

Terms of reference for Consultancy Services for Development of Environmental and Social Management System (ESMS) including E&S Policy for Karachi Water & Sewerage Corporation (KW&SC)

Karachi Water & Sewerage Services Improvement Project (KWSSIP)

1. Introduction

1.1. Background

Karachi, the largest city in Pakistan, serves as the country's economic and industrial hub. According to the Pakistan Bureau of Statistics (PBS), the population of Karachi exceeds 20 million, making it not only the most populous city in Pakistan but also one of the largest metropolitan areas in the world. The city is known for its cultural diversity, bustling ports, and dynamic urban landscape. As a key center for finance, trade, and media, Karachi plays a vital role in shaping the nation's socio-economic development.

Karachi, has grown so rapidly that it now struggles to deliver basic infrastructure and services, including potable water and wastewater collection and treatment. The Karachi Water and Sewerage Corporation (KW&SC), which is responsible for the provision of water and sewerage services in Karachi, is not able to effectively deal with the challenging reality on the ground. There is a huge unmet demand for drinking water supply services (550 Million Gallons per Day (MGD) current pumping capacity versus an estimated demand of 1200 MGD) coupled with a high Non-Revenue Water (NRW) level estimated at around 50-60 percent of water pumped. There is currently limited sewage treatment, as the greater part of the city's sewage treatment facilities are dilapidated and not working, resulting in a significant quantum of sewage/day being discharged into the Arabian Sea. There has been no significant capital and major repairs and rehabilitation investment for water and sewerage infrastructure for more than a decade. As such, most of the water and sewerage infrastructure is now worn out and operating far below its rated capacity.

There are two different water sources for Karachi City which are the Indus River and the Hub Dam. The total approved water abstraction quota from Indus River is 1200 cusecs (648 MGD) while 185 cusecs (100 MGD) is drawn from Hub Dam. The current combined water supply from both the sources has proven to be insufficient to meet current demand and the needs for the city's expansion in horizontal and vertical dimensions. The unprecedented population growth coupled with continuous influx of people from other parts of the country has put KW&SC under tremendous pressure to meet the ever-growing demand for water and sanitation services. Thus, the scarcity and shortage of water and environmental degradation are directly contributing to public health risks and undermining sustainable development with the passage of time.

1.2. Karachi Water and Sewerage Services Improvement Project

To transform KW&SC into a financially, environmentally and technically sustainable water utility and to improve the water and sewerage services delivery levels, the Government of Sindh (GoS) and KW&SC, with the assistance of World Bank (WB) and Asian Infrastructure Investment Bank (AIIB), have conceived Karachi Water and Sewerage Services Improvement Program (KWSSIP) to provide clean, safe drinking

water and efficient sewerage services to the residents. The Karachi Water and Sewerage Services Improvement Program (KWSSIP) is being implemented by the GoS through KW&SC and a Project implementation Unit (PIU) to manage the series of projects.

The KWSSIP-Phase 1 has been completion on June 30, 2026, whereas Phase-2 (KWSSIP-II) has been approved by Executive Committee of the National Economic Council (ECNEC) in 2024 amounting to USD 600 Million. The total investments for Phase2 sub-projects will be around USD 600 million out of which USD 240 million would be funded by IBRD & AIIB each and USD 120 million will be funded by GoS.

1.3. Rationale for the assignment

Given the complexity, scale, and multi-stakeholder nature of KW&SC's functions and operations, and in line with its commitments under the Environmental and Social Commitment Plan (ESCP), recommendations of study titled 'Institutional Assessment and Road Map for Establishment of the Environmental and Social (E&S) Cell' prepared for KW&SC, KW&SC intends to establish a comprehensive Environmental and Social Management System (ESMS) to systematically manage environmental and social risks and impacts. The ESMS will apply to KW&SC's institutional functions, ongoing operations, maintenance activities, and all interventions, including existing and future projects, ensuring a consistent and structured approach to E&S risk management across the utility.

In this context, KW&SC seeks to engage a qualified consultancy firm to support the development and operationalization of the ESMS, along with an overarching Environmental and Social (E&S) policy, aligned with applicable provincial and national legislation, and with relevant international standards, good international industry practices, stakeholder expectations, and the local operating context. For the purpose of this assignment, the ESMS shall constitute a fully operational and implementable system that translates the E&S Policy into actionable procedures, tools, workflows, institutional arrangements, and monitoring mechanisms applicable across KW&SC's entire system. The ESMS shall not be limited to a conceptual or framework level document.

2. Assignment Objectives

The overall objective of this assignment is to support KW&SC in the development and operationalization of an overarching E&S policy, and a comprehensive and holistic Environmental and Social Management System (ESMS) to implement these policies across KW&SC's entire system, including all functional units, core functions, operations, maintenance activities, and all interventions comprising existing and future projects.

The specific objectives of the assignment are to:

- Develop an overarching E&S policy for KW&SC, aligned with applicable provincial, national, and international standards, good international industry practices and regulatory requirements, and tailored to KW&SC's operational context, stakeholder needs, and local conditions.
- Develop a comprehensive and implementable ESMS for KW&SC, designed to operationalize the approved E&S policy, covering environmental and social risk management across key functional units, including water supply and treatment, bulk transmission and distribution, sewerage and wastewater management, laboratory services, customer services, and the planning, design, construction, operation

and maintenance of water supply and sewerage infrastructure, covering both existing operations and future projects.

- Establish standardized and enforceable procedures, tools, and workflows for E&S risk screening, assessment, management, monitoring and reporting applicable across KW&SC's functions, operations, maintenance activities, and all projects (existing and planned).
- Conduct a detailed E&S risk assessment and gap analysis of KW&SC's existing institutional systems, operational practices, project planning, implementation, monitoring and reporting processes, and organizational capacities, and propose specific, practical, and time-bound corrective and preventive measures. Where applicable, the assessment shall take into consideration the findings and recommendations of the Institutional Assessment and Road Map for Establishment of the Environmental and Social (E&S) Cell prepared for KW&SC to ensure alignment and avoid duplication of efforts.
- Define institutional and implementation arrangements for ESMS operationalization, including clear roles and responsibilities, staffing requirements, capacity-building measures, and resource and budgetary allocations.
- Design and operationalize monitoring, reporting, and compliance mechanisms to ensure effective implementation of ESMS requirements across KW&SC.

3. Scope of Services:

The consultants will be responsible for the following key tasks:

3.1. Task: Inception and Work Planning

- Review ESCP commitments, the study titled 'Institutional Assessment and Road Map for Establishment of the Environmental and Social (E&S) Cell in KWSC'¹, relevant KW&SC/KWSSIP-I and II documents², the KW&SC Act 2023³, the KW&SC Master Plan, KW&SC policies and manuals, and applicable legal/regulatory frameworks including the World Bank Environmental and Social Framework (ESF), World Bank Group Environmental, Health and Safety (EHS) Guidelines, and Sindh EPA regulations. Prepare an Inception Report including methodology, detailed work plan, timelines, resource mobilization and deliverables with clear prioritization of early policy development.
- Undertake mapping of KW&SC's institutional structure, functional units, operations, maintenance functions, and project lifecycle processes.
- Identify key internal and external stakeholders relevant to ESMS development and implementation

3.2. Task: Legal, Institutional, and Stakeholder Assessment for ESMS Development

¹ <https://www.kwsc.gos.pk/uploads/1783934641533-3bb63830.pdf>

² <https://www.kwssip.gos.pk/ess1/>, <https://www.kwssip.gos.pk/ess2/>,

³ <https://www.pas.gov.pk/uploads/acts/Sindh%20Act%20No.XVIII%20of%202023.pdf>

- Conduct a detailed review of applicable environmental and social (E&S) provincial and national legislation, international standards and good international industry practices relevant to KW&SC's functions, operations, maintenance activities, and projects (existing and future), including but not limited to environmental and social protection, occupational health and safety, community health and safety, labor and working conditions, and stakeholder engagement.
- Assess KW&SC's existing institutional setup, mandates, and decision-making processes specifically in relation to environmental and social risk management, to ensure that proposed E&S policies and sub policies are realistic, implementable, and aligned with institutional capacities.
- Identify and analyze key environmental and social risks and impacts associated with KW&SC's core functions, operations, maintenance activities, and projects (existing and future), including risks related to water supply, wastewater management, occupational and community health and safety, labor conditions, and stakeholder interactions.
- Undertake targeted stakeholder consultations to capture E&S-related expectations, concerns, and priorities, including those of affected communities, workers, contractors, regulatory agencies, and other relevant stakeholders, taking into account local context.
- Identify gaps in KW&SC's existing arrangements in relation to environmental and social management and define the scope and structure of required E&S policy areas, ensuring that proposed commitments are practical, enforceable, and commensurate with KW&SC's institutional capacity and operational context.

3.3. Task: Development of E&S Policy (Priority Deliverable)

- Develop an overarching Environmental and Social (E&S) Policy for KW&SC, clearly defining commitments, principles, scope, and applicability across all functional units, operations, maintenance activities, and all projects (existing and future), based on findings from the legal, institutional, and stakeholder assessment.
- Develop a structured suite of E&S policy addressing key environmental and social aspects relevant to KW&SC's operations and services, including environmental and social risk management, occupational health and safety, community health and safety, labor and working conditions, stakeholder engagement, gender and social inclusion and targeted engagement with vulnerable group engagement and prevention of sexual exploitation and abuse/ Sexual Harassment (SEA/ SH).
- Ensure that all E&S policy, /procedures and strategies are aligned with applicable provincial and national legislation, international standards, good international industry practices and are responsive to stakeholder needs and local context identified under Task 3.2.
- Define clear and realistic policy commitments, obligations, and minimum requirements that are implementable within KW&SC's institutional structure, operational context, and resource capacity, avoiding over commitment.
- Ensure internal consistency along with overarching roles of related departments⁴, with clearly defined scope, applicability, and hierarchy.
- Develop policy implementation principles and compliance requirements that will guide the subsequent development of ESMS procedures, tools, and systems.

⁴ Examples of such departments include but not limited to: Sindh Environmental Protection Agency (SEPA), Board of Revenue (BoR), Sindh, Sindh Wildlife Department & Forest Department, Sindh Irrigation Department, Local Government Department, Sindh, Karachi Development Authority (KDA) & Malir Development Authority (MDA), Sindh Solid Waste Management Board (SSWMB), Ministry of Climate Change and Environmental Coordination (Federal)

- Submit draft E&S policy for review within an early stage of the assignment, incorporating feedback to produce final versions suitable for management consideration and Board approval.

3.4. Task: Baseline Assessment and Gap Analysis

- Assess KW&SC's existing systems, procedures, operational practices, and project implementation processes against the proposed E&S Policy
- Evaluate current institutional capacities, staffing, and resource availability for policy implementation.
- Identify gaps between current practices and policy requirements across functions, operations, maintenance, and projects (new and existing).
- Propose specific, practical, and prioritized corrective and preventive actions.

3.5. Task: Development of ESMS (Policy Implementation System)

- Develop a comprehensive and implementable ESMS designed to operationalize the E&S Policy (developed under this assignment)
- Translate policy commitments into detailed procedures, workflows, and decision-making processes.
- Develop standardized tools including screening formats, risk categorization systems, assessment procedures, management plans, and monitoring tools.
- Integrate ESMS into KW&SC's existing planning, design, procurement, HR, operations, maintenance, and project management processes.
- Ensure ESMS applicability across all functional units and all projects (existing and future).
- Prepare a phased ESMS Implementation Roadmap, outlining institutional arrangements, implementation priorities, resource requirements, timelines, and monitoring mechanisms to facilitate effective rollout across KW&SC.
- Develop and deliver an ESMS Training and Implementation Support Program, including training materials, user guidance, and knowledge transfer sessions to strengthen institutional capacity for effective ESMS implementation and continual improvement.

3.6. Task: Institutional, Resource, and Implementation Arrangements

- Define institutional arrangements for ESMS implementation, including roles and responsibilities across KW&SC.
- Recommend staffing structure, including dedicated E&S functions where required.
- Develop a capacity-building and training plan aligned with ESMS requirements.
- Estimate resource needs, including human, technical, and financial requirements.
- Prepare a phased ESMS implementation and rollout plan with clear timelines, and milestones.

3.7. Task: ESMS Performance, Compliance Monitoring, Reporting, and Continuous Improvement

- Develop a comprehensive system for monitoring and evaluation of ESMS implementation and performance, covering all functional units, operations, maintenance activities (along with resources required) and projects (existing and future).

- Define measurable key performance indicators (KPIs) and reporting protocols for assessing ESMS implementation and performance at all organizational levels of KW&SC and its's projects, with clearly assigned roles, responsibilities, and accountability for monitoring and reporting.
- Establish practical and enforceable compliance tracking mechanisms to ensure adherence to ESMS procedures, legal requirements, and policy commitments across all functional units and projects.
- Design and integrate grievance redress mechanisms (GRM) and stakeholder feedback systems within the ESMS monitoring and performance management system.
- Establish an ESMS compliance review system based on defined maturity levels to evaluate implementation performance across KW&SC, along with a structured cycle of periodic reviews, corrective actions, and follow-up measures to ensure continuous improvement in E&S management practices.

4. Team Composition & Qualification Requirements

Key Experts	
Position Title	Qualification, Experience and Expertise
Team Leader	Master's Degree in Environmental Engineering / Environmental Management / Social Sciences or a related field. Over 10 years of overall professional experience, including at least three (03) assignments involving development of Environmental and Social Management Systems (ESMS), Environmental and Social Management Frameworks (ESMF), or similar institutional systems for public sector, Water and Sanitation, infrastructure, or donor-funded projects. Demonstrated experience in leading multidisciplinary teams and managing complex assignments related to environmental and social risk management. Strong experience in institutional systems development, policy formulation, and integration of E&S requirements into organizational processes. Preferably having experience working with international institutions particularly the World Bank.
Environmental Specialist	Bachelor's Degree in Environmental Engineering / Environmental Sciences or related field. Minimum 7 years of professional experience in environmental assessment and management, preferably in water supply and wastewater utilities, urban infrastructure, or utility sector projects. Demonstrated experience in environmental risk assessment, pollution control, wastewater management, water quality management and environmental monitoring. Familiarity with national environmental regulations and international E&S standards is preferred.
Social Safeguards Specialist	Master's Degree in Social Sciences, Sociology, Development Studies, or related field. Minimum 7 years of professional experience in social risk assessment and management for infrastructure or public sector projects. Demonstrated experience in stakeholder engagement, community consultations, grievance redress mechanisms (GRM), land acquisition and resettlement, labor and working conditions, and social inclusion. Experience in addressing social risks in line with international standards and familiarity with donor requirements is preferred.
Health and Safety Specialist	Bachelor's Degree in Environmental Engineering/Sciences, Occupational Health and Safety, Public Health, or a related field, preferably with relevant professional certifications. Minimum 7 years of professional experience in health and safety management, particularly in utility services and construction environments. Demonstrated experience in development and implementation of occupational health and safety systems, workplace risk assessments, and community health and safety measures, including management of risks associated with infrastructure works and service delivery. Familiarity with national labor laws, occupational health and safety regulations, and international standards and guidelines related

Key Experts	
Position Title	Qualification, Experience and Expertise
	to both worker and community safety is required. Experience with donor-funded projects and international standards is preferred.
Gender Specialist	Master's Degree in Gender Studies, Social Sciences, Development Studies, or related field. Minimum 7 years of professional experience in gender and social inclusion, including experience in addressing gender-based violence (GBV), sexual exploitation and abuse (SEA), and sexual harassment (SH) risks in infrastructure or public sector projects. Demonstrated experience in developing gender-responsive policies, workplace inclusion strategies, and labor-related safeguards. Experience with donor-funded projects and international standards is preferred.
Legal Expert	Bachelor's Degree in Law, preferably with specialization in environmental or labor law. Minimum 7 years of professional experience in legal and regulatory frameworks related to environmental protection, labor laws, occupational health and safety, and public sector governance. Demonstrated experience in reviewing and interpreting applicable legal and regulatory requirements and advising on compliance mechanisms. Experience in working with public sector entities or donor-funded projects is preferred.
Data Analyst	Master's Degree in Statistics, or related field. Minimum 7 years of professional experience in data management, analysis, and development of monitoring and reporting systems. Demonstrated experience in designing data collection tools, dashboards, or tracking systems for performance monitoring. Experience in environmental and social data management and familiarity with monitoring frameworks and reporting systems is preferred.
Non-Key Experts	
Monitoring & Evaluation (M&E) Specialist	Bachelor's Degree in relevant field. Minimum 5 years of experience in monitoring and evaluation systems, including development of KPIs, reporting frameworks, and performance tracking systems for development or infrastructure projects.
Field Coordinator (Social)	Bachelor's Degree in Social Sciences or related field. Minimum 5 years of experience in community engagement, stakeholder consultations, and field-level social data collection.
Field Coordinator (Environment)	Bachelor's Degree in Environmental Sciences/Engineering or related field. Minimum 5 years of experience in environmental field assessments, site inspections, and data collection related to environmental parameters.
Field Enumerators (Male – 4, Female – 4)	Minimum Bachelor's level education. 3 years' experience in conducting surveys, community consultations, and field data collection.

5. Expected Deliverables and Timelines

The Consultancy Services shall finalize the assignment within a period of 24 weeks from the date of signing of the contract. The consultants shall report to KWSC's Chief Environment and Social Officer for the quality assurance, review, feedback, and approval of the assignment

Sr. No	Deliverable	Timeline (Weeks from Signing of Contract)	Payment %
1.	Inception Report	2 weeks	10%

Sr. No	Deliverable	Timeline (Weeks from Signing of Contract)	Payment %
2.	Draft E&S Policy, annexing supporting analysis (legal, institutional, stakeholder, and risk assessment report)	8 weeks	15%
3.	Final E&S Policy (after addressing comments and incorporating feedback)	16weeks	15%
4.	Baseline Assessment and Gap Analysis Report (Task 3.4)	16 weeks	10%
5.	Stakeholder Consultation and ESMS Orientation Workshop, including presentation materials, attendance record, and workshop proceedings	18 weeks	10%
6.	Draft ESMS Package including procedures, tools, templates, workflows, institutional arrangements, implementation plan, monitoring system, KPIs, compliance mechanisms, GRM integration, and maturity-based review system (covering Tasks 3.5, 3.6, and 3.7)	20 weeks	15%
7.	Final ESMS Package (complete and integrated system incorporating feedback, covering all elements of Tasks 3.5, 3.6, and 3.7)	24 weeks	25%

Note: *All deliverables shall be subject to review and formal acceptance by KW&SC prior to release of corresponding payments. Submission of incomplete or partial deliverables shall not be considered for payment.*

6. Client's Input and Counterpart Personnel

(a) Services, facilities, and property to be made available to the Consultant by the Client shall be agreed upon during contract negotiations and specified at the time of contract award.

(b) Professional and support counterpart personnel to be assigned by the Client to the Consultant's team:

- i. Chief Environment and Social Officer, KW&SC
- ii. Manager Environment, KW&SC
- iii. Manager Social, KWSC