

Md Mizanur RAHMAN, Ph.D.
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[Google Scholar](#)

Summary

I am a broadly trained forest ecologist with a decade of experience specializing in forest ecosystem carbon, ecological modeling, and remote sensing, including collaborative research with NASA Goddard Space Flight Center. My work investigates how functional trait diversity regulates carbon storage, ecosystem multifunctionality, and climate resilience, with the ultimate goal of providing scientific tools to aid nature-based solutions for sustaining natural ecosystems under global climate change. Using mangroves as model ecosystems, I develop multi-disciplinary approaches that integrate field ecology with UAV/LiDAR, satellite remote sensing, GeoAI, machine learning, and structural equation modeling to uncover mechanisms enhancing blue carbon sequestration and forest resilience. I have published 20+ peer-reviewed articles (cited 1,450 times, h-index 14) in leading journals—including *Nature Communications*, *Global Change Biology*, and *Communications Earth & Environment*—advancing trait-based solutions for climate-resilient ecosystem restoration. My long-term vision is to establish an independent research program and professional position that trains the next generation of scientists and supports regional priorities in JREDD+, carbon neutrality, NetZero, and sustainable ecosystem management through cutting-edge ecological and remote sensing approaches.

Education

Ph.D. in Forest and Biomaterials Science	Kyoto University, Kyoto, Japan	2019
Master of Science in Forestry	Khulna University, Khulna, Bangladesh	2012
Bachelor of Science (Hons) in Forestry	Khulna University, Khulna Bangladesh	2009

Research and professional experience

Research Fellow

30/06/2026-Ongoing

Remote Sensing Laboratory, Department of Land Survey and Geo-Informatics, The Hong Kong Polytechnic University

- Guiding mangrove ecosystem blue carbon in Hong Kong SAR, China
- Growth rate of tree for species in Hong Kong to support carbon neutrality and NetZero action plan of Hong Kong SAR
- Monitoring carbon sequestration trees in the green space of the Hong Kong Polytechnic University (PolyU) to offset the carbon emission of PolyU

Research Fellow

03/2024-29/06/2026

Jockey Club STEM Laboratory of Earth Observations, Department of Land Survey and Geo-Informatics, The Hong Kong Polytechnic University

- Assessing mangrove forest resilience and their drivers using long term remote sensing image properties (kNDVI) in Google Earth Engine and field data.
- Leading a wetland group to study the Drone drive and Terrestrial LiDAR based assessment of forest stand structure and biodiversity in Mai Po Mangrove ecosystem Hong Kong.
- Chairing a weekly guest speaker seminar series on the application of geospatial technologies to address socioecological and environmental challenges in urban, coastal, natural, and managed forest ecosystems.

Assistant Researcher

05/2023-02/2024

Carbon Accounting and Carbon Resource Utilization, Jiangmen Laboratory of Carbon Science and Technology, The Hong Kong University of Science and Technology, Guangzhou, China

- Ecosystem Carbon Assessment to facilitate Nature-based climate change mitigation through forest-based carbon offsetting.
- Integrate drone and airborne remote sensing technologies with advanced machine learning and deep learning models for spatial and temporal monitoring forest carbon and functional diversity monitoring.

Postdoctoral Fellow (Research Grants Council Fellow of Hong Kong SAR)

1/2022–05/2023

School of Biological Science, The University of Hong Kong, Hong Kong, China

- Machine learning modeling for spatiotemporal monitoring of forest biophysical properties by fusing image properties of Sentinel 1, Sentinel 2, GEDI LiDAR, TanDEM-X and Landsat 5-8 image properties.
 - Driver of multiple ecosystem properties and processes in mangrove
- Postdoctoral Fellow** 2/2019–12/2021
College of Geography and Environmental Science, Henan University, Kaifeng, Henan, China
- Co-benefit of protecting mangrove for biodiversity (taxonomic and plant trait diversity) and ecosystem carbon stocks using structural equation modeling
 - Modeling spatial and temporal pattern of functional traits diversity in the Sundarbans Mangrove Forest using Landsat 5-8 image properties.
- Assistant Research Staff** 11/2018–01/2019
Division of Forest and Biomaterials Science, Kyoto University, Japan
- Photogrammetry for forest canopy mapping using aerial photo and WorldView 2 stereo imagery.
- NASA Visiting Fellow** 7/2016–9/2016
NASA Goddard Space Flight Centre, Greenbelt, MD, USA
- Mapping forest canopy height in the Sundarbans
 - 3-D vegetation classification (WorldView2 and TanDEM-X) in the Sundarbans
- Junior Professional** 2/2014–8/2015
Remote Sensing Division, Center for Environmental and Geographic Information Services, Bangladesh
- Land use classification using multisource satellite data in Bangladesh.
 - Environmental Impact Assessment on forest ecosystem of different development projects
 - Leading field inventory in the Sundarbans to monitor forest health using permanent sample plots' data.
 - Proposal and report writing
- Research Assistant** 1/2013–1/2014
Department of Geography, Indiana University, Bloomington, USA.
- Collecting plant traits (foliar and stem) major species in the Sundarbans mangrove forest
 - Leading field carbon inventory in the deforestation Chakaria Sundarbans Bangladesh.
 - Farmer and public opinion on restoration of the Chakaria Sundarbans through aqua-silviculture system.
 - Data analysis and reporting
- Field Assistant** 8/2011–12/2012
Forestry and Wood Technology Discipline, Khulna University, Khulna, Bangladesh
- Surveying people's perception on and choice of plant species for agroforestry promotion as well as their socioeconomic and demographic status
 - Promoting Agro-aqua-silviculture through dike plantation in the coastal two districts of Bangladesh.
 - Periodic inventory on plant survival and growth for monitoring and reporting.
 - Assisting MS students' research works.
- Research Assistant** 6/2010–7/2011
Forestry and Wood Technology Discipline, Khulna University, Khulna, Bangladesh
- Guiding field inventory team in Sundarbans for assessing biodiversity and stand structure profiling.
 - Collecting and analyzing data and reporting
- Carbon Inventory Analyst** 12/2009–5/2010
United States Agency for International Development and Bangladesh Forest Department, Dhaka, Bangladesh
- Collecting data **on forest carbon pools in the Sundarbans and tropical forests** of Bangladesh.
 - Collecting data on land use and socioeconomic factors in the tropical forests of Bangladesh.
 - Analyzing data and assisting with report writing.
- Teaching and instruction experience**
- Guest Lecture-** Forest biodiversity and ecosystem functioning. School of Biological Science, The University of Hong Kong, Hong Kong SAR, China, 2022.
- Teaching Assistant-**Assisting in modelling and mapping mangrove carbon in Myanmar using Sentinel 1 & 2 satellite imagery, Division of Forest and Biomaterials Science, Kyoto University 04/2018-09/2018
- Teaching Assistant-**Assessing Forest cover change in Indonesian mangrove using Landsat and Sentinel 1 & 2 satellite imagery, Division of Forest and Biomaterials Science, Kyoto University, 04/2017-09/2017
- Trainer-** Training on Intermediate Remote Sensing, Geographic Information System, Global Positioning System to Bangladesh Forest Department. Organize by US Forest Service International Program and Center for Geographic Information Services, Bangladesh. March- 2014

Trainer- SAARC Training Workshop on **Measurement and Estimation of Carbon Stocks in Mangrove Forests of South Asia. Provide training** to South Asian Countries' Forest Department's high officials on Measurement and Estimation of each carbon pools in Mangrove Forest. South Asian Association of Regional Cooperation (SAARC) Forestry Centre and Bangladesh Forest Department. November- 2011

Publications

[Google Scholar Citations](#) (03/06/2026)

	All	Since 2021
Citations	1483	1194
h-index	14	11
i10-index	19	14

1. Cao, M., Mohammad, P., **Rahman, M. M.**, & Weng, Q. (2026). Differential impacts of soil hydrothermal properties on root and leaf phenology in cropland. *International Journal of Applied Earth Observation and Geoinformation*, 149, 105282. <https://doi.org/10.1016/j.jag.2026.105282> IF (2024): ~7.6–8.6; JCR: Remote Sensing Q1, Computers in Earth Sciences Q1, Earth-Surface Processes Q1, Global and Planetary Change Q1, Environmental Sciences Q1.
2. **Rahman, M.M.**, Zimmer, M., Rahman, S.M., Liang, J., Khan, N.I., Donato, D., Weng, Q. (2026). Functional composition and structural diversity enhance mangrove forest resilience in the Sundarbans. *Communications Earth & Environment*. <https://doi.org/10.1038/s43247-026-03305-5>. IF (2024): 8.9; JCR: Environmental Sciences Q1, Geosciences Multidisciplinary Q1.
3. Ahmed, S., Sarker, S.K., Kamruzzaman, M. (including **Rahman, M.M.**) et al. (2025). Soil nutrients and leaf area index interact with species and structural diversity to buffer mangrove productivity against salinity. *Soil Ecology Letter*. 7, 250299. IF (2024): 4.4; JCR: Ecology Q1, Soil Science Q1.
4. Wang, J., Li, Y., **Rahman, M. M.**, Wang, W., Wu, J., Chu, C. (2024). Characterizing phenological diversity and associated drivers in a subtropical evergreen forest using CubeSats observations. *New Phytologist*. DOI: 10.1111/nph.19850. IF (2024): 8.1; JCR: Plant Sciences|Q1.
5. **Rahman, M. M.**, Zimmer, M., Donato, D., Ahmed, I., Xu, M., & Wu, J. (2024). Functional composition outweighs taxonomic and functional diversity in maintaining ecosystem properties and processes of mangrove forests. *Global Change Biology*, 30, e17152. IF (2024): 12.1; JCR: Environmental Sciences|Q1.
6. **Rahman, M. M.**, Zimmer, M., Ahmed, I., Donato, D., Kanzaki, M.; Xu, M. (2021). Co-benefits of protecting mangroves for biodiversity conservation and carbon storage. *Nature Communications*, 12, 3875. IF (2024): 15.7; JCR: Multidisciplinary Sciences|Q1.
7. **Rahman, M. M.**, Kundu, G. K., Ahmed, H., Kabir, M. E., and Xu, M. (2021). Opposing ecological strategies together promote biomass carbon storage in Homegardens Agroforestry of Southern Bangladesh. *Forests*, 12(12), 1669. IF (2024): 2.8; JCR: Forestry|Q1|21/89
8. **Rahman, M. M.**, Kundu, G. K., Ahmed, H., Kabir, M. E., and Xu, M. (2021). Assessing tree coverage and the direct and mediation effect of tree diversity on carbon storage through stand structure in Homegardens of Southwestern Bangladesh. *Forests*, 12(12), 1661. IF (2024): 2.8; JCR: Forestry|Q1|21/89
9. Zhang, X., Zeraatpisheh, M., **Rahman, M. M.**, Wang, S., Xu, M. (2021). Texture Is Important in Improving the Accuracy of Mapping Photovoltaic Power Plants: A Case Study of Ningxia Autonomous Region, China. *Remote Sensing*, 13(19), 3909. IF (2024): 4.1; JCR: Remote Sensing|Q1|13/62
10. **Rahman, M. M.**, Zhang, X., Ahmed, I., Iqbal, Z., Zeraatpisheh, M., Kanzaki, M., Xu, M. (2020). Remote Sensing-Based Mapping of Senescent Leaf C: N Ratio in the Sundarbans Reserved Forest Using Machine Learning Techniques. *Remote Sensing*, 12, 1375. IF (2024): 4.1; JCR: Remote Sensing|Q1|13/62
11. **Rahman, M. M.**, Lagomasino, D., Lee, S. K., Fatoyinbo, T. E., Ahmed, I., and Kanzaki, M. (2019). Improved assessment of mangrove forests in Sundarbans East Wildlife Sanctuary using WorldView 2 and TanDEM-X high resolution imagery. *Remote Sensing in Ecology and Conservation*, 5(2), 136–149. IF (2024): 4.3; JCR: Remote Sensing Q1, Ecology Q1.
12. Sanderman, J., and 25 coauthors (including **Rahman, M. M.**) (2018). A global map of mangrove forest soil carbon at 30 m spatial resolution. *Environmental Research Letters*, 13, 055002. IF (2024): 5.7; JCR: Meteorology & Atmospheric Sciences|Q1.
13. Kamruzzaman, M., Ahmed, S., Paul, S., **Rahman, M. M.**, Osawa, A. (2018). Stand structure and carbon storage in the oligohaline zone of the Sundarbans mangrove forest, *Bangladesh. Forest Science and Technology*, 14,

23–28. IF (2024): 2.2; JCR: Forestry|Q2.

14. Rahman, M.M., **Rahman, M. M.**, Rahman, M., 2018. Environmental quality evaluation in Dhaka city corporation (DCC)-using satellite imagery. *Urban Design and Planning*. DOI: 10.1680/jurdp.17.00032. (Non-SCI)
15. **Rahman, M.M.**, Kabir, M.E., Ahmed, I., (2017). Protected Areas for Climate Change Mitigation and Livelihood Option: A Case Study of the Bangladesh Sundarbans Mangrove Forest, in: DasGupta, R., Shaw, R. (Eds.), Participatory Mangrove Management in a Changing Climate. **Springer Japan**, Tokyo, pp. 119-136. (Book Chapter)
16. **Rahman, M. M.**, Khan, M. N.I. Hoque, A.K. F. and Ahmed, I. (2015). Carbon stock in the Sundarbans mangrove forest: Spatial variations in vegetation types and salinity zones. *Wetlands Ecology and Management*; 23:269–283. IF (2024): 1.6; JCR: Water Resources|Q3.
17. **Rahman, M. M.**, Kabir, M. E., Akon, A.S.M.J.U., and Ando, K. (2015). High carbon stocks in roadside plantations under participatory management in Bangladesh. *Global Ecology and Conservation*, 3, 411-423. IF (2024): 3.8; JCR: Ecology|Q1.
18. **Rahman, M.M.**, Das, K. A., Asaduzzaman, M., Biswas, S.K. and Hannan, M. O. (2014). Physical and Mechanical Properties of Raj Koro (Albizia Richardiana) Plywood. *African Journal of Wood Science and Forestry*, 2 (1): 098-103. (Non-SCI)
19. Shanu, S. A., Das, K. A., **Rahman, M.M.**, and Ashaduzzaman, M. (2015) Effect of CCB preservative treatment on physical and mechanical properties of raj koro (Albizia richardiana) wood. *Bangladesh Journal of Scientific and Industrial Research* 50(3), 77-86. (Non-SCI)
20. Alam J., Das, A. K., **Rahman, M. M.**, and Islam, A., (2015). Effect of Waterlogged Condition on Wood Properties of Acacia nilotica (L) Debile Tree. *Bangladesh Journal of Scientific and Industrial Research*, 50(2), 71-76. (Non-SCI)
21. Ghosh, R. K., **Rahman, M. M.**, Das, A. K., Rana, R., and Shams, M. I., (2015) Introducing Areca catechu as a raw material of cement-bonded board through determining the properties of Areca catechu cement-bonded board. *Journal of the Indian Academy of Wood Science*, 12 (2), 99-103. (ESCI; IF (2024): 1.2)
22. Rahman, K., Asaduzzaman, M., **Rahman, M.M.**, Das, A. K., and Biswas, S.K. (2014). Physical and Mechanical Properties of Ghora neem (Melia azedarach) Plywood. *Bangladesh Journal of Scientific and Industrial Research*, 49 (1), 47-52. (Non-SCI)
23. Zaman, M. S. Das, A. K., Shams, M. I., Rana, R., **Rahman, M.M.**, and Biswas, S.K. (2013). Physical and mechanical properties of Agriculture plastic composite made from jute (corchorus olitorius L.) and dhaincha (sesbania cannabina retz.) *International Journal of Wood Science Technology and Forestry*, 1(1):001-008. (Non-SCI)

Manuscript under development

24. **Rahman, M.M.**, Majid Nazeer, Man Sing Wong. Remnant mangroves of Chakaria Sundarbans offer a blueprint for aqua-silviculture. *In Preparation* (under coauthor review, A letter for Science)
25. **Rahman, M.M.**, Majid Nazeer, Man Sing Wong. Tropical forest carbon stability declines where compound climate extremes limit productivity and diversity. *In Preparation*
26. **Rahman, M.M.**, Ahmed, I., Donato, D., Weng, Q. Agroforestry as a nature-based climate solution in Indo-Gangetic Plain. *In preparation*.

Selected oral presentations.

- a. **Rahman, M.M.** Rahman, M.M. (2020). Predictability of Landsat TM 5 for leaf carbon to nitrogen ratio in Sundarbans Mangrove Forest: an application of Machine learning regression. ECOSUMMIT2020, building a sustainable and desirable future: Adapting to a changing land and seascape; Queensland, Australia. Postponed to 21-25/06/2022 (online)
- b. **Rahman, M.M.** (2017) Carbon stocks in relation to vegetation type, tree diversity and tree height class in Sundarbans: an application of high-resolution imagery. **06/04/2017, U.S. Agency for International Development (USAID) Office, Dhaka-1212, Bangladesh.**
- c. **Rahman, M.M.** (2017) Carbon stocks in relation to vegetation type, tree diversity and tree height class in Sundarbans: an application of high-resolution imagery. **04/04/2017, Department of Forest, Agargaon, Dhaka-1207, Bangladesh.**
- d. **Rahman, M.M.**, 2016. Carbon stocks in relation to vegetation type, tree diversity and tree height class in Sundarbans: an application of high-resolution imagery. **NASA Goddard Space Flight Centre, 8800 Greenbelt, MD, USA. 22/09/2016**

- e. **Rahman, M.M.** (2016). Carbon stocks in relation to vegetation type, tree diversity and tree height class in Sundarbans: an application of high-resolution imagery. **International program Office, US Forest Service, One Thomas Circle, 3rd floor conference room, Washington DC, USA. 12/09/2016**
- f. Rahman, M.M. (2016) **Biomass carbon stocks** in protected areas in Chittagong Hills, Bangladesh. The 127th Annual Meeting of the Japanese Forest Society (127th Annual JFS Meeting) College of Bioresource Sciences, Nihon University, Kanagawa, Japan. 27-30 March 2016

Conference poster

- a. **Rahman, M.M.**, Kanzaki, M and Ahmed, I. (2016) Ecosystem carbon stock and stand structure across the intertidal zone in Sundarbans Reserved Forest, Bangladesh. July 18 - 22, 2016, Mangrove and Macrobenthos Meeting (MMM4), Flager College, St. Augustine, FL, USA
- b. Kabir, M. E., and **Rahman, M. M.** (2013). Can roadside plantation be targeted for increased carbon storage in Bangladesh? International Workshop on Initiative in Science, Education, Research and Capacity Building, 14-15/9/2013, Dhaka, Bangladesh.

Technical report

- a. Kabir, M. E., and **Rahman, M. M.** (2013). Stand structure and tree biomass carbon stocks in Noapara-Foltita roadside plantation of Dhaka-Khulna Highway, Bangladesh. Research Cell, Khulna University, Khulna-9208, Bangladesh.

Thesis

- a. **Rahman, M. M.** (2019). Exploring vegetation type, diversity, and carbon stocks in Sundarbans Reserved Forest using high resolution image and inventory data. Doctor of Philosophy thesis submitted to Graduate School of Agriculture, Kyoto University, Kyoto 606-8502, JAPAN, Main Supervisor: Dr. Mamoru Kanzaki
- b. **Rahman, M. M.** (2012). Relationship between carbon storage, vegetation types and salinity in the Sundarbans. M.Sc. thesis submitted to Forestry and Wood Technology Discipline of the Khulna University, Bangladesh. Main Supervisor: A. K. Fazlul Hoque
- c. **Rahman, M. M.** (2009). Manufacture of Raj Koroi (*Albizia richardiana*) Plywood: A Comparative Study on Physical and Mechanical Properties with Simul (*Bombax ceiba*) plywood. Undergraduate thesis submitted to Forestry and Wood Technology Discipline of the Khulna University, Bangladesh. Main Supervisor: Obadullah Hannan

Student co-supervised/Assisted

13+ Students- Forest Carbon, stand structure mapping using LiDAR, biodiversity, and forest cover and carbon modeling in agroforest and mangrove (2013-2026)

Postdoctoral Researchers (Assisting)

1. Dr. El Hachimi Chouaib (2025–ongoing, The Hong Kong Polytechnic University)
 - Exploring mechanisms of crop water use and its management in continental Africa.
 - Investigating process-based drivers of urban extreme heat waves.
 - Studying agroforestry dynamics in the Indo-Gangetic Plain and developing tree foundation models.
 - Assisting in ecological theory and mechanisms.

PhD student (Assisting)

2. Hamza Muktar (2025–ongoing, The Hong Kong Polytechnic University, Hong Kong SAR, China)
 - Characterization of forest stand dynamics through photometric monitoring and diversity assessment.
 - Assisting in forest ecology and ecological theory.
3. Mengying Cao (2025–ongoing, The Hong Kong Polytechnic University, Hong Kong SAR, China)
 - Differential impacts of soil hydrothermal properties on root and leaf phenology in cropland.
 - Assisting in forest ecology, ecological theory, structural equation modeling, data visualization, and manuscript review.
4. Ye Longjie (2024–ongoing, The Hong Kong Polytechnic University, Hong Kong SAR, China)
 - Modeling mangrove biodiversity and carbon storage using terrestrial laser scanning and UAV LiDAR in Hong Kong and Mainland China.
 - Assisting in field ecology, aerial surveys, and methodology for mangrove carbon assessment.

Master student

5. Maw Awe: Assisting in modeling mangrove carbon in Myanmar using Sentinel-1 & Sentinel-2 satellite imagery (Division of Forest and Biomaterials Science, Kyoto University).

6. Reza Rangkuti (2017–2018, Kyoto University)
 - Evaluation of planting success rates (field and remote sensing) and stakeholder participation in mangrove restoration projects in Pemalang, Central Java.
7. Md. Shahariar Jaman (2014–2015, Sher-e-Bangla Agricultural University, Bangladesh)
 - Quantification of carbon stock and tree diversity in homegardens of Rangpur District, Bangladesh.
8. Md. Shariful Islam (2013–2015, Sher-e-Bangla Agricultural University, Bangladesh)
 - Estimation of biomass carbon stock at three plantation sites on the university campus.
9. Gouranga Kundu (2014–2015, Khulna University, Bangladesh)
 - Species composition and aboveground tree biomass carbon in homegardens of Dumuria Upazila, Khulna.
10. Heera Hasan (2014–2015, Khulna University, Bangladesh)
 - Ecosystem carbon storage and homegarden characterization in Dumuria Upazila, Khulna.

Bachelor student

11. Shayla Haque Chadni (2017–2018, Khulna University, Bangladesh)
 - Carbon sequestration and its drivers in roadside plantations of Khulna and Bagerhat Districts.
12. Abdullah Al Imran (2017–2018, Khulna University, Bangladesh)
 - Dynamics of carbon stocking in roadside plantations under participatory management in southwestern Bangladesh.
13. Gouranga Kundu (2012–2013, Khulna University, Bangladesh)
 - Stand structure and aboveground carbon storage along the Khulna City Bypass Road.
14. Heera Khatun (2012–2013, Khulna University, Bangladesh)
 - Carbon storage in relation to woody species diversity in homegardens of Dumuria Upazila, Khulna.

Training and workshops/conference or symposium (participation)

- a. International Conference on Nature-Based Solutions in Urban Infrastructure. Organized by Department of Civil and Environmental Engineering and Department of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University, Hong Kong SAR, China. April 25-26, 2024. (Participated)
- b. FlightPro **Small Unmanned Aircraft (SUA) Advanced Rating** Course, Mong KoK and Practical Training at the Hong Kong Model Engineering Club, the International Model Aviation Centre (IMAC) in Hong Kong, Hong Kong China. March 21-30, 2024, Organized by FlightPro, Hong Kong.
- c. The Symposium on ‘Cross-boundary cooperation for biodiversity conservation in Asia under global change’, Henan University, Kaifeng City, Henan Province, China, July 29 – 31, 2019. (Participated)
- d. Academic Symposium on **Hyperspectral** Measurement Technology and Applications, 2019: Land Surface Spectroscopy, Zhangzhou International Hotel, Zhengzhou, Henan, China. Henan Agricultural University, Zhengzhou, Henan, China. May 23, 2019
- e. **Google Earth Engine** Workshop Kyoto in 2017 on how to collect, analyze, and visualize satellite data by using Earth Engine through a hands-on technical workshop. Kyoto University Kyoto 606-850; Jul 18, 2017
- f. Workshop on **LiDAR Data Processing using LAStools** at Knowledge Capital Salon, Grand Front Osaka, Georepublic UG, Georepublic Japan Ltd., Osaka, Japan. Nov 13, 2015
- g. Workshop on **LiDAR Data Processing using LAStools (Forestry application)**. Organized by Institute of Industrial Science, University of Tokyo, Japan. Nov 11, 2015
- h. 2nd International Workshop of **LiDAR tools for Forest Application** at Tojogaoka Hall, Matsudo campus, Chiba University. Organized by Chiba University, Japan. Nov 10, 2015
- i. **Radar** Course: Satellite for crops. Organized by Center for Environmental and Geographic Information Services and SarVision, Netherland. Jun 14-15, 2014
- j. **National Forest Inventory Information Needs**, Workshop Bangladesh, SilvaCarbon program. March 3-4, 2015
- k. **Silva Carbon Work Planning Workshop**, Bangladesh Forest Department, Dhaka. FAO, Bangladesh. Jul 22-23, 2014
- l. Consultation Workshop on **Natural Resources Governance: An Interaction among Policy makers, Managers and Resources users** at Korobi Conference Hall, Bana Bhaban, Bangladesh Forest Department, Agargaon, Dhaka. IUCN Bangladesh. March 19, 2012
- m. Sharing **forest carbon inventory field experiences** and certification on forest carbon analysis and Report Writing at Korobi Conference Hall, Bana Bhaban, Bangladesh Forest Department, Agargaon, Dhaka. Aug 19, 2010

Awards

Research Grant Council Postdoctoral Fellowship Scheme 2022/2023, Distinguished Postdoctoral Fellowship of Hong Kong SAR, China. Highly competitive 50 applicants granted out of 96 applications. It is a three-step approach: first select by the department, then by the University and finally the Hong Research Grants Committee based on the reports from three external reviews.	2022
College of Geography and Environmental Science Performance Award	2021
Visiting Fellow, NASA SilvaCarbon Bangladesh, United States Forest Services International Program; <i>Rank 1 out of 400 applicants in Bangladesh.</i>	2016
Travelling award for an international mangrove conference in Florida USA; Kyoto University, Japan	2016
Monbukagakusho (MEXT) Scholarship (PhD) Kyoto University, Japan <i>Highly competitive prestigious PhD scholarship offers by Japan</i>	2015

Research grants and projects

Exploring co-benefits of global protected mangroves for biodiversity conservation, ecosystem multifunctionality, and climate change mitigation. Research Grant Council of Hong Kong, of Hong Kong SAR, China. Amount: \$155,417.94, total three years for salary and conference participation.	2022-2025
Co-benefits of protecting mangroves for conserving biodiversity and storing carbon: a regional study. PI, Henan Provincial Government, China; Amount: \$12245.52	2021-2022
Canopy height and carbon stocks assessment in Bangladesh. Co-PI, The German Aerospace Centre, Germany. (This project is hosted by NASA Goddard Space Flight Center)	2017-2019
Environmental Monitoring of Bangladesh India Maitree Super Thermal Power Plant at Rampal, Bagerhat. Team Leader, Sundarbans Forest Health monitoring section. (This project is hosted by Center for Environmental and Geographic Information Services)	2014-2015
Environmental Impact Assessment of Proposed LPG Bottling Plant and Condensate Fractionation Plants of Energypac Power Generation Company Ltd. in Mongla, Bagerhat, as Environmental. Team Leader, Sundarbans Forest Health monitoring section. (This project is hosted by Center for Environmental and Geographic Information Services)	2014-2015
Estimation of tree carbon stocks and documentation of tree species of agroforestry importance in Sher-e Bangla Agricultural University Campus. Co-PI, University Grant Commission, Bangladesh; Amount: \$1200	2013-2014
Stand structure and tree biomass carbon stocks in Noapara-Foltita roadside plantation of Khulna-Maowa Highway, Bangladesh. Khulna University Research Cell; Amount: \$600	2012-2013

Related Professional Skills

Category	Skills & Expertise
Forest Carbon Inventory	Forest and soil carbon measurement protocols; use of GPS, DGPS, range finders, and standard carbon inventory equipment; biomass and carbon stock estimation in mangrove and tropical forests
Ecological Metrics	Species diversity, functional traits, and community-level functional diversity analysis using R packages vegan, FD, and related ecological toolkits
Drone Survey / Flight Operations	Registered Drone Pilot, Hong Kong Department of Small Unmanned Aircraft; remote pilot experience with UAV-based LiDAR, hyperspectral, and multispectral surveys for forest structure and canopy trait mapping
Terrestrial LiDAR Survey	Hands-on experience with Terrestrial Laser Scanner (TLS) surveys; point-cloud processing for mangrove growing stock, stand structure, biomass, and biodiversity assessment
Modeling & Visualization	Machine learning and GEOAI modeling using scikit-learn, XGBoost, TensorFlow; Structural Equation Modeling (SEM, SEM-deep); geospatial workflows using VS Code

Category	Skills & Expertise
	and cursor agent aided coding, Google Earth Engine, geemap, and Python notebooks; spatial modeling with rasterio, geopandas, xarray, matplotlib, plotly
Geographic Information Systems (GIS)	Proficient in ArcGIS, QGIS, and geospatial processing in R (gdal) and Python; map production, spatial analysis, and geostatistical workflows
Remote Sensing Software	Advanced use of Google Earth Engine, SNAP, ENVI, R, and Python for optical, radar, and LiDAR data processing; multi-sensor integration for forest cover, phenology, carbon, and ecosystem service mapping

Academic service

Topical Advisory panel	<i>Remote Sensing</i> (08/2021-Ongoing)
Topic Editor	<i>Remote Sensing</i> (01/2021-07/2021)
Reviewer	<i>Journal of Applied Ecology, Regional Environmental Change, Remote Sensing, Remote Sensing in Ecology and Conservation, Carbon Management, Forests, Ecosystem Health and Sustainability, Wetland Ecology and Management, Journal of Sustainable Forestry, Small Scale Forestry</i>

Professional society

Member	The Japanese Forest Society (2016)
Member	International Biogeography Society (2015-2016)

Languages

English (Fluent), Bengali (Native), Chinese (Very Basic), Hindi (Basic communication), Japanese (Basic)

References contact information

Dr. Mamoru Kanzaki
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