

# Research Achievement 2023-2024

## Program Area: Varietal Development program (VDP)

### Plant Breeding Division

#### Research Achievement 2023-2024 (Technology Developed)

| Sl. No. | Technology Developed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | How Country/Farmer /User will be benefited                                                                                                                                                                                               |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | <b>Program Area: Varietal Development program (VDP)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                          |
| 1       | <p><b>BRRi dhan107:</b> Lata Balam was approved to release as BRRi dhan107 for cultivation throughout the country for Boro season by the National Seed Board (NSB) of Bangladesh in its 111<sup>th</sup> meeting held on January 09, 2024. The average yield of BRRi dhan107 was 8.19 t/ha with 143 days growth duration which gave 17.67% higher yield in ten locations than BRRi dhan50. The grain quality of the rice is excellent. BRRi dhan107 is a new premium quality high protein (10.02%), high yielding rice variety, and the size and shape of this variety is extra-long slender. The color of the rice grain is straw and the milled rice is extra-long slender and white. BRRi scientists expect that being a high yielding high protein premium quality rice variety, BRRi dhan107 will gain popularity very quickly at farmers' level as the same time it is capable to meet up nutritional demand and earn foreign currency through export.</p>  | <p>BRRi scientists expect that being a high yielding premium quality aromatic rice variety, BRRi dhan107 will gain popularity very quickly at farmers' level as the same time it is capable to earn foreign currency through export.</p> |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |  <p style="text-align: center;"><b>Lata Balam (Proposed BRRI dhan107)</b></p> <p style="text-align: center;"><b>BRRI dhan50 (Ck)</b></p> <p style="text-align: center;"><b>Whole grain      Unparboiled milled rice      Cooked rice</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2 | <p><b>BRRI dhan108:</b> CSISA and NATP-PIU-BARC projects applied ideotype breeding approaches and developed several high-yielding fine-grain genotypes. Subsequently, multi-location yield trials (RYT, ALART, PVT) were conducted during the Boro season to identify the best performing high-yielding fine-grain genotype. Based on the results, the National Seed Board (NSB) approved BRRI dhan108 in 2024 for commercial cultivation during the Boro season across the country. BRRI dhan108 was developed from a single cross between two breeding lines: IR 80561 (fine grain) and Chinese inbred 321 (high yielding), with the objective of developing a high-yielding Jira-type variety. The pedigree of BRRI dhan108 is BRH11-9-11-4-5B, with a yield potential of about 10 t/ha and medium-slender grains. BRRI dhan108 has an average yield of 8.5–8.7 t/ha, but under optimum management it can produce 9.5–10.0 t/ha, with a growth duration of 149–151 days. This new high-yielding variety is characterized by an erect flag leaf, 8.8% protein content, 24.5% amylose content, 1000-grain weight 16.3 g, and Jira-type grain characteristics.</p>  | <p>Rice is the major crop in Bangladesh; however, the income generated from rice cultivation is comparatively low. Improving grain quality is important as it enhances consumer welfare and expands market opportunities. In recent years, scientists and breeders have increasingly focused on improving rice quality to meet the diverse needs of different purposes and markets. In Bangladesh, there is a strong domestic demand for fine-grain Jira-type rice. BRRI dhan108 meets this market demand and can help reduce the import of fine-grain rice varieties.</p> |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | <p><b>BRRI dhan109:</b> The National Seed Board (NSB) of Bangladesh has released the breeding line BR9158-19-9-6-50-2-HR1 as tidal submergence tolerant variety viz BRRI dhan109 for tidal submergence prone environment of Barisal region to be cultivated during T. Aman season. The average yield of BRRI dhan109 is 6.0 t/ha with a growth duration of 147 days. Under standard cultivation practice, this variety can produce 6.5 t/ha. It has high protein content (10.6 %) and high amylose content (25.4%). The thousand grain weight of this variety is 31.0 gm having medium bold grain which is mostly preferred by the farmers of Barisal region.</p>  | <p>Approximately 2.5 million hectares of land in Bangladesh face critical challenges due to tidal flooding, which poses a serious threat to rice cultivation in coastal regions. In these areas, agricultural land is inundated daily by river water, making traditional cultivation difficult. The rice variety BRRI dhan109 has been specifically developed for such tidal submergence-prone environments and demonstrates the ability to deliver higher yields under these conditions. It's cultivation offers a viable solution for farmers in coastal areas, thereby contributing to enhanced food security and agricultural resilience.</p> |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | <p><b>BRRi dhan110:</b> The National Seed Board (NSB) released flash flood submergence tolerant genotype, IR16F1148 as a short duration submergence tolerant variety for submergence prone farmers' field of Bangladesh as BRRi dhan110 to be cultivated during T. Aman season. This variety having <i>Sub1</i> gene can tolerate three weeks of complete submergence and can produce 5.0 t/ha yield. Under rainfed condition, the average yield is 6.0 t/ha with a growth duration of 123 days. Depending on the flood duration the growth duration may be increased up to 140 days. With standard agronomic practice it can produce 6.65 t/ha yield. This variety can produce medium slender white grain having medium amylose content. The rice is white, non-sticky which is very good to taste. The weight of 1000 grain is 19.9 grams.</p>  | <p>In Bangladesh, over 2.0 Mha of agricultural land are regularly affected by varying levels of submergence or flash floods, with water depths and durations ranging from one to six weeks. Such flooding often results in partial to total crop damage, leading to significant yield losses. The greater Rangpur region, including districts such as Lalmonirhat, Kurigram, and Gaibandha, is particularly vulnerable to flash floods. The rice variety BRRi dhan110 has been developed, which can withstand up to three weeks of submergence and has a shorter growth duration. This variety offers a promising solution for farmers in flood-prone areas, contributing to enhanced food security and livelihood stability.</p> |
| 5 | <p><b>BRRi dhan111:</b> The National Seed Board (NSB) released BRRi dhan111 (BR10260-5-15-21-6B) for shallow flooded condition of up to 80-100 cm water depths to be cultivated in tidal flood prone coastal region and shallow flood prone haor region of Bangladesh. This variety can produce 4.7 t/ha yield under shallow flooded condition but can give 5.7 t/ha yield under non-stress condition. BRRi dhan111 is taller but stronger and photosensitive with a growth duration of 146 to 160 days. The plant height is 162cm having a very strong culm which is tolerant to lodging and have ratooning ability. It has high amylose content with medium bold grain having 100-grain weight 27.5 g.</p>                                                                                                                                                                                                                         | <p>Approximately 0.48 Mha of crop land in Bangladesh are covered by deepwater and semi-deepwater (&lt;100 cm water depth). BRRi dhan111 has been developed to address the low yields typically associated with traditional landraces cultivated by farmers in these areas. This variety is specifically designed for semi-deepwater</p>                                                                                                                                                                                                                                                                                                                                                                                           |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                     |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ecosystems, aiming to ensure more stable and improved rice production under such challenging conditions.                                                                                                                                                                                                                                                            |
| 6 | <p><b>BRRi dhan112:</b> The National Seed Board (NSB) of Bangladesh has released BRRi dhan112 (BR11716-4R-102), a new salt-tolerant rice variety for the T. Aman season. This variety has a growth duration of 120–125 days and characterized by good lodging tolerance. It produces an average yield of about 5.0 t/ha, with a potential yield ranging from 4.14 to 6.12 t/ha depending on the level of salinity stress. Compared with the check variety BRRi dhan73, BRRi dhan112 provides a yield advantage of about 1.0–1.5 t/ha (approximately 22% higher yield). A key feature of BRRi dhan112 is its strong tolerance to salinity, with the ability to withstand up to 12 dS/m during the critical seedling stage (up to three weeks). In addition, it can tolerate salinity levels of up to 8 dS/m during other salt-sensitive growth stages, from the vegetative to the reproductive phase, while maintaining high yield performance. These characteristics make BRRi dhan112 a promising variety for sustainable rice production in the saline-affected coastal regions of Bangladesh.</p> | <p>BRRi dhan112 will not only improve farmers' income and livelihood security but also reduce crop losses, expand cultivation in underutilized saline lands, and lower reliance on rice imports. By promoting sustainable, climate-resilient agriculture, BRRi dhan112 is set to play a crucial role in ensuring national food security and economic stability.</p> |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                     |
| 7 | <p><b>BRRI dhan113:</b> The breeding line BR11337-5R-72 was approved for release as BRRI dhan113 by the National Seed Board (NSB) of Bangladesh in its 113th meeting held on September 5, 2024, for cultivation across the country during the Boro season. BRRI dhan113 has an average yield of 8.15 t/ha but it can produce 10.1 t/ha under optimum management with a growth duration of 143 days, producing 11.5% higher yield than BRRI dhan88 across ten locations. This new short-duration, high-yielding rice variety is characterized by an erect flag leaf, 8.4% protein content, 19.4 g 1000-grain weight, and medium-slender grain type.</p>  | <p>BRRI scientists anticipate that BRRI dhan113, owing to its high yield potential and shorter growth duration, will rapidly gain popularity among farmers and play a significant role in strengthening national food security.</p> |

## Genetic Resources and Seed Division

### Research Achievement for 2023-24 from Genetic Resources and Seed Division, BRRI

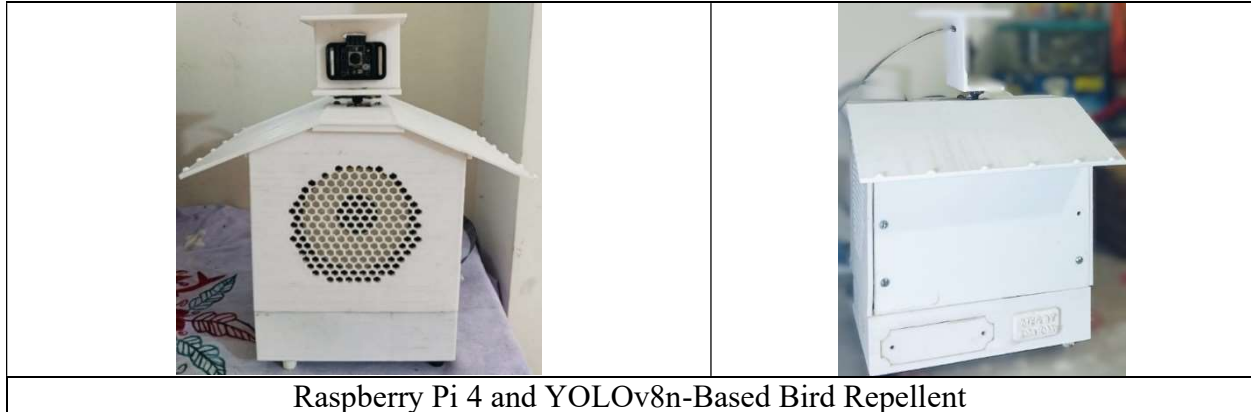
- Two collection missions were made during the reporting year and 756 rice germplasm of which 274 in Aus, 371 in T. Aman, 63 in B Aman, 47 in Boro seasons and one wild rice were collected from different districts of Bangladesh.
- One hundred and sixty-three germplasm accessions and new collections (NC) of which of which 36 in T. Aus 2023, 80 in T. Aman 2023 and 47 in Boro 2023-24 were morphologically characterized using 'Rice Germplasm Descriptors and Evaluation Form' of GRSD.
- Rejuvenation of 2,532 accessions including 526 accessions in T. Aus 2023, 1357 in T. Aman 2023 and 649 in Boro 2023-24 seasons was completed.
- In total, 138 new germplasm accessions were registered as new accessions (from accession number 8,869 to 9,006) in BRRI Genebank after processing and duplicate sorting.
- In total, 3,872 samples of rice germplasm and BRRI developed rice varieties were supplied to 30 different users in the reporting year.
- A total of 383 rice germplasm accessions have been purified based on GBS profiling (97% homology) and selected for downstream analysis.
- Three accessions of Rosul Bhog (Acc. 338), Joysail (Acc. 5969) and Ganjia (Acc. 287) showed better performance out of 15 evaluated under late (transplanting 15 September) condition in T Aman 2023 season.
- One hundred and twenty-five BRRI developed and recommended rice varieties were maintained through nucleus seed production. Besides, nucleus seeds of 73 varieties were produced to be used as the source of breeder seed (BS).
- In total 294.07 tons of breeder seed with tags of which 193.65 tons of 20 Boro varieties, 16.72 tons of seven Aus varieties and 83.70 tons of 35 T. Aman varieties were produced during 2023-24. At the same time, 249.08 tons of breeder seed of which 158.50 tons of 20 Boro varieties, 11.86 tons of seven Aus varieties and 78.73 tons of 35 T. Aman varieties were distributed among 645 partners (GO, NGO and PS) of 'BRRI Rice Seed Network'.

## Program Area: Farm Mechanization and Postharvest Technology

### Farm Machinery and Postharvest Technology Division

#### Research Achievement 2023-24

#### BRRI solar powered bird repellent



Raspberry Pi 4 and YOLOv8n-Based Bird Repellent

- Improved detection range and the ability to distinguish between birds and other objects.
- The camera, mounted on a stepper motor, allowed for dynamic area scanning.
- Enhanced accuracy in detecting birds, activating deterrent measures based on real-time data.

#### Key Components of the Bird Repellent System

The bird-repellent system consists of two main units: a bird-repellent unit and a solar power system.

- **Bird-repellent unit:** This uses a Raspberry Pi 4 processor, a camera, and machine learning to detect birds and activate sound deterrents.
- **Solar Power Unit:** This unit provides continuous power and consists of a solar panel, charge controller, battery, and inverter.

The development of the solar-powered bird-repellent system has led to significant advancements in bird control for rice farmers. This version automatically integrates machine learning and dynamic scanning and offers greater accuracy and broader coverage. Due to its enhanced detection capabilities, this version is recommended for large-scale or precise bird deterrence.

## Program Area: Socio-Economic and Policy

### Agricultural Statistics Division

#### Research Achievement 2023-2024

#### (Technology Developed)

Name of Division: Agricultural Statistics Division

| Sl. No. | Technology Developed during 2023-2024                                                                                  | How Country/Farmer/User will be benefited                                                                                                                                                                                                                                                                                                                          |
|---------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.      | Rice Yield Estimating Using Unmanned Aerial Vehicles (UAVs) Data.                                                      | Adopting UAV-based rice yield estimation can support the transition toward <b>digital and precision agriculture</b> .                                                                                                                                                                                                                                              |
| 2.      | Development of machine learning model for predicting rice yield loss concerning meteorological features in Bangladesh. | By providing timely, location-specific forecasts, it can help stakeholders anticipate climate-related risks, reduce avoidable yield losses, optimize resource use, and improve resilience across the rice production system. This contributes to sustainable agricultural development, enhanced farmer livelihoods, and strengthened national food security.       |
| 3.      | New edition of Simple Lessons from Biometry                                                                            | Incorporate novel experimental designs, topics and analytical techniques for various types of data                                                                                                                                                                                                                                                                 |
| 4.      | Digitalized Tour Distance Calculation System from BRRI HQ                                                              | Users (BRRI authority) can generate Tour related all report with less labour, cost and time                                                                                                                                                                                                                                                                        |
| 5.      | Develop real time AI-based monitoring system for location-specific insect and disease.                                 | A real-time AI-based monitoring system can transform crop protection in Bangladesh by shifting from <b>reactive</b> pest and disease control to <b>proactive</b> management. Through the integration of AI, remote sensing, weather data, GIS, and mobile technologies, the system enables early warning, targeted interventions, and data-driven decision-making. |
| 6.      | Smart profiling of rice varieties for disaster-prone zones of Bangladesh.                                              | A Smart Rice Variety Profiling System will help ensure that the                                                                                                                                                                                                                                                                                                    |

|  |  |                                                                                          |
|--|--|------------------------------------------------------------------------------------------|
|  |  | right rice variety is grown in the right place under the right environmental conditions. |
|--|--|------------------------------------------------------------------------------------------|

## Farm Management Division

### Research achievement 2023-2024 (Technology developed)

| SL. No.                                         | Technology Developed                                                                                                                                                                                                                                                                                                                                                                                                      | How Country/ Farmers/User will be benefited                                       |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Program Area: Socio-Economics and Policy</b> |                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                   |
| <b>03</b>                                       | <b>Farm Management Division</b>                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                   |
|                                                 | <p>3.1. Influence of different dates of transplanting on growth, yield performance and quality of fine rice varieties</p> <p>In T. Aman season, 30 July to 30 August transplanting plants produced statistically identical yield of tested fine rice varieties. In Grain qualities parameters, Milling outturn (%), head rice (%) and protein content (%) were produced higher in 30 July to 15 August transplanting.</p> | These finding may be useful for the rice growers and researchers.                 |
|                                                 | <p>3.2. Effect of storage times in different storage technologies on quality of rice</p> <p>If seed are kept in Plastic Container and Grain Pro Bag for up to 6 months after harvesting, seed quality, grain quality and vitamins (B- Complex) levels are good.</p>                                                                                                                                                       | This finding may be useful for the rice growers and researchers/ production farm. |

## Program Area: Technology Transfer Training Division

### Research Achievement 2023-24

|  | Technology Developed               | How country /Farmer/User will be benefited |
|--|------------------------------------|--------------------------------------------|
|  | Program Area : Technology Transfer |                                            |

|          |                                                                                                                                           |                                                                                                                                            |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
|          | Program Performing Unit : Training Division                                                                                               |                                                                                                                                            |
| <b>I</b> | 1. Technology Transfer through training                                                                                                   | Knowledge and skill of the trained personnel of the subject matter will be increased.                                                      |
|          | Total training conducted: 51<br>No. of participants : 1113<br>Duration : 1 week to 1 month<br>Participants : GO/NGO officers and farmers. | 1. Knowledge and skill on rice production technologies will be enriched.<br>2. Rice yield and production of the country will be increased. |

**Program Area: Regional Station**  
**Regional Station, Rajshahi**

**Research Achievement 2023-2024**  
**(Technology Developed)**

**Name of Division/ Program Performing Unit: BRRI RS Rajshahi**

| <b>Sl. No.</b> | <b>Technology Developed during 2023-2024</b>    | <b>How Country/Farmer/User will be benefited</b> |
|----------------|-------------------------------------------------|--------------------------------------------------|
|                |                                                 | -                                                |
|                | Technology has not yet reached at matured stage |                                                  |
|                |                                                 |                                                  |
|                |                                                 |                                                  |
|                |                                                 |                                                  |
|                |                                                 |                                                  |
|                |                                                 |                                                  |

**Regional Station, Kushtia**

**Research Achievement 2023-2024**

**Name of Division: Bangladesh Rice Research Institute, Regional Station, Kushtia**

| <b>Research Program/progress</b> | <b>Major Achievements</b> |
|----------------------------------|---------------------------|
|----------------------------------|---------------------------|

|                                             | Program area/ project with duration                                                  |                                                                                                                                                                                   |
|---------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A. Varietal Development program area</b> |                                                                                      |                                                                                                                                                                                   |
| <b>T. Aus, 2023-24</b>                      |                                                                                      |                                                                                                                                                                                   |
| 1.                                          | Advanced Yield Trial (AYT#1), High Day & Night Temperature, T. Aus, 2023             | The advanced line, IR18C1002 (6.04 t/ha) gave statistically higher yield over the check varieties BRRI dhan48 (5.08 t/ha) and BRRI dhan98 (4.6 t/ha)                              |
| 2.                                          | Regional Yield Trial (RYT#BB), Bacterial Blight Resistance Rice, T. Aus, 2023        | None of the entries gave statistically higher yield over the checks, BRRI dhan48 (5.23 t/ha) and BRRI dhan98 (5.09 t/ha).                                                         |
| 3.                                          | Regional Yield Trial (RYT#BB), Bacterial Blight Resistance Rice (Path), T. Aus, 2023 | None of the entries gave statistically higher yield over the checks, BRRI dhan48 (5.35 t/ha) and BRRI dhan98 (5.29 t/ha)                                                          |
| 4.                                          | Regional Yield Trial (RYT), Favourable conditions, T. Aus, 2023                      | None of the entries gave statistically higher yield over the checks, BRRI dhan48 (5.21 t/ha) and BRRI dhan98 (5.0 t/ha)                                                           |
| <b>T. Aman, 2023-24</b>                     |                                                                                      |                                                                                                                                                                                   |
| 5.                                          | Regional Yield Trial of Antioxidant Enriched Rice (RYT#Antioxidant)                  | None of the entries gave statistically higher yield over the highest yielded check, BRRI dhan70 (4.55 t/ha)                                                                       |
| 6.                                          | Regional Yield Trial of Antioxidant Enriched Rice (RYT#Antioxidant)                  | None of the entries gave statistically higher yield over the checks, BRRI dhan87 (5.75 t/ha) and BRRI dhan49 (5.21 t/ha)                                                          |
| 7.                                          | Regional Yield Trial, Drought Tolerant Rice (RYT#DTR)                                | None of the entries gave statistically higher yield over the check, BRRI dhan71 (5.36 t/ha). Among the advanced breeding lines, BR12023-6R-111 had the highest yield at 5.3 t/ha. |
| 8.                                          | Regional Yield Trial, Katari Type Rice (RYT#Katari)                                  | All the tested entries, BRH9-3-14-2B (4.93 t/ha), BRH13-9-5-2B (5.34 t/ha), BRH9-3-2B (5.31 t/ha) gave statistically higher yield over Katari (4.12 t/ha).                        |
| 9.                                          | Regional Yield Trial, Rainfed Lowland Enriched Rice (RYT#RLR)                        | None of the entries gave statistically higher yield over BRRI dhan71 (5.67 t/ha). The tested entry, BR12005-                                                                      |

|     |                                                                  |                                                                                                                                                                                                                                                                             |
|-----|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                                                  | 6R-14 (5.81 t/ha) gave statistically higher yield over BRRI dhan75 (5.24 t/ha) with longer growth duration.                                                                                                                                                                 |
| 10. | Regional Yield Trial, Rainfed Lowland Enriched Rice (RYT#RLR)    | None of the entries gave statistically higher yield over BRRI dhan49 (5.39 t/ha) and BRRI dhan87 (5.9 t/ha)                                                                                                                                                                 |
| 11. | Regional Yield Trial, Stagnant Water Rice (RYT#SWR)              | None of the entries gave statistically higher yield over the highest yielder, BRRI dhan76 (3.64 t/ha)                                                                                                                                                                       |
| 12. | Regional Yield Trial, Rainfed Lowland Enriched Rice (RYT#ZER)    | None of the entries gave statistically higher yield over BRRI dhan49 (5.44 t/ha), BRRI dhan72 (5.59 t/ha), BRRI dhan87 (5.76 t/ha), BRRI dhan93 (5.38 t/ha)                                                                                                                 |
| 13. | Regional Yield Trial, Jira-type Enriched Rice (RYT#Jira-type)    | The entry, BRH11-7-17-10B (4.88 t/ha) gave statistically higher yield over Zirashail (3.53 t/ha). The growth duration of BRH11-7-17-10B (114 days) which was 7 days higher than Zirashail (107 days)                                                                        |
| 14. | Regional Yield Trial, False Smut Resistant Rice (RYT#FSR)        | None of the entries gave statistically higher yield over BRRI dhan49 (5.58 t/ha) and BRRI dhan87 (5.79 t/ha).                                                                                                                                                               |
| 15. | Regional Yield Trial, Bacterial Blight Resistant Rice (RYT#BB)   | All the tested entries gave statistically higher yield over IRBB60 (4.71 t/ha). The entry, BR12098-4R-71 (6.23 t/ha) gave statistically higher yield over the highest yielder, BRRI dhan87 (5.73 t/ha).                                                                     |
| 16. | Regional Yield Trial, Low amylose Content Rice (RYT#Low-amylose) | None of the entries gave statistically higher yield over the highest yielded check, BRRI dhan87 (6.22 t/ha).                                                                                                                                                                |
| 17. | AGGRi Network Trial, (Stage-1)                                   | Among them, the best 10 entries gave higher yield ranges (5.64-6.62 t/ha, 108-119 days) compared with check varieties (6.26-5.46 t/ha, 126-127 days). Entry no- IR22EL1742 (6.46 t/ha, 127 days) and IR22EL1846 (6.45 t/ha, 126 days) performed better on grain production. |
| 18. | AGGRi Network Trial, (Stage-2)                                   | the best 9 entries gave yield ranges from (4.89-6.27 t/ha, 110-123 days) compared with check varieties                                                                                                                                                                      |

|                      |                                                        |                                                                                                                                                                                                                       |
|----------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |                                                        | (4.80-5.36 t/ha, 111-132 days). Entry no- IR 132084-B-1191-1-1-B-2 (6.27 t/ha, 111 days) followed by IR 132084-B-224-1-1-B-7 (5.41 t/ha, 117 days) performed better on grain production.                              |
| <b>Boro, 2023-24</b> |                                                        |                                                                                                                                                                                                                       |
| 19.                  | Regional Yield Trial, Salt tolerance Rice (STR)        | Among the tested lines, BR13113-4R-185 (7.96), BR13122-4R-136 (7.57 t/ha) and BR13125-4R-92 (7.53 t/ha) had statistically higher yield over the check varieties, BRRI dhan88 (6.26 t/ha) and BRRI dhan28 (6.33 t/ha). |
| 20.                  | Regional Yield Trial, Short-Medium Duration Rice (SMD) | None of the entries gave statistically higher yield over BRRI dhan58 (6.69 t/ha), BRRI dhan89 (7.16 t/ha) and BRRI dhan102 (6.81 t/ha)                                                                                |
| 21.                  | Regional Yield Trial, Disease Resistant Rice (DRR)     | Three entries, BR11866-5R-277 (7.24 t/ha), BR12125-6R-14919 (7.39 t/ha) and BR12437-4R-109 (7.03 t/ha) gave statistically higher yield over BRRI dhan88 (6.38 t/ha)                                                   |
| 22.                  | Regional Yield Trial, Favorable Boro Rice (RYT#BAR)    | One entry, NGR 736-1 (7.34 t/ha) gave statistically higher yield over BRRI dhan74 (6.6 t/ha)                                                                                                                          |
| 23.                  | Regional Yield Trial, Disease Resistant Rice (DRR)     | None of the entries gave statistically higher yield over BRRI dhan29 (7.29 t/ha)                                                                                                                                      |
| 24.                  | Regional Yield Trial, Disease Resistant Rice (DRR)     | None of the entries gave statistically higher yield over BRRI dhan58 (6.88 t/ha) and BRRI dhan89 (7.24 t/ha). However, the entry, BR(Path)15854-BC1-31HR-21 produced highest grain yield that was 7.41 t/ha.          |
| 25.                  | Regional Yield Trial, Disease Resistant Rice (DRR)     | None of the entries gave statistically higher yield over BRRI dhan28 (5.94 t/ha) and BRRI dhan88 (6.31 t/ha)                                                                                                          |
| 26.                  | Regional Yield Trial, Disease Resistant Rice (DRR)     | The entry, BR(Path) 13802-BC3-10-11-12 (7.1 t/ha) gave statistically higher yield over BRRI dhan28 (6.19                                                                                                              |

|     |                                                               |                                                                                                                                                                                                                        |
|-----|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                                               | t/ha) and BRRI dhan88 (6.33 t/ha) with 2-3 days longer growth durations                                                                                                                                                |
| 27. | Regional Yield Trial, Extra Long Slender Resistant Rice (ELS) | The entry, BR7528-2R-19-16-RIL-52 (6.85 t/ha) gave statistically higher yield over BRRI dhan63 (6.3 t/ha)                                                                                                              |
| 28. | Regional Yield Trial, Medium Durated Rice (RYT#MD)            | None of the entries gave statistically higher yield over BRRI dhan58 (6.84 t/ha), BRRI dhan89 (7.07 t/ha) and BRRI dhan102 (6.9 t/ha)                                                                                  |
| 29. | Regional Yield Trial, Short Durated Rice (RYT#SD)             | The entry, BR12574-5R-52 (7.19 t/ha) gave statistically higher yield over BRRI dhan88 (6.29 t/ha) and BRRI dhan96 (6.45 t/ha)                                                                                          |
| 30. | Regional Yield Trial, Favourable Boro#Bio (FBR-Bio)           | None of the entries gave statistically higher yield over BRRI dhan86 (6.28 t/ha) and BRRI dhan96 (6.68 t/ha)                                                                                                           |
| 31. | Regional Yield Trial, Fine grain (RYT#Fine grain)             | None of the entries gave statistically higher yield over Bangabandhu dhan100 (6.95 t/ha)                                                                                                                               |
| 32. | Regional Yield Trial, Premium Quality Rice (RYT#PQR#1)        | The entry, BR11359-4R-24 (6.96 t/ha) gave statistically higher yield over BRRI dhan81 (6.39 t/ha). But the top yield was found from check variety, BRRI dhan107 (7.17 t/ha)                                            |
| 33. | Regional Yield Trial, Premium Quality Rice (RYT#PQR#2)        | None of the entries gave statistically higher yield over BRRI dhan58 (7.07 t/ha) and BRRI dhan107 (7.51 t/ha), But the entry BR11361-4R-154 (7.60 t/ha) gave statistically higher yield over BRRI dhan104 (6.82 t/ha). |
| 34. | Regional Yield Trial, Premium Quality Rice (RYT#PQR#3)        | None of the entries gave statistically higher yield over BRRI dhan102 (7.36 t/ha), and BRRI dhan107 (7.6 t/ha), The entry, BR11359-4R-279 (7.88 t/ha) and                                                              |

|     |                                                          |                                                                                                                                                                                                                                                                                                                                                |
|-----|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                                          | BR11359-4R-304 (7.8 t/ha) gave statistically higher yield over BRRI dhan104 (6.92 t/ha).                                                                                                                                                                                                                                                       |
| 35. | Regional Yield Trial, Zinc Enriched y Rice (RYT#ZER)     | None of the entries gave statistically higher yield over BRRI dhan74 (7.44 t/ha), BRRI dhan89 (7.9 t/ha). The entry, BR10571-15-6-8-5 (7.82 t/ha) statistically higher yield over Bangabandhu dhan100 (6.7 t/ha)                                                                                                                               |
| 36. | On-Farm Yield Trial, Salt Tolerance Rice (OFYT#STR)      | The entry. BR13113-4R-63 (6.61 t/ha) and BR13113-4R-116 (6.45 t/ha) gave statistically higher yield over BRRI dhan28 (6.07 t/ha) and BRRI dhan88 (6.09 t/ha)                                                                                                                                                                                   |
| 37. | On-Farm Yield Trial, GE interaction (OFYT#G/E)           | None of the entries gave statistically higher yield over BRRI dhan63 (5.33 t/ha), BRRI dhan81 (5.72 t/ha), BRRI dhan104 (6.2 t/ha) and BRRI dhan107 (6.45 t/ha)                                                                                                                                                                                |
| 38. | On-Station Yield Trial, GE interaction (OSYT#G/E)        | None of the entries gave statistically higher yield over BRRI dhan63 (5.04 t/ha), BRRI dhan81 (5.15 t/ha), BRRI dhan104 (5.18 t/ha) and BRRI dhan107 (5.77 t/ha).                                                                                                                                                                              |
| 39. | Advanced Yield Trial, Disease Resistant Rice (AYT#DRR)   | The entry, BR13189-4R-60 (7.97 t/ha) gave statistically higher yield over BRRI dhan88 (5.69 t/ha) and BRRI dhan101 (6.89 t/ha).                                                                                                                                                                                                                |
| 40. | Advanced Yield Trial, Disease Resistant Rice (AYT#2#DRR) | None of the entries gave statistically higher yield over BRRI dhan89 (6.49 t/ha) and BRRI dhan92 (6.89 t/ha).                                                                                                                                                                                                                                  |
| 41  | Advanced Yield Trial, Early morning flowering (AYT#EMF)  | The entry, BRRI dhan98 (5.70 t/ha), BR28(T)-qEMF3-6 (5.53 t/ha) and BR28(T) (5.53 t/ha) gave statistically higher yield over BR28 (S) (5.40 t/ha) in set-1. In set-2, BRRI dha98 (5.26 t/ha) was the highest yielder followed by BR28(T)-qEMF3-6 (5.11 t/ha) and BR28(T) (5.09 t/ha) gave statistically higher yield over BR28 (S) (4.99 t/ha) |

|                           |                                                                                                   |                                                                                                                                                                                                                                                                                      |
|---------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 42.                       | Interaction Effects of Designation and Nitrogen Levels on Yield Performance of EMF Breeding Lines | At the highest nitrogen level (100% N), the variety BRRI dhan98 recorded the highest yield in both sets, with 6.41 t/ha in Set-1 and 5.87 t/ha in Set-2, statistically higher than the check variety BR28(S) (Ck), which had 5.99 t/ha and 5.53 t/ha, respectively.                  |
| <b>Late Boro, 2023-24</b> |                                                                                                   |                                                                                                                                                                                                                                                                                      |
| 43.                       | Regional Yield Trial, Heat Tolerance Rice (RYT#HTR)                                               | None of the entries gave statistically higher yield over Binadhan 14 (4.28 t/ha), and BRRI dhan98 (4.61 t/ha).                                                                                                                                                                       |
| 44.                       | Regional Yield Trial, Heat Tolerance Rice (RYT#HTR)                                               | None of the entries gave statistically higher yield over Binadhan 14 (4.77 t/ha) and BRRI dhan98 (5.03 t/ha). However, the entry, BR12605-4R-275 (4.33 t/ha), BR12605-4R-297 (4.6 t/ha) and BR 12605-4R-298 (4.97 t/ha) gave statistically higher yield over BRRI dhan28 (3.77 t/ha) |
| 45.                       | Advanced Yield Trial, Heat Tolerance Rice (AYT#HTR)                                               | The entries, IR 99853-B-B-B-509 (4.28 t/ha) BR12894-5R-71 (4.41 t/ha) and BR12894-5R-150 (4.43 t/ha) gave statistically higher yields over tolerant check, N22 (3.43 t/ha), but statistically similar with the highest yielder check, BRRI dhan98 (3.84 t/ha).                       |
| 46.                       | Hybridization, T. Aman 2023, Boro 2023-24                                                         | Zira (Kushtia) was crossed with BR11866-5R-223, BR11712-4R-93, BR11712-4R-44, BR10187-4R-5-11, and BR10187-1-4-12. Additionally, the Rod minikilt (Kushtia) was crossed with BBR991-1-3-10. & a total of 135 crosses was done.                                                       |
| <b>B. ALART 2023-24</b>   |                                                                                                   |                                                                                                                                                                                                                                                                                      |
| 47.                       | ALART for BRRI dhan49 type Short slender grain (SHR-1), T. Aman, 2023                             | None of the advanced genotypes gave higher yield than the check variety BRRI dhan49 (5.22 t/ha).                                                                                                                                                                                     |

|     |                                                                             |                                                                                                                                                                                                                                                           |
|-----|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 48. | ALART for Swarna type grain (SHR-2), Aman 2023                              | The advanced line BRH9392-6-2-1-3-4 gave highest yield (5.35 t/ha) than the other advanced lines and check varieties which is significantly similar to the yield of check variety BRRI dhan94 with seven days longer growth duration.                     |
| 49. | ALART for Development of Antioxidant enriched rice varieties, T. Aman, 2023 | The check variety BRRI dhan70 gave the highest yield (3.75 t/ha) than all other advanced genotypes and check varieties.                                                                                                                                   |
| 50. | ALART for Superior High Yielding Rice [SHR-1 (Zira type)], Boro 2023-24     | All the three advanced lines gave higher yield than the check variety BRRI dhan88 but the lowest growth duration was found in case of check variety. Among the three advanced lines BRH15-24-7B gave highest yield 6.84 t/ha with lowest growth duration. |
| 51. | ALART for Superior High Yielding Rice [SHR-2 (Katari type)], Boro 2023-24   | The advanced line BRH11-7-17-10B performed higher yield (7.04 t/ha) than all other advanced lines and check variety BRRI dhan81.                                                                                                                          |
| 52. | ALART for Short Duration of Favorable Boro Rice (FBR-SD), Boro 2023-24      | None of the advanced lines performed better than the check variety BRRI dhan96 (6.21 t/ha).                                                                                                                                                               |
| 53. | ALART for Late Boro Rice (FBR-LB), Boro 2024                                | The grain yield of advanced line BR11845-4R-62 was lowest (6.12t/ha) among all the advanced genotypes and check varieties BRRI dhan28, BRRI dhan98 and BINA dhan14.                                                                                       |
| 54. | ALART for Favorable Boro Rice, Biotechnology (FBR-Bio), Boro 2023-24        | The advanced line BR(Bio) 13028-AC24-2-4 gave highest yield (6.14 t/ha) over all other advanced lines and check varieties BRRI dhan86 (5.21 t/ha) and BRRI dhan96 (5.89 t/ha) and it's growth duration is similar to BRRI dhan96.                         |

|                                |                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 55.                            | ALART of long duration Favorable Boro Rice (FBR-LD), Boro 2023-24                                                                                                | The yield performance of the check variety BRRI dhan92 (7.05 t/ha) is better than the advanced line BR11318-5R-84 (6.95 t/ha).                                                                                                                                                                                                                                                                         |
| 56.                            | ALART for Premium Quality Rice (PQR), Boro 2023-24                                                                                                               | The check variety BRRI dhan104 gave highest yield (6.79 t/ha) than the other advanced lines and check varieties which is significantly similar to the yield of check variety BRRI dhan107 (6.77 t/ha)                                                                                                                                                                                                  |
| <b>C. RICE FARMING SYSTEMS</b> |                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                        |
| 57.                            | Performance of different cropping patterns for year-round vegetable production under agro-forestry systems with exotic date palm ( <i>Phoenix dactylifera</i> ). | Among the four cropping pattern Carrot–Mukhikachu gave the highest gross margin of 535.77 thousand taka which was followed by Fallow–Mukhikachu cropping pattern (464.9 thousand taka). The lowest gross margin was observed from Onion/Garlic–Okra cropping pattern (41.56 thousand taka).                                                                                                            |
| 58.                            | Evaluation of different rice-based cropping patterns under agro-forestry systems with exotic date palm ( <i>Phoenix dactylifera</i> ).                           | Among the five cropping pattern DS Aman (BRRI dhan71)–Chilli gave the highest gross margin of 109.62 thousand taka which was followed by DS Aman (BRRI dhan71)–Lentil cropping pattern (86.08 thousand taka). The lowest gross margin was observed from DS Aman (BRRI dhan71) –Garden pea cropping pattern (6.29 thousand taka).                                                                       |
| 59.                            | Determination of optimum planting window of newly released T. Aman rice varieties in three cropped cropping patterns                                             | Among the four varieties of rice BRRI dhan87 showed the highest yield at 16 <sup>th</sup> August transplanting which was 6.71 t/ha followed by BRRI dhan71 (5.74 t/ha). At this planting time the lowest yield was found in case of BRRI dhan90 (4.98 t/ha). The yield of each variety of rice decreased in accordance to transplanting at later date. The lowest yield of BRRI dhan87 (5.22 t/ha) was |

|                                      |                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      |                                                                                                                                         | observed at 30 <sup>th</sup> August transplanting and the yield of BRRI dhan90 was 4.29 t/ha                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 60.                                  | Interpolation of Premium Quality and Nutritional Rice Varieties in Existing Mustard – Boro –T. Aman Cropping System                     | Maximum REY yield (13.34 t/ha) (table 60.1) was recorded from CP 2 where fallow period was managed with BARI Sorisha-14 and check aman variety was replaced by a promising HYV, BRRI dhan90. From the economic point of view, CP 2 showed its superiority over the other performed cropping patterns. The highest gross margin (1,16,470Tk/ha) was obtained from CP 2 (table 60.2) followed by CP 3 (1,00,340Tk/ha). Considering rice-equivalent yield, gross return and gross margin of the CP 2 cropping pattern consisting of BARI Sorisha-14-Bangabandhu dhan100–BRRI dhan90 was found most profitable to increase the total productivity of unit area per year by increasing cropping intensity. This study is being continued year-round to find out the most sustainable cropping pattern. |
| 61.                                  | Increasing the system productivity of Boro–Fallow-T. Aman cropping pattern through inclusion of Mustard in High Ganges River Floodplain | The highest rice equivalent yield (14.56 t/ha) was recorded from cropping pattern Mustard-Boro-T. Aman cropping pattern whereas mustard was grown as relay crop and BRRI dhan103 was used as T. Aman variety. The gross margin of this cropping pattern was 1,63,550 Tk/ha. Mustard-Boro-T. Aman cropping pattern whereas mustard was relay crop was found most profitable to increase the total productivity of unit area per year by increasing cropping intensity.                                                                                                                                                                                                                                                                                                                             |
| <b>D. CROP-SOIL-WATER MANAGEMENT</b> |                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                                                 |                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 62.                                             | Effect of Missing Nutrient Elements on Growth and Grain Yield of Rice in BRRI Farm, Kushtia       | In T. Aman 2022, nutrient controlled plot and N omitted plot produced the lowest yield compared to the other fertilizer treatments .Control plot (without fertilization) reduced the highest yield level of (26%) followed by N omitted plot (17%). In Boro season, application of N, P, K, S and Zn significantly increased rice yield compared to the control and N omitted plot (Table 62). Omission of N, P, K, S and Zn (control plot) significantly reduced rice yield over the missing of P, K, S and Zn plot. However, insignificant variation in rice yield was observed between the missing of N solely and control treatment .Control plot (without fertilization) reduced the highest yield level of (42%) followed by N omitted plot (39%). So, N is the most limiting factor among all the nutrient elements. |
| 63.                                             | Determination of optimum time of planting for yield maximization of BRRI dhan87 at Kushtia region | In this trial, the highest yield (5.85 t/ha) was observed at the 6th transplanting time of 22 August 2023 (T6) which was statistically similar to the 4th (5.84 t/ha) & 5 <sup>th</sup> (5.80 t/ha) transplanting times of 07 August & 15 August (T4 & T5). The highest growth duration was found at the 1st transplanting on 15 July 2023. So, the optimum time of planting is 07-22 August in case of BRRI dhan87 in Kushtia region.                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>D. SOCIO-ECONOMICS AND POLICY</b>            |                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>64. Stability analysis of BRRI varieties</b> |                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|       |                                                                     |                                                                                                                                                         |
|-------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 64.1. | Short duration Stability Analysis of BRRI varieties, T. Aman 2023   | In T. Aman, 2023 trial, among short duration varieties the highest yielder was BRRI dhan87 (6.78 t/ha) and the lowest was BRRI dhan62 (4.37 t/ha).      |
| 64.2. | Stability Analysis of BRRI varieties (MD), T. Aman 2023             | In T. Aman, 2023 trial, among medium-duration varieties the highest yielder was BRRI dhan103 (7.15 t/ha) and the lowest was BR32 (3.63 t/ha).           |
| 64.3. | Long duration Stability Analysis of BRRI varieties, T. Aman 2023    | In T. Aman, 2023 trial, among long duration varieties the highest yielder was BR10 (6.37 t/ha) and the lowest was BRRI dhan91 (3.53 t/ha).              |
| 64.4. | Long duration Stability Analysis of BRRI varieties, Boro 2023-2024  | In Boro, 2023-24 trial, among long duration varieties the highest yielder was BRRI dhan89 (9.26 t/ha) and the lowest was BR17 (4.66 t/ha).              |
| 64.5. | Short duration Stability Analysis of BRRI varieties, Boro 2023-2024 | In Boro, 2023-24 trial, among short duration varieties the highest yielder was BRRI hybrid dhan8 (8.98 t/ha) and the lowest was BRRI dhan81 (4.72 t/ha) |

## **E. TECHNOLOGY TRANSFER**

### **Project 1: Varietal Demonstration**

#### **Varietal Demonstration under GoB/LSTD/PARTNER**

BRRI RS Kushtia also focused on promoting newly released high-yielding and hybrid varieties during the Aus, Aman, and Boro seasons. In the 2023-24 reporting year, a total of 652 demonstrations were conducted across 23 upazilas in five districts under the Government of Bangladesh (GoB) initiative. This included 103 demonstrations in the Aus 2023 season, 330 in Aman, and 219 in Boro. Among the demonstrated Aus varieties, BRRI dhan98 achieved the highest yield. In the Aman season, BRRI dhan103 ranked first in yield among 202 demonstrations. During the Boro 2023-24 season, BRRI hybrid dhan8 was the highest yielded among seven varieties demonstrated. Additionally, 17 demonstrations were executed under the LSTD project, and 390 demonstrations were conducted under the PARTNER project.

### **Project 2: Farmer's Training & Field Day**

A total of 24 batches of Farmer's Training 15 Field day was conducted funded by GOB/LSTD & PARTNER.

### **Project 3: Enrichment of Seed Stock**

Nucleus seeds were provided by the Genetic Resources and Seed (GRS) Division for breeder seed production during the Aman and Boro seasons. In Aman 2023, 4,032 kg of BRRI dhan75 and BRRI dhan87 seeds were produced. During the Boro 2023 season, 3,200 kg of BRRI dhan63 seeds were produced. The total production of breeder seed was 7,232 kg, which was sent to the GRS Division during the 2023-24 fiscal year.

### **65. Production of truthfully labeled seed (TLS)**

#### **65.1. Breeder Seed Production in T. Aman 2023 & Boro 2023-24**

A total of 7232 kg of breeder seed was produced.

#### **Truthfully labeled seed (TLS) in Aus 2023, T. Aman 2023 & Boro 2023-24**

#### **65.2. Truthfully labeled seed (TLS) in Aus 2023, T. Aman 2023 & Boro 2023-24**

A total of 3960 kg of Truthfully Labeled Seed (TLS) was produced in Aus-Aman-Boro, 2023-24.

## **Regional Station, Gopalganj**

### **Research Achievement 2023-24**

| <b>Sl. No.</b> | <b>Technology Developed During 2023-24</b>                                                                                                                | <b>How Country/Farmer/User will be benefited</b>                    |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 1              | <b>Field validation of blast resistant rice germplasm of Bangladesh.</b><br>Eleven genotypes were tested. None of the genotypes get blast disease at all. | The genotypes could be used as a source of donor plant.             |
| 2              | <b>Breeder seed production.</b><br>BRRI dhan87= 2250 kg<br>BRRI dhan74= 1450 kg<br>BRRI dhan87= 1300 kg                                                   | Breeder seed is the prerequisite for foundation and certified seed. |
| 3              | <b>Certified seed production.</b><br>BRRI dhan100= 8000 kg                                                                                                | The seed will give support of the farmers directly for good seed.   |

|   |                                                                                                                                                                                                                         |                                                                   |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 4 | <b>Free seed distribution to the farmers</b><br>BRRI Hybrid dhan3= 1000kg<br>BRRI Hybrid dhan4= 750kg<br>BRRI Hybrid dhan5= 1000kg<br>BRRI Hybrid dhan6= 750kg<br>BRRI Hybrid dhan7= 700kg<br>BRRI Hybrid dhan8= 1000kg | The seed will give support of the farmers directly for good seed. |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|

