GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
Improvement of Urban Public Health Preventive Services Project (IUPHPSP)
DPHE Bhaban (level 8), 14 Shaheed Captain Mansur Ali Sarani,
Kakrail, Dhaka- 1000.

REQUEST FOR EXPRESSIONS OF INTEREST (REOI)

For

A Study to identify Need Assessment for Setting UP Equipment and Real-Time Monitoring & Forecasting System for Air and Sound Pollution in City Corporations and Pourashavas under package No.: IUPHPSP-SD-13

(CONSULTING SERVICES – FIRM SELECTION)

Memo. No. 46.00.0000.303.010.07.005.26-246 Date: 29 .06.2026

1. The Government of the People's Republic of Bangladesh has received financing from the International Development Association (IDA), the World Bank, toward the cost of the Improvement of Urban Public Health Preventive Services Project (IUPHPSP) and intends to apply part of the proceeds for consulting services.

2. The Local Government Division (LGD) is implementing the IUPHPSP to strengthen urban public health preventive services through improved vector management, medical waste management, mitigation of environmental health risks, behavior change communication, and interventions to address non-communicable diseases in selected urban areas of Bangladesh.

   The consulting services ("the Services") will support the Project through conducting a comprehensive need assessment for establishing an integrated real-time air quality and sound (noise) monitoring and forecasting system in Dhaka North City Corporation (DNCC), Dhaka South City Corporation (DSCC), Chattogram City Corporation (CCC), Savar Pourashava, and Tarabo Pourashava.The assignment will cover Dhaka North City Corporation, Dhaka South City Corporation, Chattogram City Corporation, Savar Pourashava, and Tarabo Pourashava.

   The assignment is expected to be implemented over approximately Twelve (12) months from the date of contract signing.

3. The detailed Terms of Reference (ToR) for the assignment may be obtained from the office of the undersigned during normal office hours and website (address: https://www.worlgbank.org, https:lgd.gov.bd, https://iuphpsp.lgd.gov.bd, https://www.bppa.gov.bd

4. The Local Government Division (LGD) now invites eligible consulting firms, research institutions, universities, or associations thereof ("Consultants") to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they possess the required qualifications and relevant experience to perform the assignment.

   The shortlisting criteria are:

   a) Minimum ten (10) years of demonstrated experience in environmental research, environmental monitoring, urban environmental management, air quality assessment, noise pollution assessment, environmental health, climate studies, GIS-based analysis, environmental planning, or related fields;
   b) Minimum seven (7) years of specific experience in planning, assessment, design, installation, operation, evaluation, or technical studies related to air quality monitoring systems, noise monitoring systems, environmental sensor networks, real-time monitoring systems, forecasting systems, environmental data management platforms, or similar assignments;
   c) Proven experience in conducting environmental monitoring studies, pollution assessments, monitoring network design, GIS-based analysis, forecasting systems, equipment specification development, institutional assessments, investment planning, implementation roadmaps, or similar assignments;
   d) Experience in conducting field investigations, technical surveys, stakeholder consultations, focus group discussions, workshops, environmental data analysis, and spatial mapping exercises;

e) Demonstrated experience in preparation of technical specifications, procurement recommendations, equipment requirement assessments, operational frameworks, calibration and quality assurance systems, and environmental monitoring protocols;

f) Experience in assignments financed by the Government of Bangladesh, World Bank, ADB, JICA, UN Agencies, IFAD, or other international development partners will be considered an advantage;

g) Demonstrated organizational, managerial, technical, financial, and logistical capacity to successfully undertake multidisciplinary assignments of similar nature, scope, and complexity;

h) Availability of qualified professionals in environmental monitoring, air quality management, noise pollution assessment, ICT and real-time data systems, environmental modelling and forecasting, GIS and spatial analysis, institutional assessment, urban governance, and project management.

Interested Consultants are requested to submit the following supporting documents:

- Certificate of Incorporation/Registration or equivalent legal document;
- Valid Trade License (where applicable);
- Valid Tax Identification Number (TIN);
- Valid VAT/BIN Registration Certificate (where applicable);
- Company/Institution profile including organizational structure and available professional resources;
- Details of general assignments as mentioned above fields completed in the last ten (10) years and similar assignments completed during the last seven (7) years including assignment title, client, contract value, duration, funding agency, and scope of services;
- Details of ongoing assignments of similar nature;
- Audited financial statements or audit reports for the last three (3) financial years;
- Evidence of technical, managerial, financial, and logistical resources relevant to the assignment;
- Joint Venture Agreement or Letter of Intent for Joint Venture (if applicable);
- Any other information demonstrating the Consultant's capability to perform the assignment.

Key Experts will not be evaluated at the shortlisting stage.

5. The attention of interested Consultants is drawn to Section III, **Paragraphs 3.14, 3.16, 3.17 and 3.18 of the World Bank Procurement Regulations for IPF Borrowers, November 2020, setting forth the World** Bank's policy on conflict of interest.

6. Consultants may associate with other firms, research institutions, or universities to enhance their qualifications. Such association may be in the form of a Joint Venture (JV) and/or Sub-consultancy. In the case of a Joint Venture, all partners shall be jointly and severally liable for the entire contract, if selected.

7. A Consultant will be selected in accordance with the **Quality and Cost-Based Selection (QCBS) Method using Open National Market Approach as set out in the World Bank Procurement Regulations for IPF Borrowers**, November 2020.

8. Further information may be obtained at the address below during office hours from 09:00 AM to 04:00 PM (Bangladesh Standard Time).

9. Expressions of Interest (EOI) must be delivered in written form (one original and one copy) to the address below on or before 21 July 2026 at 2:00 PM (BST).

10. The Procuring Entity reserves the right to accept or reject any or all Expressions of Interest without assigning any reason whatsoever.

Sd/
(Abul Khair Mohammad Hafizullah Khan)
Joint Secretary, Local Government Division and
Project Director, IUPHPSP

Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives
Local Government Division (LGD)
Improvement of Urban Public Health and Preventive Services Project (IUPHPSP)
Funded by: World Bank (IDA)
National Tender

Terms of Reference (TOR)

for

Need Assessment for Setting Up Equipment and Real-time Monitoring & Forecasting System for Air and Sound Pollution in City Corporation and Pourashava.
(Package No: IUPHPSP-SD - 13)
(National Tender)
(Procurement Process: QCBS)

1. Background and justification

Rapid urbanization, high traffic congestion, industrial activities, traditional brick-kilns, construction activities and inadequate urban governance create persistent air and noise pollution hot spots across Bangladesh's major urban areas. There is a significant lack of, or deficiency in, real-time monitoring systems for air and noise pollution in Bangladesh is supported by evidence highlighting both infrastructural gaps and enforcement challenges, despite some recent improvements in monitoring capacity.

While the Department of Environment (DoE) operates 31 Continuous Air Monitoring Stations (CAMS) across the country to track PM10, PM2.5, NO2, CO, SO2, and Ozone, this number is widely considered insufficient for a country with high pollution levels and rapid urbanization.

Data, particularly during the dry season (November–March), frequently shows Dhaka to be among the most polluted cities globally, indicating that existing, limited monitoring is sufficient to show a crisis, but perhaps not granular enough for localized, real-time mitigation.

Noise monitoring is less developed than air monitoring. Studies indicate that noise levels, especially in Dhaka, regularly exceed 100 dB against a 55 dB limit for residential areas, yet there is a lack of continuous, widespread, and publicly accessible real-time noise tracking.

In conclusion, the situation is evolving from a near-total lack of data to a nascent network, but the current infrastructure still falls short of providing the necessary real-time coverage required for a country with such severe pollution levels.

As a result of these limitations, Real-time monitoring and short-term forecasting are essential to: (a) protect public health; (b) inform early-warning and advisories; (c) support enforcement; and (d) guide investments and planning in Dhak South City Corporation (DSCC), Dhak North City Corporation (DNCC) & Chattogram City Corporation (CCC) and the fast-growing peri-urban Pourashava, Savar and Tarabo represent priority jurisdictions with high population exposure and important industrial/transport nodes.

A need assessment will identify technical, institutional, financial and operational requirements to install and sustain a system of fixed, mobile and low-cost sensors and equipment plus a data/forecasts platform integrated with health and city management systems. This will also be helpful in determining the equipment specifications and probable locations for installation of the equipment.

2. Overall objective

The primary objective of this assignment is to conduct a detailed need assessment to assess needs and provide a prioritized, costed, and implementable and sustainable plan for installing and operating an integrated real-time air quality and sound (noise) monitoring and short-term forecasting system across the five target areas.

2.1 Specific objectives

1. Assess existing monitoring infrastructure (DoE, city corporations, pauroshva's, academic institutions, etc.) of air & noise
2. Identify gaps in monitoring coverage and technical capacity.
3. Identify priority monitoring sites and no. of monitoring stations (fixed stations, mobile routes, sentinel locations) and technical specifications for equipment (high-grade reference monitors and calibrated low-cost sensors).
4. Recommend appropriate technology and system infrastructure including following: Assess data management, forecasting model needs, cleaning/calibration protocols, and IT/telecom requirements.
5. Propose institutional and operational arrangement (evaluate institutional roles, staffing, O&M capacity, procurement & maintenance systems, and training requirements).
6. Provide specifications and cost estimates (CAPEX/OPEX) for equipment, installation, maintenance, calibration, and operations (e.g., 5-year projection).
7. Recommend governance arrangements, SOPs, QA/QC, public data dissemination and health-alert protocols.
8. Propose a prioritized phased implementation plan (pilot → scale) with monitoring & evaluation indicators.

3. Scope of work

The research team will conduct a comprehensive, multidisciplinary assessment covering:

A. **Desk review & baseline**

- Current air quality & noise monitoring practices of DoE and others
- Functionality of existing air quality & noise monitoring System
- Data Management, calibration, maintenance and reporting
- Collect existing datasets, maps, DoE and other city reports, published national and international journals, known source inventories, health data, meteorological records, previous monitoring studies and relevant policies.
- Current air quality and noise monitoring practices of DoE and others
- Review transboundary influences and location -specific factors that may affect pollution levels

- Review international best practices (WHO, UNEP, WMO, WB examples from cities with similar conditions) for integrated air/noise monitoring and forecasting.

B. Pollution profile Assessment

- Analyze historical air quality & noise monitoring data
- Identify pollution hotspots
- Relevant stack register

C. Field reconnaissance, data collection & technical survey

- Develop scientific criteria for site selection
- Visit candidate sites across the five jurisdictions
- Air and Noise data collection to examine sources of air and noise pollution
- Propose optimal number and type of solutions
- Inspect existing monitoring equipment (if any), shelters, power/internet, siting constraints, security and access.
- Short-term spot monitoring (where gaps exist) using portable reference instruments to validate hotspot selection.

D. **Stakeholder consultation**

- Consult LGD, DoE, city/pourashava authorities, MoHFW, meteorological office (BMD), hospitals, universities (academicians, researchers), industry representatives, telecom providers, and civil society, etc.
- Organize multi-stakeholder workshop(s) for needs validation and buy-in.

E. **Technical design and options analysis**

- Recommend specification for:
    - Reference (regulatory-grade) continuous (Real time) ambient air monitoring stations (measuring $PM_{2.5}$, PM_{10}, NO_2, SO_2, O_3, CO, meteorological parameters).
    - Continuous sound level meters and noise loggers at selected urban locations.
    - Network of calibrated low-cost PM sensors for spatial coverage and mobile monitoring units (vehicle-mounted).
- Define siting rules, number of stations per city, spacing, and high-priority locations (marketplaces, traffic corridors, industrial clusters, schools, hospitals and clinics, architecture: ingestion, validation, storage, API, dashboards, public portal, and integration with local health surveillance and weather forecasts.
- Recommend short-term forecasting approach: statistical models (e.g., persistence, regression), machine learning models, or other model depending on data availability; use of meteorological forecasts from BMD.

F. institutional and Capacity Assessment (**Operational considerations)**

- Detailed staffing plan: roles for installation, operations, calibration, data analysts, IT support, and communications.
- SOPs for instrument calibration, QA/QC, downtime reporting, maintenance, data validation and archiving.

- Training needs assessment and a training plan (onsite + remote modules)
- Assess integration with DoE's data system

G. **Costing & procurement**

- Provide itemized CAPEX and OPEX estimates (procurement, site prep, instrument cost, installation, calibration equipment, 3–5-year maintenance & consumables, data platform, training).
- Procurement options (national vendors), spare parts, warranty, and SLAs.

H. **Governance, policy & sustainability**

- Recommend institutional arrangements for ownership (LGD/City Corporation/
- Pourashava/DoE, MoHFW), data stewardship, MOUs, and cost recovery or financing mechanisms.
- Propose mechanisms for public information, health alert triggers, and legal/regulatory compliance.

I. **Phased implementation roadmap & M&E**

- Prioritize pilot sites, timeline for roll-out, milestones, deliverables, and indicators for measuring success.

4. Methodology

- **Mixed methods**: desk review, technical field assessment, spot monitoring (if feasible), stakeholder interviews, focus group discussions, and workshops.
- **GIS mapping**: produce maps of candidate sites and pollution hotspots combining population density, land use, traffic, industrial facilities, and health facilities.
- **Data analysis**: analyze existing air/noise/meteorological/health datasets to quantify trends and exposure.
- **Options appraisal**: compare alternatives (e.g., fewer high-grade stations vs. wider low-cost network) using cost-benefit and feasibility criteria.
- **Validation**: circulate draft technical and costing recommendations to stakeholders and incorporate feedback in final deliverables.

5. Deliverables

Deliverable No.	Deliverable Title	Description / Key Contents	Timeline (Month)
D1	**Inception Report (Through a workshop)**	• Understanding of the ToR and project objectives• Detailed methodology, data sources, and survey plan• Work plan with milestones and Gantt chart• Stakeholder and institutional mapping• Quality assurance plan, etc. (Inception plan must be verified through a workshop)	**Month 1–2** (From the date of contract signing)
D2	**Baseline Review Report**	• Review of existing air and noise monitoring infrastructure• Assessment of available data from DoE, BMD, and city corporations• Gap analysis in	**Month 3–4**

		equipment, data quality, and institutional capacities• International best practices for forecasting systems	(From the date of contract signing)
D3	**Field Data Collection & Site Assessment Report**	• Site visits and assessments for suitable monitoring station locations• Air and Noise data collection Mapping of emission and noise hotspots• Evaluation of power, communication, and security conditions• Preliminary recommendations on sensor types and placement	**Month 5–7** (From the date of contract signing)
D4	**Technical Specification and Equipment Requirement Report**	• Definition of specifications for reference-grade and low-cost sensors• Equipment for air quality, noise, meteorological, and calibration units• Communication, data storage, and dashboard design parameters• Procurement strategy recommendations, etc.	**Month 8–10**
D5	**Real-Time Data Management and Forecasting Framework**	• Design of a data flow architecture and integration system• Model framework for short-term forecasting (based on meteorology and emission trends) • Calibration, validation, and QA/QC plan for data management• Early warning system design for pollution alerts, etc.	**Month 9–12**
D6	**Institutional & Capacity Assessment Report**	• Evaluation of existing technical and human capacity within city corporations/municipalities• Institutional responsibilities for data operation, analysis, and reporting• Capacity gap analysis and training plan• Proposed institutional setup for system maintenance	**Month 10–11**
D7	**Draft Needs Assessment & Investment Plan**	• Comprehensive needs assessment for each city corporation/pourashava• Proposed monitoring network layout (location, number, type of equipment) • Cost estimation (CAPEX and OPEX)• Implementation phasing and operational plan	**Month 8–10**
D8	**Stakeholder Consultation Workshops on draft report**	• Consultation with DoE, BMD, LGD, and city corporation/pourashava officials and others • Validation of technical findings and costed investment plan• Incorporation of feedback and recommendations	**Month 8-10**
D9	**Final Report & Implementation Roadmap**	• Consolidated report covering all assessments and findings• Technical specifications, site selection, forecasting model, and data system design• Institutional and capacity-building recommendations• Final costed and phased implementation roadmap, etc.	**Month 12**
D10	**Dissemination & Capacity Building through a Workshop**	• A national dissemination workshop and technical training sessions• Handover of datasets, maps, and system design tools• Awareness and communication materials for key stakeholders, etc.	**Month 12**

6. Implementation Timeline

Activity / Deliverable	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12
Inception Report (D1) through a workshop	■	■										
Baseline Review (D2)			■	■	■							
Field Data Collection and Site Assessment (D3)					■	■	■					
Technical Specifications (D4)								■	■	■		
Forecasting Framework (D5)									■	■	■	■
Institutional Assessment (D6)										■	■	■
Needs Assessment & Investment Plan (D7)								■	■	■		
Stakeholder Consultations (D8)								■	■	■	■	■
Final Report (D9)												■
Dissemination & Capacity Building (D10) through a workshop												■

7. Expert Team Composition and Minimum Qualification Requirements

The research institute/university/firm shall deploy a multidisciplinary team with proven experience in air quality monitoring, noise assessment, ICT systems, and urban governance. All key experts must have prior experience in similar studies, preferably in Bangladesh or comparable developing-country contexts.

Position of expert	Number	Qualification	Experiences
Team Leader / Environmental Monitoring Specialist (Key Expert) (Full Time)		Postgraduate degree (Master's or higher) in Environmental Engineering, Environmental Science, Atmospheric Science, or related discipline	Minimum **12 years of professional experience**, including at least **7 years** in air quality and/or environmental monitoring projects Proven experience in leading environmental monitoring or pollution management studies Experience in **design or assessment of air and noise monitoring systems** Familiarity with **World Bank–funded or other development partner–funded projects** preferred
Air Quality Monitoring & Instrumentation Expert (Key Expert) (Part Time)		Master's degree in Environmental Engineering, Mechanical Engineering, Atmospheric Science, or relevant field	Minimum **8 years of experience** in air quality monitoring Hands-on experience with **continuous air monitoring stations (CAMS)** and low-cost sensors Experience in **equipment specification, siting, calibration, and maintenance planning**
Sound / Noise Pollution Specialist (Key Expert) (Part Time)		Master's degree in Environmental Engineering, Acoustics, Physics, or related discipline	Minimum **7 years of experience** in noise measurement and assessment Experience in **urban noise mapping and monitoring systems will be given preference**

ICT / Real-Time Monitoring & Data Management Expert (Key Expert) (Part Time)		B.Sc./ Master's degree in Computer Science, CSE, Information Technology, Electronics Engineering, MIS, Data Science, etc.	Minimum **7 years of experience** in real-time data systems, IoT, or environmental data platforms Experience in **data acquisition systems, dashboards, and cloud-based platforms**
Climate Change, Air Quality Modelling & Forecasting Specialist (Part Time)		Master's degree in Climate Science, Meteorology, Environmental Science, or related discipline	Minimum **6 years of experience** in climate data analysis or forecasting Experience linking meteorological parameters with air pollution dispersion
Institutional & Policy Analyst (Part Time)		Master's degree in Public Administration/Policy, Environmental Management, Urban Planning, or related field	Minimum **6 years of experience** in institutional assessment or policy analysis Experience with **urban governance and environmental regulation in Bangladesh** preferred
GIS & Data Analyst (Part Time)		Bachelor's or Master's degree in GIS, Geography, Statistics, Environmental Science, MIS, Data Management, or related field	Minimum **5 years of experience** in GIS-based spatial analysis Experience in pollution mapping and spatial visualization
Field Coordinator / Survey Specialist (Full Time)		Bachelor's or Master's degree in Environmental Science or Social Science	Minimum **5 years of experience** in field coordination or surveys
Administrative & Finance Officer (Full Time)		Bachelor's degree in Business Administration, Accounting, or related field	Minimum **5 years of experience** in project administration or financial management

8. General Outline/Experience of Consulting Firm

The research institution/ university/firm must be engaged in research, research training and related activities, in Bangladesh. The research institution/ university/firm must also recognize the vital importance of research, the new knowledge and applications that it creates, the knowledgeable and skilled human resources developed through the process of conducting research, as well as the importance of peer review, which ensures that funded research meets the highest standards of excellence.

9. Supporting documents to be submitted by the applicant:

- A short history of research institution/university/firm
- The mission statements
- The policy on research, if available
- The current strategic plan, if available
- The research mandate of the research institution/university/firm (as it relates to health, natural sciences and/or social sciences and humanities)
- A statement of Bangladesh incorporation or constitution, and information on governance sstructure such as mandate, and constitution of board of governors or equivalent; and
- The documentation describing the status of his/her research institution/university/firm, ie., agreement indicating whether or not the research institution/university/firm is affiliated to, or a constituent portion of another institution, if applicable.
- Last three fiscal years audit report of the research institute/university/firm
- Last five years research activities of the research institute/university/firm

10. Study eligibility

- The research cannot be currently funded or must be able to demonstrate insufficient funding
- The proposed budget must reasonably and feasibly cover the research
- The research must be biologically plausible and supported by current scientific evidence and understanding
- The study must be methodologically sound

11. Application Requirements

- An appropriate title of the research and sound methodology
- Complete a study profile summarizing the details of the proposed research including description, budget with justification, timeline, and study team
    - Details on research will be kept confidential and not disclosed to anyone outside the Research Lead
- Submit current curriculum vitae of all members of research team noting the affiliated research institution/university/firm

    - If the researcher is found to be using these funds for unintended use or research is not being performed as indicated, the Research Lead will

request funds to be returned and the researcher may be disqualified from further use of the Research Lead platform
- Payment system based on milestones

12. Research Proposal Outline

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13. Expert Panel

An Expert Panel of 3-5 members may be formed to review the research activities of the study. The Terms of Reference of the committee will be determined during formation of the committee.