

# Professor Dr. Md Nurul Amin

Department of Environmental Science  
Faculty of Environmental Science and Disaster Management  
Patuakhali Science and Technology University, Patuakhali -8602, Bangladesh  
Office: Phone: +88 04427-56014 Ext: 288, Mobile: +8801741603001  
Date of Birth: July 1, 1982, Gender: Male  
Email: [namines@pstu.ac.bd](mailto:namines@pstu.ac.bd); [namines@gmail.com](mailto:namines@gmail.com);  
[Google Scholar](#), [Researchgate](#), [Orcid](#), [LinkedIn](#), [publons](#), [Institutional](#)

I have been working as a professor of Environmental Science at Patuakhali Science and Technology University, Bangladesh. My research expertise includes social-ecological systems, soil carbon management, and climate change impacts and adaptation. The methodological expertise includes social-ecological systems theories and approaches, network analysis, household and farm survey, quantitative and qualitative data analysis, participatory modelling, stakeholders' engagement, and systematic review.

## **Administrative Experiences:**

- Convenor, Dean council, Patuakhali Sci. and Tech. University (PSTU)
- Chairman, Department of Environmental Science, PSTU – 5 years
- Dean, Faculty of Environmental Science and Disaster Management, PSTU – 2 years
- Assistant Hall Provost, Keramot Ali Hall, PSTU – 2 Years

## **Education**

<b>2018 to 2022</b>	<b>PhD</b> Project title: "Understanding the role of social-ecological system framework for examining Australian farmers' capacity to manage soil carbon" Ecosystem management (Agronomy and Soil Science) School of Environmental and Rural Science University of New England (UNE) Armidale NSW 2351, Australia
<b>Affiliated organizations</b>	Southern New England Land Care, Armidale, NSW NSW Northern Tableland Local Land Service
<b>PhD Funding</b>	Recipient of the UNE IPRA Scholarship, and School of Environmental and Rural Science research fund, UNE
<b>Achievements</b>	<ul style="list-style-type: none"><li>➤ Developed the social-ecological framework of soil carbon management for agricultural systems of Australia and showed the need of it internationally. This framework has been published in a very high impact Q1 journal (IF 10.753) "<a href="#">Science of the Total Environment</a>" and awarded the J Doyle Memorial Award from UNE for its immediate practical application under Australian condition.</li><li>➤ Attained greater competencies in performing statistical analysis using diversified program (e.g. R studio, SPSS), systems dynamic modelling (e.g. participatory modelling, network modelling) and writing reports, manuscripts and publishing in renowned agricultural scientific journals</li><li>➤ Revealed the SES relationships for soil carbon management in the grazing regimes of Australia to enhanced soil carbon stock at the farm level.</li><li>➤ The Information/Activities of the research project was advertised in the <a href="#">Southern New England Land Care</a>, NSW Northern Tableland Local Land Services Newsletters (Ag Update June 2019, August 2019), Newspaper-<a href="#">Armidale Express</a>, and experimental findings are accepted to be presented in several international conferences.</li></ul>

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<b>2015</b>	Master of Science in Environmental Science Specialization: Environmental System Analysis, Climate impact assessment and management of agricultural system, agricultural nutrient model (GNEWS) Wageningen University and Research, the Netherlands
<b>Funding</b>	Netherland Fellowship Program (NFP) Scholarship
<b>Achievements</b>	➤ Achieved distinction in thesis (8.0 out of 10). Overall grade 7.5 out of 10.0. A part of my thesis has been published in a high impact Q1 journal (IF 4.049), <a href="#">Marine Pollution Bulletin</a>
<b>2008</b>	MSc. in Environmental Science, Khulna University, Bangladesh Major: Agricultural sustainability: Animal waste management from slaughter house
<b>Achievements</b>	Obtained CGPA 3.76 out of 4.00 ( <b>With distinctions merit position second</b> ) Published article in peer-reviewed journal on Agricultural sustainability
<b>2004</b>	BSC. in Environmental Science (4 years) Khulna University, Khulna, Bangladesh
<b>Achievements</b>	Obtained CGPA 3.78 out of 4.00 ( <b>With distinctions merit position second</b> ) Published article in peer-reviewed journals from part of BSc. thesis

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#### **Consultancy Experiences:**

Year	Org.	Title
2016	Uttaran	Context and prospect of understanding the framework for ecosystem services for climate change adaptation in the coastal area of Bangladesh
2022-2023	CGIAR IWMI	Understanding the inclusive social-ecological governance for climate vulnerable coastal food system
2023-2024	BRAC	Building Climate Resilient Migrant Friendly Town through Locally Led Adaptation (CRMFT)

#### **Scholarships and Grants**

2021	Keith and Dorothy Macky Postgraduate Travelling Scholarship, University of New England. Grant Amount Up to \$5000
2020	J Doyle Memorial Award from the University of New England, Australia. Grant amount AUD \$1000
2020	Keith & Dorothy Mackay Travelling Scholarship from the University of New England, Australia. Grant amount AUD \$3000
2018	University of New England International Postgraduate Research Award (UNE IPRA). Scholarship covers full tuition fees, stipend AUD \$26,682 p.a. and student health insurance premiums
2017	Netherlands Fellowship Programme (NFP), COC NUMBER 09098104, Tuition fee for the short course, Full board and lodging at hotel 'het Hof van Wageningen', International travel, Airport tax duties, AON health insurance (arranged by CDI), Study allowance, Compensation in costs involved in obtaining a VISA
2013	Netherlands Fellowship Programme (NFP), grant reference number (NFP-MA.12/13157), Estimated funding €47,061, subsistence allowance €970 per

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month and worldwide health insurance cover, one time thesis research grant € 850.

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### **Conference presenter, session organizer and international Conference Organizer**

2020	International Symposium on climate-resilient Agri-environmental systems, Dublin, Ireland ( <a href="http://www.iscraes2020.org/">http://www.iscraes2020.org/</a> ) ** Belated and decided virtual because of COVID-19
2021	Seventeen International Conference on Environmental, Cultural, Economic & Social Sustainability: Accelerating The Transition to Sustainability: Policy Solution to Climate Emergency, Amsterdam, the Netherlands ( <a href="https://onsustainability.com/2021-conference">https://onsustainability.com/2021-conference</a> )
2021	Organized a session on Analysis and Modelling Social-Ecological Systems for Sustainable Development: Challenges and Opportunities in 6th <a href="#">International EcoSummit Congress: EcoSummit 2021.Building a sustainable and desirable future</a>
2024	Organized “Global Climate Talk 2024” – an international seminar on 11-12 November, 2024 at Patuakhali Science and Technology Campus, Bangladesh

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### **Reviewed Conference Paper/Proceedings Paper**

- Salequzzaman, M. Iqbal, A. and **Amin, M. N.** (2005) Contexts and Prospects of Renewable Energy Resources in KCC Area: A Case Study of Waste to Electricity from Existing Solid Waste, In: Proceedings of National Workshop for Awareness & Motivation under the ADB PREGA Project, 03- 04 July 2005, Bangladesh Center for Advanced Studies (BCAS), Khulna, Bangladesh.  
<http://www.adb.org/Documents/Events/2005/Awareness-Motivation-Phase2/Khulna/salequzzaman.pdf>
- **Amin, M.N.** Salequzzaman, M. and Alam, K. K. (2006) Ecological economics as a part of Environmental Education for the Option of Sustainable Management in Bangladesh- Subsidies and Taxation Perspectives. In, the national seminar on the status of Environment and Environmental Education in Bangladesh held on 16 August, 2006, DAE Auditorium, Laboratory Building, Khamarbari, Dhaka, Bangladesh
- **Amin, M.N.** and Salequzzaman, M. (2006) Identification of Invasive Species and the causes of invasion on South-West Coastal Region of Bangladesh: A case Study of the Mongla Port area of Bagerhat district, Bangladesh. In, the national seminar on Role of Environmental Education( EE) for the sustainable development in Bangladesh held on 2<sup>nd</sup> march, 2006, at Environmental Science Discipline of Khulna University, Khulna, Bangladesh
- Salequzzaman, M.; Uddin, M.N. and **Amin, M.N.** (2006) Environmental aspect of industrialization in Bangladesh: A concept paper. a paper, presented in the Annual General Meeting of the BISIC, Jessore Branch on 28 February 2006.
- **Amin, M. N.**; Salequzzaman, M.; Mondol, P.; Kasem, M. A. and Islam, S.M.T. (2008) An appropriate waste management option for slaughter house waste in Khulna City Corporation of Bangladesh. In, the national seminar on solid waste management held on 9-10 February, 2008, at Civil Engineering department of KUET, Khulna, Bangladesh
- Salequzzaman, M.; Islam, S.M.T.; Kasem, M. A. and **Amin, M. N.** (2008) A policy framework for solid waste management of south waste coastal region of Bangladesh. In, the national seminar on solid waste management held on 9-10 February, 2008, at Civil Engineering department of KUET, Khulna, Bangladesh
- Rahman, M.; **Amin, M. N.**; Haigh, R.; Amaratunga, D. and Udaya Kulatunga.(2011) People's Perception of Climate Change Vulnerability and Adaptation: Chila Union, Mongla Upazila, Bagerhat District, Bangladesh (Pg. No. 109). In, International Conference on Structural Engineering, Construction and Management held on 15-17 December, 2011, at *Earl's Regency Hotel, Kandy, Sri Lanka*
- Ahmed, P and **Amin, M. N.** (2012) Context and Challenges of climate change disaster aid in Bangladesh: Scio-economic Perspective. In, the international conference on Climate Change, Community Resilience, Disaster Interventions and Humanitarian Aid when Empowering Local Communities held on 1-3 August, 2012, at Calman Learning Center, Durham University, Durham, United Kingdom
- **Amin, M. N.**, de Bruyn, L. L., Hossain, M. S., Lawson, A. & Wilson, B. (2020). Untangling the social-ecological system of farmers' current soil carbon management in Australian Grazing lands. In, the Virtual Interactive International Symposium on Climate-Resilient Agri-Environmental Systems held on 4 to 6 November, 2020, at Dublin, Ireland

- **Amin, M. N.,** de Bruyn, L. L., Hossain, M. S., Lawson, A. & Wilson, B. (2021). Unravelling the Relationships of the Social-ecological Indicators for Soil Carbon Management in Australia In, the international conference on Seventeenth International Conference on Environmental, Cultural, Economic & Social Sustainability, held on 23-26 February, 2021, at University of Amsterdam, Amsterdam, the Netherlands
- **Amin, M. N.,** de Bruyn, L. L., Hossain, M. S., Lawson, A. & Wilson, B. (2021). Revealing the social-ecological system of farmers' current soil carbon management in Australian Grazing lands. In, the international conference on 2021 Joint Conference Soils, Investing in our future, held on June 27 to July 2, 2021, at Crains, Queensland, Australia.
- Parvez M., **Amin, M. N.,** Raihan A. (2024). Climate change adaptation strategies for coastal farmers: social-ecological governance and practice interface. In, the international conference on Global Climate Talk 2024: Navigating the Future Together, held on November 11 & 12, 2024, at Patuakhali Science and Technology University, Bangladesh.

### **Employment History**

<b>August 2020 to January 2022</b>	<b>Teacher, Staff, Trimester 2 2020, 2021 HORT 510 Advance Horticulture, Staff ID: 00691513</b> School of Environmental and Rural Science Faculty of Science, Agriculture, Business and Law University of New England (UNE) Armidale NSW 2351, Australia
	<b>Responsibilities</b> Helping in course work preparation of the unit coordinator for <b>Advanced Horticulture course of the MSc in Agriculture</b> , marking the essays and final exams.
<b>April /2020 to June 2021</b>	<b>Teacher, Staff, Trimester 1 2020 RSNR 303/RSNR403/RSNR503 Sustainable Land management Advance, Staff ID: 00691513</b> School of Environmental and Rural Science Faculty of Science, Agriculture, Business and Law University of New England (UNE) Armidale NSW 2351, Australia
	<b>Responsibilities</b> Helping in course work preparation of the unit coordinator for <b>Sustainable Land management of the MSc in Agriculture</b> , marking the essays of sustainable land degradation management and final exams.
<b>May/2017 to April/2021</b>	<b>Associate Professor</b> Department of Environmental Science Patuakhali Science and Technology University, Bangladesh From 2018 to 2021 studied PhD in Australia (on deputation)
	<b>Responsibilities</b> <ul style="list-style-type: none"> <li>• Wrote research proposal, collected funds from national and international Organizations and executed research projects.</li> <li>• Co-worked with research students on agricultural system dynamics for exploring indigenous adaptation techniques to cope with climate changed induced disasters</li> <li>• Conducted statistical analysis, prepared reports, manuscripts and published papers.</li> </ul>
<b>May/2012 to April/2017</b>	<b>Assistant Professor</b> Department of Environmental Science Patuakhali Science and Technology University, Bangladesh From 2013 to 2015 studied MSc. in Environmental Science in Netherlands (on deputation)

	<p><b>Responsibilities</b></p> <ul style="list-style-type: none"> <li>Worked a Chairman of the department for more than two years.</li> <li>Delivered undergraduate courses and practical demonstration of Fundamentals of agriculture and environmental science, Ecosystem management, Ecology and biodiversity</li> <li>Wrote research proposal, collected funds from national and international Organizations and executed research projects.</li> <li>Co-worked with research students on agricultural system dynamics for exploring indigenous adaptation techniques to cope with climate changed induced disasters</li> <li>Conducted statistical analysis, prepared reports, manuscripts and published papers.</li> </ul>
<p><b>May/2010 to April/2012</b></p>	<p><b>Lecturer</b>            Department of Environmental Science            Patuakhali Science and Technology University, Bangladesh</p> <p><b>Responsibilities</b></p> <ul style="list-style-type: none"> <li>Delivered undergraduate courses and practical demonstration of Fundamentals of agriculture and environmental science, Ecosystem management, Ecology and biodiversity</li> <li>Co-worked with research students on indigenous adaptation agriculture techniques to cope with climate changed induced disasters</li> <li>Conducted statistical analysis, prepared reports, manuscripts and published papers</li> </ul>

#### Other Qualifications

April/2018	First Aid certificate Certificate Number: 55129483533244
February/2020	First Aid (Refresher) Resuscitation
June 2017	Wetlands, Integrated Water Resource Management and Food security, Wageningen center for development innovations (CDI), Wageningen University and Research, the Netherlands

#### Professional affiliations

2016 to Present	<a href="#">Deputy Director</a> Knowledge sharing division, Innovative Research Syndicate
2016 to present	<a href="#">Assistant Editor</a> International Journal of Innovative Research
2017-2024	Commission Member - IUCN CEM Agro-ecosystems Specialist Group
2017-2024	Commission Member - IUCN CEM Ecosystem Based Adaptation and Mitigation Thematic Group 2017-2020
2020 to Present	<a href="#">Member, Global Land Program</a>
2020 to Present	Member, Soil Science Australia, Membership number: MMM182527

#### Journal Reviewer

- Science of the Total Environment (IF 10.75) Publisher: Elsevier
- International Journal of Sustainable development and world ecology (IF 2.772) Publisher: Tylor and Francis
- International journal of disaster risk reduction (IF 2.896) Publisher: Elsevier

- Environmental Science and Policy (IF 4.77): Publisher: Elsevier
- Sociological Methods and Research (IF 3.62) Publisher: SAGE
- Journal of Environmental Management (IF 8.55): Publisher: Elsevier
- Environmental Development (IF 3.77): Publisher: Elsevier
- Sustainable Development (IF 12.00): Publisher: Willy

### **Technical Skills**

I have following technical skills on application software, statistical programming and modelling techniques highly essential for **Australian applied agricultural research**

- Application Software: SPSS, Arc GIS 10.5
- Statistical programming Software: R studio
- Modelling techniques/ skills: Participatory system dynamics modelling, Network modelling
- Reference formatting program: Endnotes, Mendeley
- Qualitative analysis software/ techniques: Nvivo12, Systematic review
- General: MS Office application package

### **Teamwork**

I have worked as part of team in both international and national premises. My working institute Patuakhali Science and Technology University (PSTU) is an [Agriculture dominated university](#) and in the alliance of Agricultural University of Bangladesh. I am working as a chairman of the Department of Environmental Science, PSTU, Bangladesh. I am also the chairman of the academic and examination committee, member of the academic council of the University. As a Chairman of the department, I am very mindful of my roles, responsibilities, and other's role as well. I used to work with my colleagues together to ensure the success of the department and University. I have also worked as a team member in the international environment in a [collaborative project](#) between Salford University, United Kingdom and PSTU where I worked as a project member, participated in several team meetings at Salford University, UK, Durham University, UK and at PSTU, Bangladesh.

### **People Management and participatory modelling**

One of the research skills I have developed through my PhD in Australia is the Participatory modelling and successful network building with the graziers and cropping farmers in the Northern Tablelands areas. The basic requirement of the participatory systems dynamic modelling is to ensure participation of the stakeholders to find out real world solution of the problem through the participation of the stakeholders who are facing the problems. The next work is to find the way forward with a comprehensive participation of the full group of stakeholders (e.g. in my case of dryland agriculture, they were farmer, scientists and agricultural organization workers). During my PhD work I had to organise 4 workshops with this mixed group to find out my participatory solution model. Eventually, all of these processes gave me a tremendous skill to manage people and to find out solution models that expect to have immediate application in Australian grazing regimes AgTech systems.

### **Published Manuscript**

Joshi, D., Schulze, P., **Amin, M. N.**, Gallant, B., Aheeyar, M., Rahman & Sarker, M. R. (2024). Agri-Food System Governance in Bangladesh's Coastal Regions: Why the Socio-Ecological Systems Approach Needs to be Politicized. *International Journal of Water Governance*, 11.

Hossain, M. S., Basak, S. M., **Amin, M. N.**, Anderson, C. C., Cremin, E., & Renaud, F. G. (2023). Social-ecological systems approach for adaptation to climate change. *Sustainable Development*.

**Amin, M. N.**, Lobry de Bruyn, L., Hossain, M. S., Lawson, A., & Wilson, B. (2023). The Social-Ecological System of Farmers' Current Soil Carbon Management in Australian Grazing Lands. *Environmental Management*, 1-15.

**Amin, M. N.**, de Bruyn, L. L., Lawson, A., Wilson, B., & Hossain, M. S. (2023). Lessons learned from farmers' experience of soil carbon management practices in grazing regimes of Australia. *Agronomy for Sustainable Development*, 43(1), 5.

Hossain, M. S., Basak, S. M., **Amin, M. N.**, Anderson, C. C., Cremin, E., & Renaud, F. G. (2023). Social-ecological systems approach for adaptation to climate change. *Sustainable Development*.

Kabir, A., Roy, K., **Amin, M. N.** & Hossain, M. S. (2021) Determinants of climate change adaptation strategies in the coastal zone of Bangladesh: Implications for adaptation to climate change in developing countries. *Adaptation and Mitigation Strategies for Global Change*. <https://doi.org/10.1007/s11027-021-09968-z>

**Amin, M. N.**, Assaduzzaman, Md., Kabir, A., Snigdha, S. S. & Hossain, M. S. (2021) Lessons from indigenous climate adaptation practices: Evidences from coastal Bangladesh. *Local Environment* (In press), Taylor and Francis ID: 1937970 DOI:10.1080/13549839.2021.1937970

**Amin, M. N.**, Hossain, M. S., de Bruyn, L. L., & Wilson, B. (2020). A systematic review of soil carbon management in Australia and the need for a social-ecological systems framework. *Science of the total environment*, 719, 135182. <https://doi.org/10.1016/j.scitotenv.2019.135182>

Islam, M. A., Warwick, N., Koech, R., **Amin, M. N.**, & de Bruyn, L. L. (2020). The importance of farmers' perceptions of salinity and adaptation strategies for ensuring food security: Evidence from the coastal rice growing areas of Bangladesh. *Science of the total Environment*, 138674. <https://doi.org/10.1016/j.scitotenv.2020.138674>

Hossain, M. A., **Amin, M. N.**, Sultana, J., & Siddique, M. N. A. (2020) Climate Change Impact on Agriculture and Related Sustainable Land Management Practices in Bangladesh—A Review. *International Journal of Environment and Climate Change*, 10 (2): 54845 <https://doi.org/10.9734/ijecc/2020/v10i230181>

**Amin, M. N.**, Shil, S. C., Ghosh, R. C., & Shamsuzzoha, M. (2016). Influence of conservation tillage on carbon sequestration mechanism related to aggregation. *Journal of Environmental Science and Natural Resources*, 9(1), 23-27.

**Amin, M. N.**, Solayman, H. M., Snigdha, S. S., & Sultana, J. (2018). Climate resilient livelihood activity in the south central coastal region of Bangladesh. *Journal of Science, Technology and Environment Informatics*, 6(01), 421-430. <https://doi.org/10.18801/jstei.060118.45>

**Amin, M. N.**, Kroese, C., & Strokal, M. (2017). Human waste: An underestimated source of nutrient pollution in coastal seas of Bangladesh, India and Pakistan. *Marine Pollution Bulletin*, 118(1-2), 131-140. <https://doi.org/10.1016/j.marpolbul.2017.02.045>

**Amin, M. N.** (2009). Resource recovery and zero waste management option of slaughter house waste in Khulna City Corporation of Bangladesh. *Journal of the Bangladesh Agricultural University*, 7(2), 321-327. <https://doi.org/10.3329/jbau.v7i2.4742>

Salequzzaman, M.; M Mutahara, M.; Uddin, N. M. Banerjee, P.; **Amin, M.N.** (2006) Determination of Noise Inventory and Noise Zoning for Khulna City Corporation Bangladesh. *Ku-studies special issue (First research cell conference), Bangladesh*. pp 35-42.

**Amin, M.N.**; Ali, Yusuf and Salequzzaman, M. (2009) Identification and impact analysis of invasive species: a case study in the Mongla port area of Bagerhat district in Bangladesh. *Daffodil International University Journal of Science and Technology*. Vol 4 No.1.

Yousuf, M. A.; **Amin, M.N** and Alam, K. (2008) Ecological health risk of Buriganga River of Dhaka, Bangladesh. *Journal of Water, Energy and Environment, Nepal*. Vol 3 No. 1, pp 33-36.

**Amin, M. N.**; Rahman, M. and Akter, A. and Baten, M. A. (2011) External Cost Induced Vulnerabilities from the Impact of Climate Change: A Community Perception. *Journal of Agroforestry and Environment, Bangladesh*. vol.5. no.1

**Amin, M. N.** ; Paul, C. k.; Parvez, A. and Chowdhury, M.A.I . (2012) Context and Prospect of Water Safety Plans in Bangladesh. *Journal of Environmental Science and Natural Resources, Bangladesh*. Vol 4 No.2, pp 61-71.

Shamsuzzoha, M.; Islam, M. Z.; Khan, R. H. and **Amin, M. N.** (2012). Status of climatic variations in North Western region of Bangladesh, *Bangladesh*. Vol 6. No.1. pp 61-71.

**Amin, M. N.**; Shil, S. C.; and Hasan, M. (2016) Perceived status of cyclone shelter facilities in south central Bangladesh. *Journal of Environmental Science and Natural Resources*. Vol 6. No.1

**Amin, M. N.**; Paul, S and Gosh, R.C. (2016) Is Provisioning Services Assessment a Tool for Forest Dependency Estimation in Coastal Bangladesh? *International Journal of innovative research*. Vol 1. No. 1. pp 24-29.

## **References**

**1. Prof Lisa Lobry de Bruyn**

BSc(Hons) (1<sup>st</sup> Class) (WA), PhD (WA), GCHE (NE)

 <https://orcid.org/0000-0003-0173-2863>

Associate Professor in Soil Health & Knowledge Sharing

School of Environmental and Rural Science

University of New England

Armidale NSW 2351 Australia

Phone: 61 2 6773 3119

Email: [llobryde@une.edu.au](mailto:llobryde@une.edu.au)

**2. Prof Dr. Brian Wilson**

Deputy Associate Dean, Research

Faculty of Science, Agriculture, Business and Law

University of New England

Armidale, NSW 2351, Australia

Phone 61 267733287

Email: [bwilson7@une.edu.au](mailto:bwilson7@une.edu.au)