

## Curriculum Vitae of Mohammad Zabed Hossain



### CONTACT ADDRESS

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### RESEARCH AREA

My areas of research and teaching are Plant Ecology, Plant Molecular Ecology, Ecosystem Ecology and Environmental Science. Currently, I have been conducting research on understanding the adaptation mechanisms of plants, ecosystem functions, assessment of carbon stocks, introduction, distribution and impacts of exotic plant species, interactions between plants and abiotic stresses such as salinity, drought and arsenic.

### EDUCATION

- Post-Doctorate Department of Plant Biology and Forest Genetics, Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden (September 2009 - February 2011)
- Ph. D. The United Graduate School of Agricultural Sciences, Iwate University (Hirosaki University), Japan (2003 - 2007)  
Thesis title: Ecological relationships between plant and soil microbial communities in grasslands: structural and functional linkages
- M. Sc. (Thesis) Department of Botany, University of Dhaka, Bangladesh, Obtained 1<sup>st</sup> class 1<sup>st</sup> position with 69.13% marks (1994, Exam. held in 1997)  
Thesis title: "Ecological conditions of a segment of the river Meghna near Bhairab Bazar"
- B. Sc. (Hons.) Department of Botany, University of Dhaka, Bangladesh, Obtained 1<sup>st</sup> class 2<sup>nd</sup> position with 67.10% (1993, Exam. held in 1995)
- H. S. C. Higher Secondary School Certificate, Dhaka College, Bangladesh. Obtained 1<sup>st</sup> division (1990)
- S. S. C. Secondary School Certificate, K. K. Govt. Institute, Munshiganj, Bangladesh. Obtained 1<sup>st</sup> division (1988)

### PROFESSION

#### **Employment**

- Professor Department of Botany, University of Dhaka, Dhaka, Bangladesh (July 22, 2013 till date)
- Associate Professor Department of Botany, University of Dhaka, Dhaka, Bangladesh (August 10, 2011 – July 21, 2013)
- Assistant Professor Department of Botany, University of Dhaka, Dhaka (September 13, 2008 - August 9, 2011)
- Lecturer Department of Botany, University of Dhaka, Dhaka (June 30, 2003 - September 12, 2008)
- Researcher Worked as Environmental Researcher at Research and Evaluation Division, BRAC, Dhaka, Bangladesh (October 01, 1998 - June 29, 2003)
- Research Officer Bangladesh Centre for Advanced Studies, Dhaka, Bangladesh (June 1998 - September 1998)

#### **Teaching responsibility**

Teaching courses Synecology (B.S), Ecology and Environment (B.S.), Plant Molecular Ecology (M.S., M.Phil. and Ph.D.) and Ecosystem Ecology (Ph.D.)

**Thesis Supervising responsibilities**

1. Ph.D.: Nur Jahan, Md. Habibur Rahman, Md. Aatur Rahman, Md. Ashraful Alam Khan, Md. Moshidul Islam and Md. Abdullah Al Mahmud (ongoing)
2. M. Phil: Jannatul Ferdousi and Protika Sarker (complete), Fahliza Ferdous (ongoing)
3. M.S. thesis: Tulika Palit, Md. Kaiser Mohaimen, Fariha Afrin Mustafa, Md. Morsalinur Rahman (ongoing), Pragga Saha Sharmi, Suraiya Akter, Saila Kabir, Sirajum Munira Hussaini, Mumtahina Nabila, Farzana Zaky, Md. Mehedi Hasan, Md. Ishaque Uddin, Md. Abul Kashem, Shaila Islam Satu, Shuchita Nasreen Jannat and Tania Sultana (complete); Md. Morsalinur Rashid and Fariha Afrin (ongoing)
4. Co-supervisor of the research project of M.S. degree: Mr Mohammad Saiful Islam Rasel, Department of Plant Biology and Forest Genetics, Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden (October 2010-February 2011)
5. Co-supervisor of the research project of Bachelor Degree: Mr Martin Gregorc, Department of Plant Biology and Forest Genetics, Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden (September 2009 - February 2011:)

**SKILLS****Laboratory techniques**

1. Biochemical analysis: Fatty acid profiling by using GC and GC-MS for microbial analysis
2. Basic microbiological: Plating, culturing, inoculation, isolation, purifying, staining, microscopy
3. Chemical analysis: Basic elements, organic and inorganic compound analysis of plant and soil samples
4. Molecular biology: DNA extraction, purification, PCR, DGGE, Sequencing, cloning
5. Proteomics: Extraction, 2D gel electrophoresis (IEF & SDS PAGE), identification, iTRAQ labeling, Tandem mass spectrometry based sequencing, MALDI, Nano LC based proteome mapping, Data acquisition and interpretation.

**Computing**

1. Word processing (Word), Graphics Software (Power Point, Photo editor, Photo Shop, Prism Graphpad, Image J, Canvas), Data-sheets (Excel)
2. Comparative Genomics: Blast and specialized software to infer on gene sequences
3. Phylogenetic analysis: Various soft-wares CLC, RDP, DNASTAR Lasergene
4. Multivariate Statistics: JMP (SAS Institute), NTSYS, CANOCO

**PUBLICATION**

1. Akter S, Rahman MH, Kashem MA and Hossain MZ 2021. Seasonal variation in leaf traits of Sal (*Shorea robusta* Gaertn.) in relation to its adaptation with soil environment. Tropical Ecology <https://doi.org/10.1007/s42965-021-00175-0>
2. Sharmi PS, Kashem MA, Rahman MH and **Hossain MZ** 2021. Leaf traits of Sal (*Shorea robusta* Gaertn.) populations selected from different regions of Bangladesh. Dhaka Univ. J. Biol. Sci. **30**(2): 317-324
3. Sharmi PS, Kashem MA, Samad R and **Hossain MZ** 2021. Genetic diversity within and among populations of *Shorea robusta* Roxb. ex Gaertn. in Bangladesh and its implications for conservation. Bangladesh Journal of Botany 50(2): 405-412
4. Jake FA, Rahman MH, Kashem MA and **Hossain MZ** 2020. Spatio-temporal variation in leaf traits of Sal (*Shorea robusta* Gaertn.) populations in Bangladesh. Tropical Plant Research 7(2): 452–459
5. **Hossain MZ** and Sugiyama S 2020. Relative importance of soil microbes and litter quality on decomposition and nitrogen cycling in grasslands. Ecological Research 35: 912–924

6. Kabir S, Kashem MA, Rahman MA, Hasan MM, Khan MAA and **Hossain MZ** 2020. Variation in leaf traits of *Lantana camara* L. in relation to its adaptation with the soil condition of Bangladesh. *Journal of Advanced Plant Sciences* 10(2): 37- 44
7. **Hossain MZ**, Hussaini SM, Kashem MA, Hasan MM and Khan MAA 2020. Litter quality and nitrogen mineralization of dominant tree species in the Ratargul swamp forests, Bangladesh. *International Journal of Ecology and Environmental Sciences* 46 (2): 195-201
8. Kabir S, Kashem MA, **Hossain MZ** 2020. Genetic diversity and introductions patterns of *Lantana camara* L. in the territory of Bangladesh as revealed by microsatellite profiles. *Species* 21(67): 140-149
9. **Hossain MZ**, Anawar HM, Santa-Regina I and Akter F. 2019. Revegetation of Energy Crops on Acidic and Alkaline Toxic Metal-Rich Mining Waste and Soil: Carbon Sequestration, Energy Production and Waste Management. In: *Sustainable and Economic Waste Management: Resource Recovery Techniques* (Editors: H. M. Anawar, V. Strezov and Abhilash). CRC Press, pp. 127-144.
10. Anawar HM, **Hossain MZ** and Strezov V 2019. Biogeochemical Processes for Carbonation and Neutralization of Alkaline Mining Waste, Recycling and Waste Management. In: *Sustainable and Economic Waste Management: Resource Recovery Techniques* (Editors: H. M. Anawar, V. Strezov and Abhilash). CRC Press, pp. 146-160.
11. Anawar HM, Strezov V, **Hossain MZ**, Akter F and Santa-Regina I 2019. Biogeochemical Processes for Pedogenesis and Soil Formation in Mine Tailing and Waste and Plant Growth for Waste Management. In: *Sustainable and Economic Waste Management: Resource Recovery Techniques* (Editors: H. M. Anawar, V. Strezov and Abhilash). CRC Press, pp. 161-176.
12. Hossain MA, Strezova V and **Hossain MZ** 2019. Comparison of different nanoprocesses and industrial waste-based adsorbents such as red mud, steel slag, and fly ashes for treating wastewater. *In: Occurrence of emerging and nanomaterial contaminants in wastewater: advanced treatment technologies*, Elsevier pp. 107-136.
13. **Hossain MZ** and Sugiyama S 2019. Structural and functional relationships between plant and soil microbial communities for grassland management. *Trends in Applied Sciences Research* 14(3): 160-169.
14. Ferdous J, Kashem MA, Ahmed A and **Hossain MZ** 2018. Effects of salinity on the soil bacteria associated with the rhizosphere of lentil. *Mol.* 18: 9-18
15. **Hossain MZ**, Hasan MM and Kashem MA 2018. Intervarietal variation in salt tolerance of lentil (*Lens culinaris* Medik.) in pot experiments. *Bangladesh J Botany* 47(3): 405-412
16. Nabila M and **Hossain MZ** 2017. Ecophysiological responses of crop plants under different functional types to salt stress. *Mol.* 17: 55-65
17. Satu SI, Kashem MA and **Hossain MZ** 2017. The extent of soil salinity in some selected areas of Bangladesh and the growth responses of lentil (*Lens culinaris* Medik. var BARI masur 4) to salt stress. In: *Advances in Environmental Research*, (Editor: Justin A. Daniels), 60: 161-179
18. **Hossain MZ**, Rasel IU, and Samad R. 2016. Soil moisture effects on the growth of lentil (*Lens culinaris* Medik.) varieties in Bangladesh. *Mol.* 16: 30-40
19. **Hossain MZ**, Hasan MM, Ferdous J and Hoque S. 2016. Growth responses of lentil (*Lens culinaris* Medik.) varieties to the properties of selected soils in Bangladesh. *Mol.* 16: 18-29
20. **Hossain MZ**, Khan MAA, Kashem MA, Hoque S. 2016. Plant community composition in relation to soil physico-chemical properties of the Ratargul swamp forest, Bangladesh. *The Dhaka Univ. J. Biol. Sci.* 25(1): 1-8.
21. **Hossain MZ** and Lundquist P-O. 2016. Nodule Inhabiting non-rhizobial bacteria and their influence on growth of selected leguminous plants of Bangladesh. *Bioresearch Communication* 2: 134-138
22. Kashem MA, Ahmed A, Hoque S and **Hossain MZ**. 2015. Effects of land-use change on the properties of top soil of deciduous Sal forest in Bangladesh. *Journal of Mountain Area Research* 1: 5-12
23. **Hossain MZ**, Jannat SN, Jahan N, Moniruzzaman M and Hoque S. 2015. Forest and agricultural soils differ in affecting growth of groundnut plants (*Arachis hypogaea* L.). *Mol.* 14-15: 30-37
24. **Hossain Z** and Sugiyama S. 2014. Seasonal variation of soil microbial communities in semi-natural and improved grasslands in northern Japan. In: *Grasslands: Habitat Management, Impact of Plant Diversity and Restoration Strategies* (Editors: Pierre Mariotte and Paul Kardol). Nova Science Publishers, Inc. New York, USA. pp. 51-68.

25. Anwar HM, Garcia-Sanchez A and **Hossain MZ** 2013. Biogeochemical cycling of arsenic in soil-plant continuum: Perspectives for phytoremediation. In: Heavy Metal Stress in Plants (Editors: D. K. Gupta., F. J. Corpas and J. M. Palma). Springer, Germany, pp. 203-224.
26. **Hossain MZ**, Sultan S, Ahmed A and Hoque S. 2013. Influence of leguminous trees on soil nitrogen and phosphorus status of the *Sal* forests. The Dhaka Univ. J. Biol. Sci. 22(2): 179-182
27. Sultana T, **Hossain MZ**, Ahmed A and Hoque S. 2013. Decomposition and nutrient release of *Sal* leaf litter as influenced by legume leaf litter of the *Sal* forests. The Dhaka Univ. J. Biol. Sci. 22(2): 183-186
28. **Hossain Z** and Sugiyama S. 2013. Differences in microbial functions in soils of semi-natural and improved grasslands. In: Soil functions: Theory, Evolution and Processes (Editors: Jay R. Lynch and Derek T. Williamson). Nova Science Publishers, Inc. New York, USA. pp. 317-327
29. **Hossain MZ**. 2012. Bioremediation of arsenic: Prospects and limitations in the agriculture of Bangladesh. Int. J. Econ. Environ. Geol., 3(1): 6-12
30. Hossain MA, **Hossain MZ**, Hossain N and Akter S. 2012. Water Quality, Mitigation Measures of Arsenic Contamination and Sustainable Rural Water Supply Options in Bangladesh. Int. J. Econ. Environ. Geol., 3(1): 34-42
31. **Hossain Z** and Sugiyama S. 2011. Grassland management and structural changes in soil microbial communities. In: Grasslands: Types, Biodiversity and Impacts (Editor: Wen-Jun Zhang). Nova Science Publishers, Inc. New York, USA. pp. 95-108
32. Saha ML, Islam MN, Aziz CB and **Hossain MZ**. 2012. Molecular identification of bacteria present in the soils of the Madhupur *Sal* and the Sunderban mangrove forests of Bangladesh. The Dhaka Univ. J. Biol. Sci. 21(2): 117-123.
33. **Hossain MZ**, Aziz CB and Saha ML. 2012. Relationships between soil physico-chemical properties and total viable bacterial counts in Sunderban mangrove forests, Bangladesh. The Dhaka Univ. J. Biol. Sci., 21(2): 169-175.
34. **Hossain MZ** and Begum M. 2011. Vegetation of Sunderban mangrove forest after the devastating cyclone Sidr in Bangladesh. Society and Change. 5(3): 72-78.
35. **Hossain Z** and Sugiyama S. 2011. Geographical structure of soil microbial communities in northern Japan: effects of distance, land use type and soil properties. Europ. J. Soil Biol. 47: 88-94.
36. **Hossain MZ** and Sugiyama S. 2010. Influences of plant litter diversity on decomposition, nutrient mineralization and soil microbial community structure. Grassland Sci. 57: 72–80.
37. **Hossain MZ**, Okubo Atsushi and Sugiyama S. 2010. Effects of grassland species on decomposition of litter and soil microbial communities. Ecol. Res. 25: 255-261.
38. **Hossain MZ**, Saha ML, Aziz CB and Hoque S. 2010. Effects of deforestation on the properties of soil of *Sal* forests in Bangladesh. The Dhaka Univ. J. Biol. Sci. 19 (1): 63-72.
39. Ullah SM, **Hossain MZ**, Mahbuba I, Jahan S, and Bashirullah M. 2009. Extent of arsenic poisoning in the food chain of arsenic affected areas. The Dhaka Univ. J. Biol. Sci. 18 (2): 159-171.
40. Sugiyama S, **Hossain MZ**, and Atsushi O. 2008. Relationships between soil microbial diversity and plant community structure in seminatural grasslands. Grassland Sci. 54: 117-124.
41. **Hossain MZ** and Sugiyama S. 2008. Effects of chemical composition on the rate and temporal pattern of decomposition in grassland species leaf litter. Grassland Sci. 54: 40-44.
42. **Hossain MZ** and Gani S. 2007. Eliminating arsenic consumption: switching drinking water sources through intensive awareness programmes in rural Bangladesh. Society and Changes. 1(4) 60-70.
43. **Hossain MZ**, Okubo A, Sugiyama S. 2007. Local variation in soil microbial community structure in seminatural and artificial grasslands. Grassland Sci. 53: 165-171.
44. Rahman S and **Hossain MZ**. 2003. Pesticide demand in hybrid seed production technology. J. Food, Agric. Environ. 1 (3 & 4): 174-179.
45. **Hossain Z**, Quaiyum M Jakariya M. 2003. Using IEC materials for mass communication: Experiences of an arsenic mitigation project in Bangladesh. Bangladesh J. Commun. Publ. 2 (1): 11-18.
46. Rahman S and **Hossain MZ**. 2003. Determinants of Pesticide use in Hybrid Vegetable and Cereal Seed Production in Bangladesh: A Tobit-decomposition Analysis. Asian Profile. 31 (5): 49-440.
47. Jakariya M, Chowdhury AMR, **Hossain Z**, Rahman M, Sarker Q, Khan RI and Rahman M. 2003. Sustainable community-based safe water options to mitigate the Bangladesh arsenic catastrophe-An experience from two upazilas. Curr. Sci. 85 (2): 141-146.
48. Jakariya M, Chowdhury AMR, **Hossain MZ**, Rahman M. 2003. Management of chronic arsenicosis. Tropical Doctor. 33: 251-252.
49. Jakariya M and **Hossain MZ**. 2003. Arsenic poisoning of groundwater and its consequences on

- human health: Experiences from an upazila. Bangladesh J. Environ. Sci. 1: 103-105.
50. **Hossain Z**, Sharmin L and Rahman S. 2002. Use and handling practices of pesticide in hybrid vegetables and maize seed productions in Bangladesh: A case study of BRAC contract farmers. *Landschaftsökologie und Umweltforschung*. 38: 49-61.
  51. **Hossain MZ**, Gani MS, Jakariya M, Chowdhury AMR. 2002. People do switch to arsenic-free water. *In: Ahmed MF, Tanveer SA, Badruzzaman ABM (Editors). Bangladesh Environment 2002 (Vol 1). Dhaka: Bangladesh Poribesh Andolan, 2002 December : 274-284.*
  52. Rahman, S and **Hossain MZ**. 2000. Pesticide demand among hybrid vegetable and cereal seed producers in Bangladesh: a simultaneous equation analysis. *Bangladesh J. Agric. Econ.* 23 (1&2): 91-102.
  53. Chowdhury, AMR., **Hossain MZ.**, Nickson R., Jakariya Md., Rahman M., and Shamimuddin Md. 2000. Combating a deadly menace: Early experiences with a community based arsenic mitigation in Bangladesh. *Research Monograph Series No. 16*. BRAC, Dhaka

#### SCHOLARSHIPS/FELLOWSHIPS OBTAINED

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|-----------|--|
| 2009-2011 | Guest Scholarship Program of Swedish Institute, The Swedish Government for Post-Doctoral research at Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden. |
| 2003-2007 | Monbukagakusho (Monbusho) Scholarship of the Government of Japan for Ph. D. program in Japan.  |
| 1996-1997 | National Science and Technology Fellowship of the Government of Bangladesh for M. Sc. research.  |
| 1993-1994 | Delta Study Centre Fellowship, Dhaka University at M.Sc. level.  |
| 1991-1994 | Dhaka University Merit Scholarship.  |
| 1991-1993 | Fullar Memorial Scholarship, Dhaka University.   |
| 1990      | Higher Secondary School Scholarship, the Government of Bangladesh.   |

#### AWARDS/RECOGNITION

1. Received Green Guru Award from the 7<sup>th</sup> Eastern Himalayan Naturenomics Forum organized by Balipara Foundation, Guwahati, Assam, India, November 5-6, 2019
2. Awarded 2<sup>nd</sup> prize in essay writing competition in the category of university teachers and scientists organized by SAIC (SAARC Agriculture Information Centre) on the occasion of SAARC Chartered Day and International Year of Soils 2015, December 7, 2015, BARC, Dhaka, Bangladesh

#### COURSES/TRAINING ATTENDED

1. *“Proteomics: High Throughput Analysis of Proteins and Proteome by Mass Spectrometry”* Theoretical and practical training course organized by International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi, India, October 10-21, 2011
2. *“Genomics for ecologists-fundamentals and practicalities”* Graduate student course organized by the Evolutionary Biology Centre (EBC), Uppsala University, Uppsala, Sweden. January 20 - 22, 2010
3. *“Legumes: Plant-soil interactions and agricultural applications”*. Graduate course organised by Swedish University of Agricultural Sciences (SLU), Umeå Campus, Sweden. October 12 - 16, 2009
4. *“Community structure analysis of soil microorganisms by biomarkers”* Course of study offered by the Graduate School of Agriculture and Life Science, Hirosaki University, Japan, October 2003 - September 2004
5. *“Preparatory Intensive Course in the Japanese Language”* offered by the International Student Exchange Center, Hirosaki University, Hirosaki, Japan, October 2003- March 2004
6. *“Plant Genetic Transformation, in situ Hybridization and Bioinformatics”* workshop organised by Higher Education Quality Enhancement Project (HEQEP), Department of Botany, University of Dhaka, Dhaka 1000, Bangladesh. October 06 - 14, 2012
7. *“Genomics and proteomics”* workshop organised by Higher Education Quality Enhancement Project (HEQEP), Department of Botany, University of Dhaka, Dhaka 1000, Bangladesh. July 16 - 24, 2012

8. “International Training Course on Operation Research in Reproductive Health” organised by the Institute of Health Economics, University of Dhaka, January 23 - February 1, 2001.
9. Attended a number of workshops on EIA and IEE during the period from 1998 to 2003.
10. Completed basic training course on Participatory Rapid Rural Appraisal (PRA) from BARD, Comilla, Bangladesh, April 26-May 3, 1998.
11. Attended training program on “Application of statistics in research” organized by Institute of Statistical Research and Training, University of Dhaka, December 6-10, 2015.

#### SEMINAR/CONFERENCES ATTENDED

1. “Biodiversity of Bangladesh: current status, threats and conservation initiatives” presented as keynote speaker at the ICSTB-2021, BCSIR, Dhaka on 12 March 2021
2. “Bangladesh Regional Eastern Himalayan Naturenomics Forum 2021 with the theme: Understanding deforestation patterns and designing customized habitat restoration plans” organized as co-organizer in association with Balipara Foundation, India at the Department of Botany, University of Dhaka, on 2<sup>nd</sup> March 2021
3. “Plastics and Ecosystem Stability” was presented as invited speaker in webinar organized by Sweden Alumni Network Bangladesh, Dhaka on 26 October 2020
4. “Current trends in advanced research and applications’ a webinar hosted and moderated by Mohammad Zabed Hossain in Dhaka on 17 November 2020.
5. “Emerging issues on ecological research and conservation in the Southeastern Himalayan region” a webinar hosted and moderated by Mohammad Zabed Hossain on 23 August 2020
6. “Regeneration constraints of Sal (*Shorea robusta* Gaertn. ex.f.) in the deciduous forests of Bangladesh” presented by Md. Moshidul Islam, Md Abul Kshem and Mohammad Zabed Hossain in the Annual Botanical Conference, Jahangirnagar University, January 18, 2020
7. “Debate on development versus conservation: the context of Bangladesh” presented by Mohammad Zabed Hossain as Key Note Speaker in the Conference on Environmental Solution to the Sustainable Development held in Dhaka, November 27, 2019
8. “Microsatellite profiles indicate multiple introductions of invasive alien species *Lantana camara* L. in Bangladesh” presented by Saila Kabir and Mohammad Zabed Hossain in the 4<sup>th</sup> IPFS-ICBHA held in Dhaka, November 11-13, 2019
9. “How rich forests of Bangladesh” presented by Mohammad Zabed Hossain s invited speaker at the Independent University, Bangladesh, October 28, 2019
10. ‘Use and handling practices of pesticides used in the cultivation of high yielding potato varieties in Bangladesh’ presented as Invited Speaker in the 7<sup>th</sup> Annual South Asian Biosafety Conference held on September 14-16, 2019, The Westin Dhaka
11. ‘Abiotic stress induced growth responses of lentil (*Lens culinaris* Medik.)’ presented by Mohammad Zabed Hossain as Invited Guest speaker in the 3<sup>rd</sup> International Symposium on Innovation in Plant and Food Science organized by Fujian Agriculture and Forestry University, December 15-17, 2018, Fuzhou, China
12. ‘Adaptation of Sal (*Shorea robusta* Roxb. ex Gaertn.) through leaf traits in the deciduous forests of Bangladesh’ by Farzana Akter Zake and Mohammad Zabed Hossain presented in the 7<sup>th</sup> International Botanical Conference held in Dhaka, January 5-6, 2018, Bangladesh
13. “Salt tolerance of varieties of lentil (*Lens culinaris* Medik.) in Bangladesh” presented by Mohammad Zabed Hossain as Invited Guest in the International Symposium on Innovation in Agriculture and Food Science”, September 8-10, 2017, University of Saskatchewan, Saskatoon, Canada
14. “Effects of Eucalyptus on the decomposition of leaf litter of other plant species” by Protika Sarker and Mohammad Zabed Hossain presented at the Annual Botanical Conference, February 3-4, 2017, Rajshahi University, Rajshahi
15. “Effects of land-use changes on the soil properties of deciduous Sal forest in Bangladesh” presented in the 23<sup>rd</sup> Bangladesh Science Conference, 17-18 October 2015, Bangabandhu Sheikh Mujibur Rahman Agricultural University, Gazipur, Bangladesh
16. “Growth responses of groundnut plants (*Arachis hypogaea* L.) to the properties of soils of agricultural and forest soils’ poster presented in the International symposium on Protein crops, May 4-7, 2015, Pontevedra, Spain.
17. “Nodule inhabiting non-rhizobial bacteria and their role in growth of leguminous plants. 7<sup>th</sup> Plant tissue culture and Biotechnology conference, March 1 - 3, 2014, Dhaka.

18. "Molecular identification of bacteria present in the soils of the Madhupur *Sal* and the Sunderban mangrove forests of Bangladesh". National conference on Plant tissue culture and Biotechnology, January 5 - 6, 2012, Ishurdi, Pabna.
19. "Occurrence and diversity of *Bradyrhizobium* sp. associated with N<sub>2</sub>-fixing root nodules of groundnut (*Arachis hypogaea* L.) in agricultural and non-agricultural soils in Bangladesh". Fifth International Botanical Conference, December 9 - 11, 2011, Dhaka.
20. "Ecological implications for interaction between plant litter and soil microbial communities in grassland ecosystems". 4<sup>th</sup> International Botanical Conference, January 16 - 18, 2009, Dhaka
21. "Ecological relationships between plant and soil microbial communities". Seminar presentation in the Department of Botany, University of Dhaka, April 9, 2008, Dhaka
22. "Linkages between aboveground plants and belowground soil microbial communities through leaf chemicals: an experimental evidence". 55<sup>th</sup> General conference of the Grassland Society of Japan, October 29 - November 1, 2006, Okinawa, Japan.
23. "Plants can influence decomposition and mineralization through leaf chemical composition". 55<sup>th</sup> General conference of the Grassland Society of Japan, October 29 - November 1, 2006, Okinawa, Japan.
24. "Plant litter effects on the soil microbial community structure-PLFA analysis". 2<sup>nd</sup> Scientific Congress of East Asian Federation of Ecological Societies, March 25 - 28, 2006, Niigata, Japan.
25. "Relationship between plant and soil microbial community diversity in grasslands". 53<sup>rd</sup> General conference of Grassland Society of Japan, University of Tokyo, March 28 - 30, 2005, Tokyo, Japan.
26. "Peoples' awareness about medicinal plants and its prospect in Bangladesh". International conference on the role of plant taxonomy in herbal medicine and conservation policy of floral diversity, Bangladesh National Herbarium, March 17 - 19, 2003, Dhaka.
27. "People do switch to arsenic-free water". 2<sup>nd</sup> International Conference on Bangladesh Environment. BUET, December 19 - 21, 2002, Dhaka.
28. "Peoples' perception about the impacts of modern agriculture technology adoption on environment: a case study from BRAC contract farmers". 1<sup>st</sup> National Conference on Environmental Health in Bangladesh, ICDDR,B, February 19 - 20, 2002, Dhaka.
29. "Peoples' responses to some safe water devices implemented in the arsenic affected rural areas of Bangladesh". 1<sup>st</sup> National Conference on Environmental Health in Bangladesh, ICDDR,B, February 19 - 20, 2002, Dhaka.
30. "Pesticide use and awareness of hybrid vegetables and maize seed productions in Bangladesh: A case study of BRAC contract farmers". International Workshop on Environmental Risk Assessment of Pesticides and Integrated Pesticide Management in Developing Countries, November, 6 - 9, 2001, Kathmandu, Nepal.
31. "Ecological conditions of lotic environment: a case study of the Meghna river". 10<sup>th</sup> Bangladesh Botanical Conference. November 12 - 14, 1999, Dhaka.

#### RESEARCH GRANTS RECEIVED/PROJECT WORKS

1. "Screening of legume crops for water use-efficiency to enhance food security of Bangladesh in the context of global climate change" funded by the University of Dhaka under Centennial research Grants program (2020-2021).
2. "Environmental determinants of the spatial distribution of tree species in the selected deciduous and evergreen forests of Bangladesh" funded by Centre for Advanced Studies and Research in Biological Sciences, University of Dhaka (2019-2020)
3. "Genetic diversity of timber producing teak plant (*Tectona grandis* L.f.) populations in Bangladesh" funded by the Ministry of Science and Technology of the Government of Bangladesh under special allocation programme (2019-20).
4. 'Use and handling practices of pesticides used in the cultivation of high yielding potato varieties in Bangladesh' supported by the USAID-ILSI Research Foundation under Biosafety Research in Bangladesh Grant Program (BRBGP) 2019
5. 'Understanding the regeneration and nutritional adaptation of *Sal* (*Shorea robusta* Roxb. *Ex* Gaertn) for its better management and conservation' Bangladesh University Grants Commission (2017-2018).
6. 'Population structure, regeneration and genetic variation of *Sal* (*Shorea robusta* Roxb. *ex* Gaertn) of the deciduous forests in Bangladesh' funded by the Ministry of Science and Technology of the Government of Bangladesh under special allocation programme (2017-18).

7. 'Securing enhanced growth and biological nitrogen fixation in lentil (*Lens culinaris* Medik.) by using salt tolerant *rhizobium* in the salinity affected soils of Bangladesh' funded by Ministry of Education (2015-16/17/18)
8. "Understanding the adaptation mechanisms of trees of Ratargul swamp forests" funded by Centre for Advanced Studies and Research in Biological Sciences, University of Dhaka (2017-2018)
9. 'Drought tolerance of symbiotic association between lentil (*Lens culinaris* Medik.) and *Rhizobia* in the context of global climate change' funded by the Ministry of Science and Technology of the Government of Bangladesh under special allocation programme (2015-16).
10. 'Microbial ecology of bacteria associated with the rhizosphere and root nodules of groundnut (*Arachis hypogaea* L.) in arsenic affected soils in Bangladesh'' funded by the International Foundation for Science (IFS), Sweden (2012-2013).
11. "Molecular identification and characterization of nitrogen fixating bacteria compatible to *Arachis hypogaea* and *Lens culinaris* in the soils of Sal forests" funded by the Bangladesh University Grants Commission (2012-2013).
12. "Enhancing growth and nitrogen fixation in *Arachis hypogaea* L. (groundnut) and *Lens culinaris* Medik. (lentil) by using indigenous rhizobia in agricultural soil of Bangladesh" funded by the Ministry of Science and Technology, Government of the People's Republic of Bangladesh (2013-2014).
13. 'Productivity responses of plant functional types to drought stress as an effect of global climate change' funded by the Centre for Advanced Studies and Research in Biological Sciences, University of Dhaka (2015-16)
14. "Bioremediation of arsenic by using arsenic-resistant nitrogen fixing bacteria compatible to leguminous crops *Arachis hypogaea* L. (groundnut) and *Lens culinaris* Medik. (lentil) in the arsenic affected soil of Bangladesh" funded by the Ministry of Science and Technology, Government of the People's Republic of Bangladesh (2012-2013).
15. "Ecological investigation on Eucalyptus plantation in Bangladesh' funded by the Bangladesh University Grants Commission (2014).
16. 'Assessment of soil Carbon stocks as influenced by land-use changes in the Madhupur *Sal* forest' funded by the Centre for Advances Studies in Biological Science, University of Dhaka (2014-15)
17. "Nodulation and biological nitrogen fixing efficiency of legume plants in Madhupur *Sal* forests" funded by the Bangladesh University Grants Commission (2012)
18. "Root morphology and nodulation of groundnut (*Arachis hypogaea* L.) in relation to soil physico-chemical properties" funded by the Centre for Advances Studies in Biological Science, University of Dhaka (2012)

## REVIEWING/EDITING

- (i) Scientific Reports, (ii) PlosOne, (iii) Ecological Research, (iv) Pedosphere, (v) Frontiers in Plant Science, (vi) African Journal of Agricultural Research (AJAR), (vii) Journal of Soil Science and Plant Nutrition (JSSPN), (viii) Bangladesh Journal of Botany, (ix) Bangladesh Journal of Ecology etc.

## AFFILIATION

1. Ex-Chairperson, Sweden Alumni Network in Bangladesh (2019)
2. Life member of the Bangladesh Botanical Society
3. Life member of Bangladesh Ecological Society
4. Life member of the Bangladesh Association of Advancement of Science
5. Life member of the Global Network of Bangladeshi Biotechnologists (GNOBB).
6. Member of EUCARPIA (European Association for Research on Plant Breeding)
7. Honorary member of the Science Society of Galicia, Spain

## OTHER SKILLS

### *Languages proficiency*

- Bangla (mother tongue)
- English (fluent)
- Japanese (moderate)



***Country visited***

India, Nepal, China, Japan, Sweden, Finland, Spain, Canada

**PERSONAL INFORMATION**

Married and born on April 3, 1973 in Munshiganj, Dhaka, Bangladesh.