# Name of the Institute: Bangladesh Rice Research Institute

## Plant Breeding
## Proposed Research Program 2014- 2015

| Programme area/Project | Major Objectives | Annual Budget (Lack TK) |
|---|---|---|
| **Programme Area: Varietal Development Programme (VDP)** | | |
| **1. Rice Breeding** | | |
| **1.1** Development of Upland rice | Development of genotypes suitable for dry direct seeded (upland rice) condition at drought prone environment with emphasis on quick seedling emergence, vigorous growth, plant architecture for lodging tolerance and earliness. | 7.0 |
| **1.2** Development of T Aus rice | Development of high yield potential varieties with short growth duration, good grain qualities and tolerance to major diseases and insect pests along with adaptation capability under transplanted Aus condition. | 7.0 |
| **1.3** Development of shallow flood tolerant rice | Development of improved genotypes with slow elongating plant type for 1.0m flood depth | 3.0 |
| **1.4** Development of rainfed lowland rice (RLR) | Development of genotypes superior to standard varieties and adaptable to rainfed lowland environment in T. Aman season. | 12.0 |
| **1.5** Development of tidal submergence tolerant rice | Development of high yielding rice varieties adaptable to tidal saline and non-saline environments in southern districts of Bangladesh | 6.0 (EQSS) |
| **1.6** Development of salt tolerant rice | Development of salt tolerant varieties suitable for the saline prone coastal areas in Aus, Aman and Boro seasons | 25.0 (STRASA, IAPP, EQSS, GOB) |
| **1.7** Development of premium quality rice | Development of aromatic and non-aromatic fine quality rice with national (Kalizira/Chinigura type) and international (Basmati/Banglamati type) standards for domestic use and export | 19.0 |

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| **1.8** Development of submergence tolerant rice | Development of high yielding rice varieties tolerant to submergence (flash flooding) and medium stagnant water (MSW) stresses as flash flooding and water stagnation are the major constraints in the rainfed lowland rice ecosystem in Bangladesh. | 15.0 (STRASA, IAPP) |
| **1.9** Development of rice varieties for favourable Boro environment | Development of genotypes superior to standard rice varieties for irrigated areas of Bangladesh. | 9.0 |
| **1.10** Development of cold tolerant rice | The thrust is to develop short duration varieties accompanied with cold tolerance for Boro season. | 12.0 |
| **1.11** Development of low amylose rice | Development of high yielding indica rice variety with low amylose (< 20%) content for both domestic use and export. | 5.0 |
| **1.12** Development of micronutrient enriched rice | Development of high yielding rice varieties with high Vitamin A, iron and zinc content to improve nutritional quality of rice | 7.0 (Harvest Plus) |
| **1.13** Development of disease resistant rice | Development of varieties resistant to BB, RTV & Blast | 5.5 |
| **1.14** Development of insect resistant rice | Development of rice varieties resistant to BPH, WBPH, GLH and GM | 5.0 |
| **1.15** International network for genetic evaluation of rice | Exchange of elite rice germplasm among the rice growing countries of the world and their evaluation, characterization and utilization under wider range of environments for ultimate use by farmers | 5.5 |
| **1.16** Development of low water aerobic rice varieties | To develop rice varieties adaptable to aerobic environment | 10.0 (IAPP, ADB, EQSS) |
| **1.17** Development of Arsenic tolerant rice varieties | To develop Arsenic tolerant rice varieties | 12 (FFP) |
| **1.18** Development of Green Super Rice | Development of less input but high yield potential with tolerance to different stresses rice varieties (inbred and hybrid) | 7.0 (GSR) |
| **1.19** Development of drought tolerant rice for RLR ecosystem | To develop drought tolerant varieties for the RLR ecosystem | 12.0 (STRASA, IAPP) |

## Hybrid Rice Division

### Proposed Research Program 2014-2015

| SL. No. | Program area/Project (Duration) | Major Objectives | Status with duration | Annual Budget (Thousand taka) |
|---|---|---|---|---|
| **01.** | **Development of Parental Materials**<br>a. Source Nursery<br>b. Test cross Nursery<br>c. Re-test cross Nursery<br>d. Back cross Nursery<br>e. CMS Maintenance & Evaluation Nursery<br>f. Improvement of maintainer & restorer lines through B × B and R × R crosses<br>g. Development of disease resistant parental lines<br>[**This is routine work for hybrid rice parental lines development and it's a continuous process**] | Developing CMS lines from the adaptable varieties/lines suitable for Bangladesh<br>Maintenance & evaluation of exotic/locally developed CMS lines<br>Selection of heterotic rice hybrids & usable parental materials.<br>Broaden the genetic base of the parental materials | On going<br>(2 years) | 100000/-<br>150000/-<br>80000/-<br>150000/-<br>150000/-<br>80000/-<br>200000/- |
| **02.** | **Evaluation of experimental hybrids & parental lines**<br>a. Observational Nursery<br>b. Evaluation of maintainer & restorer lines for better adaptability<br>c. Preliminary yield trials (PYT)<br>d. Multilocation yield trials (MLT)<br>e. Screening of parental lines against BLB & BLS | Selection of promising hybrids base on yield, duration and grain quality<br>Identification of promising maintainer and restorer lines for better adaptability<br>Disease resistant parental line identification | On going<br>(2 years) | 100000/-<br>40000/-<br>150000/-<br>400000/-<br>100000/- |
| 03. | **Seed production of parental lines & hybrids**<br>a. CMS lines multiplication of released hybrids | To produce sufficient seed of parental lines, experimental hybrids and released hybrids for subsequent use | On going<br>(2 years) | 400000/- |

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| | b. Seed multiplication of promising CMS lines<br>c. $F_1$ seed production of released hybrids<br>d. Experimental seed production of promising hybrids<br>e. Nucleus seed production of released hybrids parental lines<br>f. Breeder seed production of released hybrids parental lines (B & R lines)<br>g. Seed multiplication of promising maintainer & restorer lines | | | 400000/-<br>600000/-<br>300000/-<br>300000/-<br>200000/-<br>100000/- |
| | **Total** | | | 40,00000 |

## Biotechnology
## Proposed Research Program 2014 – 2015

| Sl. No. | Programme area/ Project (Duration) | Major Objective | Annual budget (Thousand Tk.) |
|---|---|---|---|
| **Program area : Biotechnology** | | | |
| 1 | **Project I: Development of rice variety through anther culture**<br><br>Expt1.1:Development of low glycemic index (GI) rice variety through anther culture<br>Expt1.2: Development of salt tolerant rice variety through anther culture<br>Expt1.3: Development of arometic and fine grain rice variety through anther culture<br>Expt1.4: Development of upland Aus variety through anther culture | To develop salt tolerant, low glycemic index (GI), aromatic and fine grain, high yielding rice variety through anther culture | 100 |
| 2 | **Project II: Field performance of tissue culture derived lines**<br><br>Expt 2.1: Progeny selection<br>Expt 2.2 Observational trials<br>Expt 2.3 Primary yield trials<br>Expt 2.4 Secondary Yield Trials | To select Agronomically desirable and high yield potential materials | 500 |
| 3 | **Project III: Rice Transformation**<br><br>Expt 3.1 Development of salt tolerant transgenic rice<br>Expt 3.2 Development of drought and salt tolerant transgenic rice<br>Expt 3.3 Development of drought and salinity transgenic rice through backcrossing (ABSPII Project) | To develop salt and drought tolerant transgenic rice lines | 1500 |

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| 4 | **Project IV: QTLs identification**<br><br>Expt 4.1: Identification of yield enhancing QTLs<br><br>Expt. 4.2: Identification of QTLs for salinity tolerance at both seedling and reproductive stage | <br><br>Identify yield enhancing QTL from a wild rice (*Oryza rufipogon)* and enhance the grain yield of elite Bangladeshi rice variety<br><br>To identify QTLs for salt tolerance both at seedling and reproductive stage | <br><br>1000<br><br>1200 |
| 5 | **Project V: Marker Assisted Breeding**<br><br>Expt 5.1: Field evaluation of Bacterial Blight (BB) gene pyramided rice lines<br><br>Expt 5.2: Introgression of submergence tolerance gene, *sub1* in BRRI dhan44 using MAB | <br><br>To develop lines possesing *xa13* and *Xa21* BB resistance genes<br><br>To introgress *sub1* gene to develop submergence tolerance BRRI dhan44 | <br><br>100 |

## Genetic Resources and Seed Division (GRSD)

## Proposed Research Program 2014-2015

| SL No. | Program area/Project | Major Objectives | Annual Budget (Lack TK) |
|---|---|---|---|
| **Program Area 01: Varietal Development Program (VDP)** | | | |
| **3** | **Sub-program area: Rice Germplasm and Seed** | | |
| **3.1** | Rice germplasm | Collection (morphological & molecular), characterization, evaluation and conservation of rice germplasm to enrich the genebank for rice scientists. | 15.0 |
| **3.2** | Seed production and variety maintenance | Maintenance of the nucleus seed stock and supply of breeder seeds as per national demand. | 50.0 |
| **3.3** | Exploratory and genetic studies | Conduct problem related genetic studies for breeder seed and rice germplasm. | 3.50 |
| **3.4** | Documentation of technology | Development of technology packages with seeds and ready reference on genebank status | 1.00 |

## Grain Quality and Nutrition Division

**Proposed Research Programme 2014-15**

| Sl. No. | Program area/Project (Budget) | Major objective | Budget Thou. Tk |
|---|---|---|---|
| 1 | Screening of breeding lines | To evaluate physicochemical properties | 100,000 |
| 2 | Evaluation of commercial rice bran oil and soybean oil available in the market | To evaluate physical and chemical properties of edible oil | 100,000 |
| 3 | Purification and quality control of rice bran oil extracted from different rice bran | • To purify the bran oil extracted from different aged rice bran<br>• To ensure the quality of rice bran oil | 100,000 |
| 4 | Formulation of rice noodle | • To prepare nutrient enriched food | 100,000 |

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| | from rice flour | product<br>• To provide supplement food to regular diet<br>• To introduce rice based food product as rice is abundant in Bangladesh | |

## Entomology Division

**Table-3**
**Proposed Research Programme 2014-2015**

| Sl. No. | Programme area/Project (Duration) | Major objective | Annual budget (Thousand Tk.) |
|---|---|---|---|
| **1.** | **Project : Survey & Monitoring of Rice Arthropods** | To determine the incidence and abundance patterns of insect pests and their natural enemies at BRRI farm and in different AEZs for better management of rice pests. | 1000 |
| 1.1 | Arthropod monitoring in BRRI Farms<br>(Duration:1972-till to date) | To study the insect pest and their natural enemy incidence at BRRI farm and to create a database to develop a forecasting system | 150 |
| 1.2 | Incidence of insect pests and natural enemies in light traps<br>(Duration: 1972-till to date) | To study the pest and their natural enemy incidence patterns in rice fields and to create a database to develop a forecasting system. | 150 |
| 1.3 | Construction of epidemiology information interchanges system for migratory disease and insect pests of rice.<br>(Duration: 2013 to 2016) | Establishment of a sustainable multinational collaboration network for the management of migrating rice planthoppers and associated viruses to reduce their incidences below the threshold level in Asian countries. | 700<br>(AFACI) |
| 1.4 | Pests and natural enemies survey and monitoring in Gopalganj, Pirojpur and Bagerhat (Integrated Agricultural Project for Gopalganj, Pirojpur and Bagerhat)<br>(Duration: 2014 to 2016) | To determine the incidence and abundance patterns of insect pests and their natural enemies in the selected areas | IAP for Gopalganj, Pirojpur and Bagerhat |

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| **2** | **Project: Studies on rice insect pest and natural enemy ecology** | To study the ecology and development of insect pest of rice. | 300 |
| 2.1 | Climate change impacts, vulnerability and adaptation: sustaining rice production in Bangladesh. (Duration: 2012-till to date) | To assess the impacts of climate change on water resources and rice yields in the selected rice growing sub-division using crop, weather, pest and hydrological models & develop future scenario together with stakeholders. | 100 BIOFORSK |
| 2.2 | Conservation of natural enemies through ecological engineering approaches. (Duration: 2014 to 2016) | To conserve natural enemies through ecological engineering approaches | 200 |
| **3.** | **Project: Biological Control of Rice Insect Pests** | To evaluate the role of natural enemies in controlling rice insect pests. | 200 |
| 3.1 | Studies on the biology of green mirid bug. (Duration: 2014 to 2016) | To know the biology of green mirid bug. | 200 |
| **4.** | **Project : Crop Loss Assessment** | To determine relationship between pest damage levels and yield losses. | 500 |
| 4.1 | Relationship rice hispa damage and yield loss. (Duration: 2000-till to date) | To determine the yield loss and recovery abilities of different rice varieties against rice hispa damage. | 200 |
| 4.2 | Relationship between gall midge damage and yield loss. (Duration: 2014-till to date) | To determine the yield loss potential of different rice varieties against gall midge damage. | 300 |
| **5.** | **Project : Evaluation of Chemicals and Botanicals against Rice Insect Pests** | To evaluate the effectiveness of different botanicals and determine efficacy of different insecticides against major rice insect pests. | 300 |
| 5.1 | Test of different insecticides against major insect pests. (Duration:1972-till to date) | To evaluate the effectiveness of commercial formulations of different insecticides against major insect pests of rice. | 300 |
| **6.** | **Project : Integrated Pest** | | 480 |

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| | **Management** | | |
| 6.1 | Validation of BRRI recommended practices for the management of major insect pests of rice. (Duration: 2012 to 2017) | To demonstrate BRRI recommended practices for successful management of major insect pests of rice. | 380 |
| 6.2 | On farm validation and dissemination of rice crop manager (RCM). (Duration-2014 to 2016) | To improve and to upgrade the RCM based guidelines. | 100 |
| **7.** | **Project: Host Plant Resistance** | Identification of resistant sources against rice insect pests. | 800 |
| 7.1 | Screening of rice germplasm against BPH,WBPH and GLH (Duration:1972-till to date) | To identify resistant rice germplasm against BPH,WBPH and GLH | 200 |
| 7.2 | Screening of germplasm materials for resistant sources against gall midge (GM) (Duration: 2002-till to date) | To identify resistance sources against GM | 200 |
| 7.3 | Screening of $F_2$ population against BPH,WBPH and GLH (Duration: 2002-till to date) | To develop MVs using known resistant parents. | 100 |
| 7.4 | Screening of $F_2$ population against gall midge (GM) (Duration: 2002-till to date) | Isolation of resistant progeny against GM. | 100 |
| 7.5 | Evaluation of Advance lines for resistance against BPH, WBPH and GLH (Duration:1972-till to date) | To evaluate level of resistance against BPH, WBPH and GLH | 100 |
| 7.6 | Pest reaction of BRRI released varieties against major insect pests (Duration: 2014-till to date) | To evaluate level of resistance against major insect pests | 100 |
| **8.** | **Project: Vertebrate Pest Panagement** | Management of rat in the rice field | 200 |
| 8.1 | Rice field rat management by using trap barrier system (TBS). (Duration: 2014 to 2018) | To evaluate different barrier systems for rice filed rat management | 200 |

## Program Performing Unit: Plant Pathology Division
## Proposed Research Program 2014-15

| Project No. | Project Title and experiment/Plan/ Activity | Objectives | Annual Budget (000' Tk) | Comment |
|---|---|---|---|---|
| **I.** | **Survey and monitoring** | **To understand the epidemiology of different rice diseases in BRRI HQ farm** | | |
| | **1.1.** Survey and monitoring of rice diseases in four selected climate vulnerable and favorable ecosystem | To investigate the present status of different rice diseases in different climatic environment | 1000 | |
| **II.** | **Population Biology** | | | |
| | **2.1.** Confirmation of the standard differential set of blast isolates | To confirm the reaction pattern of selected standard differential blast isolates with blast resistant genes<br>To reduce the number of isolates for standard differential set of Bangladesh | 50 | |
| | **2.2.** Investigation of differential system of P. grisea on MLs over the year | To identify the change of pathogem diversity over time | 100 | |
| | **2.3.** Collection, isolation and evaluation of *Trichoderma* and *Azotobacter* Strains | To control *R. solani* with *Trichoderma* and to enhance N capture f rom air into soil | 200 | |
| **III.** | **Disease Resistance and Molecular studies** | **To know the diversity of the pathogen and resistance sources** | | |
| | **3.1.** Identification of major blast and BB resistant genes in land races of Bangladesh using MAS and pathogenicity | To find out blast resistant source(s) of *Pita, Pita-2, Pish, Pib And Pi9, Piz, Pi40*<br>To detect BB resistant genes Xa21 xa13, xa14 and xa5 | 600 | |
| | **3.2.** Screening advanced breeding lines against Bakanae, Blast, BB and False smut (VDP) | To identify BB, ShB, False smut and Blast resistant sources in advance breeding lines | 100 | |
| | **3.3.** Pyramiding major blast and BB resistant gene in susceptible rice variety/lines. | To introgress blast and BB resistant genes *pish pita-2* and *pi9* ; *Xa21*, *xa14*, *xa13* and *xa5* respectively in the background of BRRI dhan29, BRRI dhan28, PQR etc. | 700 | |
| | **3.4.** Introgression of Blast resistant gene into BRRI dhan47 | To develop durable blast resistant variety harbouring *pi40* and *pi9* | 200 | |
| | **3.5.** Purification of locally improved Aus variety mala through pure line selection for Barisal region | To develop and disseminate suitable Aus variety for tidal non-saline sub-ecosystem of Barisal region | 500 | |

| Project No. | Project Title and experiment/Plan/ Activity | Objectives | Annual Budget (000' Tk) | Comment |
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| | **3.6.** Evaluation of blast resistant multiline variety of IR64 | To develop suitable blast resistant rice variety for Bangladesh | 200 | |
| | **3.7.** Evaluation of blast resistant multiline varieties of IR49830 in tidal non-saline ecosystem of Barisal | To develop suitable blast resistant rice variety for tidal non-saline sub-ecosystem | 150 | |
| **IV.** | **Epidemiological Studies** | **To know the relationship between climatic factor and rice disease development** | | |
| | **4.1.** Development of mass inoculation technique of false smut disease | To develop mass screening technique against false smut disease | 50 | |
| | **4.2.** Reaction and recover ability of latest T. Aman BRRI varieties to tungro disease under natural condition. | To know the varietal performance against rice tungro disease | 30 | |
| | **4.3.** Impact of climate change on rice blast disease development | To find out a relationship between climatic factors and their change for blast disease epidemics | 200 | |
| | **4.5.** Identification of red eelworm and damage phenomenon on rice | To identify the harmful species of red eelworm and their nature of damage on rice | 200 | |
| **V.** | **Yield Loss Studies** | | | |
| | **5.1.** Distribution, Severity and Yield Loss caused by false smut in Bangladesh | To identify current status of false smut in Bangladesh and its geographical distribution<br>To develop yield loss assessment model<br>To identify the factors associated with false smut spread | 500 | |
| **VI.** | **Management of Rice Diseases** | **To develop appropriate management practices of rice diseases** | | |
| | **6.1.** Effect of Brine solution and garlic extract on rice seed borne disease, germination and seedling vigour | To find out the effect of brine solution in controlling seed borne disease. | 100 | |

| Project No. | Project Title and experiment/Plan/ Activity | Objectives | Annual Budget (000' Tk) | Comment |
|---|---|---|---|---|
| | **6.2.** Management of seedling blight in raising seedling on tray | To control the disease through seed treatment in different seedling raising technique | 70 | |
| | **6.3.** Evaluation of new chemicals against false Smut disease of rice | To find out the effective chemicals suitable for False Smut disease control. | 50 | |
| | **6.4** Integrated approach on rice false smut disease management | To find out the effective control measures for false smut disease | 50 | |
| | **Other activities** | **To increase the farmer's proficiency concerning disease management issues** | | |
| **VII.** | **7.1.** Demonstration on Integrated Rice Disease Management at farmers' field | To demonstrate rice disease management practices at farmers' field. | 300 | |
| | **7.2.** Specialized **t**raining on Rice Disease Management and Healthy Seed Production | To train up extension personnel on rice disease management and healthy seed production | | |

# Proposed Research Program 2014-2015

## Soil Science Division

| Sl. No. | Program area/Project (Duration) | Major Objectives | Annual budget (Thousand Tk.) |
|---|---|---|---|
| **I** | **1. Program Area: Crop-Soil-Water Management** | | |
| | **1.1. Project: Fertility Assessment of Rice Soils and Nutrient use efficiency in rice (Open)** | To assess fertility of rice growing areas and determine optimum fertilizer requirement. | |
| | 1.1.1. Updating fertilizer doses through SSNM for BRRI released varieties | 1.To quantify rice yield gaps and yield responses to fertilizer application.<br>2. To evaluate the agronomic and economic performance of SSNM<br>3. To evaluate the incremental profitability of SSNM in various production and grain and fertilizer price scenarios | 600 |
| | 1.1.2 Updating fertilizer doses through RCM for BRRI | To develop soft wire based fertilizer recommendation for rice. | IRRI funded |

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| | released varieties | | |
| | 1.1.3. . Evaluation of P efficient rice genotypes | To screen P efficient rice genotypes at P deficient soil. | 200 |
| | 1.1.4 Study the interaction effect of nitrogen and potassium on modern rice cultivation | 1. To find out the suitable combination of N and K for MV rice cultivation<br>2. To study the N and K dynamics in soil and plant. | 300 |
| | 1.1.5. Increasing productivity and soil fertility through integrated nutrient management in farmers' fields under different cropping patterns. | 1. To develop appropriate nutrient management technologies for different cropping patterns<br>2. To increase total productivity of the individual cropping pattern | 1000 |
| II | **1.2. Project: Identification and management of nutritional disorder (Open)** | To determine upcoming nutritional disorders in rice under intensive rice cultivation with different fertilizer management practices | |
| | 1.2.1. Long-term effect of some macro and micronutrients on yield and nutrition of lowland rice | 1. Determine nutrient deficiency problems in soil through missing element techniques<br>2. To see long-term yield trend of rice under different nutrient management practices<br>3. To evaluate the changes in soil physical, chemical and biological properties under long-term fertilization. | 650 |
| | 1.2.2 Study on the consequences of continuous wetland rice cropping | To evaluate the effect of continuous and intensive wetland rice culture on changes in soil fertility and yield of rice. | 120 |
| | 1.2.3. Integrated nutrient management (INM) for double/triple rice cropping pattern for maximizing yield and sustaining soil fertility | To evaluate the INM practices for continuous and intensive wetland culture for sustainable soil health and productivity. | 300 |
| | 1.2.4. Validation of BRRI Fertilizer Management Technology in Boro, T. Aus and T. Aman rice | To demonstrate BRRI developed fertilizer management packages in farmers' field. | IAPP |
| | 1.2.5. Physico-chemical properties of coastal saline soils (Collaboration with RFSD) | To monitor the soil salinity and moisture level in coastal saline soil under different cropping patterns**.** | APSIM |
| III | **1.3 Green house gas emission study** | To examine the GHG emission from rice field | |
| | 1.3.1. Green House Gas (GHG) Emission Trial | To determine the GHG emission from rice field under different water management | IFDC |

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| IV | **1.4 New fertilizer trial** | To study the efficiency of new fertilizer on the yield of MV rice | |
| | 1.4.1. Evaluation of Urea Super Phosphate (USP) on rice cultivation | To evaluate the USP fertilizer on rice cultivation. | 150 |
| | 1.4.2. Evaluation of USG and PU applicator on N–use efficiency for rice cultivation (Collaboration with FMPHT Division). | To evaluate the efficacy of USG and PU applicator on N–use efficiency for rice cultivation | 150 |
| V | **1.5 Management of problem soils** | To find out a suitable fertilizer management package for problem soils | |
| | 1. 5.1. Screening salt – tolerance materials (Collaboration with Physiology Div.) | To find out suitable salt –tolerance materials | 200 |
| | 1.5.2. Fertilizer management of saline soil for rice production | To find out a suitable fertilizer management package in combination with organic and inorganic fertilizer for higher crop production in salt affected soil. | 300 |
| | 1.5.3. Evaluation of soil management packages for rice production in char lands ecosystem (Collaboration with RFS Division). | To identify the proper soil management packages through organic and inorganic amendments in char lands ecosystem. | 300 |
| | 1.5.4.Integrated Soil management for rice production in Haor and Piedmont soil areas | To identify the proper soil management packages through organic and inorganic amendments in Haor and Piedmont soil areas. | 300 |
| | 1.5.5.Evaluation of fertilizer management packages for local T. Aman rice in tidal submergence ecosystem | To identify the best fertilizer management packages for local T. Aman rice in tidal submergence ecosystem | 300 |
| | 1.5.6.Integrated Soil management for rice production in drought prone areas | To identify the proper soil management packages through organic and inorganic amendments in drought prone areas. | 300 |

## Plant Physiology Division
## Proposed Research Programme 2014-2015

| Sl. No. | Program area/ Project (Duration) | Major Objectives | Annual budget (lac TK |
|---|---|---|---|
| 1 | Screening for salinity tolerance of advance breeding lines at the seedling stage (June 2014- July 2015) | To identify salt tolerant lines at seedling stage. | 3.5 |
| 2 | Evaluation of advance breeding lines for salinity tolerance at reproductive stage. (April 2014- Dec 2014) | To characterize tolerance reaction in varying salinity level at reproductive stage. | 4.5 |
| 3 | Identification of new sources of salinity tolerance. (2014-15). | To identify new sources of tolerance for future salinity tolerance breeding | 3.0 |
| 4 | Mapping QTLs for salinity tolerance of Horkuch at reproductive stage. (2014-15). | 1. To map QTLs for salinity tolerance of Horkuch at reproductive stage.<br>2. To find out the possible mechanisms contributing for this tolerance. | 5.0 |
| 5 | Mapping QTLs for salinity tolerance of Ashfal balam at seedling and reproductive stage (2014-15). | 1) To map QTLs from Ashfal balam for seedling and reproductive stage salinity tolerance.<br>2) To find out the possible mechanisms contributes' for this tolerance. | 5.0 |
| 6 | Characterization of germplasms for submergence tolerance (Apr-Sep, 2014). | 1. To identify non-elongating tolerant germplasms under complete submergence<br>2. To identify better recovery ability germplasms | 1.5 |
| 7 | Effect of submergence under different water turbid condition ( Aug-Sep, 2014) | To determine the effect of submergence under different water turbid condition | 1.5 |
| 8 | Characterization of germplasms and advance breeding materials for medium stagnation and deep flooding environment (Apr-Sep, 2014) | 1. To identify tolerant genotypes for stagnation flooding condition<br>2. To observe elongation under deep water condition | 1.5 |
| 9 | Confirmation of performance of ALART/ PVT materials under drought stress at reproductive stage (July-Dec, 2014) | Evaluation of ALART and PVT materials under control drought condition in the net house. | 3.5 |
| 10 | Characterization of some selected drought tolerant rice germplasms(Aug-Dec, 2014) | To characterize rice germplasms which can tolerate water stress at reproductive stage. | 4.0 |
| 11 | Screening of germplasms for drought | To identify rice genotypes tolerant to | 3.5 |

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| | tolerance at reproductive phase(2014-15) | drought stress at reproductive phase. | |
| 12 | Screening of germplasms for deep rooting ability (2014-15) | To identify genotypes having deep rooting ability. | 1.5 |
| 13 | Development of heat tolerant varieties through conventional pedigree selection method. (2014-15) | To identify heat tolerant breeding lines through conventional pedigree selection method. | 3.5 |
| 14 | Screening germplasms for heat tolerance at flowering stage. (2014-15) | To identify new sources of heat tolerance | 3.0 |
| 15 | Screening of germplasms for drought and heat tolerance at field condition. (2014-15) | To identify drought and heat tolerant germplasms through mass screening in field condition. | 3.5 |
| 17 | Identification of heat tolerant genotype at flowering stage (2014-15). | To identify the heat tolerant genotype from advance materials | 1.5 |
| 18 | Screening for cold tolerance at seedling stage under natural condition (2014-15) | To identify rice genotypes which can tolerate low temperature at seedling stage | 2.0 |
| 19 | Characterization for cold tolerance of selected rice genotypes from IRTON(2014-15). | To observe cold tolerance of selected rice genotypes for whole growth period at natural field condition. | 3.5 |
| 20 | Evaluation for cold tolerance of BRRI dhan55 for whole growth period (2014-15). | To observe the cold toleranceof BRRI dhan55 for whole growth period at natural condition. | 3.5 |
| 21 | Identification of cold tolerance mechanism of BRRI dhan55 and two selected advance lines (2014-15). | 1. To observe physiological attributes of the tested genotypes at low temperature condition.<br>2. To find out the possible cold tolerant mechanisms of the tested genotypes. | 3.5 |
| 22 | Effect of seed invigoration on the growth of seedling in low temperature condition (2014-15) | 1. To find out the effect of seed priming on seed germination rate.<br>2. To assess the effect of priming on seedling growth and development. | 1.5 |
| 23 | Effect of seed invigoration on growth of seedling in drought condition (Apr-May, 2014) | 1. To find out the effect of seed priming on seed germination rate.<br>2. To assess the effect of priming on seedling growth and development. | 1.5 |
| 24 | Effect of seed invigoration on the growth of seedling in salinity condition (Apr-May, 2014) | 1. To find out the effect of seed priming on seed germination rate.<br>2. To assess the effect of priming on seedling growth and development at salinity condition. | 1.5 |
| 25 | Determination of growth stages of newly released rice varieties as affected by sowing time (2014-15) | 1. To examine the growth behaviour and photosynthesis of BRRI released varieties<br>2. To determine the required degree days for different stages of different | 3.5 |

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| | | varieties | |
| 26 | Identification of photosensitivity of BRRI released varieties (Apr-July, 2014) | To know the photosensivity of recently released T aman varieties | 2.5 |
| 27 | Effect of seed bed media on growth of seedling in low temperature condition (2014-15) | To find out the effect of different seed bed media on the seedling growth in Boro season's low temperature condition | 1.5 |
| 28 | Physiological studies of some hybrid genotypes. | To study the vegetative growth and yield of some hybridrice genotypes | 2.5 |
| 29 | Automatic weather station data recording, transfer, storage and maintenance | To collect, transfer and storage of automatic weather station data. | 2.0 |
| 30 | Estimation of Genetic Co-Efficient of Some Rice Varieties (2014-15) | To observe the phenological development of growth of rice plant over the year. | 8.0 |
| | | Total | 86.5 (Lac TK) |

## Agronomy Division
## Proposed Research Program 2014-2015

| Sl No. | Program area/Project (Duration) | Major Objectives | Annual budget (Thousand Tk.) |
|---|---|---|---|
| **1** | **Project: Seeds and Seedling** | To develop technologies for quality seeds and seedlings for higher yield | |
| | 1.1. Effect of different nursery bed media on rice seedling during Boro season (new) | To improve the seedling quality under low temperature condition | AFACI project |
| | 1.2. Effect of spacing and seedling age on growth and yield of newly BRRI developed long duration and short duration Boro, T. Aman and T. Aus varieties (new) | To find out the appropriate spacing and age of seedling for yield optimization of long duration and short duration Boro, T. Aman and T. Aus varieties | GOB 20.00 |
| | 1.3 Effect of seed rate on yield of direct dry seeded Aus rice (new) | To find out the optimum seed rate for better yield | CSISA project |
| | 1.4. Evaluation of rice transplanter and BRRI weeder technique and seedling raising on trays (new) | To grow quality seedlings suitable for transplanter by using tray<br>To minimize the cost of production by using transplanter and BRRI weeder | AFACI project |
| | 1.5. Adjustment of optimum seedling age of hybrid rice varieties after potato harvest in northern region of Bangladesh | To find out optimum seedling age of suitable hybrid rice varieties after potato harvest for maximizing grain yield | 60.00 |

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| | 1.6. Evaluation of cold tolerance ability of exotic and selected advanced lines at seedbed under various seeding dates in cold prone areas of Bangladesh | To find out suitable rice genotypes for cold tolerance at seed bed in cold prone areas to safe the farmers as well as to produce more production after potato harvest | 20.00 |
| | 1.7. Production of quality Boro seedlings in dry seed bed in cold prone areas (Rangpur region) (new) | to compare different dry seed bed management options to produce quality seedlings and increased yield of rice | 20.00 |
| | 1.8. Determination of seedling age for Rice Transplanter (new) | To find out suitable seedling age for rice transplanter. | 50.00 |
| | 1.9. Effect of seed rate to seedling establishment in dry seed bed condition for T. Aman Season (new) | To determine seed rate in dry seed bed condition | 30.00 |
| | 1.10. Nursery management for enhanced survival of SUB1 introgressed genotypes of rice for submergence-prone areas (on going) | To produce good quality seedlings for better survival | IFAD project |
| **2** | *Project: Planting Practice* | To find out optimum planting date<br>To screen high yield potential advanced lines<br>To determine suitable planting density and crop establishment method | |
| | 2.1. Performance evaluation of modern rice varieties in Aus, Aman and Boro season in tidal flooded ecosystem (on going) | To find out the suitable variety for selected location<br>To know farmer's reaction | IAPP |
| | 2.2. Effect of time of planting on growth and yield of advanced lines both in Aman and Boro seasons (on going) | To determine suitable time of planting and selection of high yield potential genotypes | 90.00 |
| | 2.3. Escaping salinity effect on rice by adjusting planting time in Boro season (on going) | To determine optimum planting time for higher productivity<br>To know the salinity status of selected area | IAPP |
| | 2.4. Performance of BRRI dhan62 under different spacings and levels of nitrogen (new) | To know the growth , yield and NUES under different spacing and levels of nitrogen | 50.00 |
| | 2.5. Performance of Modern T. Aman and Boro varieties in farmers field at Pirojpur, Gopalgonj and Bagerhat (on going) | To demonstrate new varieties in the farmers' field<br>To show the benefits of best agronomic practices | PGB project |
| | 2.6. Study on the performance of NERICA rice variety under different management in Boro and T. Aus seasons ( new) | To find out the appropriate agronomic management for yield optimization NERICA rice variety in Boro, T. Aman and T. Aus Varieties | 45.00 |
| | 2.7. The effect of crop establishment methods for yield improvement of T Aus rice ( new) | To find out the appropriate agronomic management for the yield optimization of T Aus rice | GOB 15.00 |
| | 2.8. Effect of crop establishment methods on late Boro (Braus) rice yield in northern cold prone area of Bangladesh ( on going) | To investigate the effect of different crop establishment methods on yield<br>To find out the appropriate crop establishment method | GOB 20.00 |

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| | 2.9. Performance of hybrid and inbred rice at late planting situation (Brush) after potato harvest in cold prone areas of Bangladesh | To evaluate hybrid and inbred rice varieties at late planting situation after potato harvest | 50.00 |
| | 2.10. Rice yield maximization through agronomic management in Rangpur region (on going). | To increase rice yield<br>To increase farmers income | 30.00 |
| | 2.11. Crop diversification through direct seeded rice with short duration variety and weed control options in high and medium high land of (low rainfall area) NW region of Bangladesh (on going) | To increase cropping intensity<br>To validate DSR technology and short duration varieties | LPCEWG project |
| | 2.12. Performance of dry direct seeded rice in different tillage practices and weeds control options by different herbicide sources under Rice-Wheat-Mungbean cropping system (on going) | To identify the yield performance on different dry tillage conditions.<br>To investigate weed species and population growth on different tillage conditions.<br>To observe the herbicide source for effective control of weeds and their economics | LPCEWG project |
| | 2.13. (a). Mother Trial with Sub1 genotypes under Participatory Variety Selection (PVS) in northern Bangladesh (on going). | To observe the phenotypic performance and different agronomic traits of Sub1 genotypes under PVS in submergence prone areas | CURE project |
| | 2.13.(b). Participatory Variety Selection (PVS) - Mother trial (on going) | Evaluation of genotypes in the real submergence prone environments of the farmers' field with the participation of farmers under the management practices of researchers | CURE project |
| | 2.14. Participatory Variety Selection (PVS) Baby trial (on going) | Evaluation of genotypes chosen by farmers in their submergence prone environments under the management practices of farmers | CURE project |
| | 2.15. Determination of planting time for Rice Transplanter (new) | To find out suitable planting time for rice transplanter | 60.00 |
| | 2.16. Crop establishment and fertilizer management of shallow deep water rice (new) | To determine input package of deep water Aman rice | 40.00 |
| | 2.17. Farm profitability and livelihood improvement in greater Faridpur Region (new) | To determine suitable crop production system in Faridpur | 60.00 |
| | 2.18. Introducing improve cropping pattern for increasing cropping intensity in Rice-Rice system | To increase the cropping intensity and productivity | 60.00 |
| **3** | **Project: Fertilizer Management** | To increase nutrient use efficiency for higher yield<br>To maintain soil health<br>To find out optimum nutrient requirement for advanced lines and newly released rice varieties | |
| | 3.1.Validation of different nutrient management options for increasing | To find out the suitable nutrient management option<br>To increase the nutrient use efficiency | IAPP |

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| | yield of rice in Aus, Aman and Boro season in tidal flooded ecosystem (on going) | | |
| | 3.2. Effect of different rates of nitrogen application with and without vermicompost on growth and yield of rice (new) | To reduce chemical fertilizer for rice with vermicompost | 45.00 |
| | 3.3. Management of nitrogen from different sources and methods of application in modern T.Aman varieties (on going) | To observe the N response of newly developed T. Aman varieties when N will be supplied from different sources and methods | 50.00 |
| | 3.4. Management of nitrogen from different sources and methods in modern Boro varieties (on going) | To observe the N response of newly developed Boro varieties when N will be supplied from different sources and method | 43.00 |
| | 3.5. Evaluation of nitrogen use efficiencies of modern Boro varieties using prilled urea and USG applicators | To observe NUEs of boro varieties by prilled urea and USG applicators<br>To observe N uptake, growth and yield of rice | 35.00 |
| | 3.6. Field validation of LCC and USG application in T. Aman and Boro rice (on going) | To find out the performance of LCC and USG in farmers field | PGB project |
| | 3.7. Performance of NPK briquette deep placement on the growth, yield and nutrient status of HYV rice during Boro, T. Aus and T. Aman season at different locations (on going) | To find out the effectiveness of NPK briquette deep placement in wetland rice under tidal flooded condition.<br>To recommend NPK briquette for sustainable rice production of T. Aman rice | IFDC project |
| | 3.8. Effect of urea deep placement time on the performance of HYV rice and nutrient status during Boro T. Aus and T. Aman season (on going) | To find out the appropriate time of UDP and its effectiveness for rice yield maximization<br>To recommend the appropriate time of UDP application for sustainable rice production in T Aman season | IFDC project |
| | 3.9.Validation of nitrogen management for yield maximization after de submergence for BRRI dhan51 & BRRI dhan52 at Rangpur region in T. Aman season (on going) | To identify and recommend appropriate nitrogen management for submergence tolerant varieties for yield maximization | IAPP |
| | 3.10. Effect of nitrogen levels on growth and yield of BRRI hybrid rice in Boro season | To know growth and yield of hybrid rice under different levels of nitrogen<br>To know NUEs of hybrid rice | 42.00 |
| | 3.11. Effect of different sources of N fertilizer on weed infestation of HYV rice (on going) | To find out the effect of different sources of N fertilizer on weed infestation<br>To find out the source of N fertilizer for less weed infestation | IFDC project |
| | 3.12. Nitrogen management in local Aman varieties in Barisal (on going) | To evaluate the effect of N application to local rice at panicle initiation stage | AFACI project |
| | 3.13. Effect of nitrogen on growth and | To increase yield of short duration rice varieties with suitable fertilizer management practices | 40.00 |

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| | yield of some drought tolerant rice varieties (on going) | | |
| | 3.14. Determination of optimum fertilizer for maximizing yield in Bhanga (on going) a. Missing element trial | To find out the optimum rate of fertilizer<br>To find out the PKS and Zn requirment for Bhanga soil | 30.00 |
| | 3.14.b. Determination of N fertilizer requirement | To find out the optimum N rate for maximizing grain yield in low lying areas of Bangladesh | 20.00 |
| | 3.15. Response of Zn fertilizer in High Zn rice (new) | To find out the relation of Zn application in grain yield of high Zn rice<br>To find out the amount of Zn in rice grain | 35.00 |
| | 3.16. Method of N application and dose in establishment of rice by Rice Transplanter (new) | To determine N application method in crop establishment by rice transplanter | 60.00 |
| **4** | **Project: Integrated Weed Management** | To develop cost effective weed management practices<br>To screen rice genotypes having weed suppressing ability | |
| | 4.1. Effect of nitrogen levels and weed management on weeds abundance in irrigated Boro rice under AWD irrigation system (new) | To find out interaction effect of weeding treatments and N levels | 35.00 |
| | 4.2. Validation of different integrated weed control options for yield maximization in Boro season (on going) | To identify appropriate weed management option<br>To know the weed species available | IAPP |
| | 4.3. Effect of Gramaxone (non-selective herbicide) in controlling aquatic weeds in single Boro area | To reduce labour cost during land preparation<br>To increase productivity | IAPP |
| | 4.4. Effect of continuous application of herbicide on weed species shift and resistance (on going) | To identify weed species that shift due to continuous application of herbicide<br>To identify resistance weed species for specific herbicide | 35.00 |
| | 4.5. Validation of weed control options for yield maximization on BRRI dhan56 and BRRI dhan57 in drought condition at Rangpur region in T. Aman season (on going) | To identify and recommend appropriate weed management option for drought condition | IAPP |
| | 4.6. Validation of weed control option and crop management for yield maximization of BRRI dhan62 at Rangpur region in T. Aman season (on going) | To identify and recommend appropriate weed management option | IAPP |
| | 4.7. Weed seed bank dynamics in Maize- Mungbean- Rice cropping pattern at BRRI (on going) | To observe abundance of different weed species.<br>To record weed seed status in different depth of soil | 30.00 |

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| | 4.8. Potential allelopathic effect of some rice cultivars on *Echinochloa crus-gali* (on going) | To assess the weed suppressing potential of rice cultivars on *Echinochloa crus- gali* | 30.00 |
| | 4.9. Effect of herbicides on soil microbial population (new) | To observe the status of microbial population after herbicide application | 50.00 |
| | 4.10.Evaluation of candidate herbicides (on going) | To find out the effective herbicide<br>To find out the efficacy of new herbicides | 50.00 |
| | 4.11.Cost effective weed management in T. Aman and Boro rice (on going) | To demonstrate cost effective weed management in the farmer's field | PGB project |
| | 4.12. Weed control methods on productivity of direct dry seeded rice in Aus season ( on going) | To determine effective weed control method | CSISA project |
| | 4.13. Influence of weed management options on seasonal variation of N use efficiency of prilled urea by applicator in northern region of Bangladesh (new) | To find out suitable weed management option for higher N use efficiency of prilled urea by applicator | 50.00 |
| | 4.14. Weed control of rice established by Rice Transplanter (new) | To determine suitable weed control method in rice | 50.00 |
| | 4.15. The effect of land preparation options for Zero plow pan soil for yield maximization in Boro-Fallow-T.Aman cropping pattern | To determine suitable and preparation options for Zero plow pan soil for yield maximization in Boro-Fallow-T.Aman cropping pattern | 60.00 |

## RESEARCH PROGRAMME 2014-2015

### Program Performing Unit 02: Irrigation and Water Management Division, BRRI

| Sl. No. | Program area/project (Duration) | Major Objectives | Annual Budget (Thousand Tk.) |
|---|---|---|---|
| **1** | Program Area: Crop – Soil – Water Management | | |
| | **1. Project: Water use efficiency improvement.** | - To generate water efficient technologies for rice cultivation | **GOB** |
| | 1.1 Development of Soil moisture declination model for alternate wetting and drying (AWD) irrigation for Rice cultivation | -To study the soil moisture dynamics of AWD irrigation<br>- To develop a model for prediction of soil moisture dynamics, and<br>- To predict the time of re-irrigation using the model | **GOB** |

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| | 1.2 Assessment of water resources availability for irrigation to increase rice production in tidal areas of Barisal region | - To quantify the amount of available water resources for irrigating boro rice,<br>- To determine possibility of using water for MV boro and MV aman cultivation, and<br>- To assess the constraints and prospects of tidal water utilization for crop production. | **GOB** |
| | 1.3 Climate change impacts on water for irrigating paddy rice in Bangladesh. | - To predict the water requirement at different stages of two popular rice varieties BRRI dhan28 and 29, in the year 2030, 2050 and 2070 by using MAKESENS model, and<br>- To assess the impacts on yield due to climate change | **GOB** |
| | 1.4 Delineation of areas having water shortage during Boro rice cultivation in Northwest Bangladesh | - To identify STW areas which face water scarcity during boro season,<br>- To estimate duration of water shortage, and<br>- To assess the possibility of shifting Boro to Braus/Aus | **GOB** |
| | 1.5 Improving low-cost check valve for STW and test its performance in field level. | - To develop a low-cost check valve for overcoming priming problem of STW and<br>- To find out the suitability in the field level | **GOB** |
| | 1.6 Optimization of irrigation water for maximum year round production. | - To investigate the single and integrated effects of date of transplanting and variety on irrigation requirement, yield, water saving and water productivity.<br>- To find out suitable cropping patterns based on Boro and Aus. -<br>To compare the cost-benefit ratio for different treatments /approach. | **GOB** |
| | 1.7 Impact of water stress on rice at varying water level below soil surface and calibration by ORYZA2000 model | - To investigate the impact of water stress on rice yield,<br>- To calibrate the tensiometer reading with water level in PVC pipe, and<br>- To calibrate the ORYZA 2000 model | **GOB** |

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| | **2. Project: Water Management for rice cultivation in climate change situation** | To obtain optimum rice yield under climate change situation | **GOB** |
| | 2.1 Terminal drought mitigation through integrated approaches in T. Aman cultivation | - To determine effect of drought for different transplanting dates, - To document impact and cost analysis of supplemental irrigation for timely crop establishment, and<br>- To determine drought severity and its probability at different growth stages of T. Aman | **GOB** |
| | **3. Project: Land productivity improvement in the coastal environment** | To increase land and water productivity for improved food security and livelihoods in the coastal zones | **GOB** |
| | 3.1 Effect of long term groundwater extraction on the performance of STW and on crop production in coastal region of Bangladesh | - To assess potentiality for development of suitable groundwater,<br>- To test the cost-effectiveness of tubewell irrigation, and<br>- To monitor the long-term effect of groundwater extraction in the coastal saline areas. | **GOB** |
| | 3.2 Survey on surface water utilization and its scope for crop production in different Agro-Ecological Zones of Bangladesh | - To identify the location specific surface water availability and its utilization for rice and non-rice crop production;<br>- To determine the scope for further increase of surface water utilization, and<br>- To identify the constraints and prospect for surface water utilization in Bangladesh | **GOB** |
| | **4. Project: Sustainable management of water resources** | - To identify the aquifer characteristics and quality of groundwater in Bangladesh and its relationship with rainfall. | **GOB** |
| | 4.1 Monitoring of groundwater fluctuation and safe utilization in different geo-hydrological regions | - To determine the fluctuation of groundwater level over time and its relationships with rainfall, and - To determine water quality including arsenic. | **GOB** |
| | 4.2 Water quality assessment and its suitability for irrigation in different locations of Bangladesh | - To determine the water quality for irrigation | **GOB** |

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| | 4.3 Study on alternative water management practices for increasing water and crop productivity in selected haor areas of Bangladesh | - To identify and quantify the existing water resources for crop production in haor areas,<br>To test alternative water management technologies for Boro production,<br>-To identify the problems and prospects of water management during Boro season, and<br>- To develop policy guidelines for appropriate water management and crop production practices in haor areas | **GOB** |
| | 4.4 Water Salinity monitoring for Boro Cultivation in Coastal Region of Barisal | - To assess the suitability of water salinity for boro cultivation,<br>- To delineate the trend of change of salinity in surface water of coastal region of Barisal,<br>- To identify the saline water-sweet water interface | **GOB** |
| | **5. Project: Renewable energy for irrigation** | To identify some renewable energy sources for irrigation | **GOB** |
| | 5.1 Feasibility study of solar pump for irrigated rice | - To evaluate solar pump for energy output, pump discharge and irrigated area, and<br>- To investigate multiple use and economic performance of solar pump | **GOB** |
| | **6. Project: 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 Project Title: Adoption of new cropping system under climate change and validation of cropping system model APSIM | To validate the cropping system model APSIM under the changing cropping pattern of coastal region of Bangladesh under climate change scenario. | ACIAR, Australia |
| | 6.2 Project Title: Productive, profitable and resilient agricultural and aquaculture systems | To increase the cropping intensity and productivity of the coastal region of Bangladesh by improve water management. | IRRI, CPWF |
| | 6.3 Project Title: Integrated | - To reduce irrigation cost and | GAFSP |

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| | Agricultural Productivity Project: Adaptation and Demonstration of Water Management Technologies at farmer's fields | increase water productivity,<br>-To increase water conveyance efficiency for rice cultivation, and<br>-To increase irrigation command area | and MoA |
| | 6.4 Project Title: Climate change impacts, vulnerability and adaptation: Sustaining rice production in Bangladesh | - To assess the impacts of climate change on water resources and rice yields in the selected rice growing sub-divisions using crop-, weather-, pest and hydrological models and develop future scenarios together with stakeholders<br>- To identify and develop suitable adaptation measures to minimize the negative impacts of salinity and droughts on rice production<br>- To analyse the socio-economic vulnerability, in particular the loss of livelihoods (in selected case study areas), farmers ability to adapt, identify needs for the capacity development, and assess how policy can address the need based development of adaptation measures, and<br>- To disseminate results to policy makers, farmers, scientific community through active involvement of stakeholders and increase their overall awareness to improve the adaptive capacity. | The Royal Norwegian Embassy, Dhaka |
| | 6.5 Project Title: Mujibnagar Integrated Agricultural Development Project (MIADP)-IWM Part (On-going) | Ensure more food production by adopting suitable cropping pattern through irrigated agriculture for food and nutrition security by integrated approach. | MoA |
| | 6.6 Project Title: Pirojpur-Gopalgonj-Bagerhat Integrated Agricultural Development Project (PGBIADP) - IWM Part (On-going) | - Effective utilization of all<br>available water resources for rice<br>and non-rice crop cultivation and -<br>To identify and recommend the most<br>suitable water management practice | **MoA** |

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| | | for the area using conjunctive uses<br><br>of surface and groundwater | |

## Economics Division
## Proposed Research Programme 2014-15

| Sl. No. | Programme area/Project (Duration) | Major Objectives | Annual Budget ('000') Tk. |
|---|---|---|---|
| | SUB-SUB PROGRAM-I: ECONOMIC CONSEQUENCES & RURAL INSTITUTION | | |
| 1.1 | Farm Level Evaluation of Modern Rice Cultivation in Bangladesh | 1. To determine the region-wise adoption rate of different MV Aus, T. Aman and Boro seasons,<br>2. To estimate the yield of different modern and local rice varieties in different seasons; and<br>3. To determine the socio-economic and varietal constraints to the adoption of MV rice in different regions. | Tk. 400 |
| | SUB-SUB PROGRAM-II: PRODUCTION ECONOMICS | | |
| 2.1 | Estimation of Costs and Return of MV Rice Cultivation at the Farm Level | 1. To determine the costs and return of MV Aus, T. Aman and Boro rice cultivation in Bangladesh,<br>2. To estimate the factor and income share of MV rice cultivation in different seasons; and<br>3. To evaluate the changes in costs and return and input utilization pattern over the years. | Tk. 200 |
| 2.2 | Surface Water Utilization Pattern and its Scope for Crop Production in different Hydrological Zones of Bangladesh | 1. To identify the location specific surface water availability and its utilization for rice and non-rice crop production;<br>2. To determine the scope for further increase of surface water utilization; and<br>3. To identify the constraints and prospects for surface water utilization. | Tk. 300 |
| 2.3 | Shifting of Crop Land into Mango Orchard: A New Challenge and Opportunity | 1. To assess the socio-economic status of mango orchard farmers;<br>2. To estimate the relative profitability of | Tk. 250 |

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| | for Farming in Rajshahi Region | mango production;<br>3. To identify the factors responsible for crop land transformation/shift into mango orchard;<br>4. To explore the problems of cultivating mango at farm level; and<br>5. To suggest future policy guidelines for transformation of land in Barind area. | |
| 2.4 | Projection Irrigation Cost over Next 20 Years by Using ARIMA Models | 1. To assess the existing irrigation costs for crop production; and<br>2. To predict the irrigation cost up to 2030 by using ARIMA models; and<br>3. To suggest policy guidelines for formulating irrigation policy in Bangladesh. | Tk. 50 |
| | SUB-SUB PROGRAM-III: AGRICULTURAL MARKETING AND DEVELOPMENT | | |
| 3.1 | The Scenario of Varietal Re-naming and Consumers' Preference of Rice in Bangladesh | 1. To list down the names of the major rice varieties which are processed by the millers and processors.<br>2. To examine the branding and packaging methods of processed MV rice at the mill gate areas.<br>3. To find out the reasons behind changing the original name and what extent extra benefit earned by the traders; and<br>4. To suggest policy implications to prevent this mal-practice. | Tk. 300 |
| 3.2 | Economics of Cost Effectiveness of Rice Milling System in Bangladesh: The Case of Business Efficiency | 1. To evaluate the cost efficiency of rice mills.<br>2. To find out and determine the factors responsible for profitability of rice mills<br>3. To identify the constraints and suggest their remedies of rice milling. | Tk. 250 |
| 3.3 | Value Chain of some Niche and Aromatic Rice Varieties in Bangladesh | 1. To critically analyze the value chain of aromatic rice examining different actors and their activities;<br>2. To identify the constraints and opportunities in rice value chain and to recommend measures for further improvement. | Tk. 400 |
| | SUB-SUB PROGRAM-IV: AGRICULTURAL POLICY AND DEVELOPMENT | | |
| 4.1 | Impact assessment of SPDP on Quality Seed and Rice Production | 1. To assess the awareness/ interest about demonstrated rice varieties among the farmers. | Tk. 300 |

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| | | 2. To evaluate the contribution of SPDP for ensuring the availability of seeds to increase rice production<br>3. To find out the role of program in expanding the BRRI rice varieties in the adjacent localities.<br>4. To identify the problems of seed production at farmers level. | |

## Agricultural Statistics Division

### Proposed Research Programme_2014-15

| SL No. | Programme area/ Project | Major Objective | Annual Budget (lac TK.) |
|---|---|---|---|
| | **Programme area: Socio-economics and Policy** | | |
| **1.** | **Yield Assessment through crop-cuts** | 1. To estimate rice yield through crop cuts at farmers' field. | |
| | ***1.1 Experiment/Study:***<br><br>Estimation of Area and Production of Rice in Bangladesh | 1. To forecast rice yield through crop cuts at farmers' field.<br>2. To compare the crop-cut methods followed by DAE, BBS and a modified procedure proposed by Agricultural Statistics to forecast the rice yield.<br>3. To formulate a protocol that provides suitable estimates of area and production of rice in Bangladesh. | 2.00 |
| **2.** | **Stability Analysis of BRRI Varieties** | 1. To determine the stability index of BRRI proposed and released varieties.<br>2. To generate season, year and location-wise database on BRRI varieties. | |

| SL No. | Programme area/ Project | Major Objective | Annual Budget (lac TK.) |
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| | ***2.1 Experiment/Study:***<br><br>Study on G X E interaction of BRRI varieties<br>(In collaboration with pl. Breeding div. and R/S) | 1. To develop/standardize the model for stability analysis.<br>2. To determine the stability index of BRRI varieties.<br>3. To maintain season, year and location-wise database on BRRI varieties. | 2.50 |
| **3.** | **Development of Computer Programs** | 1. To develop computer programs for management and analysis of data.<br>2. To develop software for administration/ accounting systems of BRRI. | |
| | ***3.1 Activity:***<br><br>Development/modification of software for administration / accounting System for BRRI employees | 1. To develop and time to time modification of software for administration/accounting systems of BRRI depending on the request from administration/accounts section. | 2.50 |
| **4.** | **Multivariate Analysis of BRRI Varieties** | 1. To determine factors affecting farmers' and consumers' preference to a rice variety. | 1.00 |
| | ***4.1 Experiment/Study:***<br><br>Development and validation of producer and consumer preference model to rice varieties. | 1. To determine factors affecting producer's decision on varieties for rice cultivation.<br>2. To determine factors affecting for consumer's preference to rice varieties.<br>3. To develop mathematical models for producers and consumer's preference to different rice varieties. | |
| **5.** | **Genetic Coefficient of BRRI Varieties** | 1. To determine genetic coefficient of BRRI varieties | |
| | ***5.1 Experiment/Study:***<br><br>Study on genetic coefficient of BRRI | 1. To determine the genetic coefficients of BRRI varieties | 0.50 |

| SL No. | Programme area/ Project | Major Objective | Annual Budget (lac TK.) |
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| | released varieties<br>(In collaboration with Plant Physiology and Division) | | |
| **6.** | **Spatial Database for BRRI varieties** | 1. To create a geo-reference database of BRRI varieties<br>2. To construct adoption and productivity maps of BRRI varieties in Bangladesh | |
| | ***6.1 Experiment/Study:***<br><br>Suitability mapping of BRRI dhan44, 46, 47, 50 and newly released BRRI varieties including hybrid dhan4.<br>(In collaboration with Plant Breeding, RFS and ARD) | 1. To construct Suitability map of BRRI dhan44, 46, 47, 50 and newly released BRRI varieties including hybrid dhan4. | 0.25 |
| **7.** | **Geographical Information System (GIS)** | | |
| | ***7.1 Experiment/Study:***<br><br>Identification of submergence areas for growing newly developed BRRI varieties<br>(In collaboration with Agril. Econ. and RFS) | 1. To map the submergence areas used for rice cultivation<br>2. To delineate submergence areas suitable for growing newly developed submergence tolerant BRRI varieties. | 1.00 |

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| | ***7.2 Experiment/Study:***<br><br>Sampling protocol for soil and water sampling for assessing Arsenic status in South-west Bangladesh. (In collaboration with soil science Div. and Cornell University under FFP) | 1. To improve knowledge of the geographical distribution of contamination of soil and irrigation water with arsenic, in order to target arsenic management strategies to the most contaminated areas. | Fund FFP |
| | ***7.3 Experiment/Study:***<br><br>Determination of arsenic content in BRRI varieties at diversed/ different environment (In collaboration with soil science Div. and Cornell university under FFP) | 1. To get information about As in the newer varieties in both rice grain and straw.<br>2. To compare As in different rice varieties across years.<br>3. To establish relationships between rice grain and straw across a range of As concentrations and varieties.<br>4. To determine the effects of milling and cooking on As removal from grain, including speciation<br>5. To establish how much As is removed by processing - across varieties and grain As levels. | Fund FFP |
| **8.** | **Characterization of rice environment in Bangladesh** | 1. To develop environmental indices for rice growing areas of Bangladesh.<br>2. To map the areas suitable for BRRI varieties in Boro, Aus and T.Aman seasons. | |
| | ***8.1 Experiment/Study***<br><br>Ground truthing of the characterization maps | 1. To validate the maps of environmental index for the Boro and T.Aman seasons. | 0.25 |

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| **9.** | **Probability Mapping of Weather Variables** | 1. To construct station wise probability curves of weather variables.<br>2. To construct station wise return period for the estimates of weather variable.<br>3. To construct surface maps for the estimates of weather variables. | |
| | ***9.1 Experiment/Study***<br><br>Probability Mapping of Maximum Temperature and rainfall and minimum temperature at different growth stages of Aus, Aman and Boro rice. | 1. To determine the expected maximum, minimum temperature and rainfall in different region of Bangladesh<br>2. To determine the areas of critical maximum and minimum temperature and rainfall for rice on map of Bangladesh during the period and<br>3. To estimate the return period of rainfall and high temperature above critical level at reproductive phase in rice growing areas | 0.50 |
| | ***9.2 Experiment/Study:***<br><br>The effect of Groundwater level Change in Different Area on Boro Rice Production of Bangladesh | 1. To understand Groundwater depth in all over of Bangladesh.<br>2. To find the groundwater variability in Bangladesh.<br>3. To identify impact of Groundwater depth on Boro rice periods.<br>4. To assess the change in rice production in many area.<br>5. The future recommendation of rice production with Groundwater fluctuation and variation. | 1.50 |

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| | ***9.3 Experiment/Study:***<br><br>An application of Box-Jenkins method for forecasting of Aus, Aman and Boro rice production in Bangladesh | 1. To measure the instability and growth rates of Aus, Aman and Boro rice area, production and yield in Bangladesh;<br>2. To identify the best fitted growth and ARIMA model;<br>3. To forecast Aus, Aman and Boro rice area, production and yield in Bangladesh using the best fitted growth and ARIMA models;<br>4. To compare with the forecasted results from deterministic (growth) and stochastic (ARIMA) model | 0.25 |
| | ***9.4 Experiment/Study:***<br><br>Stochastic Frontier Analysis and Data Envelopment Analysis for Efficiency and Environmental Awareness of Paddy Farmers in Bangladesh | 1. To investigate the factors affecting the efficiency (technical, economic, environmental) of paddy farmers.<br>2. To investigate the influence of paddy farmer's environmental awareness on efficiency.<br>3. To make recommendation that may assist policy makers to design agricultural policy in Bangladesh. | 0.50 |
| **10.** | **Information and Communication Technology (ICT)** | 1. To manage and maintain ICT at BRRI | |
| | ***10.1. Activity :***<br><br>Management Information System (MIS) of BRRI | 1. To Manage and maintain MIS of BRRI | |
| | ***10.2 Activity:***<br><br>BRRI Website Management | 1. To complete the construction of blank pages and modify the design of BRRI Website<br>2. To manage and maintain BRRI Website through regular updating of the information and documents | 1.50 |

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| | ***10.3 Activity:***<br><br>Management of BRRI network and internet connectivity | 1. To manage and maintain ICT network of BRRI<br>2. To initiation of e-Governance | 1.50 |
| | ***10.4 Activity:***<br><br>Antivirus Security Protection of BRRI | 1. To protect BRRI server security.<br>2. To protect, update and clean server and personal computer of BRRI. | 4.0 |
| | ***10.5 Activity:***<br><br>e-Tender system of BRRI | 1. To introduces the online tendering system to facilitate the procurement process of BRRI.<br>2. To participate in the local and international tender/procurement of BRRI.<br>3. To ensure adequate infrastructures and enhancing skills and awareness of both the procuring officials and the tenderers.<br>4. To increase transparency and competition and minimize the processing time and effort. | 2.50 |
| | ***10.6 Activity:***<br><br>e-File management system of BRRI | 1. To develop “e-File Management Software” for administration, Accounts and finance division of BRRI.<br>2. To develop “e-File Management Software” for maintaining and reporting the results of financial transaction.<br>3. To use this software, administration, Accounts and finance division of activities/ execution will be increased. | 2.00 |
| **11.** | **Maintenance of Agricultural Database** | 1. To maintain computerized database on rice and related crops | |

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| | ***11.1 Activity***<br><br>Maintenance of rice and rice related variable database | 1. To maintain up-to-date information on rice and related crops | 1.00 |

## Farm Management Division
## Proposed Research Program 2014-2015

| Sl. No. | Program area/Project (Duration) | Major Objectives | Annual Budget (Lak. TK) |
|---|---|---|---|
| | 1. Program Area: Socioeconomic and Policy | | |
| **03** | **Farm Management Division** | | |
| | • **3.1.Project . :** Rice production<br>• management | | |
| | • **Expt.1**. The influence of seedling age on tiller production, yield and yield components of rice | To determine the tillering pattern, yield and yield components of rice as affected by seedling age | 0.50 |
| | • **Expt.2**. Seed quality of different T. aman rice as affected by rainfed condition in ripening phase | To investigate the seed quality of T. aman rice as affected by drought at ripening phase | 0.50 |
| | • **Expt.3.** Determination of plough pan status of BRRI, HQ rice fields | -To detect plough pan position / layer in rice fields<br>-To measure the resistance capacity of plough pan<br>-To prepare a map of rice field based on plough pan status | 0.50 |

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| | • **Expt.4**. Determination of suitable soil-plough-pan resistance for rice cultivation in BRRI, HQ farm | -To measure effect of different plough pan resistance on yield and some physiological traits of rice<br>-To estimate water and fertilizer response (loss) against different level of plough pan<br>-To determine suitable plough pan resistance (cone penetration resistance) for rice cultivation | 2.50 |
| | • **Expt.5.** Effect of quality seed and farmer's seed for seed production and; yield gap between quality seed used plot and farmers' seed used plots.<br><br>TLS, Breeder, 4-5 local farmers' seed of following varieties from Barisal / Rangpur,/ Rajshahi, / Satkhira,/ Khulna,/ Barisal, /Rangpur,/ Rajshahi will be collected<br>1. Rice variety for Boro<br>BRRI dhan 28/ BRRI dhan 29/ BRRI dhan47<br>2. Rice variety for T.Aman<br>BR 11 / BR 22 / BR 23 / BRRI dhan40 / BRRI dhan41/ BRRI dhan 56 /BRRI dhan 56 | To identify the seed effect on<br>probable yield gap between<br>quality seed and farmers' seed.<br>Seek the possibilities to increase rice yield through quality seed that could be useful at policy level. | 1.00 |
| | • **Expt.6.** Effect of foliar spray of MOP and elemental S for spot free seed production | To evaluate the effectiveness of foliar spray of MOP & S on grain spotting. | 0.25 |
| | **3.2. Project**: Cost of production | | |
| | • **Expt. 1**. Cost and return of HYV rice cultivation at BRRI Gazipur farm**.** | To determine cost and return of HYV rice cultivation at the prevailing situation | 0.75 |
| | **3.3. Project:** Survey and development of data base for labor management. | | |
| | • **Expt 1.** Labor efficiency as affected by direct supervision for rice cultivation | To find out the effect of different period of direct supervision of labor on labor efficiency. | 0.25 |

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| | • **Expt.2.** Monitoring the laborers' wage rate for rice cultivation around different locations of Bangladesh. | To document farmers' labor management practices for rice cultivation | 0.75 |
| | **3.4. Project:** Management and utilization of land and other resources.<br><br>These include:<br><br>• Rice seed production (TLS)<br>• Breeder seed production in collaboration with GRS division and plant breeding division.<br>• **Others**: Management of land, labor, farm implements, flower garden, irrigation and drainage etc | Better utilization of farm land and other resources for smooth running of research activities of BRRI | 50 |
| | | | Total= 57.0 |

## Rice Farming Systems Division

### Proposed Research Program 2014-15

| Sl. No. | Program /Project | Major Objective | Annual budget (lakh Tk) |
|---|---|---|---|
| Programme Area: **Rice Farming Systems** | | | |
| **01** | 1. Rice Farming Systems Division | | |
| | **Project 1: Survey** | **To create farming systems database for Bangladesh** | **3.2** |
| | **Activity 1.1.** Study of existing cropping systems in the eastern hill tracts of Bangladesh (AEZ 29) | To explore the scope of improvement of existing cropping systems in hilly areas | 0.60 |
| | **Activity 1.2.** Study of existing cropping systems in Barisal region of Bangladesh | To explore the scope of improvement of the existing cropping systems in Barisal region | 0.50 |
| | **Activity 1.3.** Study of existing cropping systems in the South-Western Bangladesh | To explore the scope of improvement of the existing cropping systems in the South-Western region | 0.60 |
| | **Activity 1.4.** Survey of existing cropping systems in Rangpur, Nilphamari, Kurigram and | i) To identify major cropping patterns under different land types.<br>ii) To identify opportunities for | IAPP Project |

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| | Lalmonirhat districts | increasing cropping intensity and land productivity | |
| | **Activity 1.5.** Survey of existing cropping systems in Charlands of Madaripur, Sariatpur, Faridpur, Munsiganj and Manikgonj districts | i) To identify major cropping patterns in char land.<br>ii) To identify opportunities for increasing cropping intensity and land productivity in char land | 1.50 |
| | **Project 2. Development of Resource Conservation Technologies** | **To generate and evaluate resource saving farming systems technologies for increasing farm income** | **1.2** |
| | **Expt. 2.1.** Crop establishment method and weed management in Rice-Wheat-Mungbean | To evaluate the productivity of Rice-Wheat-Mungbean cropping pattern under different tillage, residue and weed management options | 0.60 |
| | **Expt. 2.2.** Evaluation of different rice based cropping patterns for their water requirement in medium highland ecosystem | i) To find out water requirement of different cropping patterns<br>ii) To improve the cropping pattern for replacing Boro-Fallow-T. Aman | 0.60 |
| | **Project 3. Development of Cropping Systems and Component Technologies for Favorable Environment (Irrigated condition)** | **To develop agro-economically profitable cropping patterns and component technologies for Favorable Environment (irrigated condition)** | **4.90** |
| | **Expt. 3.1.** Development of Vegetables, fish and fruit system in mini pond | To develop mixed farming system technology for diversifying and maximizing yield. | 0.70 |
| **Sl. No.** | **Program /Project** | **Major Objective** | **Annual budget (lakh Tk)** |
| | **Expt. 3.2.** Long-Term Effect of Three Cropped Cropping Patterns on the Agro-Economic Productivity and Soil Health | To determine the long-term implications of Potato-Boro-T. Aman, Maize-Mungbean-T. Aman and Boro-T. Aus-T. Aman cropping patterns on: i) System productivity ii) Economic return and iii) Soil health | 0.80 |
| | **Expt. 3.3.** Development of high intensity Cropping Pattern for greater Kushtia | i) To increase income of the farm families through optimizing cropping intensity<br>ii) To diversify and intensify the rice based cropping patterns | MIADP Project |
| | **Expt. 3.4.** Evaluation of Maize intercropping technologies to develop suitable cropping pattern packages for maize based cropping pattern in | To indentify the suitable cropping pattern technology to replace Maize-Fallow-T. Aman and Maize-Sweet gourd-T. Aman | MIADP Project |

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| | Chuadanga | | |
| | **Expt. 3.5.** Validation of improved cropping patterns for greater Kushtia | To increase the system productivity and income of the farmers through introduction of improved cropping patterns | MIADP Project |
| | **Expt. 3.6.** Intensification of Boro-T. Aus-T. Aman cropping pattern through inclusion of Mustard | i) To increase the system productivity by adopting 3 cropped cropping pattern<br>ii) To Increase farmers income | 0.40 |
| | **Expt. 3.7.** Development and validation of Suitable Cropping Pattern for Northern Region | i) To increase income of the farm families through adoption of improved cropping pattern<br>ii) To validate different cropping pattern in Northern region<br>iii) To diversify the rice based CP | IAPP Project |
| | **Expt. 3.8.** Evaluation of relay intercropping with winter crops under Rabi-Aus-T. Aman cropping pattern in medium highland | To evaluate the performance of relay intercropping in Rabi in Rabi-Aus-T. Aman cropping pattern | 0.50 |
| | **Expt. 3.9.** Evaluation of different cropping pattern in medium highland of Faridpur Region | To identify suitable cropping pattern for medium highland of Faridpur region | 0.70 |
| | **Expt. 3.10.** Performance of different types of seed bed for the quality of seedlings and yield in Aman and Boro seasons | To determine the performance of different types of seed bed for seedlings quality and its performance in yield in Aman and Boro seasons. | 0.40 |
| | **Expt. 3.11.** Effect of fertilizer management on double transplanted and yield at first and second time transplanting of Aman and Boro rice under T. Aman-Boro cropping system | i) To determine optimum fertilizer management for double transplanted rice<br>ii) To increase system productivity | 0.50 |
| | **Expt. 3.12.** Evaluation of fertilizer management options in major crops in Kushtia region | To compare the different management options in Aman, Boro rice, maize and wheat under different cropping pattern in Kushtia region | MIADP Project |
| | **Expt. 3.13.** Nitrogen management options in Boro rice under Boro-Fallow-T. Aman cropping pattern | To compare the best nitrogen management option of rice in Boro-Fallow-T. Aman cropping pattern | 0.40 |
| | **Expt. 3.14.** Evaluation of BRRI prilled urea applicator in boro rice in Boro-Fallow-T. Aman cropping pattern | i) To evaluate the performance of BRRI prilled urea applicator<br>ii) To determine nitrogen use efficiency of different nitrogen | 0.50 |

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| | | application method<br>iii) To compare the yield performance | |
| | **Project 4. Development of Cropping Systems and Component Technologies for Saline environment** | **To develop agro-economically profitable cropping patterns and component technologies for saline environment** | **2.30** |
| | **Expt. 4.1.** Evaluation of different cropping patterns in saline area | i) To validate different cropping patterns in saline soils<br>ii) To diversify the rice based-cropping patterns | 0.50 |
| | **Expt. 4.2.** Evaluation of sunflower varieties and spacing under different gradient of salinity | To find out suitable variety and optimum plant population for better productivity of dibbled sunflower in the saline soils | 0.60 |
| | **Expt. 4.3.** Evaluation of fertilizer recommendation in rice-dibbled sunflower cropping sequence under different gradient of salinity | To enhance the productivity of rice-sunflower cropping system in the saline soils | 0.50 |
| | **Expt. 4.4.** Farmers' participatory demonstration of rice-based technology in saline area of Satkhira district | i) To demonstrate the effect of rice-based technology in saline soils<br>ii) To improve the knowledge base of farming community<br>iii) To increase the farm productivity | 0.70 |
| | **Project 5. Development of Cropping Systems and Component Technologies for Non Saline Tidal environment** | **To develop agro-economically profitable cropping patterns and component technologies for Non Saline Tidal environment** | **2.20** |
| | **Expt. 5.1.** Evaluation of different cropping patterns for Barisal region | i) To validate different cropping pattern for Barisal region<br>ii) To diversify the rice based-cropping patterns | 0.50 |
| | **Expt. 5. 2.** Improvement of single local T. Aman cropping pattern practicing relay cropping and zero tillage in Barisal region | i) To increase the total productivity of existing single local T. Aman cropping pattern<br>ii) To diversify the existing cropping system | 0.60 |
| | **Expt. 5.3.** Intensification of single T.Aman (local) cropping pattern through inclusion of T. Aus rice in Barisal region | To intensify and increase the productivity of single T.Aman (local) cropping pattern | 0.50 |
| | **Expt. 5.4.** Investigating the response of local T. Aman rice varieties to Urea-N fertilizer in Barisal district | To study N-fertilizer response in local T.Aman varieties mass module | 0.60 |
| | **Project 6. Development of Improved Cropping Systems for drought prone area** | **To develop agro-economically profitable cropping patterns and** | **0.50** |

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| | | **component technologies for drought prone area** | |
| | **Expt. 6.1.** Evaluation of rice-based cropping pattern in partially irrigated ecosystem | To evaluate the performance recently released BRRI varieties in Vegetables-Mungbean-DS Aman cropping system | 0.50 |
| | **Project 7. Development of Cropping Systems for submergence condition** | **To develop agro-economically profitable cropping patterns and component technologies for submergence condition** | **0.50** |
| | **Expt. 7.1.** Evaluation of double transplanting in Boro rice at Habiganj haor area under Boro-Fallow-Fallow cropping pattern | i) To evaluate the performance of double transplanted rice<br>ii) To maximize the farmers productivity.<br>iii) To avoid risk from early flash flood. | 0.50 |
| | **Project 8. Development of Cropping Systems under rainfed condition** | **To develop agro-economically profitable cropping patterns and component technologies under rainfed condition** | **4.35** |
| | **Expt. 8.1.** Variety performance and fertilizer management in Jhum cultivation | i) To increase the productivity of Jhum Cropping systems | 4.35 |
| | **Project 9. Crop Modeling** | **To generate future scenario of rice based cropping systems** | **0.50** |
| | **Expt. 9.1.** Evaluation of different cropping patterns for APSIM model | i) To evaluate different cropping sequence for APSIM validation<br>ii) To determine water use efficiency of different cropping patterns | 0.50 |
| | **Project 10. Validation and Delivery of cropping of Systems Technology** | **To disseminate agro-economically profitable farming systems technologies under different ecosystem** | **13.58** |
| | **Activity 10.1.** Multi-location testing of improved cropping pattern in different locations of Bangladesh | To increase productivity of existing system through introduction of BRRI developed high yielding varieties throughout the country | 10.73 |
| | **Activity 10.2.** Scaling out of BRRI varieties in T. Aus, T. Aman and Boro season in Barisal region | i) To increase the productivity of T.Aus, T.Aman and Boro rice<br>ii) To increase farmers' capacity for seed production and delivery system | 1.5 |
| | **Activity 10.3.** Scaling out of BRRI | To identify the suitable varieties | 0.70 |

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| | varieties in T. Aman and Boro season in saline area of Satkhira region | against salinity | |
| | **Activity 10.4.** Replacement of Aus varieties through BRRI dhan48 in Fallow-T. Aus-T. Aman cropping pattern at Habiganj | i) To popularize BRRI dhan48 variety at farmers level<br>ii) To Increase farmers income | 0.65 |
| | **Activity 10.5.** Production of quality seeds of recently released BRRI varieties | To expedite the delivery systems of good quality seeds among the farmers | MIADP Project |
| | **Project 11. Capacity building and technology transfer** | **To improve the knowledge base of extension personnel and farmers** | MIADP/ IAPP/ GOB Projects |
| | **Activity 11.1.** Farmers' training on different cropping systems activities | To improve capacity building of the farmers for enhancing adoption of cropping system technologies | MIADP/ IAPP/ GOB Projects |
| | **Activity 11.2.** Field days on different cropping systems activities | To motivate farmers for adoption of technologies<br>Field days on different components of cropping systems technologies will be organized by RFSD. | MIADP/ IAPP/ GOB Projects |
| | **Project 12. Research and Development under cross cutting issues** | **To improve the productivity of different farming system component** | MIADP Project |
| | **Activity 12.1.** Introduction of date palm (*Phoenix dactylifera* l.) in homestead and agro-forestry systems | i)To establish germplasm centre in the farmer's field<br>ii) To select and introduce suitable variety | MIADP Project |

## Proposed Research Programme 2014-2015

**Programme Area 06: Farm Mechanization and Postharvest Technology**

**Sub-Programme 01: Farm Machinery and Postharvest Technology Division**

**Program Performing Unit 01: Farm Machinery and Postharvest Technology Division**

| ***Project /Exp. No*** | ***Title (Project/Experiment)*** | ***Objectives*** **(General/Specific)** | **Budget Tk (Lac)** |
|---|---|---|---|
| **01** | Development of Agricultural Machines | • Development of farm machinery adaptable to rice eco-system<br>• Reduction of human drudgery | 17.80 |

| *Project /Exp. No* | *Title (Project/Experiment)* | *Objectives* **(General/Specific)** | **Budget Tk (Lac)** |
|---|---|---|---|
| 1.1 | Evaluating and modifying of BRRI developed machines | • To verify the quality of BRRI machines<br>• To identify the functional problems of winnower<br>• To improve the performance of winnower. | 0.30 |
| 1.2 | Effect of settling period of soil on performance of Rice Transplanter | • To optimize the settling period for proper functioning of the selected rice transplanters in different types of soil | 0.50 |
| 1.3 | Design and development of power operated hand reaper | • To harvest cereal crops<br>• To evaluate the performance in comparison with sickle harvesting. | 0.60 |
| 1.4 | Modification and performance evaluation of the BRRI USG applicator in different location of Bangladesh. | • To observe the performance of BRRI USG applicator in transplanted rice fields.<br>• To compare the effect of different form of Urea in rice plants applied by different methods. | 1.50 |
| 1.5 | Modification and evaluation of mechanical rice transplanter for different tillage condition | • To evaluate the mechanical transplanter in both puddle and un-puddle conditions<br>• To identify problems of mechanical rice transplanter<br>• To modify the rice transplanter for different tillage practices. | 1.50 |
| 1.6 | Study on seedling strength and soil bonding capacity with different filler and base materials for mechanical transplanting | • To raise seedling with different base and filler materials<br>• To measure seedling strength<br>• To observe the soil bonding capacity | 2.00 |
| 1.7 | Development and evaluation of a power weeder | • To develop a power weeder suitable for 20cm line spacing with adjustable mechanism<br>• To compare with other weeding technology | 3.00 |
| 1.8 | Development of an integrated seed sowing machine | • To develop an integrated sawing machine<br>• To test the performance and capacity | 4.00 |
| 1.9 | Design and development of a head feed power thresher | • To develop a head feed thresher<br>• To conduct test of the thresher for its performance and capacity<br>• To compare the performance with BRRI existing thresher | 2.00 |
| 1.10 | Design and development of a hill dispensing seeder | • To develop a hill dispensing seeder | 1.00 |

| *Project /Exp. No* | *Title (Project/Experiment)* | *Objectives* **(General/Specific)** | **Budget Tk (Lac)** |
|---|---|---|---|
| 1.11 | Performance evaluation of different type's reaper | • To evaluate field performance of korean reaper<br>• To compare the performance with BRRI PT mounted and BRRI self propelled reaper<br>• To identify the field constrained of the reaper<br>• To rectify the problems for Bangladesh condition | 1.00 |
| 1.12 | Development of seedling raising techniques for different varieties to combat cold temperature | • To raise seedling under different graded and color polythene shade<br>• To observe the effect of different graded polythene and color on seedling quality<br>• To find out suitable graded polythene and optimum time of covering for quality seedling | 0.50 |
| 1.13 | Design and development of BRRI panicle thresher | • To add cleaning and bagging facility<br>• To improve the threshing capacity | |
| 1.14 | Design and development of BRRI prilled urea applicator | • To design and development of deep placement of prilled urea<br>• To evaluate the performance of BRRI prilled urea applicator<br>• To compare the yield and yield contributing character | 0.30 |
| 1.15 | Design and development of Single and double row conical weeder | • To design, fabricate and develop a Single and double row conical weeder suitable for weeding both in lowland and upland fields<br>• To compare with other dry and wet land weeder | 0.60 |
| **02** | *Milling and Processing Technology* | • To reduce loss, improve quality and addition of value to the farm products | 3.50 |
| 2.1 | *Comparative performance of different types of mechanical dryer* | • To evaluate the performance of different types of mechanical dryer | 0.80 |
| 2.2 | Study on milling recovery of BRRI varieties under different drying rate and degree of polishing | • To find out optimum drying rate of BRRI varieties for maximum milling yield and head rice recovery<br>• To determine optimum degree of polishing in terms of physical quality<br>• To study the economics of different drying and degree of polishing | 0.70 |

| *Project /Exp. No* | *Title (Project/Experiment)* | *Objectives* **(General/Specific)** | **Budget Tk (Lac)** |
|---|---|---|---|
| 2.3 | Study of the modernization of rice milling industry for producing quality rice | • To identify the modern machinery adoption pattern in rice mills<br>• *To estimate the physical quality of the produce in modern rice mill* | 1.0 |
| 2.4 | Design and development of solar dryer | • To design, fabricate and develop solar dryer<br>• To compare with traditional sun drying of paddy | 1.0 |
| **03** | Development of stores and storage technology | • **To increase shelf life of rice in store** | 0.60 |
| 3.1 | Study the storage quality under different degree of milled rice | • To study the quality deterioration of different degree of milled rice stored in different storage structure | 0.1 |
| **04** | Renewable Energy Technology | • Development of renewable energy extraction technologies from solar, agri-residues and waste products | 8.0 |
| 4.1 | Feasibility Study of Solar Photovoltaic (PV) Irrigation Pump | • To design of solar PV irrigation system<br>• To study the performance of the solar PV irrigation pump | 5 |
| 4.2 | Physical and thermo-chemical characterization of rice husk | • To document the physical and thermo-chemical properties of rice husk | 1.0 |
| 4.3 | Study on biogas generation for farm machinery operations | • To develop technologies for biogas for operations of farm machinery<br>• To study the performance of the biogas powered farm machinery | 1.0 |
| 4.4 | Extraction of Energy and Biomaterials from waste materials | • Feasibility study to find out the scope of improvement of existing power generation capacity of agricultural waste material<br>• Preparation of activated carbon ad carbon nano-tubes from waste material | 1.0 |
| **05** | Popularization of BRRI developed farm machinery and Postharvest technology | • Awareness build up about the benefit of using BRRI machines among the farmers<br>• Motivation of the local manufacturer to manufacture the BRRI agricultural machinery | 14.00 |

| *Project /Exp. No* | *Title (Project/Experiment)* | *Objectives* **(General/Specific)** | **Budget Tk (Lac)** |
|---|---|---|---|
| 5.1 | Industrial and farm level extension of BRRI machinery and Postharvest technology | • To create awareness and demonstrate the benefit of using BRRI machines among the farmers<br>• To motivate the local entrepreneurs to manufacture BRRI developed machinery | 10.00 |
| 5.2 | Training on operations, repair and maintenance of BRRI Machinery | • To improve the operational skill of the farm machinery operators/drivers/farmers.<br>• To sharpen knowledge of operators on safety, maintenance and management | 2.0 |
| 5.3 | Field Trial and Demonstration of Promising Farm Machinery and Technology to the LFS Farmers | • To create awareness among the LFS farmers to use farm machinery in their farming operation | 1.0 |
| 5.4 | Maintenance practice scenarios of agricultural machinery in farms field | • To investigate the maintenance practices of farm machineries | 1.0 |

## Workshop Machinery and Maintenance Division

### Proposed Research Program 2014-15

| **Sl. No.** | **Experiments** | **Specific Objective(S)** | **Budget (Thoushand TK)** |
|---|---|---|---|
| 1 | Design and development of power transmission system of a power unit | • To design a gearbox with mechanism of two forward and a backward speed<br>• To design a chassis of a power unit | 50 |
| 2 | Design, development, and modification of self-propelled reaper | • Development of user friendly self-propelled reaper to boost-up the crop production | 103 |
| 3 | Modification of a self propelled field mower | • To modify the chassis of the self propelled field mower<br>• To attach lawn mower with tractor/power tiller for increasing field capacity | 50 |
| 4 | Modification of wheel of self-propelled reaper for wet-land condition | • To design the suitable wheel for wet-land condition<br>• Test and evaluate the newly designed wheel at wet-land as well as dry-land condition | 50 |

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|---|---|---|---|
| 5 | Database development for repair and maintenance of BRRI's farm machineries and auto-mobiles of a power unit. | • To create database about repair and maintenance information of farm machineries and automobiles | 100 |
| 6 | Feasibility study of solar energy use in Agricultural Machinery | • To study the solar energy use in agricultural machinery<br>To evaluate the aptness of solar energy use in agricultural machinery | 200 |
| 7 | Development of management system for farm machinery maintenance | • To maintain maximum performance of the machinery, automobiles and equipments<br>• To utilize them efficiently at any time | 200 |
| 8 | Survey the status of engineering workshops at different places in Bangladesh | • To identify the working facilities and limitations of the workshops<br>• To gather information about the potential capacity of manufacturer, repair, maintenance and the area of services of these workshop | 100 |

## Adaptive Research Division

### Proposed Research Program: 2014-2015

| Sl. No | Proposed Research Program | Major Objectives | Expected out |
|---|---|---|---|
| **Program Area: Technology Transfer** | | | |
| **01** | **Adaptive Research** | | |
| | **Program 1<br>Validation of Technologies<br>Program leader: Dr. Md. Shafiqul Islam Mamin, CSO and Head, ARD** | **Validate the matured technologies at farm level** | |
| | **1. Varietals development** | | |
| | **1. Advanced Lines Adaptive Research Trial (ALART)** | To evaluate the yield potential and adaptability of advanced breeding lines at farmers' field in different agro-ecological zones of Bangladesh.<br><br>To get feedback information about the advantages and disadvantages of the advanced lines from farmers and DAE personnel. | Based on the overall performance, some advanced lines will be recommended for Proposed Variety Trial (PVT). So new varieties from those advanced lines may be released in future for different agro |

| Sl. No | Proposed Research Program | Major Objectives | Expected out |
|---|---|---|---|
| | **1.1. ALART, B. Aus, 2014**<br><br>4 Advanced lines and 1 Std. ck, BRRI dhan43<br>8 locations: Gazipur (Kapasia and westbide), Noakhali, Feni, Sylhet, Faridpur, Magura, Kushtia<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: April, 2014<br>Expected ending date: June, 2014. | To recommend Upland B. Aus genotypes based on the results of ALART | ecological zones of Bangladesh with some special characters through PVT during Aus and Aman seasons. |
| | **1.2. ALART, B. Aman (DWR), 2014**<br><br>2 Advanced lines and 1 Std. ck, Gabura and 1 local ck<br>6 locations: Manikgonj, Tangail, Pabna, Habigonj, Shirajgonj and Comilla<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: April, 2014<br>Expected ending date: Novem., 2014 | To recommend B. Aman (DWR) genotypes based on the results of ALART | |
| | **1.3 ALART, T. Aman, 2014**<br><br>4 categories<br><br>**ALART (PQR)**<br>4 Advanced lines and 1 Std. ck. BRRI dhan37<br><br>10 locations: Gazipur, Rajshahi, Barisal, Chittagong, Comilla, Kishorgonj, Sylhet, Jessore, Satkhira & Kushtia.<br><br>**ALART (RLR)**<br>3 Advanced lines and 2 Std. ck. BRRI dhan32, 49.<br><br>10 locations: Gazipur, Rajshahi, Barisal, Chittagong, Comilla, Kishorgonj, Sylhet, Jessore, Satkhira & Kushtia.<br><br>**ALART, (Salinity tolerant)**<br><br>6 advanced lines and 2 Std. ck. BRRI dhan41, 54.<br><br>8 locations: Khulna, Bagerhat, Putuakhali, Borguna & Satkhira. | To recommend suitable genotypes based on the results of ALART for following catagories:<br>PQR<br>RLR<br>Salinity tolerant<br>Submergence tolerance | |

| Sl. No | Proposed Research Program | Major Objectives | Expected out |
|---|---|---|---|
| | **ALART (Submergence tolerant)**<br>4 advanced lines and 3 std. ck. BRRI dhan44, Sadamota, Dudkalam.<br><br>8 locations: Barisal, Patuakhali, Jhalokathi, Borguna & Pirojpur.<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: June, 2014<br>Expected ending date: Novem.,2014 | | |
| | **1.4 ALART, Boro, 2015**<br>(Experiment will be conducted by the supplied materials from Plant Breeding Div.)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: December, 2014<br>Expected ending date: April, 2015 | To recommend suitable genotypes for Boro seasons. | Based on the overall performance, some advanced lines will be recommended for Proposed Variety Trial (PVT). So new varieties from those advanced lines may be released in future for different agro ecological zones of Bangladesh with some special characters through PVT during Boro seasons. |
| | **Program 2**<br>**Dissemination of Technologies**<br>**Program leader: Dr. Md. Shafiqul Islam Mamin, CSO and Head, ARD** | **Conducting on-farm trials for dissemination of technology** | |
| | **2. Seed Production and Dissemination Program (SPDP)** | To encourage the farmers for production, processing and storing of quality seeds at on-farm level.<br>To enhance adoption and dissemination of BRRI varieties through exchanging seeds among the farmers.<br>To get feedback information from the farmers and DAE personnel about BRRI varieties & and other technologies such as USG. | • BRRI varieties will be disseminated among the farmers through quality seed production.<br>• Quality seed production will be increased.<br>• Farmers' income through rice production will be increased by using BRRI varieties.<br>• Awareness and adoption about BRRI varieties by the farmers will be increased. |
| **BRRI core Program** | | | • To popularize Urea |

| Sl. No | Proposed Research Program | Major Objectives | Expected out |
|---|---|---|---|
| | 2.1. **SPDP in T. Aus 2014.**<br>Var: BRRI dhan48 and 55<br>Locations: 28 upazilas under 14 districts<br>(Sylhet, Moulavibazar, Comilla, Chittagong, Rangamati, Cox's Bazar, Sherpur, Faridpur, Jessore, Bogra, Rajshahi, Naogaon, Dinajpur, Thakurgaon).<br>PI: Md. Rafiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: April, 2014<br>Expected ending date: July, 2014. | | Super Granule (USG) instead of prilled urea among the farmers. A significant amount of prilled urea can be saved by using USG.<br>• Insect and disease infestation will be reduced and yield will be slightly increased due to USG application.<br>• Through adaptive trials by using different varieties, location specific suitable varieties were identified for particular area. This will help to increase rice production at farmers level. |
| | 2.2. **SPDP in B. Aus 2014.**<br>Var: BR24<br>Locations: 4 upazilas under 2 districts (Rajbari & Magura).<br>PI: Md. Rafiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: April, 2014<br>Expected ending date: July, 2014. | | |
| | 2.3 **SPDP with USG in T. Aman 2014.**<br>Var: BRRI dhan49, 56, 57 & 62.<br>Locations: 28 upazilas under 14 districts<br>(Chaittagong, Rangamati, Cox's Bazar, Comilla, Sylhet, Rajshahi, Chapi N, Bagerhat, Khulna, Dinajpur, Bogra, Jessore, Gazipur & Pabna).<br>PI: Md. Rafiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: June, 2014<br>Expected ending date: Novem.,2014 | | |
| | 2.4 **SPDP with USG in Boro 2015.**<br>Var: BRRI dhan60,61 & BRRI hybrid dhan3.<br>Locations: 28 upazilas under 14 districts<br>(Chaittagong, Rangamati, Cox's Bazar, | | |

| Sl. No | Proposed Research Program | Major Objectives | Expected out |
|---|---|---|---|
| | Comilla, Sylhet, Rajshahi, Chapi N, Bagerhat, Khulna, Dinajpur, Bogra, Jessore, Gazipur & Pabna).<br><br>PI: Md. Rafiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: December, 2014<br>Expected ending date: April, 2015 | | |
| | 2.5. **SPDP with USG applicator in Boro, 2015.**<br><br>Locations: Kapasia, Gazipur.<br><br>PI: Md. Rafiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: December, 2014<br>Expected ending date: April, 2015 | To observe the efficiency and opportunity of USG applicator at farmer's field. | |
| **Integrated Agricultural Productivity Project (IAPP)** | | | |
| | 2.6. **SPDP in T. Aus, 2014 in northern region.**.<br>Var: BRRI dhan48 & 55.<br><br>Locations: 6 upazilas under 3 districts (Nilphamari, Kurigram, Lalmonirhat)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br><br>Status of the experiment: Ongoing<br>Starting date: April, 2014<br>Expected ending date: July, 2014. | To disseminate BRRI technologies in Rangpur region | • BRRI varieties will be disseminated among the farmers through quality seed production.<br>• Quality seed production will be increased.<br>• Awareness and adoption about BRRI varieties by the farmers will be increased.<br>• To popularize Urea Super Granule (USG) instead of prilled urea among the farmers. A significant amount of prilled urea can be saved by using USG. |
| | 2.7. **SPDP in T. Aus,2014 in southern region**.<br><br>Var: BRRI dhan48 & 55.<br><br>Locations: 8 upazilas under 4 districts (Barisal, JhaloKathi, Patuakhali, Borguna)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: April, 2014<br>Expected ending date: July, 2014. | To disseminate BRRI technologies in Barisal region during Aus season. | |
| | 2.8. **Varietal adaptability trials in T. Aus 2014 in southern region.**<br><br>Var: BRRI dhan27,48, 55 & Local ck..<br>Locations: 4 upazilas under 4 districts | To find out the suitable varieties for southern tidal prone area during Aus season.. | |

| Sl. No | Proposed Research Program | Major Objectives | Expected out |
|---|---|---|---|
| | (Barisal, JhaloKathi, Patuakhali & Borguna)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: April, 2014<br>Expected ending date: July, 2014. | | |
| | 2.9. **SPDP with USG in T. Aman, 2014 in northern region.**<br>Var: BRRI dhan49, 56, 57 & 62.<br>Locations: 6 upazilas under 3 districts (Nilphamari, Kurigram, Lalmonirhat)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: June, 2014<br>Expected ending date: Novem.,2014 | To disseminate BRRI technologies in Rangpur region during T. Aman season. | |
| | 2.10. **Varietal adaptability trials in T. Aman 2014 in northern region.**<br>**V**ar: BRRI dhan49,56,57, 62 & Local ck..<br>Locations: 3 upazilas under 3 districts (Nilphamari, Kurigram & Lalmonirhat)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: June, 2014<br>Expected ending date: Novem.,2014 | To find out the suitable varieties for northern drought prone area during T. Aman season. | |
| | 2.11. **SPDP with USG in T. Aman, 2014 in southern region**.<br>Var. : BRRI dhan41, 44, 49 & 52.<br>Locations: 8 upazilas under 4 districts (Barisal, JhaloKathi, Patuakhali, Borguna)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: June, 2014<br>Expected ending date: Novem.,2014 | To disseminate BRRI technologies in Barisal region during Aman season. | |
| | 2.12. **Varietal adaptability trials in T. Aman 2014 in southern region.**<br>Var: BRRI dhan41, 44, 49, 52 & Local ck..<br>Locations: 4 upazilas under 4 districts (Barisal, JhaloKathi, Patuakhali, Borguna)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists | To find out the suitable varieties for southern tidal prone area during T. Aman season. | |

| Sl. No | Proposed Research Program | Major Objectives | Expected out |
|---|---|---|---|
| | Status of the experiment: Ongoing<br>Starting date: June, 2014<br>Expected ending date: Novem.,2014 | | |
| | 2.13. **SPDP with USG in Boro, 2015 in northern region.**<br>Var: BRRI dhan50, 58, 59 & 60.<br>Locations: 6 upazilas under 3 districts (Nilphamari, Kurigram, Lalmonirhat)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: December, 2014<br>Expected ending date: April, 2015 | To disseminate BRRI technologies in Rangpur region during Boro season. | |
| | 2.14. **Varietal adaptability trials in Boro 2015 in northern region.**<br><br>Var: BRRI dhan50, 58, 59, 60 & Local ck..<br>Locations: 3 upazilas under 3 districts (Nilphamari, Kurigram, Lalmonirhat)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: December, 2014<br>Expected ending date: April, 2015 | To find out the suitable varieties for northern drought prone area during Boro season. | |
| | 2.15. **SPDP with USG in Boro, 2015 in southern region.**<br>Var: BRRI dhan47, 59, 60 & 61.<br><br>Locations: 8 upazilas under 4 districts (Barisal, JhaloKathi, Patuakhali, Borguna)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: December, 2014<br>Expected ending date: April, 2015 | To disseminate BRRI technologies in Barisal region during Boro season. | |
| | 2.16. **Varietal adaptability trials in Boro 2015 in southern region**.<br>Var: BRRI dhan47, 59, 60, 61 & Local ck.<br>Locations: 4 upazilas under 4 districts (Barisal, JhaloKathi, Patuakhali, Borguna)<br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: December, 2014<br>Expected ending date: April, 2015 | To find out the suitable varieties for southern tidal prone area during Boro season. | |

| Sl. No | Proposed Research Program | Major Objectives | Expected out |
|---|---|---|---|
| | | | |
| **Mujibnagar Integrated Agricultural Development Program (MIADP)** | | | |
| | 2.17. **SPDP in T. Aus, 2014**<br><br>Var: BRRI dhan48 & 55.<br><br>Locations: 19 upazilas under 4 districts (Jhenaidah, Chuadanga, Meherpur, Kushtia)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: April, 2014<br>Expected ending date: July, 2014. | To disseminate BRRI varieties and other technologies in the project implementing areas. | • Quality seeds of BRRI varieties were produced and disseminated among the farmers in project area.<br>• A large number of farmers will motivate to grow BRRI varieties |
| | 2.18. **SPDP with USG in T. Aman, 2014.**<br><br>Var: BRRI dhan49, 56, 57 & 62.<br><br>Locations: 19 upazilas under 4 districts (Jhenaidah, Chuadanga, Meherpur, Kushtia)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: June, 2014<br>Expected ending date: Novem.,2014 | To disseminate BRRI varieties and other technologies in the project implementing areas. | |
| | 2.19. **SPDP with USG in Boro, 2015.**<br><br>Var: BRRI dhan50, 55, 59 & 60.<br><br>Locations: 19 upazilas under 4 districts (Jhenaidah, Chuadanga, Meherpur, Kushtia)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: December, 2014<br>Expected ending date: April, 2015 | To disseminate BRRI varieties and other technologies in the project implementing areas. | |
| **Enhancing Quality Seed Supply (EQSS)** | | | |
| | 2.20**. Quality Seed Production and Dissemination Program** (**QSPDP) with USG in T. Aman, 2014.**<br><br>Var: BRRI dhan49, 56, 57 & 62. | To encourage the farmers for producing quality seeds of BRRI varieties by themselves and disseminate through exchanging among neighboring farmers. | • Quality seeds of BRRI varieties will produce and disseminate among |

| Sl. No | Proposed Research Program | Major Objectives | Expected out |
|---|---|---|---|
| | Locations: 10 upazilas under 6 districts (Norshingdi, Kishorgonj, Tangail, Mymenshing, Netrokona, Sherpur)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: June, 2014<br>Expected ending date: Novem.,2014 | | the farmers in project areas.<br>• A large number of farmers will motivate to grow BRRI varieties |
| | 2.21. **QSPDP with USG in Boro, 2015.**<br><br>Var: BRRI dhan50, 58, 59 & 60.<br><br>Locations: 10 upazilas under 6 districts (Norshingdi, Kishorgonj, Tangail, Mymenshing, Netrokona, Sherpur)<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: December, 2014<br>Expected ending date: April, 2015 | To encourage the farmers for producing quality seeds of BRRI varieties by themselves and disseminate through exchanging among neighboring farmers. | |
| | **Program 3**<br>**Promotional activities**<br>**Program leader: Dr. Md. Shafiqul Islam Mamin, CSO and Head, ARD** | **To update knowledge and skill of farmers and stalk holders on modern rice cultivation technology.** | |
| | **3.1 Farmers' Training** | | |
| | 3.1. 1. Farmers' training in Aus 2014, Aman 2014 & Boro 2015 seasons under GOB & different Projects<br><br>PI: Dr. Md. Atiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: Through out the year.<br>Expected ending date: Through out the year | To train the farmers on modern rice production technologies.<br>To improve the farmers' knowledge and skill on rice production technologies.<br>To create farmers' awareness about recent technologies. | • About 1400 farmers and DAE field staffs will be trained about modern rice production technologies.<br><br>• About 9,000 farmers, DAE staffs, elite persons, social workers will gain knowledge about modern rice production technologies. |
| | **3.2 Field Day** | | |
| | 3.2.1. Field days in Aus 2014, ,Aman 2014 & Boro 2015 seasons under GOB & different Projects<br>.<br>PI: Md. Rafiqul Islam, PSO<br>CI: Other ARD Scientists<br>Status of the experiment: Ongoing<br>Starting date: At crop maturity stage. | To create awareness and interest about the BRRI technologies among the farmers and get feed back about the technologies.<br>For rapid dissemination of rice production technologies among the farmers. | |

| Sl. No | Proposed Research Program | Major Objectives | Expected out |
|---|---|---|---|
| | Expected ending date: NA | | |
| | **Program 4**<br>**Enrichment of own seed stock** | | |
| | **4.1. Production of quality seeds of BRRI released recent varieties**<br>Location: BRRI Research Farm, Gazipur<br>PI: Md. Rafiqul Islam, PSO<br>CI: Other ARD Scientists | To produce quality seeds of BRRI released recent varieties for adaptive research trials during Aus, Aman and Boro seasons. | A total of 15 tons quality seeds of different BRRI varieties in different seasons will produce and will be used in different Adaptive trials. |

## Training Division

### Proposed Research Program (2014-2015)

| Sl. No. | Program area | Major Objective | Annual budget (lac TK) |
|---|---|---|---|
| II | **Program Area : Technology Transfer**<br>**Program Performing Unit : Training Division** | | |
| | **Project 1. Capacity building and technology transfer through training**<br>Project leader: Dr. Md. Islam Uddin Mollah CSO and Head | To disseminate BRRI developed technologies | |
| | **1.1. Rice Production Course**<br>Participants: BRRI Scientist/ AEO of DAE<br>Duration: 1month (AEO), 2 month (BRRI Scientist)<br>Batch : 02<br>No. of Participants: 50<br>P.I. : Dr. Md. Islam Uddin Mollah, CSO<br>C. I. : MS Hossain, PSO<br>Dr. Md. Fazlul Islam, SSO | To train Extension personnel/ BRRI Scientists so that they can-<br>● Recognize and apply the important concept, principles advanced techniques of modern rice production.<br>● Able to identify and solve field problems of rice cultivation.<br>● Capable to do research planning, program development and report writing on research | **25.00** |

| | | | |
|---|---|---|---|
| | | activities. | |
| | **1.2. Rice production training for trainers**<br><br>Participants: AEO/UAO of DAE<br>Duration: 1 week<br>Batch : 10<br>Participants: 250 | To train Extension personnel so that they can-<br>● Recognize and apply the important concept, principles advanced techniques of modern rice production.<br>● Able to identify and solve field problems of rice cultivation.<br>● Train the field level extension agents and farmers | **15.00** |
| | **1.3. Modern Rice Production Technologies**<br><br>Participants: SAAO of DAE<br>Duration: 1 week<br>Batch : 30<br>Participants: 750 | To train the extension agents so that they can-<br>● Recognize and apply the important concepts, principles and techniques of modern rice production.<br>● Identify and solve field problems of rice cultivation and help the farmers to increase productivity. | **36.00** |
| | **1.4. Modern rice production technologies for farmers**<br>Participants: Farmers<br>No. of part: 600<br>Duration : 1 day<br>Batch : 20 | To train the farmers so that they can-<br>• Apply the important techniques of modern rice production<br>• Identify and solve the field problems of rice production | **3.00** |
| | **1.5. Special training on specific issues related to rice production**<br>Requested/demanded by different project of BRRI, IRRI, DAE and NGOs. | To train on specific issues of rice production technologies | |
| **II** | **Project 2. Evaluation of imparted training program.**<br>**Project Leader: Dr. Md. Islam Uddin Mollah CSO and Head** | To determine the effectiveness of training program. | |

| | | | |
|---|---|---|---|
| | **2.1. Performance of long and short term training programs.**<br>Duration: Throughout the year<br>P.I. : Dr. MIU Mollah, CSO<br>C. I. : MS Hossain, PSO<br>Dr. Md. Fazlul Islam, SSO | The purpose of this study is to<br>● Evaluate the overall training program.<br>● Assess the trainee's performance.<br>● Assess the resource speaker performance.<br>● Identify the training needs, improve future training programs | **-** |
| **III** | **Project 3. BRKB and its improvement.**<br>**Project Leader: Dr. Md. Islam Uddin Mollah CSO and Head** | To disseminate rice production technologies through electronic media, do overall improvement of BRKB | **5.00** |
| | **3.1. Development and Utilization of Bangladesh Rice Knowledge Bank training and its development**<br>Duration: Throughout the year<br>P.I. : Dr. Md. Islam Uddin Mollah, CSO<br>C. I. : MS Hossain, PSO<br>Dr. Md. Fazlul Islam, SSO | ● Add new training materials to BRKB compendium.<br>● Develop new fact sheets of different needs.<br>● Prepare new materials for BRKB | |