilizer deep placement • To test, evaluate and validate the technology in laboratory, research field and farmers' field • To save energy, cost and time of separately seedling transplanting and deep placement of fertilizer application	1,00,000.00

Sl. No	Programme area /Project with duration	Major Objective	Annual budget (Thousand Tk.)
1.12	Design and development of power tiller operated rice transplanter Duration : 2018-2021	• To design and development of mat type transplanter suitable to incorporate with 2-wheel tractor (power tiller). • To design simple linkage mechanism to incorporate the transplanter with power tiller. • To design simple and easy power transmission and hydraulic mechanism suitable to operation in wetland. • To test, evaluate and validate the technology in laboratory, research field and farmers' field.	5,00,000.00
1.13	Design and development of inclined plate hill dispensing seeder for direct seeding of rice Duration : 2018-2021	• To design and development of hill dispensing type direct seeder of rice • To design simple metering device for different graded of rice varieties • To design simple and easy power transmission mechanism for furrow making, covering, uniform and hill dispensing of seeds. • To test, evaluate and validate the technology in laboratory, research field and farmers' field	4,00,000.00
1.14	Test and evaluation of BRRI developed power weeder Duration : 2018-2020	• To observe the performance of BRRI power weeder	50,000.00
1.15	Development of power operated rice transplanter Duration : 2018-2021	• To develop a power operated rice transplanter • To observe the performance of the developed rice transplanter	5,00,000.00
02	Milling and Processing Technology	• To reduce loss, improve quality and addition of value to the farm products	**13,00,000.00**
2.1	Design and development of solar dryer Duration : 2015-2018	▪ To design, fabricate and develop solar dryer ▪ To compare with traditional sun drying of paddy	1,00,000.00
2.2	Improvement of air blow type engelberg huller mill Duration : 2016-2018	• To test and evaluation of milling quality of un-parboiled rice process in the air blowing engelberg huller • To test and evaluation modified air blowing type rice mill	2,00,000.00
2.3	Test, evaluation and modification rubber roll de-husker Duration : 2016-2018	• To modify and development of a rubber roll de-husker • To evaluate the performance of paddy de-husker	3,00,000.00

Sl. No	Programme area /Project with duration	Major Objective	Annual budget (Thousand Tk.)
2.4	Study the milling recovery of long grain rice varieties in commercial mill Duration : 2016-2018	• To compare the milling recovery of processed rice in different rice mill • To evaluate head rice and broken rice percentage	3,00,000.00
2.5	Effect of drying and tempering on milling recovery of BRRI Variety under different moisture content Duration : 2017-2019	• To find out optimum moisture content for maximum milling yield and head rice recovery	3,00,000.00
2.6	Drying Characteristics and Milling Quality of Premium Quality Rice under various Drying and Tempering Conditions Duration : 2018-2020	• To describe the convective drying proces using several mathematical models for i dentifying the best model. • To determining effects of different levels of drying temperature and tempering on p remium quality rice. • To establish the appropriate tempering t ime for premium quality rice by analyzing the milling yield, amylose content, pro tein content, and whiteness.	1,00,000.00
03	Development of stores and storage technology	• To increase shelf life of rice in store	2,00,000.00
3.1	Effect of ageing on milling performance of premium quality rice Duration : 2018-2021	• To observe the milling performance of BRRI dhan50 at different aging	2,00,000.00
04	Renewable Energy Technology	• Development of renewable energy extraction technologies from solar, agri-residues and waste products	7,00,000.00
4.1	Study the briquette production from rice byproduct Duration : 2016-2018	• To prepare briquettes from rice straw and husk • Characterization of different briquettes originated from agricultural residue • To measure the calorific value of the briquettes	1,00,000.00
4.2	Study on Solar Energy Utilization for BRRI Power Chopper Operation Duration : 2017-2020	• To design mechanism of solar energy utilization • To evaluate the performance of the developed machine	3,00,000.00
4.3	Design and development of solar powered light trap Duration : 2017-2018	• To develop solar system for light trap • To evaluate the efficacy of solar light trap	1,00,000.00
4.4	Determination of mixing ratio of agricultural byproduct for biogas production Duration : 2017-2021	• To identify the potential biogas material from agricultural byproduct • To find out the best mixing ratio for maximum biogas production	2,00,000.00

Sl. No	Programme area /Project with duration	Major Objective	Annual budget (Thousand Tk.)
05	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	10,00,000.00
5.1	Industrial and farm level extension of BRRI machinery and Postharvest technology Duration : 1998-2018	• To create awareness and demonstrate the benefit of using BRRI machines among the farmers • To motivate the local entrepreneurs to manufacture BRRI developed machinery	10,00,000.00

Workshop Machinery and Maintenance Division

SUMMARY OF THE PROPOSED RESEARCH PROGRAMME 2018-19

Sl. No.	Title (Project/Experiment)	Objectives (General/Specific)	Annual Budget (Thousand Tk.)
1	Design and development of power transmission system of a power unit	To design a compact size gearbox with mechanism of two forward and a backward speed To design a chassis of self-propelled power unit	100 GOB
2	Design, development and modification of self-propelled reaper	To develop user friendly self-propelled reaper To evaluate the performance of the reaper	200 GOB
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	50 GOB
4	Design and development of manually/power operated mini reaper	To develop a manually operated reaper To evaluate the performance of the manually operated reaper	200 GOB
5	Modification of reaper travelling wheel for wet land condition	To design the suitable travelling wheel for wet-land condition To test and evaluate the newly designed wheel at wet-land as well as dry-land condition	50 GOB
6	Determination of tilling efficiency of power tiller at selected areas in Bangladesh	To determine the optimum tillage depth for maximum paddy yield To identify the amount of fuel consumption according to depth of tillage	50 GOB

Sl. No.	Title (Project/Experiment)	Objectives (General/Specific)	Annual Budget (Thousand Tk.)
7	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 GOB
8	Potentiality of engineering workshop for enhancing farm mechanization in selected areas of Bangladesh	To investigate the capacity of engineering workshop in agricultural machinery manufacturing To study the production and existing use level of agricultural machinery at different farm operations To identify the limitations and prospects of engineering workshop at farm level	150 GOB
9	Survey on status and constraint of farm machinery used in farmer's field at selected areas	To investigate the capacity of engineering workshop in agricultural machinery manufacturing; To study the production and existing use level of agricultural machinery at different farm operations To identify the limitations and prospects of engineering workshop at farm level.	100 GOB
10	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 To increase crop production by improving irrigation facilities where electricity is not available.	200 GOB
11	Solar energy use in threshing operation	To test the suitability of solar energy use in threshing operation To evaluate the performance of solar energy use in threshing operation	200 GOB

RICE FARMING SYSTEMS PROGRAM AREA

Rice Farming Systems Division

Proposed Research Program 2018- 2019

S1.No.	Program area/ Project	Major Objective	Annual Budget (Thousand Tk.)
	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	Tk. 1,00,000.00
	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	Tk. 1,50,000.00
	Development of integrated vegetables, fish and fruit system for shallow mini pond	To develop farming system technology for diversifying and maximizing productivity using aquatic systems.	Tk. 50,000.00
	Determination of fertilizer dose for Mustard-Boro-T. Aman cropping patterns	To determine Location specific recommended fertilizer package for Mustard/Potato-Boro-T. Aman cropping pattern.	Tk.1,20,000.00
	Development and evaluation of four-crop cropping patterns and sustainability	i) To increase total productivity of unit area per year by increasing cropping intensity ii) To compare the sustainability of four-crop cropping patterns with that of three-crop cropping pattern in terms of soil heath and profit.	Tk.6,00,000.00
	Identification of suitable rice variety in Boro-Fallow-T. Aman cropping system under supplemental irrigation for sustainable production	i) To evaluate suitable T. Aman & Boro varieties for sustaining the productivity of Boro-Fallow-T. Aman cropping pattern ii) To evaluate the performance of T. Aman varieties under supplemental irrigation	Tk. 1, 20,000.00
	Development of Aus- T. Aman-Sunflower CP as suppresor Aus weed by incorporation of sunflower	To investigate the allellopathic effect of sunflower crop residue on Aus weed in Aus-T. Aman-Sunflower CP and evaluate its performance	Tk.2,00,000.00

	crop residue		
	Ecosystem wise demonstration of newly released rice variety for accelerated adoption	Dissemination of newly released variety for appropriate ecosystem to increase yield.	Tk.10,00,000.00
	Multilocation testing of Boro-Fallow-T. Aman CP in flash flood prone areas	To adopt BRRI dhan51 and BRRI dhan79 in Boro-Fallow-T. Aman CP in flash flood prone areas to increase total production	Tk.10,00,000.00
	Multilocation testing of Boro-Fallow-DWR CP in flood prone areas	To introduce DWR (Laxmi digha) in Boro-Fallow-Fallow CP in flash flood prone areas to increase total production	Tk. 1,20,000.00
	Evaluation of non-rice crop establishment methods for sustainable crop production in saline areas	To evaluate the performance of selected crops under different crop establishment methods	Tk. 3, 00,000.00
	Evaluation of different mulching techniques for pit crops under saline condition	To evaluate mulching material and mulching method for pit crop.	Tk. 3, 00,000.00
	Performance of exotic date palm (Phoenix dactylifera) in homestead and agro-forestry systems	i) To increase diversity in date palm ii) To increase existing agro-forestry system iii) To proper use of in- and around homestead area	Tk. 5,00,000.00
	Coordinated subproject on Integrated Farming Research and Development for Livelihood Improvement in the Plain land Eco-system		

SOCIO-ECONOMICS AND POLICY PROGRAM AREA

Agricultural Economics Division

Proposed Research Program 2018-19

SL. No.	Program area/ project	Major Objectives	Annual Budget (Thousands Tk.)
I. Rural Institution & Economic Consequences			
1.	Farm Level Adoption and Evaluation of Modern Rice Cultivation in Bangladesh	Determine the region-wise adoption rate of different MVs in Aus, T. Aman and Boro seasons; Estimate the yield of different modern and local rice varieties in different seasons; and Delineate the socio-economic and varietal constraints to the adoption of MVs in different regions.	BDT 500,000 (GOB)
2.	Returns to Investment on Rice varietal Research in Bangladesh	Estimate the rate of return of post 1990s BRRI released varieties replacing pre1990s rice varieties (modern and local).	BDT 500,000 (GOB)
II. Production Economics			
3.	Estimation of Costs and Return of MV Rice Cultivation at the Farm Level	Determine the costs and returns of MV Aus, T. Aman and Boro rice cultivation in Bangladesh, and Estimate the factor and income share of MV rice cultivation in different seasons.	BDT 500,000 (GOB)
4.	Economic Viability and Production Efficiency of Rice: A Macro Level Study in Bangladesh (NATP-II)	Assess input use pattern and economic viability (profitability and risks) of Aus, T. Aman and Boro rice for different farm types (small, medium, large) in different regions; Evaluate technical efficiency of different farm types (small, medium, large) and the factors responsible for variation in the level of efficiency ; and Identify constrains to rice farming and drivers of varietal adoption.	BDT 15,108,720
III. Rice Marketing & Price Policy			
5.	Value Chain Analysis of Aromatic Rice (*Kalizira, Katari bhog,* BRRI dhan34 and BRRI dhan50) in Bangladesh	Mapping the value chain networks of aromatic rice and the process of value addition along the chain; Determine cost, margin, price spread and efficiency of supply chain of aromatic rice; and Identify constraints and opportunities of value chain of aromatic rice and recommend policy measures.	BDT 400,000
IV: Agricultural Policy and Development			

SL. No.	Program area/ project	Major Objectives	Annual Budget (Thousands Tk.)
6.	Assessment of Adoption status and Productivity of rice cultivation in hilly areas of Bangladesh	Examine the socio economic profile of rice growers in the hilly areas; Estimate adoption status of different rice variety in the hilly areas; Assess profitability of rice cultivation and examine the economic efficiency of rice producer in the hilly areas; and Identify constrain toward rice cultivation and document farmers' suggestion for possible solutions.	BDT 150,00,000 (GOB)
7.	Transforming Rice Breeding Through Capacity Enhancement of BRRI: A Market Analysis	Segmenting rice market from different locations and generate database on rice consumption, consumer and producer's preferences; and, Development of product concepts and quality targets for varietal replacement**.**	BDT 12,00,000 (TRB)
8.	Constraints to Adoption of BRRI Released Rice Varieties in *Haor* Areas of Bangladesh: A Policy Options	To delineate farmer's adaptation options toward rice cultivation in *haor* areas; To investigate the positive and negative traits of BRRI released rice varieties; To assess the factors affecting slow adoption of BRRI released rice varieties at farm level; and, To construct easy and shorter dissemination procedure for curtailing adoption lag period.	BDT 500,000

Farm Management Division

Proposed Research Program 2018-19

Sl. No.	Program area/Project (Duration)	Major Objectives	Annual Budget (Thousands Tk.)
3.1.	**Rice production management**		
	1. Productivity and profitability of different short duration rice variety as affected by spacing	To find out the optimum spacing of different short duration rice variety in terms of maximum benefit.	25
	2. Effect of organic matter on soil properties and yield of rice	- To find out the effect of kitchen waste, bio-slurry and poultry litter on yield of rice. - To evaluate the better source of organic matter for improvement of rice soil health.	50
	3. Standardization of crop soil fertilizer management and spacing for super high yielding rice	To find out appropriate fertilizer doses and spacing for super high yielding lines	25
3.2.	**Survey and development of Data base for labor management.**		
	1. Monitoring the laborers' wage rate for rice cultivation around different locations of Bangladesh.	-To document farmers' labor management practices for rice cultivation	100
3.3.	**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	5000
			Total= 5200

Agricultural Statistics Division

Proposed Research Programme_2018-19

SN	Program area/ Project	Major Objective	Annual Budget (lac TK.)
	Program area: Socio-economic and Policy		
1.	**Stability Analysis of BRRI Varieties**	1. To determine the stability index of BRRI varieties 2. To study G×E Analysis of BRRI Varieties 3. To project national rice production of Bangladesh 4. To obtain Genetic Variability, Heritability and Genetic Advance of BRRI Varieties 5. To maintain season, year and location wise database on BRRI varieties	14.00
	1.1 Experiment/Study: Stability Analysis of BRRI Varieties (In collaboration with Plant Breeding Div., Plant Physiology Div., ARD and All Regional Stations of BRRI)	1. To determine the stability index of BRRI varieties 2. To maintain season, year and location wise database on BRRI varieties	3.50
	1.2 Experiment/Study: Genotype x Environment Interaction of BRRI varieties	1. To Identify BRRI released rice genotypes that have both high mean yield and stable yield performance across different environments for different ecosystem of Bangladesh.	3.00
	1.3 Experiment/Study: Genetic Variability, Heritability and Genetic Advance for Yield and Yield Contributing Characters of BRRI Released Rice Varieties	1. To assess the extent of genetic variability, heritability and genetic advance for yield and yield contributing characters of BRRI released rice genotypes 2. To investigate characters association among different traits and constructing selection criteria for high yielding genotypes under different ecosystem of Bangladesh	3.50
	1.4 Experiment/Study: Region specific BRRI variety adoption: A simple way of increasing national production	1. To project national rice production of Bangladesh	4.00
2.	**Multivariate Analysis of**	1. To maintain up-to-date computerized	3.00

SN	Program area/ Project	Major Objective	Annual Budget (lac TK.)
	BRRI Varieties	information on rice and related crops 2. To determine year wise GR of Rice Production in Bangladesh 3. To maintain up-to-date computerized information on climatic factors 4. To produce various climatic maps	
	2.1 Activity: Maintenance of rice and rice related variable database	1. To maintain up-to-date computerized information on rice and related crops 2. 2. To determine year wise GR of Rice Production in Bangladesh 3. To maintain up-to-date computerized information on climatic factors both BRRI regional stations and BMD stations data. 4. Make comparison between BRRI stations and BMD stations data. 5. Produce various maps from these data.	3.00
3.	**Agro Meteorology and Crop Modeling**	1. To forecast and validation of agro micro climatological factors in rice crop seasons through experimentation for sustainable rice production. 2. To determine the genetic coefficient of rice varieties and simulate the impact of climate change on rice growth and yield 3. To forecast the yield of selected rice varieties at changing climatic conditions	17.00
	3.1 Experiment/Study: Minimizing Agro Micro climatological Risk Factors for Maximizing Sustainable Rice Production in Bangladesh (In collaboration with Entomology Div., Plant Physiology Div., Soil Science, IWM Div., Plant Pathology Div., and Agril. Econ. Div.)	1. To forecast and validation of agro micro climatological factors in rice crop seasons through experimentation for sustainable rice production. 2. To avert management risk and capacity development through weather forecasting information 3. To provide advisory services applying the tools of ICT in Agriculture. 4. To create database on weather forecasting and agro meteorological advisory services	10.00

	3.2 Experiment/Study: Simulating of Climate Change Impact on Rice Growth and Yield in Bangladesh using DSSAT Model (In collaboration with Entomology Div., Plant Physiology Div., Soil Science, IWM Div., Plant Pathology Div., and Agril. Econ. Div.)	1. To determine the genetic coefficient of rice varieties of Aus, Aman and Boro season. 2. To simulate the impact of climate change on rice growth and yield and also forecast the yield of selected rice varieties at changing climatic conditions. 3. To select suitable rice variety(s) as adaptation options at different climatic condition for regional rice farmers.	7.00
4.	**Utilization of Geographic Information System (GIS) in Rice Research**	1. To construct suitability map of BRRI released rice varieties. 2. To produce various climatic maps of Bangladesh 3. To construct upazila wise zonal map of BRRI released rice varieties	6.00
	4.1 Experiment/Study: Suitability Mapping of BR11, BR22, BRRI dhan28, BRRI dhan29 and BRRI dhan81-86. (In collaboration with Plant Breeding Div., Soil Science Div. and ARD)	1. To construct suitability map of BRRI rice varieties of BR11,BR22, BRRI dhan28, BRRI dhan29 and BRRI dhan81 - 86.	2.00
	4.2 Experiment/Study: Probability Mapping of Temperature and Rainfall of Bangladesh	1. To determine the season wise expected maximum, minimum temperature and rainfall in different region for rice in Bangladesh 2. To determine the season wise areas of critical maximum and minimum temperature and rainfall map of Bangladesh for rice during the period and 3. To estimate the return period of extreme rainfall and high temperature	2.00
	4.3 Experiment/Study: Rice zoning of BRRI varieties (In collaboration with Plant Breeding Div., Soil Science Div. and ARD)	1. To construct upazila wise zonal map of BRRI released rice varieties	2.00

5.	**Capacity Building Through Training**	1. To train up BRRI scientists on experimental data analysis using different Statistical software. 2. To make BRRI scientists self-dependent on experimental data analysis. 3. To developed skills on research planning, program and report writing.	4.00
	5.1 Activity: Training Program on Experimental Data Analysis	1. To train up BRRI scientists on experimental data analysis using different statistical software. 2. To make BRRI scientists self dependent on experimental data analysis. 3. To developed skills on research planning, program and report writing.	4.00
6.	**Information and Communication Technology (ICT)**	1. To manage and maintain ICT at Bangladesh Rice Research Institute 2. To digitize analog system of BRRI. 3. To develop software and Apps for BRRI. 4. To establish e-Governance at BRRI.	66.00
	6.1 Activity: "Rice Doctor" Apps for BRRI	1. To develop rice doctor Apps for BRRI. 2. To manage and maintain rice doctor apps. 3. To host rice doctor Apps at server.	15.00
	6.2 Activity: Mobile Apps of RKB (Rice Knowledge Bank)	1. To develop and modify the design of RKB. 2. To manage and maintain RKB through regular updating of the information and documents.	2.00
	6.3 Activity: BRKB website management *(In collaboration with training, breeding and others research divisions)*	1. To develop and modify the design of BRKB Website. 2. To manage and maintain BRKB Website through regular updating of the information and documents.	1.00
	6.4 Activity: Dynamic view connectivity system, bangla searching system and inner banner system for BRKB Website *(In collaboration with training, breeding and others research divisions)*	1. To construct dynamic view connectivity system. 2. To create bangla searching system. 3. To develop inner banner system. 4. To manage and maintain BRKB Website through regular updating of the information and documents.	4.00

	6.5 Activity: BRRI Web Mail and Group Mail.	1. To create Web mail and Group mail id with password for all scientists and officers of BRRI. 2. To manage, maintain and update regularly as routine work web mail and group mail of BRRI.	1.00
	6.6 Activity: Spamming filtering system (SFS), automatic active & close system (AACS) and secure sockets layer system for BRRI Web and Group Mail	1. To develop spamming filtering system (SFS) at BRRI web mail server. 2. To create automatic active & close system (AACS) at BRRI web mail server. 3. To develop Secure Sockets Layer (SSL).	5.00
	6.7 Activity: Online Application System of BRRI *(In collaboration with Administration of BRRI and Teletalk Mobile Company Ltd.)*	1. To develop "Online application system" for BRRI. 2. To host "Online application system" at data center. 3. To manage and maintain "Online application system".	2.00
	6.8 Activity: e-File Management System of BRRI *(In collaboration with Administration of BRRI)*	1. To setup "e-File Management Software" for BRRI Head Quarter and all Regional station(R/S) for establishing e-Governance. 2. To setup "e-File (Nothi) Management System" for ensuring faster movement of files, hassle less and paperless office system. 3. To setup "e-File (Nothi) Management System" for increasing transparency, accountability at BRRI.	2.00
	6.9 Activity: e-Tender System of BRRI *(In collaboration with Building and Construction and procurement cell)*	1. To develop "e-Tender system "of BRRI as per requirement of the Ministry of Agriculture (MoA). 2. To introduce the online tendering system to facilitate the procurement process of BRRI. 3. To participate in the local and international tender/procurement of BRRI. 4. To increase transparency, competition and minimize the processing time and effort.	2.00

	6.10 Activity: Digitalized Labour Salary Management System of BRRI *(In collaboration with FM Div.)*	1. To digitalized "Labour Salary Management System" (LSMS) of BRRI. 2. To manage and maintain LSMS through regular updating with labour management related various information.	1.00
	6.11 Activity: Online Labour wages Management System of BRRI *(In collaboration with FM Div.)*	1. To online "Labour wages Management System" (LWMS) of BRRI. 2. To manage and maintain LWMS through regular updating.	5.00
	6.12Activity : 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.	4.00
	6.13 Activity: BRRI Web Portal Management	1. To develop and modify the design of BRRI Web Portal. 2. To manage and maintain BRRI Web Portal through regular updating of the information and documents.	1.00
	6.14 Activity: Management of BRRI HQ Local Area Network and Internet Connectivity	1. To increase the infrastructure of BRRI local Area Network. 2. To increase the bandwidth connectivity from 51 Mbps to 60 Mbps or more. 3. To manage and maintain ICT Network of BRRI.	4.00
	6.15 Activity: 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 posted.	1.00
	6.16 Activity: Personal Data Sheet of BRRI	1. To develop "Personal Data Sheet (PDS)" database for all scientists, officers, clerks of BRRI. 2. To develop "Personal Data Sheet (PDS)" database using user name & password. 3. To get BACKUP of "Personal Data Sheet (PDS)" database regularly.	0.50

	6.17 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.	15.00
	6.18 Activity: Heritage of BRRI	1. To develop "Heritage" for all scientists, all officers, all clerks, and all workers of BRRI. 2. To develop "Heritage "for research and administration works. 3. To create and stimulate awareness amongst the present employees of BRRI about ex. Scientists and officer's great activity.	0.50

Adaptive Research Division

Proposed Research Program: 2018-2019

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (lac Tk.)
Program Area: Technology Transfer			
01	**Adaptive Research**		
	Validation of Technologies	**Validate the matured technologies at farm level**	**Project Total**
	1. Varietal development		
	1. Advanced Lines Adaptive Research Trial (ALART) during T. Aus 2018, T. aman 2018 and Boro, 2019.	To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	
	1.1. ALART of promising rice genotypes in T. Aus 2018 Locations: Chattogram (Mirsarai), Feni (Sonagazi), Sylhet (Biswanath), Rangpur (Mithapukur), Chuadanga (Damurhuda), Jashore (Avoynagar), Chapai Nawabganj (Gomastapur) and BRRI Gazipur	To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	**1.50**
	1.2 ALART: Rainfed Lowland Rice (RLR) genotypes in T. Aman 2018 Locations: Feni (Dagonbhuiyan), Chattogram (Hathazari), Khulna (Dumuria), Barishal (Sadar),	To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh.	**2.4**

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (lac Tk.)
	Habiganj (Sadar), Chapai Nawabganj (Gomastapur), Rangpur (Sadar) and BRRI Gazipur.	To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	
	1.3 ALART: Rainfed Lowland Rice (RLR Bio) genotypes of Biotechnology in T. Aman 2018 Locations: Feni (Dagonbhuiyan), Chattogram (Hathazari), Khulna (Dumuria), Barishal (Sadar), Habiganj (Sadar), Chapai Nawabganj (Gomastapur), Rangpur (Sadar) and BRRI Gazipur.	To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	**2.4**
	1.4 ALART: Zinc enriched Rice (ZER) genotypes in T. Aman 2018. Locations: Feni (Dagonbhuiyan), Chattogram (Hathazari), Khulna (Dumuria), Barishal (Sadar), Habiganj (Sadar), Chapai Nawabganj (Gomastapur), Rangpur (Sadar) and BRRI Gazipur.	To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	**2.4**
	1.5 ALART: Insect Resistant Rice (IRR) genotypes in T. Aman 2018. Locations: Feni (Dagonbhuiyan), Chattogram (Hathazari), Khulna (Dumuria), Barishal (Sadar), Habiganj (Sadar), Chapai Nawabganj (Gomastapur), Rangpur (Sadar) and BRRI Gazipur	To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	**2.4**
	1.6 ALART: Premium Quality Rice (PQR) genotypes in T. Aman 2018. Locations: Dinajpur (Sadar), Thakurgaon ((Sadar), Naogaon (Sadar), Chapai Nawabganj (Gomastapur), Jashore (Monirampur) and BRRI Gazipur	To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	**1.8**
	1.7 ALART: Rainfed Lowland Rice (RLR Rang) genotypes of BRRI Rangpur in T. Aman 2018. Locations: Dinajpur (Sadar & Parbatipur), Thakurgaon ((Sadar), Gaibandha (Palashbari), Rangpur (Mithapukur & Badarganj), Kurigram (Rajahat) and BRRI Gazipur	To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	**2.4**
	1.8 ALART: Premium Quality Rice (PQR) genotypes in Boro, 2019 Locations: Dinajpur (Sadar), Feni (Sonagazi),	To evaluate the yield potential and adaptability of advanced breeding lines at	**2.4**

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (lac Tk.)
	Chattogram (Hathazari), Khulna (Dumuria), Barishal (Sadar), Habiganj (Baniachang), Rajshahi (Tanore) and BRRI Gazipur	farmers' field in different agro-ecological zones of Bangladesh. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	
	1.9 ALART: Favourable Boro rice (FBR) genotypes in Boro, 2019 Locations: Dinajpur (Sadar), Feni (Sonagazi), Chattogram (Hathazari), Khulna (Dumuria), Barishal (Sadar), Habiganj (Baniachang), Rajshahi (Tanore) and BRRI Gazipur	To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	**2.4**
	1.10 ALART: Zinc Enriched Rice (ZER) genotypes in Boro, 2019 Locations: Dinajpur (Sadar), Feni (Sonagazi), Chattogram (Hathazari), Khulna (Dumuria), Barishal (Sadar), Habiganj (Baniachang), Rajshahi (Tanore) and BRRI Gazipur	To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	**2.4**
	1.11 ALART: Insect Resistant Rice (IRR) genotypes in Boro, 2019 Locations: Sirajganj (Tarash), Natore (Singra), Dinajpur (Birganj), Sunamganj (Chhatak), Satkhira (Tala), Feni (Fulgazi), Chattogram (Hathazari) and BRRI Gazipur	To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	**2.4**
	1.12 ALART: Favourable Boro Rice-Biotechnology (FBR-BIO) genotypes in Boro, 2019 Locations: Dinajpur (Sadar), Feni (Sonagazi), Chattogram (Hathazari), Khulna (Dumuria), Barishal (Sadar), Habiganj (Baniachang), Rajshahi (Tanore) and BRRI Gazipur	To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	**2.4**
	1.13 ALART: Bacterial Blight Resistant-Biotechnology (BBR-Bio) genotypes in Boro, 2019 Locations: Dinajpur (Sadar), Feni (Sonagazi), Chattogram (Hathazari), Khulna (Dumuria), Barishal (Sadar), Habiganj (Baniachang), Rajshahi (Tanore) and BRRI Gazipur	To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh. To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel.	**2.4**

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (lac Tk.)
02	**Dissemination of Technologies**	Conducting on-farm trials for dissemination of BRRI technologies	**Project Total**
	2. Seed Production and Dissemination Program (SPDP)	To encourage the farmers for production, processing and storing of quality seed at on-farm level. To increase adoption of BRRI varieties. To get feedback information from the farmers and DAE personnel about BRRI varieties.	
	2.1 SPDP of BRRI dhan48 and 82 in Aus 2018 under GoB.	To disseminate BRRI dhan48 and BRRI dhan82 and drum-seeder technologies	2.1
	2.2 SPDP of promising rice varieties in Aus 2018 under TRB project.	To disseminate BRRI varieties in different region of Bangladesh.	0.40
	2.3 SPDP in Jhum system of the slope of hill in Aus 2018 under Hill Project.	To disseminate BRRI technologies in the hilly region of Bangladesh.	3.00
	2.4 SPDP in Valley of hill areas in Aus 2018 under Hill Project.	To disseminate BRRI technologies in the hilly region of Bangladesh.	3.00
	2.5 SPDP of promising rice varieties in T. aman 2018 under GOB.	To disseminate BRRI varieties and technologies in different region of Bangladesh.	15.00
	2.6 SPDP of promising rice varieties in T. Aman 2018 under TRB Project.	To disseminate BRRI varieties and technologies in different region of Bangladesh.	40.00
	2.7 SPDP of promising rice varieties in T. Aman 2018 under SPIRA Project.	To disseminate BRRI varieties through block demonstration in different region of Bangladesh.	4.00
	2.8 SPDP in Valley of hilly areas in T. Aman 2018 under Hill Project.	To disseminate BRRI technologies in the hilly region of Bangladesh.	5.00
	2.9 SPDP of promising rice varieties in Boro 2019 under GOB.	To disseminate BRRI varieties and technologies in different region of Bangladesh.	3.00
	2.10 SPDP of promising rice varieties in Boro 2019 under NATP.	To disseminate BRRI varieties and technologies at farmers' level.	4.50
	2.11 SPDP of promising rice varieties in Boro 2019 under SPIRA project.	To disseminate BRRI varieties through block demonstration in different region of Bangladesh	2.50
	2.12 SPDP in Valley of hilly areas in Boro 2019 under Hill Project.	To disseminate BRRI technologies in the hilly region of Bangladesh.	5.00
	2.13 SPDP of promising rice varieties in Boro 2018-2019 under ASRS Program.	To disseminate BRRI varieties and technologies in the stress prone area of	5.00

Sl. No	Proposed Research Program	Major Objectives	Annual Budget (lac Tk.)
		Bangladesh.	
	2.14 SPDP of promising rice varieties in Boro 2019 under TRB Project (No. of trial 200).	To disseminate BRRI varieties and replacement old varieties with new varieties in different region of Bangladesh.	15.00

03	**Promotional activities**	To update knowledge and skill of farmers and stalk holders on modern rice cultivation technology.	**Project Total**
	3. Training		
	3.1. Farmers' training in Aus 2018, T. Aman 2018 & Boro2018 under GoB, SPIRA, TRB and ASRS	To train the farmers on modern rice production technologies. To improve the farmers' knowledge and skill on rice production technologies. To create farmers' awareness about recent technologies.	10.00
	3.2. Field day in Aus 2018, T. aman 2018 & Boro2018 under GoB, SPIRA, TRB and ASRS	To get feedback information directly from the farmers. For rapid dissemination of rice production technologies among the farmers.	10.00
04	**Enrichment of own seed stock**		
	4.1 Production of quality seeds of BRRI released recent varieties.	To produce quality seeds of BRRI released recent varieties for adaptive research trials during Aus, Aman and Boro seasons.	0.50

Training Division

Proposed Research Program 2018-2019

Sl. No.	Research Program	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.	To acquire and enrich knowledge 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 (Yield Maximization).	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 cultivation and help the farmers to increase productivity.	24.00
	2.3. Special Training on Modern Rice Production Technologies for SAAO of *Haor* Areas	To train the SAAO of *haor* areas so that they can: Able to use and disseminate modern rice production technologies and Identify and solve the field problems of rice cultivation and help the farmers of haor areas to increase rice productivity.	18.00

	2.4. Training on rice production and data collection.	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
	2.5. Training on rice pest management	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.	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	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.	7.50
	2.8 Farmers Training in *Haor* areas on Modern Rice Production Technologies.	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.	8.00
	2.9 Special training on specific issues related to rice production Requested/demanded by different project of BRRI, IRRI. DAE and NGOs	Objectives depend on the requested courses.	-

III	Evaluation of Imparted Training Program. PL:Dr. Md. Islam Uddin Mollah PI: Dr. Md. Shahadat Hossain CI: Dr. Shahnaz Parveen	Evaluate the overall training program Assess the trainees' performances and Assess the resource speaker performances.	

Regional Station, Sagardi, Barishal

Proposed Research Program 2018-19

Sl no	Programme area/Project with duration	Major Objective	Budget Thousand Tk
Programme area/Project with duration: Regional Station, 2018-19			
1	Development of varieties for tidal submergence of T. Aman	To transfer submergence tolerance and taller seeding height controlling genes into varieties having intermediate plant height.	300
2	Introgression of dense-erect panicle gene in Indica rice (*Oryza Sativa* L.) to improve plant architecture	-To transfer dense and erect panicle gene in Indica genotype to improve plant architecture for higher yield	200
3	Introgression of dense-erect panicle and blast resistant gene in indica rice (*Oryza Sativa* L.) to improve plant architecture and blast resistance	-To improve resistance in rice plant against blast disease	100
4	Collection and conservation of T.Aman local rice varieties cultivated in tidal areas of Barishal region	-To characterize T. Aman Local Rice varieties for varietal development	100
5	Regional Yield Trial (RYT) for high yielding rice	-To test the yield potential and adaptability of advanced lines of rice	100
6	Proposed Variety Trial (PVT)	-To observe the performance of PVT materials under rainfed lowland condition	100
7	Research program under TRB	-Objectives of TRB	1000
8	Research program under Golden Rice Project	-Objectives of Golden rice project	500
9	Proposed variety evaluation trial of hybrid rice	-To evaluate the best performing hybrid rice provided by different companies	150
10	Multi location trial (MLT) of hybrid rice	-To develop hybrid rice	25
11	Screening of rice germplasms and breeding for Ufra resistance	-To identify ufra resistant sources from local germplasms and evaluation of resistant materials.	50
12	Survey and monitoring of rice diseases in selected areas	-To investigate the status of different rice diseases in southern region of Bangladesh	100
13	Screening of chemicals against blast disease of rice	-To find out effective chemical against blast disease of rice	50
14	Demonstration of blast disease management	-Enhancement of rice yield through	100

	practices of rice at farmers' field	blast disease management practices	
15	Insect pest and natural enemy incidence in light trap at BRRI Barishal	to know the seasonal occurrence, distribution and severity of major insect pests and their natural enemies at BRRI Farm, Barishal.	50
16	Assessment of suitable water resources availability for irrigation to increase crop production in tidal areas of Barishal region	To measure the dynamics of surface water salinity.	100
17	Exploration Potential Irrigation Water Source for Boro Cultivation in Barisal Region.	-To quantify the availability of irrigation water, -To identify the key problems for utilizing suitable water in Boro cultivation and to quantify potential area coverage by this available water in Boro season.	100
18	Monitoring of Tidal Water Quality at Sagardi Farm of BRRI R/S Barishal.	To analyze the quality of tidal water and sediment throughout the Aman season.	50
19	Long-term missing element trial to diagnose limiting nutrient in soil.	-To find out yield limiting nutrient in soil.	100
20	Yield Maximization of Boro Rice Through Appropriate Agronomic Management.	To maximize growth and yield of Boro varieties.	100
21	Stability analysis of BRRI released rice varieties	-To observed the yield performance of BRRI released rice varieties	100
22	Demonstration trial under SPIRA	-To demonstrate the yield performance and suitability of modern rice varieties in Barishal region	175
23	Demonstration trial under TRB	To disseminate latest HYV of rice varieties in Barishal region	100
24	Demonstration, seed production and scaling up of MV rice in Barishal region	To disseminate modern rice varieties in Barishal region	300
25	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 Barishal farm	500
26	Breeder seed production	-To produce breeder seed for disseminating BRRI released HYV of rice s	1000
27	TLS production	-To produce TLS seed for disseminating BRRI released HYV of rice	500
28	Hybrid seed production	-To disseminate BRRI released Hybrid varieties to farmers of Barishal region	150
29	Farmers' training	To train farmers about BRRI developed technologies	240
30	Farmers' field day	To make the farmers familiar with HYV of rice	200
31	Other extension and dissemination activities	To make the farmers familiar with HYV of rice and other technology	50

32	Uses of farm machineries to enhance the productivity at BRRI Barishal	- to enhance rice productivity at BRRI Barishal	300

Regional Station, Bhanga, Faridpur.

Proposed Research Program 2018- 2019

Sl. No.	Program area/ Project	Major Objective	Annual Budget Thousand Tk.
1.	**Variety Development**		
	1.1 Breeding for developing high yielding rice varieties for single Boro cropping pattern (Hybridization)	i. To develop breeding population with higher yield potential along with earliness and acceptable grain quality for single Boro cropping pattern of Faridpur region	200
	1.2 Regional Yield trial (RYT), Preliminary Yield Trial (PYT), Advanced Yield Trial (AYT), Proposed Variety Trial (PVT)		
2.	**Rice Farming Systems**		
	2.1 Identification of potential rice variety in Wheat/Onion-Jute-Relay Aman cropping pattern under shallow deep water rice ecosystem	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
3.	**Crop management**		
	3.1 Effect of nitrogen and potassium management on growth and yield of short duration T. Aman rice	i. To find out the effect of nitrogen and potassium management for maximum yield	150
4	**Socio-Economic Research**		
	4.1 Stability analysis of BRRI released varieties is conducted	i. To determine stability index and bio-physiological factors of BRRI varieties.	-
5.	**Technology Transfer**		
	5.1 Seed production and distribution program	i. To distribute newly released BRRI varieties at farmer's level of Faridpur Region.	-

	5.2 Demonstration of newly released BRRI varieties at farmers field	i. For popularization and rapid adoption of newly released varieties	500
	5.3 Training and Field Days	i. To train up farmers of greater Faridpur region	-

Regional Station, Cumilla

Research Program for 2018-2019

Program Area : Varietal Development Program (VDP)

SN	Experiments	Specific Objective(s)	Budget (Tk. Lac)
01: Development of Transplanted Aus Rice (Head Quarter Program)			
1.1	Observational Trial (OT)	To select lines homogeneity for morpho-agronomic characters having early seedling emergence, good seedling vigor, uniformity in heading, short growth duration	1.0
1.2	Preliminary Yield Trial (PYT)	Evaluation of initial yield potential in replicated plots.	**1.5**
1.3	Regional Yield Trial	Evaluation of agronomic performance, specific and general adaptability under on station condition	**1.0**
2. Development of Transplanted Aman Rice with high yield, short duration, water stagnation, premium quality, disease resistant (tungro) & multi stress tolerant			
2.1	Hybridization	Introgression of genes from diverged genetic background into rice varieties/lines for the improvement of standard T. Aman varieties	0.5
2.2	Confirmation of F_1	To confirm the crosses as true hybrid	0.5
2.3	Growing of F_2 population	Selection of progenies with emphasis on earliness, plant type, grain type and high yield potential	1.0

		compared to standard varieties	
2.4	Pedigree nursery	Selection of progenies with improved plant type, earliness, acceptable grain quality and high yield potential compared to standard varieties	1.0
2.5	Observational Trial (OT)	Selection of homogeneous breeding lines with acceptable grain quality having high yield with good plant type	1.5
2.6	Preliminary Yield Trial-1 (PYT-1) Com	Initial yield evaluation of advanced lines compared to standard checks	1.0
2.7	Preliminary Yield Trial-2 (PYT-2) (water stagnation P1)	Initial yield evaluation of water stagnation advanced lines compared to standard checks	1.0
2.8	Preliminary Yield Trial-3 (PYT-3) (water stagnation P2)	Initial yield evaluation of water stagnation advanced lines compared to standard checks	1.0
2.9	Preliminary Yield Trial-4 (water stagnation P3)	Initial yield evaluation of water stagnation advanced lines compared to standard checks	0.75
2.10	Preliminary Yield Trial-4 (IRLON) (PYT-4)	Initial yield evaluation of advanced lines compared to standard checks	0.75
2.11	Secondary Yield Trial-1 (SYT-1) (Magic Indica-1)	Confirmation of potential of advanced lines compared to standard checks	0.80
2.12	Secondary Yield Trial-2 (SYT-2) (Magic Plus)	Confirmation of potential of advanced lines compared to standard checks	0.85
2.13	Secondary Yield Trial-3 (SYT-3) (Magic Global)	Confirmation of potential of advanced lines compared to standard checks	0.85

2.14	Secondary Yield Trial-4 (SYT-4) (Magic Indica-2)	Confirmation of potential of advanced lines compared to standard checks	0.85
2.15	Secondary Yield Trial-5 (SYT-5)	Confirmation of potential of advanced lines compared to standard checks	0.85
2.16	Secondary Yield Trial-6 (SYT-6)	Confirmation of potential of advanced lines compared to standard checks	0.85
2.17	Secondary Yield Trial-7 (SYT-7) Com	Confirmation of potential of advanced lines compared to standard checks	0.85
2.18	Advanced Yield Trial-1 (AYT-1)	Evaluation of advanced breeding lines for development of variety suitable for Cumilla region	1.0
2.19	Advanced Yield Trial-2 (AYT-2)	Evaluation of advanced breeding lines for development of variety suitable for Cumilla region	1.0
2.20	Advanced Yield Trial-4 (AYT-4) Com	Evaluation of advanced breeding lines for development of variety suitable for Cumilla region	1.0
2.21	Advanced Yield Trial-5 (AYT-5) Com	Evaluation of advanced breeding lines for development of variety suitable for Cumilla region	1.0
2.22	Advanced Yield Trial-6 (AYT-6)	Evaluation of advanced breeding lines for development of variety suitable for Cumilla region	1.0
3: Development of Boro Rice with high yield, short duration, water stagnation, premium quality, disease resistant (tungro) & multi stress tolerant (BRRI R/S, Cumilla own program)			
3.1	Hybridization	To develop breeding population with high yield potential along with earliness and acceptable grain quality	0.5
3.2	F_1 Confirmation	To confirm F_1 s as true crosses	0.75
3.3	Growing of F_2 population	Selection of progenies with emphasis on earliness, strong culm, high yield potential and disease and insect resistance at field condition	1.0
3.4	Pedigree Nursery (F_3, F_4, F_5 F_6 and F_7)	Selection of desirable segregates with emphasis on earliness, strong culm, high yield potential and	1.0

		disease and insect resistance at field condition	
3.5	Observational Trial (OT)	To select genetically fixed lines/ homogenous lines with uniform plant height, heading, plant type and acceptable grain quality along with high yield potential	1.0
3.6	Preliminary Yield Trial (PYT)	Initial yield evaluation and selection of desirable lines compared to standard checks	1.25
3.7	Secondary Yield Trial (SYT)	Confirmation of yield evaluation in a replicated trial and selection of desirable lines compared with standard checks	1.25
3.8	Regional Yield Trial (RYT)	To evaluate specific and general adaptability of the genotypes in on-station condition	1.5
3.9	Evaluation of Spike gene lines	Initial yield evaluation and selection of desirable lines compared to standard checks	1.5
3.10	Advanced Yield Trial	To evaluate the advanced breeding lines for development of variety suitable in Cumilla region	1.0
3.11	Proposed Variety Trial (PVT)	Evaluation of promising genotypes by NSB team for releasing as new varieties	0.35
3.12	Breeder seed production	To increase of breeder seeds for Boro season with a target amount	10.00
Program Area: Crop Soil Water Management			
4.1	Long-term effects of some macro and micronutrients on growth and yield	1. Determine nutrient deficiency problems in soil through missing elements techniques. 2. To see long-term yield trend of rice under different nutrients managements	3.0
4.2	Effect of N rates on the yield of BRRI dhan87	To determine the N response behavior of BRRI dhan87	1.0
4.3	Evaluation of bio-organic fertilizer in the soil plant soil system	1.To evaluate efficiency of biofertilizer to promote rice plant growth and yield 2.To improve soil biology	0.8
4.4	Effect of time of planting on growth	To find out the appropriate time	1.0

	and yield of newly BRRI developed Aman varieties	of planting for yield optimization	
4.5	Effect of time of planting on growth and yield of newly BRRI developed Boro varieties	To find out the appropriate time of planting for yield optimization	0.8
4.6	Yield maximization of Aman rice through nutrient management (new)	To maximize growth and yield of Aman rice	1.0
4.7	Yield maximization of Boro rice through nutrient management (new)	To maximize growth and yield of Boro rice	1.0
	Program Area: Pest Management		
5.1.	Survey and yield loss assessment of rice blast disease in Cumilla, Chadpur and B Baria district	1. To know the prevalence of Major rice disease blast 2. To assume the rice yield losses due to blast	1.0
5.2.	Validation of rice blast disease management using BRRI recommended practices	1. To minimize yield loss due to blast disease 2. To build up farmers awareness on blast disease management	2.0
5.3.	Application of S for the recovery of tungro infected rice plant	To know the effect of S against rice tungro disease	2.0
5.4.	Varietal reaction and recovering ability of BRRI released T Aman and Aus varieties	To know the reaction of tungro disease on BRRI released Aus and Aman varieties	0.8
5.5.	Advisory services to the farmers	1. To help the farmers for rice production 2. Disseminate the direct services to the farmers problems for rice production by visiting the farmers field	2.0
	Program Area: Rice Farming Systems		
6.1.	Improvement of Boro –fallow-fallow/ Boro –Aus-T. Aman /Boro –B. Aman cropping pattern by introducing BRRI dhan27 and BRRI dhan85.	To introduce BRRI dhan27 and BRRI dhan85 in aforesaid cropping pattern to increase total system production	2.0
6.2.	Improvement of Boro –fallow-fallow/ Boro –B. Aman cropping pattern by	To introduce BRRI dhan76 and BRRI dhan77 in aforesaid	2.0

	introducing BRRI dhan76 and BRRI dhan77.	cropping pattern to increase total system production.	
	Program Area: Technology Transfer		
7.1	Multilocation trial of different BRRI varieties in major cropping patterns	1. To demonstrate and disseminate BRRI varieties in greater Cumilla region 2. To increase seed availability of BRRI varieties at farmers' level.	6.0

Regional Station, Habiganj

Proposed Research Program 2018- 2019

Sl. No.	Program area/ Project	Major objective	Annual Budget (Thousand Tk.)
1.	**Varietal Development:** A total of 15 different RYT will be conducted during reporting year.	Evaluation of the breeding lines for yield potential and adaptability test under different agro-climatic conditions	4,50/-
2.	**Yield maximization:** Yield maximization of BRRI dhan86 through adjustment of plant spacing under BRRI and ICM fertilizer management options during Boro season 2018-19	To maximize yield of BRRI dhan86	50/-
3.	**Long term missing element trial:**	To identify yield limiting factor of rice in haor areas	50/-
4.	**Breeder and TLS seed production**	Seed demand of suitable BRRI released varieties will be fulfilled to the farmers. Breeder seed demand of suitable BRRI released varieties will be fulfilled to BADC and other seed producing organization. .	4,00/-

Regional Station, Kushtia

Proposed Research Program 2018-2019

Sl. No.	Program area/Project with duration	Major Objectives	Annual Budget (Thousand Tk.)
1	Regional yield trial (RYT-1) Tested advance breeding lines(15): BR9029-51-3-1, BR9029-51-3-5, BR9011-25-4-1-1, BR9011-25-4-1-3, BR9011-62-2-1-2, BR9039-20-2-2-1, BR9039-20-2-2-2,	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition	10.0

	BR9039-21-1-1-1, HHZ5-DT20-DT20-DT1, BR9039-12-2-1, BR9011-12-2-1, BR8773-9-1-3, SP21-1-4, BR9029-51-3-12, BR9039-30-1-1 Checks: BR26, BRRI dhan48 and BRRI dhan28		
2	Proposed variety trial (RLR, PVT-1) BR-RS(Raj)-PL4-B, BR-SF(Rang)-PL1-B and BR8210-10-3-1-2 against BRRI dhan49	On farm evaluation of proposed Rainfed Lowland Rice lines by the NSB team for the releasing as new variety	32.5
3	Proposed variety trial (PQR, PVT-2) BR8535-2-1-2 against BRRI dhan34	On farm evaluation of proposed line by the NSB team for the releasing as new variety	32.5
4	Proposed variety trial (RLR+ZER, PVT-3) BR8492-9-5-3-2 (RLR) and BR7528-2R-HR16-2-24-1 (ZER) against BRRI dhan39	On farm evaluation of proposed Rainfed Lowland Rice and Zinc Enriched Rice lines by the NSB team for the releasing as new variety	32.5
5	Regional yield trial(IRR, RYT-1) Tested advance breeding lines(4): BR9143-9-3-3-1, BR9141-8-2-2-1, BR9142-32-2-2-3, BR9143-55-3-2-1 Checks: BRRI dhan33 (Resistant) and BRRI dhan49 (Susceptible)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks under on-station condition	10.0
6	Regional yield trial(PQR-1, RYT-2) Tested advance breeding lines(9): BR9126-15-3-4-1, BR9126-15-3-4-2, BR9130-78-1-1-4, BR8887-26-8-2-3, BR9178-7-2-4-4, BR9580-30-2-1-1, BR8493-3-5-1(Com), BR8528-2-2-3-HR1, BR8528-2-2-3-HR2, Checks: BINAdhan-13, Kalizira, BRRI dhan34, Kataribhog and Radhunipagol	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks under on-station condition	10.0
7	Regional yield trial(PQR-2, RYT-3) Tested advance breeding lines(5): BR9051-1-1-2-3, BR9054-6-1-2-3, BR8882-30-2-5-2, BR8536-4-1-1-3, Krishnobhog, Checks: BRRI dhan34, Chinigura, BRRI dhan37 and Kalizira	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks under on-station condition To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks under on-station condition	10.0
8	Regional yield trial(PQR-3, RYT-4) Tested advance breeding lines(8): BR8526-2-1-4-HR3-HR2(Com), BR8526-2-1-4-HR3-HR3(Com), BR8526-38-2-1-HR1, BR8526-38-2-1-HR2, BR8850-10-12-4-5, BR8850-10-12-4-2, BR8850-10-12-4-4,		10.0

	BR8850-10-12-4-1, Checks: Kalizira and BRRI dhan37		
9	Regional yield trial(DRR, RYT-5) Tested advance breeding lines(9): BR9140-5-22-5-1, BR9140-8-25-6-3, BR10390-35-7-1, BR9140-8-1, BR9140-15-20-6-4, BR8548-8-22-5-15, BR9138-8-10-5-3, BR8545-5-5-2-7-2, BR10392-B-B-12, BR9636-8-6-10-2, BR10390-16-2-1 Checks: BRRI dhan39 (Standard), BRRI dhan49 (St.) and IRBB60 (Resistant)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks under on-station condition	10.0
10	Regional yield trial(RLR-1, RYT-6) Tested advance breeding lines(5): BR8521-30-3-1, BR8841-38-1-2-2, IR11L433, IR13F352, IR13F402 Checks: BRRI dhan39 and BRRI dhan49	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks under on-station condition	10.0
11	Regional yield trial(RLR-2, RYT-7) Tested advance breeding lines(6): BR8526-25-4-2-2-1-HR1, BR8526-38-3-2-1-HR2, Habudhan, LataBalam, BR8526-L8, HPB (PQR-TLA3) Red Rice, Check: BRRI dhan49	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks under on-station condition	10.0
12	Regional yield trial(ZER-1, RYT-8) Tested advance breeding lines(10): BR8427-2-3-2-P1-2, BR8436-21-3-3-3-1, BR8436-7-4-2-3-1, BR8444-37-2-3-1-1-B3, IR99269-33-1-3, IR99269-33-4-1, BR8143-4-3-3-6-2-4, BR8442-9-5-8-1-1, IR 84725-191-2-6-2-1-P2, IR 99641-115-2-3, Checks: BRRI dhan62 and BRRI dhan39	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks under on-station condition	10.0
13	Regional yield trial(ZER-2, RYT-9) Tested advance breeding lines(11): BR8442-12-1-3-1-B1, BR8436-21-3-1-1-1, IR 90210-100-2-3-1-P4, BR8444-47-1-1-1, IR 101760-48-1, BR7528-2R-HR16-9-1-P1-2, BR8442-12-1-3-1-B7, BR7528-2R-19-16-RIL-20, BR7528-2R-19-16-RIL-28, BR7528-2R-19-16-RIL-14, BR7528-2R-HR16-3-147-P4, Checks: BRRI dhan49, BRRI dhan72 and BRRI dhan39.	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks under on-station condition	10.0

Regional Station, Rajshahi

Proposed Research Program 2018-2019

Sl. No.	Program area/Project/expt	Major Objective(s)	Budget (000 Tk.)
	VIII. Regional Station (Rajshahi)		
1.	**Disease and insect pest survey and management**		
	1.1 Survey and Monitoring of Rice Diseases and Insect Pests	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
	1.3 Management of grain spotting in rice	To find out effective management practice for controlling grain spot disease	50
2.	**Crop-Soil-Water management**		
	2.1 Long-term missing element trial at BRRI Rajshahi farm	To identify the yield limiting nutrients at BRRI Rajshahi farm soil	50
	2.2 Determination of nutrient requirement of rice under conservation agriculture	To determine the nutrient requirement of Boro, Aus and Aman rice under conservation agriculture	100
	2.3 Test tools for nutrient requirement of rice cultivation	To find out the suitable and profitable nutrient management option for rice cultivation	50
3.	**Variety Development/ Host Plant Resistance**		
	3.1 Hybridization program	To develop high yielding genotypes with earliness, tolerant to drought and cold, 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 Validation of BRRI released drought resistant varieties under drought ecosystem	Evaluation of BRRI released drought resistant varieties for testing their yield adaptability under drought ecosystem	100
4.	**Rice Farming Systems**		
	4.1 Effects of conservation agriculture based options	To determine the effect of conservation tillage and residue management options on	300

	and crop establishment methods under Aman rice-wheat-mungbean-cropping system	productivity and profitability of Aman rice-wheat-mungbean cropping pattern	
	4.2 Evaluation of jute-rice-wheat and jute+rice-wheat cropping pattern under conservation tillage system	To increase the productivity and profitability of the farmers	250
5.	**Technology Transfer**		
	5.1 Seed production and distribution program	To distribute newly released BRRI varieties at farmer's level of Rajshahi Region.	100
	5.2 Demonstration of newly released BRRI varieties at farmers field	For popularization and rapid adoption of newly released varieties	350
	5.3 Training and Field Days	To train up farmers of Rajshahi Region	260

Regional Station Rangpur

Summary Research Program for 2018-19

SN	Experiments	Specific Objective(s)	Tentative Budget
Varietal Development Program (VDP)			
1.1	Hybridization	To introgress genes from diverse genetic background with higher yield potentials along with tolerance to drought, earliness, sturdy stem, resistance to major biotic stresses (insect and diseases) and acceptable grain quality	20000.00
1.2	Confirmation of F_1	To confirm the cross combinations as true F_1s and the use of confirmed F_1s for F_2 populations and in different multiple crosses	20000.00
1.3	F_2 population	To select superior progenies with emphasis on sturdy and strong plant type, large and compact panicle size, more tillering ability with less or no unproductive tiller, disease-insect and lodging resistance.	20000.00
1.4	Pedigree nursery	To select desirable progenies with emphasis on sturdy and strong plant type, large panicle size, more tillering ability with less or no unproductive tiller, earliness, resistance to major insect pests and diseases and acceptable grain quality	20000.00

1.5	Observational Trial (OT)	To select lines homogeneity for morpho-agronomic characters having desirable agronomic characteristics, earliness, resistance to major insect pests and diseases, high yield and acceptable grain quality	20000.00
1.6	Preliminary Yield Trial (PYT)	Evaluation of initial yield potential in replicated plots.	25000.00
1.7	Secondary Yield Trial (SYT)	Confirmation of yield potential in replicated plots	20000.00
1.8	Advance Line Adaptive Research Trial-1 (ALART)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-farm condition	20000.00
1.9	Maintenance and seed increase of parents/lines/land races	To ensure seed safety	25000.00
Crop Soil Water management, BRRI R/S, Rangpur			
2.1	Effect of Crop Establishment Methods and Nutrient Management on the Performance of BRRI newly develop Boro, T. Aus and T. Aman varieties	To study the effect of crop establishment Methods on yield and yield contributing factors of BRRI dhan63, BRRI dhan48 and BRRI dhan 71 in Boro, T Aus and T. Aman season respectively. To study the effect of nutrient management on yield and yield contributing factors of BRRI dhan63, BRRI dhan48 and BRRI dhan 71.	**50000.00**
2.2	Productivity improvement of Rice under different cropping pattern through improve Agronomic management	To find out and recommend the appropriate crop management of different cropping pattern for obtaining potential yield for Rangpur region	**50000.00**
3.1	Long-term missing element trial at BRRI regional station farm in Rangpur	To study the effect of long term nutrient omission on rice yield and soil nutrient status	**50000.00**
4.1	Program-05: Effect of Organic (Vermi compost) and Inorganic fertilizer on fine rice yield and quality at Rangpur region in T. Aman season	To study the effect of varmi compost for the improvement of yield and quality of fine rice during Boro season To find out and recommended fertilizer management for quality fine rice production for Rangpur region.	**75000.00**
Technology Transfer			
5.1	Demonstration of newly released BRRI varieties	To demonstrate the yield performance and adaptability of new varieties	

	of T. Aus and T. Aman seasons in Rangpur region	To know the farmer's reaction about new varieties	
6.1	Farmers training	To improve knowledge on modern rice production technology	
7.1	Breeder and TLS production	To produce and ensure dissemination of location specific quality rice varieties	

Regional Station, Satkhira-9400

Proposed Research Program 2018- 2019

Sl. No.	Program area/ Project	Major Objective	Annual Budget (Thousand Tk.)
Revenue Program, Aus 2018			
1.	Seed production and dissemination program (SPDP)	To disseminate BRRI varieties rapidly among the farmers of this region	60.0
	Stability Analysis of BRRI Varieties in, Aus season	To explore the suitability of rice varieties in Aman season	50.0
Revenue Program, Aman 2018			
2.	Proposed Variety Trial (PVT) Number of trial: 5	On-farm evaluation of proposed line by the NSB team for the recommendation to release a new variety	162.5
3.	Regional Yield Trial (RYT) Number of trial: 13	To evaluate specific and general adaptability of the advance breeding lines in on-station condition	325.0
4.	Effect of missing nutrient on T.Aman rice production	To find out nutrient effect on T.Aman rice production	30.0
5.	Demonstration and dissemination of Aman rice varieties	To demonstrate and disseminate of Aman rice varieties to the farmers'	60.0
6.	Improvement the productivity of gher system	To increase total productivity and farm income	60.0
7.	Seed production and dissemination program (SPDP)	To disseminate BRRI varieties rapidly among the farmers of this region	40.0
8.	Stability Analysis of BRRI Varieties in, Aman season	To explore the suitability of rice varieties in Aman season	60.0
9.	Field days and farmers' training	To disseminate and popularize BRRI varieties and rice production technologies to the farmers'	200.0

10.	Validation of T. Aman rice varieties for stagnant water	To identify suitable T. Aman rice varieties for stagnant water ecosystem.	30.0
11.	Demonstration of integrated rice-fish system	To identify suitable T. Aman rice varieties and intensify the total production	40.0
12.	Breeder seed production	To produce breeder seeds of BRRI released promising varieties and supply to GRS Division, BRRI Gazipur	150.0
Revenue Program, Boro 2018-19			
13.	Proposed Variety Trial (PVT) for Salt Tolerant Rice (STR) Number of trial: 9	On-farm evaluation of proposed line by the NSB team for the recommendation to release a new variety	292.5
14.	Proposed Variety Trial (PVT) for Short duration Rice (SDR)	On-farm evaluation of proposed line by the NSB team for the recommendation of release as a new variety	32.5
15.	Regional Yield Trial (RYT) Number of trial: 9	To evaluate specific and general adaptability of the advance breeding lines in on-station condition	180.0
16.	Evaluation of local landraces	Collection of local rice germplasm and evaluation of yield potentiality of local genotypes	20.0
17.	Effect of missing nutrient on T.Aman and Boro rice production	To find out nutrient effect on T.Aman and Boro rice production	30.0
18.	Demonstration of Boro rice varieties for non saline gher	To identify suitable HYV Boro varieties for non salin egher	20.0
19.	Demonstration and dissemination of BRRI dhan67 for saline prone areas	To disseminate saline tolerant rice to the farmers' of saline affected areas in south-western coastal region	30.0
20.	Improvement the productivity of gher system	To increase total productivity and farm income	60.0
21.	Seed production and dissemination program (SPDP)	To disseminate BRRI varieties rapidly among the farmers of this region.	40.0
22.	Stability Analysis of BRRI Varieties in Aus, Aman and Boro season	To explore the suitability of rice varieties in respective season	60.0
23.	Field days and farmers' training	To disseminate and popularize BRRI varieties and rice production technologies	300.0
24.	Yield maximization of Boro rice in saline coastal area through nutrient management	To find out suitable potassium and nitrogen dose for saline affected area	60.0
25.	Breeder seed production	To produce breeder seeds of BRRI released promising varieties and supply to GRS Division, BRRI Gazipur	700.0

26.	Truthfully labeled seed production	To produce truthfully labeled seed as per regional and national demand	720.0

Transforming Rice Breeding (TRB) Program, Aman-2018
Total Budget (Thousand Tk.): 962.399

Sl. No.	Program area/ Project	Major Objective	Annual Budget (Thousand Tk.)
27.	Participatory Varietal Selection (PVS) Number of trial: 8	Assessment of genotypes for specific and general adaptability by farmers participation	
28.	Secondary Yield Trial (SYT) Number of trial: 5	Initial evaluation of yield, salt tolerance and other agronomic characteristics of selected materials in replicated trial.	
29.	Preliminary Yield Trial (PYT) Number of trial: 17	Initial evaluation of yield, salt tolerance and other agronomic characteristics of selected materials in replicated trial	
30.	Observational Yield Trial (OT) Number of trial: 2	Identification of genetically fixed lines from non-replicated trial suitable for saline areas	
31.	Pedigree Nursery F_3, F_4, F_5 Number of trial: 6	Selection of desirable progenies from segregating population for salinity tolerance	
32.	Rapid Generation Advance (RGA) F_2, F_4, F_5	Segregating populations are grown at very close spacing, high temperature and short days to shorten growth duration, thus making possible several generations per year	
33.	Antenna Panel Trial Number of trial: 39	Establish a global rice array to generate genomics and phenomics data	
Breeding Zone Trial (BZT) Program, Aman 2018			
34.	Breeding Zone Trial (BZT)	To understand and select the best performing breeding lines with highest genetic merits across the multiple environments of Bangladesh, 2. Development of regional basis database for future breeding program.	400.0

Transforming Rice Breeding (TRB) Program, Boro 2018-19
Total Budget (Thousand Tk.): 554.254

Sl. No.	Program area/ Project	Major Objective	Annual Budget (Thousand Tk.)

35.	Participatory Varietal Selection (PVS) Number of trial: 5	Selection of genotypes by active farmers' participation suitable for saline prone areas	
36.	Advanced Yield Trial (AYT) Number of trial: 5	Confirmatory yield evaluation of selected materials for salt tolerance and other agronomic traits in replicated trial	
37.	Preliminary Yield Trial (PYT) Number of trial: 19	Initial evaluation of yield, salt tolerance and other agronomic characteristics of selected materials in replicated trial	
38.	Observational Yield Trial (OT) Number of trial: 11	Identification of genetically fixed lines from non-replicated trial suitable for saline areas comparing to yield potential under field condition	
39.	Pedigree Nursery F_5	Selection of desirable progenies from segregating population for salinity tolerance	
40.	Rapid Generation Advance (RGA) F_2, F_5	Segregating populations are grown at very close spacing, high temperature and short days to shorten growth duration to grow several generations per year	
41.	Least Stage Trial (LST)	More than 95000 lines were evaluated for further advancement	
Breeding Zone Trial (BZT) Program, Boro 2018-19			
42.	Breeding Zone Trial (BZT)	1. To understand and select the best performing breeding lines with highest genetic merits across the multiple environments of Bangladesh, 2. Development of regional basis database for future breeding program.	250.0

Climate resilient farming systems research and development for the coastal ecosystem (Project ID: 098), Boro 2018-19
Total Budget (Thousand Tk.): 931.0

Sl. No.	Program area/ Project	Major Objective	Annual Budget (Thousand Tk.)
43.	Validation of T. Aman rice varieties for coastal ecosystem	To identify suitable T. Aman rice varieties in the saline coastal ecosystem	
44.	Validation of T. Aman rice varieties for stagnant water	To identify suitable T. Aman rice varieties for stagnant water ecosystem	

45.	Seed production and dissemination program (SPDP)	To disseminate BRRI varieties rapidly among the farmers of this region	
46.	Determination of rate of nitrogen in saline coastal area during Boro season	To find out suitable nitrogen dose for Boro rice in saline affected coastal area	
47.	Determination of rate of Potassium in saline coastal area during Boro season	To find out suitable potassium dose for Boro rice in saline affected coastal area	
48.	Determination of seedling age of BRRI dhan67 in saline coastal area	To find out suitable seedling age of BRRI dhan67 in saline coastal area	
49.	Yield and salinity of BRRI dhan67 field as affected by AWD in saline coastal area	To find out suitability of AWD method in Boro rice in saline coastal area	
50.	Improvement of cropping patterns in saline coastal ecosystem	To find out profitable cropping pattern in the coastal saline area	
51.	Rice production technology in saline gher	To grow rice in saline affected coastal gher areas	
52.	Introduction of turkey rearing in homestead area	To increase household income by producing highly profitable turkey production with the participation of rural women farmers	
53.	Goat raring in homestead area	To increase household income by raring Black Bengal goat with the participation of rural women farmers	
54.	Duck raring in mini-pond and homestead area	To increase household income by raring Ducks with the participation of rural women farmers	
55.	Chicken raring in homestead area	To increase household income by raring hen with the participation of rural women farmers	
56.	Homestead vegetable gardening	To increase household nutrition and income	
57.	Establishment of mini orchard	To increase household nutrition and income	
58.	Growing spices under perennial trees	To increase household nutrition and income	
59.	Mixed fish production in mini-pond	To increase household income by mixed fish cultivation in mini-pond	
60.	High price fish production in gher	To increase household income by high value fish cultivation in gher	

61.	Mixed fish production in mini-pond	To increase household income by mixed fish cultivation in mini-pond	
62.	Mixed rice-fish-vegetable production in gher land	To increase household income by rice-fish-vegetable cultivation in gher	
63.	Demonstration of BRRI dhan67 for saline affected areas	To disseminate saline tolerant rice to the farmers of saline affected areas in south-western coastal region	
64.	Demonstration of BRRI released new/latest varieties in saline coastal areas	To disseminate suitable new rice varieties in south-western coastal region	

BRRI Regional Station, Sonagazi, Feni

Proposed Research Program 2018-19

Sl. No	Project	Major Objective	Annual Budget (Thousand Tk.)
Project 01. Evaluation and collection of Breeding Materials			
1.1	Regional Yield Trial (RYT) during Aus 2018, T. Aman 2018 & Boro, 2018-19	To evaluate the regional adaptability of selected genotypes under on-station condition.	1500
1.2	Advanced Lines Adaptive Research Trial (ALART) during Aus 2018, T. Aman 2018 & Boro, 2018-19	To evaluate the yield potential and adaptability of advanced breeding lines at farmer's field in different agro-ecological zones of the country.	Fund from BRRI HQ
1.3	Proposed Variety Trial (PVT) during Aus 2018, T.Aman 2018 & Boro 2018-19	Final on-farm evaluation of proposed lines by field evaluation committee for releasing as new variety.	Fund from BRRI HQ
1.4	Stability analysis of BRRI varieties during T. Aman, 2018 and Boro, 2018-19.	To test the stability of BRRI released varieties under different agro ecological conditions prevailing at different regions of the country.	1200
1.5	Germplasm collection during Aus, Aman and Boro seasons.	Enrichment of gene bank.	150

Sub total			**2850**
Project 02: Crop Management			
2.1	Selection of profitable crop after T. Aman harvest at Laxmipur, Noakhali and Feni districts.	To study the benefit cost ratio of different non rice easily cultivated crops after T. Aman harvest. To select the most profitable pattern among the possible tested sequence To suggest the farmers a best crop combination considering the existing practice.	100
2.2	Determination of optimum aged splitted tillers seeded by dibbling method in char land rice ecosystem.	To identify the optimum age of splitted tillers for transplanting.	100
2.3	Effect of growth and yield of char land Aus rice practiced in different seeding method	To identify an easy and labor saving seeding method for Aus rice cultivation in char areas.	80
Project 03: Insect and Disease Management			
3.1	Surveillance and monitoring of insect pests and their natural enemies using fluorescent and solar light trap	To observe the availability of insect pests and their natural enemies in rice field using fluorescent as well as solar light trap to create a data base.	50
3.2	Monitoring of rice insect pests and their natural enemies in south east coastal region	To study the availability of rice insect pests and their natural enemies in saline and non saline rice eco- system.	100
3.3	Field survey and clinical suggestions to the farmers at different growing stages of rice.	To identify the rice field problem and instant suggestion to the target farmers regarding insects and disease.	50
Sub total			**480**
Project 04: Seed Stock Enrichment			
4.1	Production of Breeder Seed.	To produce Breeder seeds with a target amount as per national demand.	2000

4.2	Truthfully labeled seed production	To increase the rice seed availability for the farmers.	5000
Project 05: Technology Dissemination			
5.1	Seed production and Dissemination Program(GoB and SPIRA)	i.To motivate farmers for producing quality rice seeds and exchange among them for rapid dissemination of BRR varieties. ii.To collect feedback information about BRRI varieties from the farmers and DAE personnel.	800
5.2	Farmers' Training	i. To update knowledge and skills of farmers on modern rice production technologies. ii.To enhance dissemination of new technologies among the farmers	340
5.3	Field Days	i.To create awareness and interest among farmers, local leaders, elite persons, NGO workers and DAE personnel about BRRI varieties and technologies. ii.To promote dissemination and get feedback about BRRI technologies from the participants.	450
5.4	Agricultural Fair	To display the BRRI released modern technologies among all categories of people.	100
Sub total			**7890**
Grand Total			**11220**