

Terms of Reference

Environmental Impact Assessment (EIA) of (1) 03 (Three) Sand Mixed Stone Quarries in Sunamganj District (2) 01 (One) Sand Mixed Stone Quarry in Sylhet District and (3) 03 (Three) Stone Quarries in Panchagarh District

Background : Bureau of Mineral Development (BMD) has taken initiative to obtain Environmental Clearance Certificate (ECC) of Gazetted 03 (Three) Sand Mixed Stone Quarries in Sunamganj District, 01 (One) Sand Mixed Stone Quarry in Sylhet District and 03 (Three) Stone Quarries in Panchagarh District (copy attached) from DoE through Environmental Impact Assessment (EIA) according to Environmental Conservation Rules, 2023.

1. OBJECTIVE(S) OF THE CONSULTANCY

The objective of the consultancy service is to conduct an Environmental Impact Assessment (EIA) of Gazetted 03 (Three) Sand Mixed Stone Quarries in Sunamganj District, 01 (One) Sand Mixed Stone Quarry in Sylhet District and 03 (Three) Stone Quarries in Panchagarh District. The consultant is expected to devise mechanisms to manage and monitor the associated potential risks and impacts and thereby ensure the project will be socially acceptable and environmentally sound. The Consultant will be required to carry out the analysis of the environmental risks and impacts of the project and apply the mitigation hierarchy to ensure that negative risks and impacts are identified, anticipated, and avoided; where not possible to avoid, that the risks and impacts are minimized or reduced to acceptable levels which can be mitigated; and that where significant residual impacts remain after mitigation, that they are compensated or offset, where technically and financially feasible. The environmental assessment will promote improved environmental performance, in ways that will recognize and enhance the capacity of the implementing agency.

2. SCOPE OF SERVICES

The Consultant shall consider in an integrated manner, all relevant direct, indirect and cumulative environmental risks and impacts that could result from the proposed project. An independent Consultant will undertake the Environmental Impact Assessment (EIA) in accordance with the requirements of the Department of Environment (DoE) and relevant environmental legislation of the country. The consultant will prepare (1) EIA report including 03 (Three) Environmental Management Plans (EMP) for Stone Quarries in Sunamganj District (2). EIA report including 03 (Three) Environmental Management Plans (EMP) for Stone Quarries in Panchagarh District and (3) EIA report including 01 (One) Environmental Management Plans (EMP) for Sand Mixed Stone Quarry in Sylhet District

Due to any executive/judicial order other purposes number of stone/sand mixed stone quarries may increase or decrease. Then the payment will be fixed proportionately. In that case client will inform

the consultant. In any time any points or conditions in ToR may be included or excluded whenever the authority take decision.

a. Phase 1: ToR Approval

- Preparation of ToR for all EIA reports and submitting all documents to DoE local office for (1) 03 (Three) Sand Mixed Stone Quarries in Sunamganj District (2) 01 (One) Sand Mixed Stone Quarry in Sylhet District and (3) 03 (Three) Stone Quarries in Panchagarh District.
- Submission of EIA processing fees for EIA study at DoE (Consultant will pay the EIA processing fee and VAT on fees for all EIA reports).
- ToR approvals from DoE head office and preparation of EIA reports as per approved ToR.

b. Phase 2:

Specifically, the EIA consultant will undertake the following tasks, but not limited to:

- **Project Description:** Provide an accurate and concise description of the proposed project that includes the geographic, geological, environmental, social and temporal context of the project and any associated aspects factoring variations in the country conditions and project context. The Consultant should present detailed maps, including recent satellite imageries, showing the project sites and the areas that could be receptors of the project's direct, indirect and cumulative impacts.
- **Legal and Institutional Frameworks:** Review the country's applicable policy framework, national laws, and regulations, and institutional capabilities studies, action plans, and the country's commitments directly applicable to the project under international conventions, treaties, and agreements relating to the environmental and social issues.
- **Environmental and Social Baseline Conditions:** Present baseline data on aspects such as the physical, biological, socioeconomic, and cultural resources, that are based on current information, including any changes anticipated before the project commences, that will adequately inform the characterization and identification of potential environmental and social risks and impacts and mitigation, while taking into account the current and proposed activities in the project area that are not necessarily directly connected to the project. The consultant will collect baseline data from (1) 03 (Three) Sand Mixed Stone Quarries in Sunamganj District (2) 01 (One) Sand Mixed Stone Quarry in Sylhet District and (3) 03 (Three) Stone Quarries in Panchagarh District.
- **Analysis of Alternatives:** Evaluate the project alternatives in terms of the potential environmental and social impacts with regard to the project location, technology option, design, and operation, including the without-project option, and the most environmentally, socially, and economically feasible option.

- **Stakeholder Consultations:** Identify and carry out an analysis of stakeholders and undertake meaningful consultations as an integral part of the assessment. Public consultation should be exhaustively carried out in their vicinity with the attention of affected, interested, and vulnerable groups residing in the project area. The public consultation should be conducted in a culturally appropriate manner. The perception of beneficiaries should be assessed to enhance their engagement with the project. Minutes of the meeting should be taken and annexed to the EIA report.
- **Environmental Impacts Assessment:** Assess and evaluate the environmental risks and impacts of the project on the physical environment, social environment, land resources, water resources, erosion and sedimentation, flooding concern, waste generation and management, community health and safety, occupational health and safety, risk of child and forced labor, risk of labor influx, ecosystem services, terrestrial and aquatic flora and fauna, protected area, sensitive area, etc., and suggest appropriate mitigation measures such as environmental management plan that will help to mitigate possible environmental and social risks and impacts of the project.
 - Identify the overall Project Area of Influence (AoI) including downstream and upstream Environmental and Social Impact Zones.
 - Summarize the findings on the key environmental baseline aspects and potential risks and impacts, including an indicative assessment of the scale and severity of the risks and impacts. Information for each risk and impact must be provided on:
 - ✓ **Nature of the Impact** -Describe the type of effect that the proposed activity will have on the environment and local community and should include "what will be affected and how".
 - ✓ **Duration of the Impact** -Describe the lifetime of the impact, as being short-term (0-5 years), medium-term (5-15 years), long-term (> 15 years where the impacts will cease after the operation of the site), or permanent. The figures depicted here are for indication purposes only. The EIA Consultant can use its range based on its scientific argument.
 - ✓ **Extent of the Impact** -Indicate whether the impact will be locally extending as far as the site and its immediate surroundings, or whether the impacts may be realized regionally, nationally, or even internationally.
 - ✓ **Intensity of the Impact** -Here it should be established whether the impact is destructive or innocuous and should be described as either low (where no environmental functions and processes are affected), medium (where the environment continues to function but in a modified manner) or high (where

environmental functions and processes are altered such that they temporarily or permanently ceased).

- ✓ **Probability of the Impact**-Considers the likelihood of an impact occurring.
- ✓ **Reversibility of the Impact** -This considers the reversibility or irreversibility of an impact.
- ✓ **Significance of the Impact** -The significance of the impacts is determined based on duration, intensity, and probability of occurrence of the impacts.
- **Environmental Management Plan:** The consultant shall prepare (1) EIA report including 03 (Three) Environmental Management Plans (EMP) for Stone Quarries in Sunamganj District (2). EIA report including 03 (Three) Environmental Management Plans (EMP) for Stone Quarries in Panchagarh District and (3) EIA report including 01 (One) Environmental Management Plans (EMP) for Sand Mixed Stone Quarry in Sylhet District detailing the mitigation measures to eliminate or offset the identified adverse environmental risks and impacts or to reduce them to acceptable levels, and devise enhancement measures for the positive impacts to be implemented during the implementation of the project, and the specific actions to implement these measures. The EMP shall outline procedures and institutional responsibilities to manage the identified impacts. The environmental management plan shall include:
 - Potential environmental benefits and impacts resulting from project implementation.
 - Type, extent, and significance of the impacts.
 - Recommended enhancement measures for the beneficial/positive impacts.
 - Recommended mitigation measures for the adverse impacts to enable the sustainable implementation of the project.
 - Location of the mitigation measures within the project setup, if applicable.
 - Mitigation measures implementation timeframe.
 - Institutional responsibility for implementation of the enhancement or mitigation measures.
 - Capacity building recommendations for the institutions.
 - Estimate of mitigation measures implementation budget.
- **Environmental Monitoring Program:** This Chapter shall include details of environmental monitoring program. It should include the technical aspects of monitoring the effectiveness of mitigation measures (including measurement methodologies, data analysis, reporting schedules, emergency procedures, detailed budget & procurement schedules).
 - Summary matrix of environmental monitoring, during construction and operation stage
 - Requirement of monitoring facilities
 - Frequency, location, parameters of monitoring

- Compilation and analysis of data, comparison with baseline data and compliance to accepted norms and reporting system
- Plantation monitoring program
- **Conclusion and Recommendations:** Conclusions shall be drawn from the key findings of the EIA. Further, the EIA shall provide recommendations based on the findings of the assessment. The recommendations shall, among other points, include:
 - Integration and collaboration on environmental and social management by the various stakeholders participating during the project implementation.
 - Strengthening institutions responsible for implementation and management of environmental and social issues.
 - Capacity building needs for institutions responsible for environmental and social management.
 - Dissemination and disclosure of environmental and social information.
 - Environmental and social requirements and management measures are to be included in the works procurement and contract documents.
 - Recommendations on other key environmental and social management issues.

3. REFERENCE FRAMEWORK /STANDARD

The EIA Consultant should follow the reference framework/standard including:

- Environmental Conservation Act, 1995, and its subsequent amendments
- Environmental Conservation Rules, 2023
- EIA Guidelines for Industries, 2021
- Noise Pollution (Control) Rules, 2006
- Air Pollution (Control) Rules, 2022
- Solid Waste Management Regulations, 2021
- National Occupational Safety and Health Policy, 2013
- Bangladesh Water Act, 2013
- Bangladesh Water Rules, 2018
- Bangladesh Labor Law, 2006 and its amendments
- Bangladesh Biodiversity Act, 2017
- Wildlife (Conservation and Security) Act, 2012, etc.
- International conventions, treaties, and agreements relating to environmental issues

4. EXPERTISE REQUIRED AND EDUCATION QUALIFICATIONS

Team Leader

The Team Leader will be a senior professional with specific EIA experience of at least fifteen (15) years, including demonstrable experience in the environmental assessment projects. The Team Leader

will coordinate and oversee the activities of the team of experts in the development of the EIA as defined in this terms of reference. S/He will serve as the first point of contact for all technical and task planning and execution matters. The Team leader will provide the team of experts with technical guidance and support on the interpretation and application of the relevant national legislation applicable to the project. S/He will ensure quality control of each EIA activity and ensure strict adherence to the prescribed timelines.

The Team Leader should have at least a Master's Degree or Doctorate, Master of Technology in Environmental Engineering/Master of Science in Environmental Science, Hydrology and related sciences. The Team Leader should have experience in leading EIA teams in at least five (5) assignments. Fluency in both written and spoken English is essential.

Geologist

The role of a Geologist is to resource evaluation, estimation, quality control and environmental compliance. However, he/she has the experience in sand-stone gradation/ reserve & resource estimation/ sedimentology/ fluvial geomorphology.

The Geologist will have a minimum of five (5) years of professional experience with an MSc in Geology or Applied Geology.

Environmental Specialist

The Environmental Specialist shall be responsible for carrying out the Environmental Impact Assessment and developing the Environmental Management Plan (EMP) for the proposed project in Sunamganj, Sylhet and Panchagarh Districts in Bangladesh. The Environmental Specialist should have working knowledge of the national environmental legislation.

The Environmental Specialist should at least have a Master's Degree in Environmental Sciences, Environmental Engineering, Natural Resource Science, Environmental Studies or Environmental Management, Geography and Environment, and/or a related discipline. S/he should have at least 10 years of experience in environmental assessment in similar projects. The Environmentalist should have completed at least five (5) assignments. Fluency in both written and spoken English is essential.

Socio-economist

The Socio-economist will be responsible for carrying out the social assessment elements of the EIA and compiling the output. The Socio-economist will devise the corresponding enhancement and mitigation measures to enhance the positive impacts and to avoid or minimize any negative impacts, respectively.

The Socio-economist shall be qualified with a Master's Degree in Social Sciences, Development Studies, Sociology, or a related discipline and have at least 10 years of experience working on socio-

impact studies with sound experience in stakeholder engagement, socioeconomic issues, initiatives, and social risk management including labor, Gender-Based Violence and grievance redress management. Fluency in both written and spoken English is essential.

Ecologist

The Ecologist will be responsible for assessing both the aquatic and terrestrial ecology to establish the baseline composition using both primary and secondary data. For the aquatic ecology, the Ecologist shall assess the aquatic flora and fauna and other aquatic vegetation. The Ecologist will be required to obtain data on the bank stability, bank erosion, history of any rare, threatened, or endangered species, if any, as necessary. Further, s/he should provide information on whether the study area forms part of an ecologically sensitive area or migratory corridor of any endangered fauna.

The Ecologist will undertake a review of national laws and international conventions and treaties relating to biodiversity and evaluate how compliance with their requirements will be realized by the project. The Ecologist will devise and recommend measures to compensate for any loss or adverse effects to biodiversity where technically and financially feasible to do so and further develop an Ecosystem Management Plan.

The Ecologist will have ten (10) years of experience in ecological assessment. The ideal candidate will be fluent in written and spoken English and will have a good understanding of the ecological assessment of similar types of projects. The Ecologist will hold at least a master's degree in ecology, biology, conservation biology, botany, and zoology or related subjects.

Hydrologist

The Hydrologist will be responsible for assessing the impacts on water resources due to the mining activities. The Hydrologist will devise and recommend measures for water resources management including erosion control measures.

The Hydrologist will have at least five (5) years of experience in hydrological assessment. The ideal candidate will possess knowledge of the applicable national and international regulations on water resources management. The Hydrologist will hold at least a master's degree in water resource management, hydrology, and other subjects related to water resources management. Fluency in written and spoken English is mandatory.

RS and GIS Expert

The RS and GIS Expert will be responsible for preparing the necessary maps for the proposed project with experience of at least five (5) years. S/he should have at least a Master's in Geography and Environment, Urban and Regional Planning, Forestry, or related subjects from any recognized university.

5. LOCATION AND DURATION OF THE ASSIGNMENT

The Environmental Impact Assessment (EIA) for the Stone/Sand Mixed stone quarries shall be undertaken in the Sunamganj, Sylhet and Panchagarh Districts of Bangladesh and will entail detailed fieldwork. The assignment will be completed within 6 months, which will include the period for the required review and acceptance of the outputs by the Client and Department of Environment (DoE).

6. DELIVERABLES

Within two weeks from the date of contract effectiveness, the Consultant will submit an Inception Report detailing the methodology and work plan that he intends to use to undertake the assignment. Following the reconnaissance site visit and preliminary stakeholder consultation, the methodology and work plan may be modified to reflect the actual requirements for the successful assessment of the project. The Consultant is expected to produce specific deliverables in accordance with the requirements of all national legislation that will be applicable to the proposed project. The consultant will pay the DoE ECC fees and VAT on ECC fees for the two EIA.

Specifically, the Consultant will produce the following deliverables:

SL#	Deliverable	Timeline
1.	Inception Report for EIA	Within 0.5 month Contract Agreement
2.	Terms of Reference (ToR) for the EIA as per schedule-10 of the ECR, 2023	Within 0.5 month Contract Agreement
3.	Terms of Reference (ToR) approval from the DoE	Within 2.0 month of the Contract Agreement
4.	Draft Environmental Impact Assessment Report	Within 8.0 month Contract Agreement
5.	Final Environmental Impact Assessment Report	Within 9.0 month Contract Agreement
6.	Site Clearances from DoE	Within 10.0 month Contract Agreement
7.	Environmental Clearance Certificates from the DoE	Within 12.0 month Contract Agreement

The final EIA reports will be produced in English language and submitted to the Client as per the provided timelines. The EIA shall also be submitted to the Department of Environment (DoE) for review and approval. Each report will have ten (10) original hard copies and one (1) soft copy on a compact disk.

7. PAYMENT MODALITIES

The Consultant may invoice for payment as indicated below upon completion and acceptance of each milestone.

SL#	Deliverable Milestone	Payment
1.	Inception Report	10%
2.	Draft Environmental Impact Assessment Report	30%
3.	Final Environmental Impact Assessment Report and Submission of Site Clearance Certificate	45%
4.	Environmental Clearance Certificates from DoE	15%

8. INPUTS PROVIDED BY THE CLIENT

The Client's responsibilities shall include the following:

- Designating staff to serve as counterparts for the study.
- Providing letters to introduce the Consultant to relevant stakeholders at local, regional, and national levels.
- Consultant will pay the EIA processing fee and VAT on fees for two EIAs
- The consultant will pay the DOE ECC fees and VAT on ECC fees for the two EIAs.

9. INDICATIVE OUTLINE FOR THE ENVIRONMENTAL IMPACT ASSESSMENT

It is to mention that, All the monitoring parameters, including air, water, noise, and other environmental components, shall be derived exclusively from primary data sources. No secondary data shall be used or incorporated into the report under any circumstances. The EIA report should be prepared in accordance with the following indicative outlines but not limited to:

- **Executive Summary:** an executive summary of the EIA and includes information such as background on the proponent(s), project overview, project setting: geographic, physical, biological, and human environments, summary of environmental & social impacts as well as mitigation measures, and key information about the EIA.
- **Introduction:** provide project background, rationale for the proposed project, scope of the study, limitation of the study, EIA team composition, structure of the report, and data collection & literature review.
- **Legislative, Regulation, and Policy Considerations:** include institutional framework, key environmental laws & regulations relevant to the proposed project, the procedure for obtaining environmental clearance from DOE, and other permits and consents required for the project.
- **Approach and Methodology of the EIA Study:** include baseline data collection and analysis, impact assessment and quantification, evaluation of impact (qualitative & quantitative), mitigation measures, assessment of residual impacts, environmental management and monitoring plan, public consultation and disclosure, etc.

- **Mineral Resources:** present a discussion of mineral resources, related capacity, and life of mining operation.
- **Project Description:** present a project introduction, project objectives and options (alternative analysis), geographic location & project area of influence, administrative location, estimated project area (map & survey information, project location), existing infrastructure in and around the site (power supply, water availability), project activities, project details (type and method of mining, process, the layout of all components, production information, transportation, etc.), resources, utilities, and other services demand (water, power, road, public transport, labor, workers camp, etc.), handling of wastes, estimated project cost, etc.
- **Baseline Environmental Conditions:** include the climate and meteorological conditions, ambient air quality, hydrology, hydrogeology and drainage pattern, ambient noise level, water quality, physiography, terrestrial and aquatic ecology, endangered or threatened species, critical habitat and migratory routes, socio-economic environment, etc.
- **Identification and analysis of Key Environmental Issues:** consider environmental sensitivity investigation, valued environmental components, environmental hotspots, likely beneficial impacts, community recommendations, etc.
- **Impact Assessment:** consider the impact on geological resources, soil resources (soil quality and erosion), geomorphology, water quality, air quality, noise level, land use, ecosystem, fisheries, occupational health and safety of workers, community health and safety, flood and erosion risk, cumulative impacts, socio-economic environment, etc.
- **Mitigation and abatement measure:** The assessment should identify the possible environmental impacts of the project and evaluate the significance of these impacts. Appropriate measures must be proposed (Mitigation Plan) to eliminate or significantly reduce adverse environmental effects.
- **Residual Impact:** The projection of the long-term Environmental impact on the proposed mitigation measures.
- **Analysis of resource extraction methods:** Approximate stone/sand mixed stone reserve estimation within 5 meter depth of the relevant areas, together with an indication of environmentally sustainable extraction limits and methods to ensure that stone removal does not cause adverse environmental effects.
- **Analysis of Alternatives:** provide an analysis of alternatives considering the no-go alternative, technology, layout, type, and method of mining, process, transportation, etc.
- **Stakeholder Consultation and Public Disclosure:** include stakeholder analysis, consultation and participation mechanism, results of consultation meeting and concern raised, information disclosure process, plan for further consultation and community participation during project

implementation, a summary of issues discussed and response to comments, minutes of the stakeholders' consultation meeting, etc.

- **Environmental Management Plan and Monitoring Indicators:** describe measures designed to mitigate potential adverse impacts on physical, biological, and socio-economic impacts, provide an environmental monitoring plan, institutional arrangement/responsibilities for implementation, the timeframe, and the budgetary implications.
- **Conclusion and Recommendation:** concluding remarks on each chapter of the EIA study, critical concerns, environmental outcomes and benefits, and sustainable/holistic practices for implementing the project.

Annexes

- References
- List of stakeholders consulted and minutes of meetings of stakeholder consultations
- Maps, diagrams, and other illustrative materials can be annexed to the EIA report to assist in the interpretation of the information.

১৭-১২-২০২৫
ফারজানা হক
সহকারী পরিচালক (খনি প্রকৌশল)
খনিজ সম্পদ উন্নয়ন ব্যুরো (বিএমডি)
জ্বালানি ও খনিজ সম্পদ বিভাগ

১৭/১২/২০২৫
মোঃ মাহবুবুর রহমান খাঁন
রিসার্চ অফিসার
পরিবেশ অধিদপ্তর, সদর দপ্তর, ঢাকা
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

১৭/১২/২০২৫
মোসাঃ মাহবুবা খাতুন
উপপরিচালক (প্রশাসন/অর্থ ও পরিকল্পনা)
খনিজ সম্পদ উন্নয়ন ব্যুরো (বিএমডি)
বিদ্যুৎ, জ্বালানি ও খনিজ সম্পদ মহালয়