

Debjit Roy

Senior Scientific Officer

Irrigation and Water Management Division

Bangladesh Rice Research Institute (BRRI)

Cell: (+88)-01763436603

Email: debjit.roy@gmail.com; debjit.iwm@brri.gov.bd

LinkedIn: <https://bd.linkedin.com/in/debjit-roy-a8339120>

ResearchGate: https://www.researchgate.net/profile/Debjit_Roy2



Research Interest

Soil and Water system, Infiltration, Agricultural Irrigation and Drainage, Water Resources and Management, Water Modeling and Simulation

Education Qualification

Degree	University	Year
Ph.D. Agricultural and Biosystems Engineering	North Dakota State University, USA	2018
M.Sc. Engg. Water Resources	Bangladesh University of Engineering and Technology	2008
B.Sc. Agri. Engg.	Bangladesh Agricultural University	2002

Publications

Research Articles:

1. **Roy, Debjit** and Sattar, M. A. 2009. Promoting alternate wetting and drying (AWD) method in selected locations at Sadar upazilla of Kushtia. *Journal of Agricultural Engineering (IEB)*. 37/AE: 39-48.
1. **Roy, D.** and Hassan, M. N. 2009. Adoption of water management technologies to increase water productivity for rice cultivation in climate change situation at Sadar upazila of Khustia. *Bangladesh J. Agri. Engg.* 20 (1&2): 41-51.
2. **Roy, Debjit**, Akand, S. K., Rahman, S. and Nath, B. C. 2009. Development of building blocks using local sands. *Bangladesh J. of Prog. Sci. & Tech.* 7(2):183-186.
3. **Roy, Debjit** and Matin, M. Abdul. 2009. Experimental study on local scour around pier-like structures at floodplain of compound channel. *Bangladesh J. of Water Resources Research.* 21: 1-16.
4. **Roy, Debjit**, Islam, M. T. and Nath, B. C. 2010. Impact of supplemental irrigation applied at different growth stages of transplanted Aman rice (*Oryza sativa*). *The Agriculturist.* 8(1): 109-114.
5. **Roy, Debjit** and Matin, M. Abdul. 2010. An assessment of local scour at floodplain and main channel of compound channel section. *Journal of Civil Engineering (IEB)*. 38(1): 39-52
6. **Roy, D.**, M.U. Ahmmed and N.H. Mahmud. 2014. Water management technologies for sustainable rice cultivation under changing climate. *Journal of Agricultural Engineering (IEB)*. 41/AE (1):43-52

7. **Roy, D.**, X. Jia, D.D. Steele and Z. Lin. 2018. Development and Comparison of soil release curves for three soils in the Red River Valley. *SSSA J.* 82(3): 568-577
8. **Roy, D.**, X. Jia, D.D. Steele, X. Chu and Z. Lin. 2020. Infiltration into frozen silty clay loam soil with different soil water contents in the Red River of the North Basin in the U.S. *Water.* 12(2): 321
9. **Roy, D.**, X. Jia, X. Chu and J. Jacobs. 2021. Hydraulic conductivity measurement for three frozen and unfrozen soils in the Red River of the North Basin. *Transactions of the ASABE.* 64 (3): 761-770

10. Rahman, S., Rahman, M., Talukdar, M. S. U., **Roy, Debjit** and Raihan, A. T. M. Z. 2009. Evaluation and comparison of conveyance losses through earthen channel under different conditions. *Intl. J. of BioRes.* 8(1): 11-16.
11. Rahman, S., Khair, M. A. and **Roy, Debjit**. 2009. Performance test of different manually operated pumping devices used for low-lift irrigation. *Eco-Friendly Agril. J.* 2(12):982-985.
12. Hossain, M. O., Satter, M. A., **Roy, Debjit** and Nath, B. C. 2009. Performance evaluation of a small diesel engine by hydraulic dynamometer. *Bangladesh J. Prog. Sci. & Tech.* 7(2):191-194.
13. Nath, B. C., Hossen, M. A., **Roy, Debjit** and Rahman, M. A. 2009. Design and construction of microlysimeters to determine evapotranspiration of rice. *Journal of Agricultural Engineering (IEB).* 36/AE: 37-43.
14. Hossain, M. O., Satter, M. A., Nath, B. C. and **Roy, Debjit**. 2008. Test performance of diesel engine suitable for multipurpose use as prime movers in Bangladesh. *J. Sci. Technol. (Dinajpur).* 6: 67-74
15. Nath, B. C., Satter, M. A., Ahmed, M. T., **Roy, Debjit** and Islam, A. K. M. Saiful. 2009. Performances of direct and standard cooling systems for small engine used in irrigation. *Bangladesh Rice J.* 14(1&2): 161-167.
16. Saha, R. C., Vhutto, M. Z. A., Islam, M. M., Nath, B. C. and **Roy, Debjit**. 2010. Performance study of an engine operated mechanical chopper. *Bangladesh J. Prog. Sci. & Tech.* 8(1): 79-82.
17. Alam, Bodrul, **Roy, Debjit** and Nath, B. C. 2010. Effect of different levels of drip irrigation and mulching on yield of Tomato (*Lycopersicon esculentum* mill.). *Bangladesh J. Prog. Sci. & Tech.* 8(2): 263-266.
18. Begum, Shahinara, Akhand, Shoukat Ali and **Roy, Debjit**. 2010. Contamination of agricultural land by Arsenic from irrigated water. *Journal of Agricultural Engineering (IEB).* 38/AE (2):29-38.
19. Ahmmed, M.U., S. Hossain, **D. Roy** and K.F. Ahmed. 2011. Performance evaluation of a Deep tube-well at Sutiakhali in Mymensingh Sadar Upazilla. *Journal of Agricultural Engineering (IEB).* 39/AE (1): 53-59
20. Ahmmed, M.U., **D. Roy** and N.H. Mahmud. 2014. Feasibility study of a rice transplanter in mechanized agriculture by analyzing operation cost and performance evaluation. *Journal of Agricultural Engineering (IEB).* 41/AE (1): 29-36
21. Hossain, M. B., **D. Roy**, P. L. C. Paul and M. T. Islam. 2016. Water productivity improved using water saving technologies in Boro rice cultivation. *Bangladesh Rice Journal.* 20(1): 17-22

22. Hossain, M.B., **D. Roy**, P.L.C. Paul and M.T. Islam. 2016. Water productivity improvement using water saving technologies in Boro rice cultivation. *Bangladesh Rice J.* 20(1): 17-22
23. Razzak, M.A., P. Sanjana, M.B. Hossain, **D. Roy** and B.C. Nath. 2017. Assessment of irrigation quality of disposal water of Ashuganj-Polash agro-irrigation Project, Brahmanbaria, Bangladesh. *Journal of Agrisearch.* 4(4): 259-263
24. Yesmin, M.S., F. Nowrin, A. Chowdhury and **D. Roy**. 2018. Dissemination of water management technologies for rice cultivation to ensure food security in changing climate situation. *Eco-friendly Agril. J.* 11(09):126-134
25. Hossain, M.B., **Roy, D.**, Maniruzzaman, M., Biswas, J.C., Naher, U.A., Haque, M.M. and Karla, N. 2021. Response of crop water requirement and yield of irrigated rice to elevated temperature in Bangladesh. *International Journal of Agronomy*, 2021(9963201):11, <https://doi.org/10.1155/2021/9963201>
26. Hossain, M.B., **Roy, D.**, Mahmud, M.N.H, Paul, P.L.C., Yesmin, M.S. and Kundu, P.K. 2021. Early transplanting of rainfed rice minimizes irrigation demand by utilizing rainfall, *Environ Syst Res.*, 10:34, <https://doi.org/10.1186/s40068-021-00239-z>

Proceedings and Oral Presentations:

2. **Roy, D.** and Matin, M. A. 2010. An experimental assessment of local scour at floodplain and main channel of compound section. *In Proceedings of IABSE-JSCE joint international conference on Advances in Bridge Engineering-II* (Eds: Amin A. F. M., Okui, Y. and Bhuiyan, M. A. R.), 8-10 August, Dhaka, Bangladesh: 408-416.
3. Sattar, M. A., Rashid, M. A., Hassan, M. N., Molla, H. R., Khan, A. K., Parveen, S., **Roy, D.** and Mahamud, H. 2009. AWD technology for water saving in boro rice production for the selected locations. In proceedings of National Workshop on AWD Technology for Rice Production in Bangladesh (Eds. Sattar, M. A., Maniruzzaman, M. and Kashem, M. A.). 15 July, BRRI, Gazipur, Bangladesh: 1-14.
4. **Roy, D.** 2010. Dissemination of water management technologies for rice cultivation to ensure food security in changing climatic situation. *Paper presented in Biennial conference on food security in Bangladesh: Challenges for extension services*, Bangladesh Agricultural Extension Society (BAES), Bangladesh Agricultural University, 23-24 December: 17
5. **Roy, D.**, X. Jia, D. Steele and X. Chu. 2015. Measurement and simulation of infiltration rates into undrained and subsurface drained soils. ASABE Paper No. 152190011. St. Joseph, Mich.: ASABE.
6. Jia, X., J. Ransom, and **D. Roy**. 2014. Prediction of phenological development and maturity of two corn hybrids in eastern North Dakota. ASABE Paper No. 141913820. St. Joseph, Mich.: ASABE.
7. **Roy, D.**, X. Jia, D. Steele and X. Chu. 2015. Measurement and simulation of infiltration rates into undrained and subsurface drained soils. 2015 ASABE Annual International Meeting, 26-29 July, 2015, New Orleans, Louisiana, USA
8. **Roy, D.**, X. Jia and D.D. Steele. 2015. HYDRUS model simulation of infiltration rates into undrained and tile drained soils. North Central ASABE Conference, 10-11 April, 2015, Fargo, North Dakota, USA

9. **Roy, D.**, X. Jia, D. Steele and T. DeSutter. 2015. Soil water release curve development by field and laboratory setups. ASABE Intersectional Meeting, 28-29 March 2015, Brookings, South Dakota, USA
10. Jia X., J. Ransom and **D. Roy**. 2014. Prediction of phenological development and maturity of two corn hybrids in eastern North Dakota. 2014 ASABE Annual International Meeting, 12-16 July, 2014, Montreal, Quebec, Canada.
11. **Roy, D.** and X. Jia. 2019. Hydraulic Conductivity Measurement of Three Frozen Soils in the Red River of the North Basin. International Soils Meeting 2019, Soil Science Society of America, 6-9 January, San Diego, CA, USA.
12. **Roy, D.**, X. Jia and J. Jacobs. 2019. Comparison between simulated and field measured infiltration in frozen and unfrozen soils in the Red River of the North Basin. 2019 ASABE Annual International Meeting, 07-10 July 2019, Boston, MA, USA
13. **Roy, D.**, M.B. Hossain, R.B. Hafiz, M.T Islam. 2021. Drought management by integrated approaches in T. Aman rice season to escalate water productivity in drought prone regions of Bangladesh. 8th International Conference on Water and Flood Management, March 29-31, Dhaka, Bangladesh

Trainings

Course Title	Institution	Year
Shot course on 'On Farm Water Management'	Bangladesh Rural Development Academy	2004
Water management for rice cultivation	Irrigation Extension Training Center, Bangladesh Water Development Board	2008
Hybrid rice development and seed production	Bangladesh Rice Research Institute	2008
Breeder seed production and preservation of rice	Bangladesh Rice Research Institute	2008
IWRM Practices: Global and Bangladesh Perspective	Centre for Environment and Geographic Information Services (CEGIS), Global Water Partnership (GWP) and Uttaran	2009
One month rice production training	Bangladesh Rice Research Institute	2010
Agricultural Engineering Technology	Bangladesh Agricultural Research Institute	2011
Capacity Development for Farm Management Strategies to improve Crop-Water Productivity using AquaCrop Model	Food and Agriculture Organization (FAO)-Norwegian Embassy- Centre for Environment and Geographic Information Services (CEGIS)-Bioforsk-BRRI	2012
Concept and Practices of integrated water resources management	Centre for Environment and Geographic Information Services (CEGIS) and Global Water Partnership (GWP)	2018
Integrated Water Resources Management in Agriculture	National Agriculture Training Academy (NATA)	2019
Capacity Building Training on Climate Change Adaptation in the Water Sector	Centre for Environment and Geographic Information Services (CEGIS) and Global Water Partnership (GWP)	2019

Workshops and Meetings

1. National workshop on *Agricultural Engineering Research Planning*, 29 June 2009, BARC, Dhaka
2. National workshop on *Adoption and Success of Alternate Wetting and Drying (AWD) Technology for Rice Production*, 15 July 2009, BRRI, Gazipur
3. *Yong Scientist Congress 2009*, 29-30 December 2009, Bangladesh Academy of Sciences, Dhaka
4. Workshop on *Impact Pathways of AWD Dissemination and visions for up scaling AWD in Bangladesh*, 5 August 2010, IRRI, Dhaka
5. Workshop on *Scientific Documentation for Breeder Seed Production*, 09-11 January 2011, BRRI, Gazipur
6. National workshop on *Agricultural Engineering Research Planning*, 23-24 May 2011, BARC, Dhaka
7. Training workshop on *Water security and climate change*, 20-22 September 2011, Bangladesh Center for Advanced Studies, Dhaka
8. International workshop on *Alternate wetting and drying for resource conservation and reduction of environmental pollution*, 13-14 December 2011, IRRI, Dhaka
9. *STRASA Annual Planning Workshop for Phase 2*, 16-17 April 2012, IRRI, Dhaka
10. National workshop on *Agricultural Engineering Research Planning*, 11-12 June 2012, BARC, Dhaka
11. *Program Planning Workshop of Integrated Agricultural Productivity Project (IAPP)*, 2 January 2012, BRRI, Gazipur
12. *Planning Workshop*, Mujibnagar Integrated Agricultural Development Project, 19 April 2012, BRRI, Gazipur
13. *Regional Workshop of Integrated Agricultural Productivity Project (IAPP)-BRRI Component*, 19 July 2012, BRRI Regional Station, Barisal
14. *Inception Workshop on KGF funded “Modelling climate change impact on agriculture and developing mitigation and adaptation strategies for sustaining agricultural production in Bangladesh-2nd phase”*, 31 January 2021, BARC Auditorium, Dhaka
15. *Inception Workshop on KGF funded “Intervention in surface water utilization through integrated minor irrigation schemes for escalating water and land productivity in coastal region (ISIMISC)” Project*, 7 April 2021, BRRI, Gazipur

Technology transfer/Dissemination Project Experience

1. Government of Bangladesh (GoB) funded “Alternate Wetting and Drying Program”
2. Bangladesh Agricultural Research Council (BARC) funded “Dissemination of Water Management Technology Project”
3. Krishi Gobeshona Foundation (KGF) funded “Validation, Refinement and Dissemination of Improved Water Management Technologies for Increasing Water Use Efficiency and Rice Production”
4. Integrated Agricultural Productivity Project (IAPP), BRRI component
5. Mujibnagar Integrated Agricultural Development Project (MIADP)

6. Krishi Gobeshona Foundation (KGF) funded CRP project “Modelling climate change impact on agriculture and developing mitigation and adaptation strategies for sustaining agricultural production in Bangladesh”, Phase-2
7. Krishi Gobeshona Foundation (KGF) funded “Intervention in surface water utilization through integrated minor irrigation schemes for escalating water and land productivity in coastal region (ISIMISC)” Project

Professional Organization Membership

1. Institution of Engineers, Bangladesh (**IEB**); Membership no: M 23475
2. Bangladesh Society of Agricultural Engineers (**BSAE**); Membership no: M 582
3. Krishibid Institution of Bangladesh (**KIB**); Membership no: 05-02-17096
4. American Society of Agricultural and Biosystems Engineering (**ASABE**); Membership no: M1046972

Debjit Roy
12th July 2021