

## Proposed Research Program 2024-2025

Sl. No.	Program Area/Project/ Experiment Title & Duration	Major Objective	Expected output	
	<b>Genetic Resources and Seed Division</b>			
1	<b>Project 01: Rice Germplasm Collection and Conservation</b>			
1.1	Collection of rice germplasm	To collect cultivated and wild rice germplasm from unexplored areas of Bangladesh and to store the collected rice germplasm for different users.	Collected germplasm will be conserved safely and documented along with their characters in Genebank and in computer database. Conserved germplasm with valuable traits will be made available for utilization as parent material(s) for developing new variety(s)/genotype(s).	500
2	<b>Project 02: Rice Germplasm Maintenance and Management</b>			750
2.1	Viability testing, periodic evaluation and routine monitoring of stored Germplasm	To investigate status of germination of the Genebank accessions.	Genebank accessions will be routinely rejuvenated avoiding duplicates and documented in the restricted database. Conserved germplasm with valuable traits will be made available for utilization as parent material(s) for the breeding programs.	
2.2	Rejuvenation and conservation of rice germplasm	To rejuvenate the Genebank accessions with fresh stock and to register the new collection by giving BRRI Genebank accession number after cross checking the duplication		
2.3	Purification of priority germplasm through rapid	To isolate pure and homogeneous germplasm line(s)		

	generation advance			
2.4	Morphological characterization and documentation of rice germplasm	To characterize and document the rice germplasm as per BRRI prescribed "Germplasm Descriptors and Evaluation Form" as developed from biodiversity international and UPOV convention		
3	<b>Project 03: Exploratory and Genetic Studies.</b>			495
3.1	Study agronomic performance and photo inductive cycle of the selected photoperiod sensitive rice germplasm collected from Northern districts of Bangladesh	To identify agronomically superior germplasm suitable for post flood late transplanting	The genetic parameters/genetic studies of respective year will be helpful for varietal development and other plant breeding related issues	
3.2	Development of a duplicate free core set of rice germplasm through QC genotyping and GBS profiling	<ul style="list-style-type: none"> <li>• to optimize quality checking (QC) standards.</li> <li>• to sort and filter out duplicates of the genebanks accessions.</li> <li>• determination of sequence-based genetic distance and deploying trait-based SNPs.</li> </ul>		
3.3	Whole Genome Sequencing of GBS purified germplasm	<ul style="list-style-type: none"> <li>• to develop a sequence repository for downstream analysis.</li> <li>• to facilitate discovery of novel genes and variants associated with traits of interest.</li> </ul>		
3.4	Trait discovery and validation of landrace varieties for specific adaptability	<ul style="list-style-type: none"> <li>• To explore trait marker association for identifying genomic regions/QTLs/genes.</li> </ul>		

		<ul style="list-style-type: none"> <li>To develop functional markers and validate for specific traits required for climate resilience.</li> </ul>		
3.5	Development of a duplicate free core collection of Nazirsail group of rice germplasm	To identify a duplicate free sub-set of Nazirsail germplasm accessions for future varietal development program		
3.6	Evaluation of Rata group of rice germplasm for agronomic and aroma quality	To develop a duplicate free core collection of similar named Rata group of rice germplasm accessions for future varietal development program		
3.7	Purification of Balam and Sada Mota rice germplasm	To purify the popular Balam and Sada Mota rice germplasm of southern region of Bangladesh by head to row method.		
3.8	Identification of Glutinous rice from genebank accessions for Jhum cultivation	To study the selection criteria for developing high yielding sticky rice.		
3.9	Purification and characterization of aromatic rice accessions	To develop a duplicate free aromatic rice germplasm panel		
3.10	Characterization of Biruin rice germplasm for yield and component traits, amylose and antioxidant content	Investigate amylose and antioxidant content in the Biruin germplasm		
3.11	Assessment of agronomic performance and trait-based phenotypes of Aus Germplasm	To investigate agronomic performance and response to different biotic and abiotic stress		
3.12	Molecular characterization of Aus rice germplasm collected from greater Kushtia region of Bangladesh	To characterize the rice germplasm through molecular tools using SNP QC and trait SNP panel		

3.13	Assessment of agronomic and physico- chemical properties of long slender rice germplasm	<ul style="list-style-type: none"> <li>To characterize the rice germplasm</li> <li>To assess the physico- chemical properties including elongation ratio, amylose and aroma content of the long slender rice germplasm</li> </ul>		
3.14	Assesment of physico – chemical properties of red rice germplasm of Bangladesh	To assess the phyco-chemical properties including amylose, mineral and aroma content of the red rice germplasm		
3.15	Morphological and molecular characterization of wild rice accessions	<p>i.To characterize the wild rice accessions.</p> <p>ii. To make a core collection of wild rice accessions.</p>		
3.16	Field validation of Blast resistant rice germplasm of Bangladesh.	To validate the rice germplasm for blast resistance in different areas of Bangladesh		
4	<b>Project 04: Seed Production and Variety Maintenance</b>			860
4.1	Maintenance of BRRI released and recommended varieties	To maintain genetic purity and homogeneity in morphological characteristics	<p>Varietal purity (both genetic and physical) will be maintained.</p> <p>Breeder seed will be supplied to GO, NGOs and private sector seed producing organizations.</p> <p>Limited quantity of quality seed (QS) will be supplied to other divisions/Regional stations of BRRI and farmers directly or through DAE personnel for experimental/ exhibition purpose</p>	
4.2	Nucleus seed production	To produce source seeds for breeder seed		

		production of different BRR I varieties		
4.3	Breeder seed production	To produce the breeder seed (BS) of BRR I invented rice varieties as per indent of GO, NGOs and PS seed producing organizations/ companies/ entrepreneurs		
5	<b>Activities of GRS Division</b>			
5.1	Rice germplasm supply and exchange	<ul style="list-style-type: none"> <li>i. To provide/supply rice germplasm accessions from BRR I Genebank to different divisions of BRR I for screening against biotic and abiotic stresses</li> <li>ii. To share germplasm to researchers from home and abroad under certain MTA.</li> </ul>	All of the services from GRS Division are simplified for client's satisfaction.	
5.2	Sending <i>khudebarta</i> (SMS) for breeder seed distribution	To make it easy for the clients of BRR I Breeder Seed Network to get the information of BS distribution		
5.3	Breeder seed distribution	To supply the breeder seed of BRR I invented rice varieties as per indent of GO, NGOs and PS seed producing organizations/companies/entrepreneurs		
5.4	Monitoring of breeder and foundation seed production farms	<ul style="list-style-type: none"> <li>i. To visit breeder seed plots of BRR I regional stations at flowering and maturity stages for ensuring the quality of produced seed as BS standard</li> <li>ii. To visit foundation seed (FS) plots of seed producing agencies at flowering and maturity stages for improving the quality of produced seed as FS standard by sharing experiences</li> </ul>		

5.5	Publication on seed production technology package	To make seed technology knowledge available to the growers by preparing leaflet on seed production techniques for BRRRI Rice Seed Network partners.		
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