

Principal Scientific Officer-Plant Breeder
Plant Breeding Division
Bangladesh Rice Research Institute (BRRI; www.brri.gov.bd)
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Areas of research focus : Over 15 years of experience in agricultural research for development (AR4D) in marginal environments. My research focus is on Plant Breeding, Varietal Development, Genomic Selection, Molecular Breeding, Speed breeding for Genetic gain enhancement, Developed and managed Research Projects on breeding and climate resilient varieties, physiology of abiotic stresses, Farmer Participatory Approach. Degree and non-degree training. Supervised/cosupervised seven MS and Ph.D students; developed training course on breeding modernization, molecular breeding, Rice Production Technique and quality seed production being offered by the BRRI and IRRI

Gender : Male

Permanent Address : House No. 211 Dholadia
Mymensingh City
District: Mymensingh-2200
Bangladesh

Date of birth: : February 09, 1972

Nationality : Bangladeshi

Marital Status : Married

Education

PhD in Genetics and Plant Breeding, Bangladesh Agricultural University (BAU),
Mymensingh (Research work done at IRRI, Philippines from May 8, 2006-May 20, 2010
MS in Genetics and Plant Breeding, BAU, 1999
B.Sc. in Agriculture, BAU, 1993

Professional Appointments:

2022- Present: Principal Scientific Officer, Plant Breeding Div., BRRI HQ, Gazipur 1701
2018- 2022: Head, Bangladesh Rice Research institute (BRRI) Regional Station, Bhanga, Faridpur
2014-Present: Principal Scientific Officer -Plant Breeding, BRRI HQ, Gazipur 1701
2013-2015: Postdoctoral Fellow-Varietal Specialist, International Rice Research Institute (IRRI),
Philippines
2010-2012: Senior Scientific Officer -Plant Breeding, BRRI HQ, Gazipur 1701
2006-2010: Ph.D. Research Scholar, IRRI Philippines
1999-2005: Scientific Officer -Plant Breeding, BRRI HQ, Gazipur 1701

Additional appointments

- Nov 2017-Till date Adjunct Faculty, Bangladesh Agricultural University
- June 2014-Till date Adjunct Faculty, Sher-e-Bangla Agricultural University, Dhaka, Bangladesh

- Aug 2012- Till date Adjunct Faculty, Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Salna, Gazipur, Bangladesh

Dissertation

PhD: Marker-assisted backcrossing of *Saltol*, discovery of additional quantitative trait loci and assessment of allelic variability in *Saltol* in rice germplasm (Research Advisor: Dr. Abdelbagi M. Ismail)

Awards and Honors

- TRB-BRRI Project Annual Award 2018 and 2019: in recognition of their excellent contribution to TRB Project and Institute in accelerating the rate of genetic gain delivered to Bangladeshi Rice Growers (Worked as Team Leader)
- Bangabandhu National Agricultural Award (Gold Medal) 1420 Bangla (Team Award) - 2016
- National Environmental Award in 2009 (Team Award), Bangladesh
- IRRI Fellowship awardee in PhD 2006 (May 2006-May 2010)

Professional Training

International

Country	Year	Duration		Name of program
		Months	Days	
BRRI-HAAS** China	2001	3	5	Hybrid Rice Technology
IRRI Philippines	2002	-	15	Planning Rice Breeding for Impact
Nepal (organized by IRRI-PETTRA)	2003	-	3	Research Management Training Workshop
IRRI Philippines	2005	-	7	Workshop cum training on Advances in Marker Assisted Selection
IRRI Philippines	2007	-	5	Basic Experimental Design and Data Analysis Course
IRRI Philippines	2007	-	3	Analysis of Mixed Models Using CropStat
IRRI Philippines	2007	-	5	Scientific Writing & Presentation Skills
IRRI Philippines	2008	-	5	Bioinformatics Workshop for Crop Researcher
IRRI-BRRI- CURE-IFAD	2012	-	1	Training on Methodologies in Data Collection and Analysis for Adoption Study on BRRI dhan47
IRRI Philippines	2013	-	3	New Employee Orientation Program
IRRI Philippines	2014	-	1	Management Intensive Workshop (Manager's Workshop)
IRRI Philippines	2014	-	3	Proposal Writing Workshop
IRRI Philippines	2015	-	3	Preparing for Leadership Programme/ Workshop
IRRI & Agricultural Learning and Impacts Network (ALINE) jointly organized in Bangladesh	2015	-	3	Monitoring, evaluation, and learning (MEL) workshop

YAAS, Kunming, China	2015	-	5	Workshop of the Exchange and Cooperation Consortium for Agricultural Sciences and Technology in China-South Asia
IRRI Philippines	2018	2		R programming, Statistical design and Analysis for Plant Breeding using R; Genomic selection

**Hunan Academy of Agricultural Sciences

LIST OF PUBLICATIONS

[Google Scholar (13.7.2023) record for all publications: Total number of publications > 46; Citation: 1606, h-index: 16]

Sl#	Authors, year, title, journal, volume, and pages	Journal impact factor
1.	Maniruzzaman S, Rahman MA , Hasan M, Rasul MG, Molla AH, Khatun H, Iftekharuddaula KM, Kabir MS, Akter S. Molecular Mapping to Discover Reliable Salinity-Resilient QTLs from the Novel Landrace Akundi in Two Bi-Parental Populations Using SNP-Based Genome-Wide Analysis in Rice. <i>International Journal of Molecular Sciences</i> . 2023; 24(13):11141. https://doi.org/10.3390/ijms241311141	5.6
2.	Rahman NMF, Malik WA, Kabir MS, Baten MA, Hossain MI, Paul DNR, Ahmed R, Biswas PS, Rahman MC, Rahman MS, Iftekharuddaula KM, Hadasch S, Schmidt P, Islam MR, Rahman MA , Atlin GN, Piepho HP. 2023. 50 years of rice breeding in Bangladesh: genetic yield trends. <i>Theor Appl Genet</i> . 2023 Jan;136(1):18. doi: 10.1007/s00122-023-04260-x. Epub. Erratum in: <i>Theor Appl Genet</i> . 2023 Mar 23;136(4):84.	5.4
3.	Maniruzzaman S, Rahman MA , Hasan M, Rasul MG, Molla AH, Khatun H, Akter S. 2022. Genetic Mapping to Detect Stringent QTLs Using 1k-RiCA SNP Genotyping Platform from the New Landrace Associated with Salt Tolerance at the Seedling Stage in Rice. <i>Plants (Basel)</i> . 26;11(11):1409. doi: 10.3390/plants11111409.	4.5
4.	Debsharma SK, Rahman MA, Quddus MR, Khatun H, Disha RF, Roy PR, Ahmed S, El-Sharnouby M, Iftekharuddaula KM, Aloufi S, et al. SNP Based Trait Characterization Detects Genetically Important and Stable Multiple Stress Tolerance Rice Genotypes in Salt-Stress Environments. <i>Plants</i> . 2022; 11(9):1150. https://doi.org/10.3390/plants11091150	4.5
5.	Yadav S, N Sandhu, S Dixit, VK Singh, M Catolos, RR Mazumder, MA Rahman , A Kumar. Genomics-assisted breeding for successful development of multiple-stress-tolerant, climate-smart rice for southern and southeastern Asia. <i>Plant Genome</i> . 2021 Jan 12:e20074. doi: 10.1002/tpg2.20074. Epub ahead of print. PMID: 33438317.	3.847
6.	Rahman M A , M.J. Thomson, M. S. Alam, M. de Ocampo, J. Egdane and A. M. Ismail 2019. Assessing trait contribution and mapping novel QTL for salinity tolerance using the Bangladeshi rice landrace Capsule. <i>Rice</i> 12:63; https://doi.org/10.1186/s12284-019-0319-5	4.783
7.	Rahman M A , M.J. Thomson, M. S. Alam, M. de Ocampo, J. Egdane and A. M. Ismail 2016. Exploring novel genetic sources of salinity tolerance in rice through	4.0054.005

- molecular and physiological characterization. *Annals of Botany* 117: 1083–1097.
doi:10.1093/aob/mcw030
8. **Rahman M. A.**, IK Bimpong, J.B. Bizimana, E. D. Pascual, M. Arceta, B.P. M. Swamy, F. Diaw, M. S. Rahman, and R.K. Singh 2017. Mapping QTLs using a novel source of salinity tolerance from *Hasawi* and their interaction with environments in rice. *Rice* 10:47. DOI 10.1186/s12284-017-0186- 4.783
 9. Quddus MR, **MA Rahman**, N Jahan, S K Debsharma, RF Disha, M M Hasan, T L Aditya and B CY Collard 2019. Estimating pedigree-based breeding values and stability parameters of elite rice breeding lines for yield under salt stress during the boro season in Bangladesh. *Plant Breed. Biotech.* 7(3):257-271; 1.06
<https://doi.org/10.9787/PBB.2019.7.3.257>
 10. Mondal S., T. H. Borromeo, M. G. Q. Diaz , J. Amas , **M. A. Rahman** , G. B. Gregorio , M. J. Thomson **2019**. Dissecting QTLs for Reproductive Stage Salinity Tolerance in Rice from BRRI dhan47. *Plant Breed. Biotech.* 7(4):302-312. 1.06
<https://doi.org/10.9787/PBB.2019.7.4.302>
 11. **Rahman M. A.**, A. A. Thant, M. Win, M. S. Tun, P. Moet Moet, K. T. Win, T. Myint, O. Myint, R. V. Labios, M. C. Casimero, G. B. Gregorio, D. E. Johnson, G. R. Singleton and R. K. Singh 2015. Participatory varietal selection (PVS): a “bottom-up” breeding approach helps rice farmers in the Ayeyarwady delta, Myanmar. *SABRAO J. Breed. Genet* 47 (3): 299-314. 0.77
 12. **Rahman MA**, M. R. Quddus, N. Jahan, Asif Rahman, M. R. A. Sarker, H. Hossain and KM Iftekharuddaula 2019. Field rapid generation advance: an effective technique for industrial scale rice breeding program. *The Experiment*, 47 (2):2659-2670 0.123
 13. Swamy, B.P.M., **M.A. Rahman**, M.A. Inabangan-Asilo, et al. 2016. Advances in breeding for high grain Zinc in rice. *Rice* 9: 49. doi:10.1186/s12284-016-0122-5 4.783
 14. Hossain, H., **M.A. Rahman**, M. S. Alam and R. K. Singh 2015. Mapping of quantitative trait loci associated with reproductive-stage salt tolerance in rice. *Journal of Agronomy and Crop Science* 201:17-31. doi:10.1111/jac.12086. 3.473
 15. Collard B.C.Y. , J. Beredo, B. Lenaerts, R. Mendoza , R. Santelices, V. Lopena, H. Verdeprado, C. Raghavan, G.B. Gregorio, L. Vial, M. Demont, K.M. Iftekharuddaula, **M.A. Rahman**, J.N. Cobb, M.R. Islam 2017. Revisiting rice breeding methods – evaluating the use of rapid generation advance (RGA) for routine rice breeding. *Plant Production Science*, DOI: 10.1080/1343943X.2017.1391705 2.222
 16. Thomson, M. J, M de Ocampo, J. Egdane, **M.A. Rahman** et al. 2010. Characterizing the *Saltol* Quantitative Trait Locus for Salinity tolerance in Rice. *Rice* Vol. 3: 148-160. DOI 10.1007/s12284-010-9053-8 4.783
 17. Islam M. R., M.R.A. Sarker, N. Sharma, **M.A. Rahman**, B. C. Y Collard, G.B. Gregorio and A.M. Ismail 2015. Assessment of adaptability of recently released salt tolerant rice varieties in coastal regions of South Bangladesh. *Field Crops Research* 190: 34-43 [doi:10.1016/j.fcr.2015.09.012](https://doi.org/10.1016/j.fcr.2015.09.012) 5.224

18. Ferdous N , M. Z. H. Hawlader , S. K. Biswas , **M. A. Rahman** , S. Hosen , H. B. Shozib , M. A. Haque and M. A. Siddiquee 2020. Bio-physicochemical study for glutinous and nonglutinous rice with genetic diversity of Bangladeshi rice germplasm. IJRDO - Journal of Biological Science, 6(3):1-15 0.15
19. Hoque A. B. M. Z., M. A. Haque, M. R. A. Sarker and **M. A. Rahman** 2015. Marker-assisted introgression of *Saltol* locus into genetic background of BRRI dhan49. Int. J. Biosci. 6(12):71-80. doi: <http://dx.doi.org/10.12692/ijb/6.12.71-80> 0.225
20. **Rahman, M. A**, M. A. I. Khan, S. M. Jobair Hossain, M. S. Hossain, M, A. Hossain and S. S. Haque 2002 Quantitative Karyotype Analysis of *Lycopersicon esculentum* cv. Oxheart. Pakistan Journal of Biological Sciences 5(5): 581-584. 1.04
21. Sarker MRA, N Sharma, **MA Rahman**, MR Islam, SA Islam, MR Khanom and MAI.Khan Identification of modern Aman rice varieties suitable for salt affected Satkhira region of Bangladesh. The Experiment, 2018, 46(3): 2632-2642 0.123
22. **Rahman, M. A**, M. S. Alam, Q. N. Ahmad, M. A. I. Khan and Abdullah-Al-Mahbub 2003. Genetic analysis on yield and its component traits of tomato (*Lycopersicon esculentum* Mill.). The Agriculturists, Vol.1 (1): 21-26.
23. **Rahman, M. A**, M. S. Alam, Q. N. Ahmad and A A Mahbub 2003. Character association and path analysis in tomato (*Lycopersicon esculentum* Mill.). The Agriculturists, Vol.1 (1): 15-20.
24. **Rahman, M. A**, H Hossain, M.A.Hossain, M. K. Hossain and M. Khatun 2006. Genotypic response to environment and stability appraisal in tomato (*L. esculentum* Mill.). The Agriculturists Vol. 4 (1&2): 59-66.
25. Hossain, H., **M.A. Rahman**, M. S. Alam and R. K. Singh 2011. Physiology and genetics of salt-proof rice- bringing hope for the researcher. Eco-friendly Agril. J. 4(5): 599-604.
26. Hossain, H., **M.A. Rahman**, M. S. Alam and R. K. Singh 2011. Inheritance pattern of important traits associated with reproductive-stage salt tolerance in rice. Intl. J. BioRes. 10(5):53-57.
27. Hossain, H., **M.A. Rahman**, M. S. Alam and R. K. Singh 2011. Path analysis: a new approach to determine the contribution of traits to reproductive-stage salt tolerance in rice. Intl. J. BioRes. 10(6):47-51.
28. Islam, M.R, M. A. Salam, T. L. Aditya, M. A. R. Bhuiyan, **M. A. Rahman**, M. S. Rahman, S. Khatun and H. U. Ahmed. 2008. Improvement of rice genotypes for salt affected areas of Bangladesh. Intl. J. BioRes. 4 (5): 81-85.

29. Islam, M.R, M A Salam, M. A. R. Bhuiyan, **M. A. Rahman** and G.B. Gregorio. 2008. Participatory variety selection for salt tolerant rice. Intl. J. BioRes. 4 (3): 21-25.
30. Biswas, P.S, M.A. Salam and **M. A. Rahman** 2001. Improved deepwater rice (*Oryza sativa* L.) genotypes for shallow flooding. Bangladesh J. Pl. Breed. and Genet. 14(1): 37-41.
31. Haque, E, **M.A. Rahman**, M.A. Hossain, M.A Salam and M. Haque 2002. Genetic composition of BRRI varieties: II. BRRI dhan27-BRRI dhan41 and BRRI hybrid dhan1. Bangladesh Rice J., 11 (Special Issue): 53-63.
32. Hossain, M.S, **M.A. Rahman**, M.A.I. Khan, Abdullah-Al-Mahbub and G.M. Mujibar Rahman, 2000. Use of solar energy as seed treating agent to control the seed borne fungi of rice. Bangladesh J. Environ Sci., 6(2): 447-450
33. Hossain, S.M. J, M.A.I. Khan, **M.A. Rahman**, M.A. Hossain, S.S. Haque and G.R. Janardhana. 2002. Biodiversity study of *Fusarium* spp. on stored cereal grains in Karnataka State, India. Pakistan Journal of Biological Sciences. 5(4): 446-448.
34. Hossain, M.A., B.C. Roy, **M.A. Rahman**, A.I. Khan and A.W. Julfikar, 2004. Performance of IR68877H and IR69690H (BRRI Hybrid dhan1) in the South-central Region. J. Biol. Sci. 4(2): 130-133.
35. Hossain, H., M.A. Newaz, **M.A. Rahman** and M.A. Hossain, 2004. Genotype-environment interaction for yield and yield contributing characters in tomato (*L. esculentum* Mill.). Bangladesh J. Environ. Sci. 10: 141-146.
36. Hossain, H., M.A Newaz, **M.A. Rahman** and M.A. Hossain, 2004. Genetic variability, heritability and scope of improvement in tomato (*L. esculentum* Mill.). Bangladesh J. Environ. Sci. 10: 131-136.
37. Hossain, K., A. Akter, **M. A. Rahman**, M.H. Ali and M. A. Hossain 2009. Prediction of heterosis for yield and its component traits among hybrids of line X tester crosses in rice. Eco-friendly Agril. J. 2 (2): 494-498.
38. Khatun, S., P.S. Biswas, **M.A. Rahman**, M.R. Islam and M.A. Salam 2008. BRRI dhan42 and BRRI dhan43: two upland rice varieties for drought prone environment. Intl. J. BioRes. 4 (5): 48-51.
39. Khan, M.A.I., S. Hossain, **M.A. Rahman**, S.M. Jobair Hossain and G.M. Mujibar Rahman. 2002. Solar heat: it's use for controlling seed borne fungal; infections of wheat. Pakistan Journal of Biological Sciences 5(4): 449-451.

40. Khan, M.A.I, M.A. Hossain, M.A.H. Khan, **M.A. Rahman**, B.C. Roy and Nur-E-Elahi, 2001. Yield performance and comparative cost analysis of wet seeded and transplanted boro rice. Bangladesh J. Seed Sci. & Tech.5 (1&2):79-84.
 41. Khatun, M., **M. A. Rahman**, S. Khatun, K. M. Akther and H. Hossain 2006. Genetic variability, character association and path coefficient analysis in wheat (*Triticum aestivum* L.). Bangladesh J. Pl. Breed. Genet. 4 (1&2): 41-46.
 42. Khatun, M., T. L. Aditya, **M. A. Rahman**, K.M. Iftekharuddaula, and M. A. Salam 2010. Stability analysis of premium quality rice genotypes. Intl. J. BioRes. 8(2):1-5.
 - Roy, B. C., M. A. Hossain and **M. A. Rahman** 2004. Ratooning ability of photoperiod-sensitive rice varieties transplanted in *boro* season. PJBS 7(3):368-371.
 43. Islam, M.R, M A Salam, M. A. R. Bhuiyan, **M. A. Rahman**, R. Yasmeen, M. S. Rahman, M. K. Uddin, G. B. Gregorio and A. M. Ismail. 2008. BRRI dhan47: a salt tolerant rice variety for *boro* season isolated through participatory variety selection for salt tolerant rice. Intl. J. BioRes. 5 (1): 1-6.
 44. Sharma N., M. R. A. Sarker, **M. A. Rahman** and M. R. Islam, 2013. Participatory varietal selection of modern T. Aman rice varieties in salt affected coastal area of Bangladesh. Eco-friendly Agril. J. 6(08): 141- 145.
 45. Sharma N, M. R. A. Sarker, **M. A. Rahman** and M. R. Islam 2013. Varietal evaluation of rice for improving productivity in southern Bangladesh. Intl. J. BioRes. 15(4): 7-13.
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Book/ Manual

Rashid M.H., **M. A. Rahman**, S. Begum and M. A. Z. Chowdhury 2021. Boro Rice Cultivation in Saline Zone. Bangladesh Agricultural Research Council, Farmgate, Dhaka. pp21.

Book Chapters (Peer Reviewed)

- (i) **Rahman M. A.**, H. Khatun, M. R. A. Sarker, H. Hossain, M. R. Quddus, K. M. Iftekharuddaula and M. S. Kabir 2021. Enhancing Abiotic Stress Tolerance to Develop Climate-Smart Rice Using Holistic Breeding Approach [Online First], IntechOpen, DOI: 10.5772/intechopen.97283. Available from: <https://www.intechopen.com/online-first/enhancing-abiotic-stress-tolerance-to-develop-climate-smart-rice-using-holistic-breeding-approach>
- Rahman, M. A.** , M. R. A. Sarker, N. Sharma, M. K. Mondal, M. R. Islam, G. B. Gregorio, E. Humphreys and T. P. Tuong 2015. Challenges and opportunities for *aman* rice cultivation in *ghers* used for brackish water shrimp production. Edited by Humphreys, E., T.P. Tuong, M.C. Buisson, I. Pukinskis and M. Phillips. 2015. Revitalizing the Ganges Coastal Zone: Turning Science into Policy and Practices Conference Proceedings. Colombo, Sri Lanka: CGIAR Challenge Program on Water and Food (CPWF). 600pp.
- (ii) Sarker, M.R.A., **M.A. Rahman**, N. Sharma, M.R. Islam, M.K. Mondal, G.B. Gregorio, E. Humphreys and T.P. Tuong 2015. Performance of improved *aman* rice varieties in the

coastal zone of Bangladesh. Edited by Humphreys, E., T.P. Tuong, M.C. Buisson, I. Pukinskis and M. Phillips. 2015. Revitalizing the Ganges Coastal Zone: Turning Science into Policy and Practices Conference Proceedings. Colombo, Sri Lanka: CGIAR Challenge Program on Water and Food (CPWF). 600pp.

- (iii) Ismail, A. M., M. J. Thomson, G. V. Vergara, **M. A. Rahman** and R. K. Singh 2010. Designing resilient rice varieties for coastal deltas using modern breeding tools. CAB International 2010, Tropical Deltas and coastal Zones: Food production: 154-165.
- (iv) Salam, M. A., M. R. Islam, M. S. Rahman and **M. A. Rahman** et al. 2010. Rice varieties and cultural management practices for high and sustained productivity in the coastal wetlands of southern Bangladesh. CAB International 2010. Tropical Deltas and coastal Zones: Food Production: 183-198
- (v) Salam, M A, **M. A. Rahman**, M. A. R. Bhuiyan, K. Uddin et al. 2007. BRRI dhan47: a salt-tolerant variety for the boro season. IRRN Vol 32/1: 42-43.
- (vi) Manzanilla D., **M. A. Rahman**, M. A Salam and N. Sharma 2012. Farmers gain from ‘salinity-buster BRRI dhan47. CURE Matters Vol. 2 No. 1: page 4.
- (vii) **Rahman, M. A.**, M. R. A. Sarker, N. Sharma, M. R. Islam, G. B. Gregorio and E. Humphreys 2013. Turning adversity into opportunity. CURE Matters Vol. 3 No. 1: page 16.
- (viii) Salam, M. A., P. S. Biswas and **M. A. Rahman** 2004. Strategies for increasing productivity of rice in medium flooded areas of Bangladesh. Rice Research and Development in the Flood-prone Ecosystem. Edited by S. I. Bhuiyan, M. Z. Abedin. V. P Singh and B. Hardy, 2004 IRRI, 163p.

Reviewer of peer-reviewed journals: Current Opinion in Plant Biology, Scientific Reports, Field Crops Research, AoB Plants, Crop & Pasture Science, Vegetos; Agrosystems, Geosciences & Environment etc.

Proceedings/ abstracts

1. **Rahman, M. A.**, M. Thomson, M. Ocampo, J. Egdane, M. A. Salam, A. Ismail 2008. Marker-assisted backcrossing to introgress the *Saltol* QTL for rapid conversion of a Bangladeshi mega-variety to salt-tolerant type. Abstract no. CS4-S1, P7. 5th International Crop Science Congress & Exhibition (ICSC 2008). www.cropscience2008.com. April 13-18, 2008. Jeju, Korea, p281.
2. **Rahman, A.**, M. J. Thomson, M. P. de Ocampo, J. Egdane, A. M. Ismail 2009. Marker-assisted backcrossing of *Saltol* and mapping novel QTLs associated with salinity tolerance in rice by selective genotyping. Paper presented at the Generation Challenge Programme’s Annual Review Meeting, 19-23 Sep 2009, Bamako, Mali
3. Thomson MJ, **M. A. Rahman**, M. de Ocampo, J. Egdane, R. K. Singh, S. R. McCouch and A. M. Ismail 2009. Allelic variation from the salt tolerant landrace Pokkali for improved salinity tolerance in rice. Poster presented at the International Plant & Animal Genome XVII Conference, 10-14 Jan 2009, San Diego, CA, USA

4. Hossain H, **M. A. Rahman**, M.S. Alam, M. P. De Ocampo, A.G. Saijse, A. N. Vispo, L. Refuerzo, M. Arceta, E. F. C. Mercado, M. J. Thomson, A.M. Ismail, G. B. Gregorio and R. K. Singh 2009. QTL identification for reproductive-stage salinity tolerance in rice. Poster presented at the 6th International Rice Genetics Symposium, 16-19 Nov2009, Manila, Philippines
5. Thomson M. J., K. Zhao, M. Wright, M. Y. Reveche, J. Rey, **M. A. Rahman**, K. L. McNally, H. Leung and S. R. McCouch 2009. Development and application of 96 and 384-plex SNP sets for diversity analysis and mapping in rice. Poster presented at the 6th International Rice Genetics Symposium, 16-19 Nov2009, Manila, Philippines.
6. De Ocampo M. P., M. J. Thomson, J. Egdane, **M. A. Rahman**, R. E. Zantua, J. C. T. Concepcion and A. M. Ismail 2009. Genetic dissection of seedling-stage salt tolerance in rice using an indica-japonica population. Paper presented at the 6th International Rice Genetics Symposium, 16-19 Nov2009, Manila, Philippines.
7. Thomson, M. J., K. Zhao, M. Wright, A. Reynolds, **M. A. Rahman**, A. M. Ismail, K. L. McNally, C. D. Bustamante and S. R. McCouch 2010. Application of Illumina BeadXpress 384-plex SNP sets for diversity analysis and genetic mapping in rice. PAGXVIII, Town & Country Convention Center, San Diego, CA (http://www.intl-pag.org/18/abstracts/P05b_PAGXVIII_249.html) January 9-13, 2010.
8. Thomson, M. J., M. Ocampo, J. Egdane, M. Katimbang, **M. A. Rahman**, R. K. Singh, G. B. Gregorio and A. M. Ismail 2007. QTL mapping and marker-assisted backcrossing for improved salinity tolerance in rice. PAGXV, Town & Country Convention Center, San Diego, CA January 13-17, 2007.
9. Thomson, M.J.; M. De Ocampo, J. Egdane, M. Katimbang, **M. A Rahman**, R.K. Singh, G.B. Gregorio and A.M. Ismail 2007. QTL mapping and marker-assisted backcrossing for improved salinity tolerance in rice. In: Proceedings of BioAsia 2007: 6th Asian Crop Science Association Conference and 2nd International conference on rice for the future, Bangkok 5-9 November, 2007. Pages 6-12.
10. **Rahman, M. A.**, M. J. Thomson, M. P. De Ocampo, J. A. Egdane and A. M. Ismail 2010. Marker-assisted backcrossing of *Saltol* and identification of novel QTLs conferring salinity tolerance in rice using selective genotyping. IRC 28 Abstract no. 4004, 8-12 November, 2010, Hanoi, Vietnam.
11. Hossain, H., **M. A. Rahman** et al. 2010. Identification of novel QTLs for salinity tolerance at reproductive stage in rice. IRC 28 Abstract no. 3822, 8-12 November, 2010, Hanoi, Vietnam.
12. De Ocampo M. P., M. J. Thomson, J. A. Egdane, **M. A. Rahman**, R. E. Zantua, A. M. Ismail 2010. QTL mapping and marker-assisted backcrossing for salinity tolerance in rice using an *indica-japonica* population. IRC 28 Abstract no. 3913, 8-12 November, 2010, Hanoi, Vietnam.
13. Gregorio G. B., M. R. Islam, **M. A. Rahman** and A.M. Ismail 2011. Rice Varieties with Multiple Traits for Intensive Cropping in the Coastal Zones of the Ganges. The 3rd International Forum on Water and Food, Tshwane, South Africa November 14 – 17, 2011

14. **Rahman, M. A.**, M. J. Thomson, M. Ocampo, J. Egdane, A. M. Ismail 2012. Identification of novel QTLs associated with salinity tolerance in rice by selective genotyping. Presented in 12th SABRAO Congress: Plant breeding towards 2025, January 13-16, 2012, Chiang Mai, Thailand.
15. Islam, M. R., H. Khatun, M. Anisuzzaman, **M. A. Rahman**, A. M. Ismail and G. B. Gregorio 2012. Progress of salt tolerant rice variety development in Bangladesh. Presented in 12th SABRAO Congress: Plant breeding towards 2025, January 13-16, 2012, Chiang Mai, Thailand.
16. Salam, M.A. M.R. Islam, M.A.R. Bhuiyan, **M.A. Rahman** and M.A.B. Faruque, 2004. Development of Salt Tolerant Variety through PVS for Boro Season. Proceedings Technology Development Workshop. Organized by: PETRRA-IRRI and BRRI, 23-24 May, 2004, 80p.

List of grants and gift awards

Authors	Grant Title, year of funding and duration	Total award amount (US\$)	Amount attributed to the applicant (US\$)	Granting agency	The role played in developing each grant
Seraj Z. I. Rahman M. A.	DNA marker assisted breeding for producing highly stress tolerant rice for coastal Bangladesh by introgression of multiple salt tolerant loci (QTLs) into commercial cultivars. (National Agricultural Technology Project; NATP-2) (Competitive research grant) 2018; Duration: May 2018-Apr 2021	170880/-	80880/-	World Bank and GOB	PI- Breeding part
Ten Partners	Transforming rice breeding through capacity enhancement of BRRI (BMGF funded project): Nov2015- Nov 2023	8.0 million	(20000/Year)	Bill and Melinda Gates foundation (BMGF)	PI- Salinity Breeding part
Rahman M. A.	Physiological development through trait discovery for boosting rice yield in changing climatic conditions. KGF funded (Competitive research grant)-(Funded) April 2017-March 2020	132530	60000	GoB	PI- Breeding part
Rahman M. A.	Pyramiding salinity and submergence tolerant genes into BRRI dhan49 through marker-assisted selection-National Agricultural Technology Project (NATP-1) (Competitive research grant: <i>Funded</i>) Jul 2011-Jan 2013	100000	100000	GoB/ World Bank funded	PI

Multi-partners	Stress tolerant rice for poor farmers in Africa and South Asia (STRASA-Salinity), July 2011-June 2013 & February 2015-March 2019	-	4500/Year	BMGF	PI- Salinity Breeding part
Two partners	Asian Food and Agriculture Cooperation Initiative (AFACI Food Security Project-Salinity) - Funded by South Korea, Aug 2011-Jan 2013 and 2018-2021	10000/Year	5000/Year	South Korea	Co-PI: Salinity Breeding part
Multi-partners	Integrated Agricultural Productivity Project (IAPP-Salinity Component): GoB/ Global Agricultural Food Security Program (GAFSP) funded Project for Stress tolerant rice based technology development and extension for Rangpur and Barisal Region-Jan 2012-Jan 2016	-	(16500/Year)	GoB/ Global Agricultural Food Security Program (GAFSP)	PI: Salinity Breeding part
Multi-partners	Stress tolerant rice for poor farmers in Africa and South Asia (STRASA-Salinity), July 2011-June 2013 & February 2015-March 2019		4000/Year	BMGF	PI: Salinity Breeding part
Multi-partners	Development of High Yielding Rice Varieties for the Coastal Wetlands of Bangladesh under Poverty Elimination through Rice Research Assistance (PETRRA) - a project funded by DFID, managed by IRRI in close collaboration with BRRI (worked with resource-poor-farmers, NGOs and other stakeholders) 1999-2004	-	-	DFID	as Co-PI Salinity part- BRRI
Multi-partners	CPWF#7: Development of technologies to harness the productivity of the salt-affected areas of the Indo-Gangetic, Mekong, and Nile River Basins 2004-2006	-	8000/Year		as PI Salinity part- BRRI (National partner)
Multi-partners	Validation and delivery of new technologies for increasing the productivity of Flood-prone rice lands in South and South East Asia (IFAD/IRRI/ BRRI collaborative project) 1999-2001	-	-	-	as Co-PI Salinity part- BRRI (National partner)
	Improving livelihoods of rice-based rural households in lower region of the Ayeyarwady delta in Myanmar- <i>United Nations Office for Project Services</i>	-	-	-	As Team member

	(UNOPS)-LIFT funded project, February 2013-January 2014				
	Biofortification breeding (HarvestPlus) and molecular breeding of abiotic-biotic stresses tolerance (TRB/STRASA): February 2014-February 2015	-	-	-	As Team member

List of presentations (Invited Talks and Seminars)

- Rahman, M. A.** 2016. Remodelling of BRRI's breeding strategies and role of TRB. Seminar paper presented on January 28, 2016 at Bangladesh Rice Research Institute, Gazipur 1701, Bangladesh
- Rahman, M. A.** 2014. Transforming rice breeding for irrigated regions in South Asia. Seminar paper presented on 14 February 2014 at IRRI LosBanos, Philippines.
- Rahman, M. A.** 2015. Optimizing cropping systems to make best use of available water resources in the Ganges coastal zone. Paper presented in IRRI-GRiSP Science week on January 28, 2015, IRRI Philippines
- Rahman, M. A.** 2006. Marker-assisted backcrossing of *Saltol* and development of near-isogenic lines for additional quantitative trait loci to characterize salt tolerance mechanisms in rice. Seminar paper presented on June 20, 2006 at Department of Genetics and Plant Breeding, Bangladesh Agricultural University, Mymensingh 2202, Bangladesh
- Rahman, M. A.** 2010. Marker-assisted breeding for salinity tolerance in rice. Paper presented on October 2010 at BRRI Thursday Seminar, Gazipur 1701, Bangladesh
- Rahman, M. A.** 2011. Mapping novel QTLs for salt tolerance in rice by selective genotyping. Paper presented on February 24, 2011 at BRRI Thursday Seminar, Gazipur 1701, Bangladesh
- Rahman, M. A.** 2011. Marker-assisted backcrossing of *Saltol*, discovery of additional quantitative trait loci and assessment of allelic variability in *Saltol* in rice germplasm. Paper presented on January 2011 at Department of Genetics and Plant Breeding, Bangladesh Agricultural University, Mymensingh 2202, Bangladesh
- Rahman, M. A.** 2012. Development of salt tolerant rice for Bangladesh. Paper presented on 16 April 2012 at STRASA Phase2-Review and Planning Workshop, Dhaka, Bangladesh
- Rahman, M. A.** 2014. Breeding methodologies to accelerate adoption of improved pearl millet cultivars in West and Central Africa. Paper presented on 20 January 2014 at ICRISAT Regional Hub WCA, Bamako, Mali
- Rahman, M. A.** 2014. Challenges and opportunities for *aman* rice cultivation in *ghers* used for brackish water shrimp production. Paper presented in CPWF conference 'Revitalizing the Ganges Coastal Zone', Dhaka, 21-23 October 2014

Post-graduate students supervised (2012 – present)

Title of Thesis	Student name	University	Degree	Start date	Graduation date
Marker-assisted introgression of <i>Saltol</i> locus into genetic background of BRRI dhan49	A.B.M Zahidul Hoque	Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Salna, Gazipur, Bangladesh	M. S.	2012	2014
Phenotypic characterization and genetic diversity analysis of eggplant (<i>Solanum</i> spp.) germplasm using SSR marker	Kashpia Tasrin	Sher-e-Bangla Agricultural University, Dhaka, Bangladesh	M. S.	2014	2016
Genetic diversity analysis of Bangladeshi local rice germplasm differing in salinity tolerance using molecular markers	Md. Rashidul Islam	BSMRAU, Salna, Gazipur, Bangladesh	M. S.	2015	2017
Phenotypic and molecular characterization of aromatic rice genotypes for salt tolerance	Md. Mostafizar Rahaman	BSMRAU, Salna, Gazipur, Bangladesh	M. S.	2015	2017
Effect of salinity on seed germination and seedling growth of four rice cultivars in hydroponic technique	Mithun Chandro Roy	Bangladesh Agricultural University, Mymensingh 2202	M. S.	2015	2017
Phenotypic and molecular diversity analysis for salinity tolerance in rice	Rubayat Sharmin	Jagannath University, Dhaka, Bangladesh	M.Sc.	2016	2018
Morpho-physiological, Characterization, Genetic Diversity and Dissection of QTLs for Salinity Tolerance in Rice	Salma Akter	Bangladesh Agricultural University, Mymensingh 2202	Ph.D	2017	2022
Exploring salt tolerant donors and mapping quantitative trait loci (QTLs) for salt tolerance using Bangladeshi rice germplasm	Sheikh Maniruzzaman	BSMRAU, Salna, Gazipur, Bangladesh	Ph.D	2018	2023

List of released germplasm, cultivars, and the role played in developing each

(Rice varieties developed and released in Bangladesh as Lead PI⁺ /Co-PI)

Technologies/products (Cultivar name)	Type of technology	Year of release	<u>The role played in each rice variety development and release</u>
BRRI dhan42 (BR6058-6-3-3)	Drought tolerant direct seeded rice (upland <i>aus</i>) variety; Zn enriched	2004	Evaluated and selected lines from Observational yield trial (OYT) to release
BRRI dhan43 (BR5543-5-1-2-4)	Drought tolerant direct seeded rice (upland <i>aus</i>) variety; Zn enriched	2004	Evaluated and selected lines from OYT to release
BRRI dhan44 (BR6110-10-1-2)	Tidal submergence tolerant rice variety	2005	Involved in yield trials at hotspot region
*BRRI dhan47 (IR 63307-4B-4-3)	Salt tolerant <i>Boro</i> rice variety for Irrigated ecosystem	2007	Evaluated and selected, lines, conducted PVS from OYT to release
BRRI dhan50 (BR6902-16-5-1-1)	Premium quality rice (Basmati type) for Irrigated ecosystem	2008	Selected desirable lines from pedigree nursery; evaluated and selected from OYT to release
BRRI dhan53 (BR5778-156-1-3- HR14)	Salt tolerant <i>T. Aman</i> (RLR) rice variety	2010	Evaluated and selected, conducted PVS from OYT to release
BRRI dhan54 (BR5999-82-3-2-HR1)	Salt tolerant <i>T. Aman</i> (RLR) rice variety	2010	Evaluated and selected; conducted PVS from OYT to release
BRRI dhan55 (IR 73678-6-9-B)	Salt, cold and drought tolerant rice variety	2011	Evaluated and selected, conducted PVS from OYT to release
**BRRI dhan28- <i>Saltol</i> ⁺ (IR 89573-84)	Salt tolerant <i>Boro</i> rice line for Irrigated ecosystem	MABC product	Crossing design, MABC, line selection, evaluation and phenotyping
**BR11- <i>Saltol</i> ⁺ (IR 89574-7)	Salt tolerant <i>T. Aman</i> (RLR) rice line	MABC product	Crossing design, MABC, line selection, evaluation and phenotyping
BRRI dhan61 ⁺ (BR7105-4R-2)	Salt tolerant <i>Boro</i> rice variety/ Irrigated rice	2013	Crossing design, from RGA, OYT to release
BRRI dhan63 (BR7358-30-3-1)	Premium quality rice for Irrigated ecosystem	2014	Crossing design, and selection from pedigree nursery
BRRI dhan65 ⁺ (OM1490)	Early, direct seeded rice (<i>aus</i>) for drought prone ecosystem	2014	Conducted PVS from OYT to release
BRRI dhan67 ⁺ (BR7100-2R-6-6)	Salt tolerant <i>Boro</i> /Irrigated rice variety	2014	Crossing design, from RGA, OYT to release
BRRI dhan73 ⁺ (IR78767-B-SATB1-28- 3-24)	Salt tolerant <i>T. Aman</i> (RLR) rice variety	2015	Conducted PVS from OYT to release
BRRI dhan78 (IR77092-B-2R-B-10)	Dual tolerant (Salinity+ <i>SUB1 T. Aman</i> rice variety	2016	MAS, conducted PVS from OYT to release

BRRI dhan83 [†] (BR6848-3B-12)	Drought tolerant direct seeded rice (upland <i>aus</i>) variety	2017	Selected promising lines, using modified bulk method, OYT to release
BRRI dhan91 (BR10230-15-27-7B)	Shallow deep-water rice (HYV)	2019	Conducted yield trials, selection until release
BRRI dhan97 [†] (IR83484-3-B-7-1-1-1)	Salt tolerant irrigated (Boro) Rice	2020	Selected from F4 generation in pedigree nursery, evaluated and selected lines from yield trials to release
BRRI dhan99 [†] HHZ5-DT20-DT2-DT1 (GSR IR1-5-D20-D2-D1)	Salt tolerant irrigated (Boro) Rice	2020	Evaluated and selected lines; conducted PVS from OYT to release

[†]**Worked as Lead-PI for varietal development and release and worked as co-PI for the rest. The National Seed Board (NSB) has finally been approved the release of rice varieties and published through official gazette notification in Bengali.**

*A large range of salt tolerant improve genotypes was grown in mother and baby trials of participatory varietal selection (PVS) in coastal areas of Bangladesh. BRRI dhan47 (IR 63307-4B-4-3) was finally selected and released as salt tolerant variety for *Boro* season in Bangladesh.

**First introgression of *Saltol* locus into the mega varieties and developed two salt tolerant rice genotypes, IR89573-84 (BRRI dhan28-*Saltol*) and IR89574-7 (BR11-*Saltol*) through marker-assisted breeding at IRRI that are under advance stage of testing for release in Bangladesh and Myanmar.

Referees

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