

Master in Resource and Environmental Management (MREM)

Introduction and Background

The environment is a dynamic system of aggregates of physical and biological conditions that affect the existence or development of life and nature. The survival and sustainability of human development depends on how this dynamic system prevails. In the recent past the environment has been modified considerably, primarily due to population growth and human dominance over nature. The scarcity of resources, accumulation of emissions, volume of wastes, danger of toxicities, threat of radiations, transmission of new pathogens and reduction of natural protection have made it clear that our future survival will be threatened if the dynamism of the environment is not managed concertedly in a congenial manner. Apathy about these problems creates impacts that do not respect political borders. Environmental problems in one geographical area can quickly affect the next region irrespective of political borders guarded by security. The processes of globalization have amplified these consequences manifold. To foresee these problems and to mitigate them in a timely fashion, there is no alternative to the full engagement of well-educated and robustly trained environmental professionals.

Bangladesh, being a small, resource-scarce country, is more vulnerable to unfavourable environmental conditions due to her geographical location, large population with a high illiteracy rate, and widespread poverty. The environmental characteristics of Bangladesh have made the country vulnerable to various types of environmental disasters. In recent years, Bangladesh has achieved several milestones in the environment sector, ranging from the incorporation of environmental concerns in sectoral policy formulation to benchmarking success at the field level. Like any other country, achieving environmentally sound development has emerged as the greatest challenge for Bangladesh. In spite of the above, the mismanagement of natural resources and the lack of understanding of environmental issues and problems still are two of the most critical areas making the development process extremely challenging in Bangladesh.

To address these issues, Bangladesh needs to have adequate knowledge, capacity and skills in the relevant areas. North South University was the first institution to introduce environmental education in the country. The Department of Environmental Studies (DES) as an academic program was established in spring 1994. Later, upon the University Grants Commission's (UGC) approval, the name of DES has been changed to the Department of Environmental Science and Management (DESM). The syllabus also has been modified to reflect the changing curricula in the field over the last decade.

To further enhance the existing capacity and skills in environment, under a project funded by the Canadian International Development Agency (CIDA), "Building Environmental Governance Capacity in Bangladesh (BEGCB)," the University of Manitoba, Canada, and the North South University of Bangladesh are introducing an academic program leading to master degree (Master in Resource and Environmental Management-MREM) in the broad area of natural resource and environmental management and governance. The aim is to strengthen institutional and human resource capacity in environmental governance to support an integrated approach that reconciles pro-poor economic growth with community-based, sustainable resource and environmental management in Bangladesh and beyond.

Objectives of the Program

The objectives of the MREM Program are to:

- build capacity in natural resource and environmental management (NREM);
- develop human capability of the academic and professional organizations in NREM;
- contribute to the domain of knowledge pertaining to NREM; and
- enhance policy implementation capability in NREM and sustainable development.

North South Partnership of the Program

NSU has signed a collaborative agreement with University of Manitoba (UM), Canada, to introduce a Masters in Resource and Environmental Management (MREM) program at NSU. This is a part of the long-standing, concerted effort on the part of NSU, under the guidance of the Vice Chancellor, Prof. Hafiz G.A. Siddiqi, to build capacity and internationalize NSU research and teaching programs.



NSU Vice Chancellor Dr. Hafiz G.A Siddiqi addressing the inaugural ceremony of the CIDA-funded project on Building Environmental Governance Capacity in Bangladesh

The interdisciplinary Masters in Resource and Environmental Management (MREM) program receives funding of \$1.6 Million (Taka 11 Crore), out of which the Canadian aid agency, CIDA, has awarded \$1 million and the partner institutions contribute the rest in cash and facilities. The funding was approved on the basis of a rigorous and stringent competition following the 2006 UM-NSU joint proposal. Dr. C. Emdad Haque, Director and Professor of the Natural Resources Institute (NRI), University of Manitoba, Canada, and Dr. Mizan R. Khan, then Chairman of the Department of Environmental Science and Management (DESM) at NSU, spearheaded the efforts on behalf of the respective partner institutions.

CIDA granted the funding as a University partnership in Cooperation and Development (UPCD) Project through the Association of Universities and Colleges of Canada (AUCC). The project is focused on building environmental and natural resource governance and management capacity in Bangladesh. The first and foremost goal is to establish an effective MREM program at NSU. The project has partnerships with the Institute of Governance Studies (IGS) at BRAC University and the Center for Natural Resources Studies (CNRS). IGS is launching an Environmental Governance Certificate Program and CNRS is developing a green micro-enterprise program under the project. These partnerships will enable students to acquire practical experience from CNRS and other NGO operations in different field locations.



H.E. Robert McDougall, High Commissioner of Canada, speaking at the launching Ceremony of MREM Program

Salient Features of the MREM Program

- A 48 credit-hour professional program to be conducted in the evening
- Fifteen credits in five (5) Foundation Courses (maximum two exemptions would be considered if students are found with adequate background in corresponding course/courses); twenty-one (21) credits for Core and nine (9) credits for elective courses. For thesis students, 6 credits in Electives would be applicable.
- Length of the program is 24 months
- The program collaborates with the Masters in Development Studies program, Economics, and other departments of NSU, as appropriate.
- The program admits twenty-five (25) students per year with different academic backgrounds, while targeting gender balance.
- The program is interdisciplinary, crosscutting social, ecological and economic issues of both theoretical and technical natures.
- Core courses reflect the main objective of the program and its principles.
- Elective courses allow students with different backgrounds to choose courses of their interest.
- The program is experiential learning-based. All students will undergo a semester-wide field Practicum. However, students who volunteer to write a thesis will get 6 credits; non-thesis student will submit a report (3 credits). One elective course will be exempted for thesis students (requiring 2 Courses instead of 3).

Background of Curriculum Development

The curriculum of this MREM program has been developed through a comprehensive and rigorous exercise involving the experts from Canada and Bangladesh and with the direct participation of the local

stakeholders. The University of Manitoba team of experts, NSU DESM Faculty members, community people engaged in resource and environmental management at the grass-roots level, government policy makers, academia, NGO leaders, representative from international organizations, leaders from industry associations, leaders from environmental and resource management activist organizations and other local Resource and Environmental Management specialists participated in a series of workshops to design the overall program and its components. The NSU and UM experts associated with the projects discussed the proposed program and its objectives with those workshop participants and took their views, opinions, and ideas with a view to make the program highly practical and real world problem-oriented. Therefore, the program essentially reflects the thoughts and ideas of a comprehensive range of environment and resource management practitioners.

Courses and Credits:

Graduation Requirements

Qualifying Grade: Minimum CGPA 3.0
Credits Requirements: 48 credits

Foundation Courses (15 Credits)

Courses	Titles	Credits
REM 501	Fundamentals of Environmental Science and Management	3
REM 502	Economics for Environmental Management	3
REM 503	Ecological Principles	3
REM 509	Quantitative Tools for Environmental Management	3
REM 512	Environmental Geography of Bangladesh	3
Total		15

Core Courses (21 Credits)

Courses	Titles	Credits
REM 601	Environment and Sustainable Development	3
REM 602	Resource and Ecological Economics	3
REM 603	Environmental Policy and Governance	3
REM 606	Environmental and Social Impact Assessment	3
REM 609	Integrated Resource Management	3
REM 612	Community Based Resource Management	3
REM 615	Research Methodology	3
Total		21

Elective Courses (9 Credits for Non-Thesis and 6 Credits for Thesis Students)

Courses	Titles	Credits
REM 618	Business and Environment	3
REM 621	Population, Poverty and Environment	3
REM 624	Biodiversity Conservation	3
REM 627	Pollution Control and Waste Management	3
REM 630	Urban Environmental Management	3
REM 635	Project Development, Monitoring and Evaluation	3
REM 642	Gender and Sustainable Development	3
REM 649	Climate Change and Disaster Management	3
REM 652	Geographic Information System	3
Total		9/6

Practicum/Thesis

Courses	Titles	Credits
REM 690	Field-based Practicum	3
REM 697	Thesis	6
Total		3/6
Grand Total		48 Credits

Eligibility requirements

- At least a Bachelor degree of four years duration from a relevant discipline, with no third-class at any stage, and with adequate work experience in resource and environmental management fields; or
- A Master Degree in any relevant discipline
- Promise for continuation of a professional career in development.
- Be between the ages of 20 and 45

Admissions

Both Bangladeshi and international candidates are considered for admission for this selective program. Applicants must demonstrate competence in biological sciences, economics, law and social sciences, and quantitative analysis. They also required to have good command in English both spoken and written. Knowledge in local and global environmental and resource management concerns and issues will further add to the strength of the applicant. Applicants must also demonstrate a commitment to the field of development and compelling evidence of professional potential in the field. Candidates having work experience in government, international development institutions, non-governmental organizations, or private businesses organizations will have a competitive edge in getting admitted into the program. Applicants are to sit for a written admission test and face an oral interview to prove their suitability for the program.

Program Prospects and Employment Opportunities

The graduates will be equipped with knowledge, skills and leadership qualities pertaining to sustainable development, especially on environmental and natural resources governance issues to serve environment and development agencies, international development bodies, donor agencies, NGOs, government organizations, research organizations, and business enterprises.

Over the years, in Bangladesh, the employment opportunity of Natural Resources and Environmental Management graduates has considerably increased. Different public sector organizations/corporations and developmental projects funded by bilateral and multilateral agencies under the ministries of Environment and Forests (Departments of Environment and Forests and development projects), Agriculture, Livestock and Fisheries, and Energy and Mineral Resources are the leading employers of environmental graduates. It was reported that very recently the Ministry of Environment and Forests initiated a move to provide preference to environmental graduate in future recruitments of the ministry.

For quite sometime, the government has been supporting private sector-led economic growth in Bangladesh. As a result, there has been a remarkable growth and development of the sector in the last few years. The private sector includes industries (for example, garments, textiles, leather, prawn, shrimp culture and processing, pharmaceuticals and chemical industries) and other service sector organizations and agencies (e.g., oil and gas exploration and distribution companies). Industrial sectors feel the need to recruit natural resources and environmental management graduates in increasing numbers to address some of the environmental problems (industrial affluent treatment and management and waste management) that are associated with the production processes of the industries. International environmental standard compliance is another aspect that is increasingly becoming an important factor for export-oriented industries to take into consideration. This particular reality in the private sector is

creating increasing employment opportunities for the NREM graduates. Besides, non-governmental organizations (NGOs), national and international, as well as environmental research and activist organizations, also offer employment opportunities to the NREM graduates.

Funding

Students are expected to fund their studies through a combination of personal resources, government, employer or other support. However, each year a good number of students will receive a Scholarship or Stipend from the CIDA funding based on academic excellence and need. Meanwhile, as the program proceeds, management will strive to secure further funding to support the meritorious students and their research.

Faculty Members and their Specialization

Dr. ATM Nurul Amin

Professor & Chairman, DESM, NSU

Ph. D in Economics

University of Manitoba, Canada

Professor Amin specializes in urban environmental management, particularly in economic and financial aspects of management of water, solid waste, wastewater, air pollution and environmentally sustainable transportation (EST). His past institutional affiliations include School of Environment, Resources and Development of Asian Institute of Technology (AIT), Bangkok, Thailand; United Nations Centre for Regional Development, Nagoya, Japan; Institute of Development Studies of University of Sussex, England; School of Urbna Studies, Wuhan University, China; Department of Development Economics, University of Agriculture, Faisalabad, Pakistan, and University of Manitoba, Canada. He has served as Consultant of ILO, UNDP, Unicef, UNESCO, ESCAP and UNEP. Recently he has concluded a work, based on global cases of EST, for UNEP on designing incentive measures for reducing emissions from private car. Prof. Amin has supervised many masters and PhD theses. He has served as PhD external examiner of universities in Canada, Bangladesh, Australia, India and Pakistan. His research on informal sector, environmental policy and urban environmental management has been widely published in international journals and books. He is a member of UNEP's Network of Institutions for Sustainable Development.

Dr. Mizan R. Khan

Professor, DESM, NSU

Ph.D. in Environmental Policy & Management

School of Public Policy, University of Maryland at College Park, USA

Prof. Khan is the immediate past Chairman of DESM (2003-2009). He worked with BISS and UNDP earlier. He specializes in environmental policy-making and capacity building, climate change negotiations & community-based adaptation. He attends climate negotiations as a member of the Bangladesh delegation since 2001. He is the Focal Point of the Nairobi Work Program of the UNFCCC representing Civil Society in Bangladesh. Dr. Khan served as Vice Chair of the LDC Expert Group under the UNFCCC during 2002-2004. As an expert, Dr. Khan has substantial contribution to the Development of Early Recovery Action Plan (from cyclone Sidr impacts) and the Bangladesh Country Proposal on Community-based Adaptation to Climate Change (for UNDP-GEF). He is the Project Director) of a 6-year CIDA-funded Partnership Project "Building Environmental Governance Capacity in Bangladesh," with the University of Manitoba, Canada. He also leads expert teams of several other studies on Adaptation to Climate Change Impacts.

Dr. Khan's recent academic works include an article on "Partnership Approach to Disaster Management in Bangladesh: A Critical Policy Assessment," published in the Springer's Natural Hazards (May 2007), "Equity Considerations in NAPA Preparation Process: The Case of Bangladesh," in Edger, Neil et al., (eds), Equity in Climate Change Regime (Boston: MIT Press, 2006), and "Crop Insurance as an Instrument of Adaptation to Climate Change" (Climate Change Cell, DoE, 2009). Prof. Khan speaks French & Russian as well.

Dr. Mohammad Ali

Associate Professor, DESM, NSU
Ph. D in Land use and Environmental Policy
University of Aberdeen, UK

Dr. Ali specializes in sustainable development of resource and environment, sustainable energy issues, land use policy, human impact on environment, ecosystem dynamics, climate change impacts on biomass growth and environmental quality assurance. Earlier he used to be with Institute Forestry and Environmental Science, University of Chittagong (IFESCU) as a faculty in different capacities. Dr. Ali has about twenty years of teaching, research and administrative experience at different institutions of Australia, Bangladesh, Canada, India, Nepal, Thailand and the UK. His research interests includes: issues of sustainable development, participatory resource and environmental management, sustainable agriculture, resource conservation, riparian resources, policy analysis, policy impacts on human attitude, multiple use forestry, rural development, sustainability indicator, toxicology, environmental health, agro-forestry, land use, remote sensing and GIS.

Dr. Md. Sirajul Islam

Assistant Professor, DESM, NSU
B.Sc. Engg , BUET
M. Engg, The National University of Singapore
Ph.D in Environmental Engineering
The University of Tokyo, Japan

Dr. Islam specializes in climate change Impact and adaptation assessment, with concentration on water resources. His other research interests include Clean Development Management (CDM), Pollution control and environmental compliances of industries, Disaster management, Environmental Impact Assessment and sustainable energy issues.

Ms. Ishrat Jabeen

B.Sc Biochemistry (1st class 1st)
M.SC.-Biochemistry (1st class 2nd)
University of Dhaka ,Bangladesh
Masters of Research (MRes) in Medical Biochemistry and Molecular Biology
IBLS, University of Glasgow, Scotland, UK

Ms. Jabeen specializes on Plant Biotechnology, Parasitology and Pharmacology. Her research interests include plant biotechnology, Molecular Biology, Environmental Microbiology and Toxicology.

Mr. Alamgir Hossain

B Sc in Civil and Environmental Engineering
Shahjalal University of Science and Technology
MS in Environmental Management and Development

Australian National University

Alamgir Hossain is an engineer by background, specialized in environmental management, industrial waste management, cleaner production, energy management and environmental impact assessment. An UNEP certified trainer on cleaner production and energy management for Asia Pacific and received further training on cleaner production and energy management from the Netherlands, Philippines, Malaysia and Vietnam. He was a member of environmental and energy auditing team for 35 industries in Asia and Pacific. Current research interests includes public participation in community based resource management, EIA policy in Bangladesh and South Asia, profitable environmental management for businesses particularly textile and RMG and surface water quality modeling.

Mrs. Shah Wahida Nashreen

Lecturer, DESM, NSU

B.Sc in Environmental Science

Khulna University, Bangladesh

M.Sc. in Environmental Engineering

University of Newcastle upon Tyne, United Kingdom.

Mrs Nashreen specializes in management of Waste and Waste water, Water Treatment. Her research interests include Solid Waste Management, Impact of Climate Change in Bangladesh and Gender, Economic Development and Poverty.

Other DESM Associates

Mr. A K M Shahidullah

CIDA-BEGCB Program Manager & Faculty (P.T)

MBA (IBA), MNRM (Manitoba)

AKM Shahidullah is a Master of Natural Resources Management (MNRM) from Natural Resources Institute (NRI), University of Manitoba, Canada. He also holds a Master of Business Administration (MBA) degree from Institute of Business Administration (IBA), Dhaka University. At present he is co-employed by University of Manitoba, Canada and North South University, Bangladesh as Program Manager for a university partnership program on Environmental Governance and a Faculty Member (Part time) of North South University. As a Faculty member Mr. Shahidullah teaches Environmental Science and Environmental Management. Having worked in the development sectors for the last ten years, he has also provided consulting services to large corporations, NGOs, and many SMEs in Bangladesh. Academically, Mr. Shahidullah explores business-environment interfaces in pursuing his intellectual vision. Mr. Shahidullah authored a book on participatory management and marketing of medicinal plants and 3 referred articles: value chain of medicinal plants, institutional interplays in natural resources governance, and socio-economic dynamics of extreme disastrous events.

Adjuncts

Dr. Fikret Berkes,

Distinguished Professor & Canada Research Chair

Natural Resources Institute, University of Manitoba, Canada

Ph.D. Marine Sciences, McGill University, Montreal, Canada

Dr. Ainun Nishat

Country Representative, IUCN, Bangladesh

Water and Environmental Scientist

PhD University of Glasgow, UK

Dr. C. Emdad Haque

Professor and Director, Natural Resources Institute
University of Manitoba, Canada
Ph.D., Geography, University of Manitoba

Dr. A. John Sinclair

Professor, Natural Resources Institute
University of Manitoba, Canada
Ph D in Geography, University of Waterloo

Dr Shirley Thompson

Assistant Professor, Natural Resources Institute
University of Manitoba, Canada
Ph. D. in Community Development
University of Toronto

MREM Research and Resource Center

Exclusively for this MREM Program, the CIDA BEGCB project is going to establish a 'Resource Center' equipped with the necessary supporting and study materials. The Resource Center will have a large number of books and journals for the students. There will be around 10 workstations with online facilities, facilities to access to a wide array of electronic journals and other resources with the support of the University of Manitoba. DESM plans to make the Resource Center a comprehensive material and support service provider to the students that may include printing, binding, and copying as well.

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