

**TERMS OF REFERENCE (TOR) FOR THE
RECRUITMENT OF A FIRM**

**TO SUPPORT
DEVELOPMENT OF A NATIONAL PLASTIC WASTE
MANAGEMENT PLAN AND ESTABLISHMENT OF IT-
BASED MONITORING AND REPORTING MECHANISM
FOR PAKISTAN
UNDER THE WORLD BANK-FUNDED PLASTIC FREE
RIVERS AND SEAS PROJECT(PLEASE)**

**IMPLEMENTATION PARTNER: SOUTH ASIA
COOPERATIVE ENVIRONMENT PROGRAM**

I. BACKGROUND

1. Introduction.

Pollution poses a significant cost to Pakistan, with the overall cost of environmental degradation being more than 8.9% of the GDP as of 2016. Plastic pollution is a particular challenge contributing to this issue, with current practices creating around 250 million tons of plastic pollution per year in Pakistan.

In addition, a significant quantity of plastic pollutants flows down river systems, threatening marine and coastal environments. The issue of waste management is crucially interlinked with the overall issue of marine pollution. For example, 87% of the sewage produced by Karachi city is deposited directly into the Arabian Sea without any treatment. Tackling this issue aids by not just addressing sustainable development but by presenting a critical opportunity to address climate vulnerabilities and resilience. The total investment potential for climate-smart opportunities in Pakistan is estimated at US\$197 billion between 2018 -2030. Hence, addressing this issue unlocks opportunities through both financial support and funding, while also creating a positive impact within local communities. There is also increasing interest from the private sector, particularly from those sectors dependent on coastal and marine environments, to constitute resource and material efficient and sustainable practices (socio-environmental) in their business models to meet global compliance and to address growing green demand in the market. Despite legacy systemic challenges, there is a growing commitment from a range of partners in Pakistan recently - across the public and private sectors - to address the critical challenges and barriers to reducing plastic pollution:

Pakistan's National Climate Change Policy 2021, set out a goal to “develop plastic waste management tools such as reduce, reuse, recycle, and encourage eco-packing and substitutes for plastic” as a policy direction.

The Prime Minister of Pakistan, under the ‘Clean and Green Pakistan’ roadmap launched the largest plastic waste collection and recycling initiative. Private sector organizations have committed to work alongside the government to collect 4.75 million kgs of plastic waste and focus on recycling it in purposeful ways. The initiative will enable local companies to produce numerous types of utility products including waste bins, benches, tables, chairs, and others. While the direction is set, the road ahead is long and difficult. Above everything else, making progress toward reducing plastic pollution requires a coordinated effort across all public and private stakeholders in the system at the federal and provincial levels. Together, these

stakeholders must not only establish a robust policy and regulatory framework but hold themselves accountable for implementation. From government officials to private sector organizations, and general citizens, all have an equal and important role to play to realize the goal.

A successful formulation and implementation of reforms will require deep stakeholder engagement and leadership commitment to ensure key stakeholders and investors are active participants, are backed by strong support from the government and are able to make progress, and regularly hold themselves accountable to the tasks and goals they set for themselves through the partnerships and agreements.

2. Description of grant funds available for the proposed project under the World bank Financed PLEASE project.

The regional “**Plastics Free Rivers and Seas for South Asia**” project (PLEASE) is a world bank-funded regional initiative that is executed by the South Asia Cooperative Environment Program (SACEP). The Project aims to strengthen innovation and coordination of circular economy solutions to plastic pollution flowing into south Asian seas.

The Project Development Objectives are based on the combination of two medium-term outcomes such as, strengthening innovation of circular plastic economy approaches across South Asia and strengthening coordination of circular plastic economy approaches amongst the public, private sector, and non-government stakeholders in SACEP member countries. These align with the objectives of project components which are

(1) to improve the identification and testing of plastic pollution mitigation solutions.

(2) to increase leveraging of policy solutions and public-private sector engagement in plastic pollution, waste, and leakage mitigation across the value chain

(3) to strengthen regional integration institutions.

the term ‘innovation’ in the project development objectives refers to better policies, strategies, plans, standards, technologies, and investments at both national and regional levels that will reduce the amount of plastic pollution flowing into rivers and seas across South Asia. This will also focus on leveraging the engagement of the public and private sectors to build a more integrated regional oversight, management, and policy framework for plastic pollution control. This in turn will enable an increased circular plastic economy model in the South Asia Region (Afghanistan, Bangladesh, Bhutan, India, the Maldives, Pakistan, Nepal, and Sri Lanka).

In line with the above project development objectives, three main project components have been defined to achieve project outcomes in a timely manner.

Component 1. Supporting Competitive Block Grant Investments to Reduce Plastic Waste

Component 2. Leveraging Public and Private Sector Engagement and Solutions

Component 3: Strengthening Regional Integration Institutions

The proposed consultancy assignment will provide the necessary expertise to identify project initiatives under the above-mentioned component 2 in collaboration with member countries and the Project Implementation Unit, which is located in Sri Lanka.

Leveraging Public and Private Sector Engagement and Solutions:

The objective of this component is to improve regional and national strategies, policies, action plans, and standards based on better analysis, and to facilitate the transition of the region to a more circular plastic economy through public-private sector intervention, dialogue, and cooperation.

To this end, the component will provide support to develop and/or improve national and regional plastic pollution mitigation strategies and action plans, policies, and industry standards and, provide technical and other support to relevant institutions to identify, prioritize, collect, and analyze lifecycle data and identify data issues and gaps. The development of national action plans, while led by national ministries authorized to do so will get support from SACEP and will complement, and be coordinated with, other country dialogues and advisory work financed by other sources.

The component would also support the convening of public and private sector decision-makers to discuss and agree on mainstreaming circular plastic economy solutions and approaches. This component will be undertaken through two proposed subcomponents:

Subcomponent 2.1: Enabling Policies, Standards, and Analytics: This subcomponent supports the development of strategies, action plans, policies, and standards to harmonize plastic pollution mitigation measures through:

(a) developing and implementing a multi-year plastic policy support program, working with leading universities and organizations.

(b) developing a database for lifecycle analysis, data collection, and modeling related to plastic across, selected industry value chains; and

(c) supporting communication activities. Such policy will be incorporated into policy revision, planning and investment processes across the region, including modification of existing standards and regulations governing private sector organizations.

The project builds on strong working relationships with units in government Ministries of each of the SACEP member states responsible for plastics and marine litter policy and their associated government standards bodies. One of its functions will be to help to maintain an up-to-date understanding of plastic relevant standards at any given time across countries, analyze the extent of their harmonization and key areas of divergence, and help respond to the research and technology-focused agenda needed to work on the update and introduction of new standards. In the project's first year, SACEP will work closely with national ministries toward the development of improved country-level/national marine litter strategies and action plans in addition to the development of an approach, including methodology and measurement to track and report on existing plastic pollution levels (national and regional) and plastic reduction impact of solutions (investment and policy), by MTR.

Subcomponent 2.2: Enabling Regional Public and Private Engagement:

This subcomponent supports the circular use of plastic in the economy through regional public-private collaboration and engagement in South Asia, including designing and organizing annual or more frequent meetings of representatives from the public and private sectors.

Activities supported will bring public and private sector representatives together to review and discuss strategies, policies, and standards (developed under subcomponent 2.1) that can accelerate South Asian countries toward a more circular and reduced use of plastics in the economy. More specifically, it will support the design of regional convenings as a part of SACEP's regular convening of stakeholders; support costs associated with such annual or more frequent meetings of public sector policy and decision-makers with private sector representatives, including the sharing of best practice public-private partnership (PPP) solutions from within the region and beyond; and proactively disseminate The World Bank Plastic free Rivers and Seas for South Asia (P171269) information on a regular basis to a broad range of stakeholders on the goals and progress on shared priorities defined for an action-focused agenda for regional conversion as reported by both public and private entities from across the region. These convenings could be branded to further accelerate awareness and exemplify regional cooperation in support of plastic-free rivers and seas and could adopt a fee for private sector participation (a successful model used in trade shows, convening on other topics, and so on) to ensure continued convenings over time that SACEP will continue to oversee beyond the life of the project.

3. The Ministry of Climate Change Pakistan has requested the PLEASE project financed by the World Bank and implemented by the SACEP to support the Ministry of Climate Change Pakistan 's efforts to implement the project. Considering the above, World Bank /SACEP agreed to support the implementation of the proposed project for the Development of a National Plastic Waste Management Plan and the Establishment of IT-based Monitoring and Reporting Mechanism for Pakistan under the world bank-funded plastic-free rivers and seas project. The executing agency of the PLEASE project is SACEP.

4. The Ministry of Climate Change Pakistan has submitted its proposal for the Development of a National Plastic Waste Management Plan and establishing IT-based monitoring and reporting mechanism in the proposal submitted by them. The proposal envisages support for the development of an action plan to reduce plastic pollution in Pakistan through:

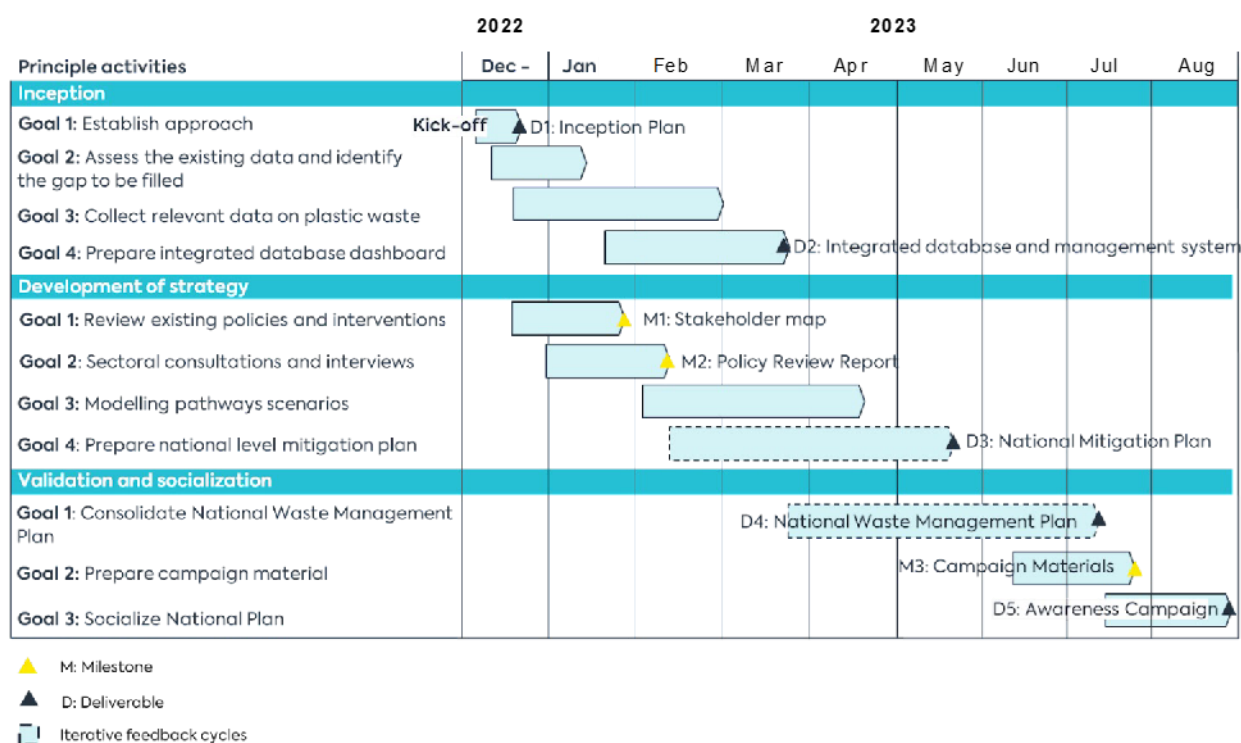
a. Conducting a diagnostic analysis of plastic pollution and its sources and sinks;

b. analyzing and synthesizing the current policy and institutional landscape for marine pollution across the country, including by identifying and aligning key actors; and

- c. preparing a long-term integrated action plan that provides recommendations on how to reduce plastic pollution through stakeholder interventions, financial and operational support, and policy reform.
- d. Developing a national plastic database that houses all the relevant plastic ecosystem databases in one place under an agreed framework. This database can be accessed by the Ministry and other relevant stakeholders as a unified repository of the plastic database of Pakistan. Furthermore, the database should be user-friendly so it is easily accessible and updated by the concerned operators

To deliver this national plastic waste management roadmap, it is critical to build on the data collection for the diagnostic analysis and link it to actionable points within the reform plan. In this way, it is important to identify priority areas for targeted interventions, such as regulatory changes, financial investments, or other voluntary arrangements. For this, it is crucial to set up a foundational understanding that is agreed upon by the broad set of stakeholders. As such, these proposed interventions will assess the existing data available on plastic pollution and waste management, identify the gap which is to be filled, and conduct a field survey to fill out these gaps. This diagnostic analysis will subsequently feed into the final sector strategy and roadmap to deliver a national plastic waste management plan. The list of key proposed activities under the TOR and the expected program which will undertake to achieve the deliverables over a period of 9 months are listed below;

II. LIST OF KEY ACTIVITIES UNDER THE TOR



III. OBJECTIVES

5. The Consultant should proactively ensure that all activities are aligned with the Ministry of Climate Change's overall goals and objectives for the project by planning, managing, and fine-tuning all of the details during, and after the execution of the activities. Based on the above activities under the TOR following key tasks are required to be carried out by the consultant:

- a. **Plastic waste estimation:** The consultant will be following a detailed, systematic methodology for carrying out this assignment which would involve the collection of quantitative data (primary and secondary databases) to develop site-specific insights on Pakistan's main sources and types of plastic pollution. Subsequently, the databases will be integrated into a national interactive dashboard. Using the existing information and secondary database, produce a plastic waste estimation that will form the baseline of the current plastic management situation and use that as a foundation to develop the national plastic action plan
- b. **Review of the Existing policies:** Besides this, major policies, programs, projects, initiatives, and stakeholders related to plastic pollution will be mapped and analyzed and reviewed to produce an interim policy review report. As such, the challenges and trends associated with reducing plastic waste will be mapped and some quantitative and qualitative assessment methods will be used to measure the outputs.
- c. **Development of national action plan:** The Consultant will use the above two outcomes to develop a national action plan on plastic waste management, with a focus on identifying specific regulations, market-based interventions, and financial instruments that the government can use to meet the aforementioned goal. This plan will also include opportunities for voluntary agreements and public-private partnerships to reduce plastic waste and improve the overall circular economy.
- d. **Database Development:**
The Consultant will use the information collected on the above key activities and develop a IT based database system to record, disseminate and monitoring, and evaluation purposes. The policy review report indicated above will be paired with the integrated dashboard to identify a roadmap for conducting reforms, building capacity, and gathering momentum toward achieving a 90% national recycling target for plastic waste
- e. **Awareness Campaign**
Finally, the consultant will carry out an awareness campaign which will be developed and run to disseminate this plan to stakeholders and the public and other stakeholders.

IV. SCOPE OF KEY WORK UNDER THE ABOVE AND EXPECTED DELIVERABLES

6. In general, the scope of consultancy services will include, but not be limited to the following:
The overall plan for the principal activities and how they map to the deliverables have been set out and listed below;. A summary is then prepared on approaching each deliverable, including an indicative implementation approach which will be subject to further comments from the Ministry of Climate Change and relevant contracting parties. Ministry of Climate Change Pakistan expects the consultant to accomplish all tasks indicated above within a time span of 9 months with the aim of accomplishing the above activities using the following methodology and approach;

- a. Task A: Diagnostic the current state of plastic pollution and waste management based on;
 - i. primary data collection

- ii. desk research
 - iii. Field Consultation
 - iv. Compose data to enable feeding them to the integrated database dashboard.
 - v. Develop an IT-based Database system to record, monitor and disseminate and control on plastic circular economy.
- b. Task B: Analysis of the plastic landscape (policy and other models);
 - i. Carry out stakeholder consultations,
 - ii. modeling, and desk research
 - iii. prepare a level national-level mitigation plan.
- c. Task C: Development of a national waste management plan and awareness campaign;
 - i. .planning of the awareness campaign
 - ii. Status and gaps identification
 - iii. Strategy finalization
 - iv. Carry out an awareness campaign.

7. Estimated total person-months. The consultants will be comprised of a team of **120.4** man-months including non-key and key staff as follows;

Key task	Key staff	Non-Key staff
Development of a national plastic waste management plan and dissemination	7	3
The development of a Dashboard for the IT Solution	4	7

The estimated cost of this service shall include among others the cost of conducting field surveys and associated tasks. The Consultant will be paid according to the time spent and other out-of-pocket expenditures with evidence throughout the duration of the consulting assignment. The team will be headed by the Team Leader. The detailed breakdown of the person-months for each required expert is given in Section V (Team Composition and Qualification Requirements for Key Experts).

V. TASKS

8. Major tasks. The Consultant shall proactively ensure that all activities are aligned with the Ministry of Climate Change, Pakistan's overall goals and objectives for the implementation of the project requirements by planning, managing, overseeing, and fine-tuning all of the details before, and during the execution of the project components. PMC is expected to deliver the following major tasks but not limited to:

Task A: Diagnostic of the current state of plastic pollution and waste management based on primary data collection and desk research

Accordingly, the following activities are expected to be carried out within the first 3 months;

- a. **Primary data collection;**
The consultant should identify;
 - i. plastic pollution hotspots,
 - ii. plastic waste categorization, and characterization,
 - iii. identify point sources and waste generation estimation.

- iv. Conduct primary surveys across select proposed sites with all other approved data collection methods to gain a deeper understanding of the existing profile of sources and types of pollution
- b. **Desk review;**
 - i. of existing literature, studies,
 - ii. data sources on plastic pollution across Pakistan will be carried out.
 - iii. The literature review will be focused on the existing status of and data on plastic pollution at the provincial level to identify gaps in the data, and characterization of plastic wastes based on available data.
- c. **Field consultation;**
 - i. Conduct individual consultative sessions with at least 5 key informants and experts to deepen the research.
 - ii. Based on the research and individual stakeholder consultations, identify the data gap which is to be filled. Develop a project plan and inception report for conducting surveys and other primary data collection methods at different proposed sites, and share it for approval and feedback with the Contracting Party and key informants;
 - iii. the study sites should cover the main sources and sinks in the province.
- d. **Compose data to enable feeding them to the and prepare an integrated database dashboard**
 - i. Analysis of collected data to produce diagnostic and quantification reports, detailing sources, and detailed breakdown of types of plastic pollution.
 - ii. Integration of desk research and comparative analysis of diagnostic results with global standards.
- e. **Develop an IT-based Database system to record, monitor and disseminate and control on plastic circular economy**
 - i. Development of a national database management system,
 - ii. Integration of primary data and other identified databases into a national database and management system. This will enable all the stakeholders to have access the information on the plastic economy and also for dissemination and monitoring of related activities.
 - iii. Use the integrated database to develop dynamic models of national plastic pollution and plastic waste management, including projections for future levels along three different pathways (business-as-usual, low-level intervention, and high-level intervention).

ask B : Analysis of the plastic landscape (policy and other models) based on stakeholder consultations and desk research.

Accordingly. the following activities are expected to be carried out within the next 3 months;

a) Carry out based on stakeholder consultations

- i. Engage at least 5 experts in the sector to identify and map key stakeholders involved in Pakistan's plastic pollution sphere in selective cross-cutting sectors across public and private sectors, international organizations, and academic institutions.
- ii. This includes Local and (inter)national experts, knowledgeable of marine pollution and solid waste management in Pakistan, who will be interviewed with a focus to gain important insights into the current state and effectiveness, efficiencies, failures, barriers, and bottlenecks of (a) existing policy regulations, projects, and institutional controls pertaining to pollution control; (b) availability of plans, projects, and strategies related to wastewater management; (c) potential investment opportunities; and (d) trends and development following the global compliance.

b) modeling, and desk research

- i. Review research material and conduct desk research to understand the breadth of interventions currently underway in the government, private sector, and civil society in the plastic pollution and waste management sphere and subsequent regulatory constraints across sub-sectors.
- ii. Review key documentation, including materials and regulatory frameworks established by the national government, provincial governments, and different administrative bodies (Municipalities, Cantonment Boards, Industrial Boards), particularly pertaining to their relevant source of pollution.

- iii. Produce environmental models, demonstrating the impact on the environment from different levels of project pollution.

c) prepare a national level national-level mitigation plan

- i. Develop a national-level mitigation plan based on key identified opportunities from an integrated database and policy review.
- ii. Provide different-termed models for environmental, economic, and social impacts of policy recommendations; integrate into pathways for the mitigation plan
- iii. Prepare key policy recommendations from mitigation plans and models to reach the target of 90% national recycling of plastic waste by 2050.

Task C: Development of national waste management strategy and campaign

Accordingly, the following activities are expected to be carried out within the first 3 months;

- a. **planning of the awareness campaign** Incorporate analysis of the diagnostic report and policy report from previous deliverables to identify gaps and weaknesses in the current framework and develop an integrated delivery plan for reforms.
- b. **Status and gaps identification** The reform response will include the identification and development of an intervention plan capturing the following five dimensions (i) regulatory and legal constraints, (ii) institutional arrangements, (iii) technical capabilities, (iv) financial measures, (v) gender aspects, and (vi) potential investment opportunities. The reforms will center on possible policies, administrative reforms, potential investment areas, and other voluntary arrangements.
- c. **Strategy finalization**
 - i. Finalize plastic waste management plan and roadmap draft upon the incorporation of comments from the Contracting Party and other stakeholders identified from previous deliverables, including individual roadmaps for different identified stakeholders, and detailing of short- and long-term action plans for the overall sector, with key priority areas; include learnings from previous deliverables.
 - ii. Prepare a private-sector-specific engagement plan to integrate Public Private Partnerships(PPPs) and voluntary arrangements into the roadmap, in particular for improving the circular economy and increasing plastic pollution.
 - iii. Performing high-level stakeholder engagements with Pakistan's key public sector officials to gather support and endorsement for the plan.
- d. **Carry out awareness campaign** Prepare awareness and advertising campaign materials for the public campaign and distribute materials through an agreed-upon awareness program.

9. Deliverable Plan

The consultant shall furnish the following deliverables within the time span indicated below;

Tasks	Deliverable	Final submitted
Task A	Deliverable 1: Inception report on the scope of the survey and methodology of primary data collection and other databases	After 8 weeks of the commencement of the Contract
	Deliverable 2: Integrated database and management system, report User manual and relevant training.	After 12 weeks of the commencement of the Contract
Task B	Deliverable 3: National Plastic Mitigation Plan	After 30 weeks of the commencement of the Contract

Task C	Deliverable 4: National Plastic Waste Management Plan and Roadmap	After 32 weeks of the commencement of the Contract
	Deliverable 5: Knowledge dissemination and awareness campaign	After 32 weeks of the commencement of the Contract

VI. TEAM COMPOSITION AND QUALIFICATION REQUIREMENTS FOR KEY AND NON-KEY EXPERTS

10. COMPOSITION OF THE TEAM

The team will leverage expertise from local consultants. An indicative list of the positions of key staff for the firm of consultants who will be evaluated during the technical evaluation process is given below (note that the list does not include support staff for fieldwork and other activities such as field survey, data collection, documentation, etc.). The consultant may enhance the utility of expertise by proposing their own estimate of the required number of positions/person months to carry out the assignment.

The teams

A four teams will be deployed to this work, including; (i) a project management team, (ii) a technical expert team, (iii) an analysis team, and (iv) a survey team, combining a blend of in-depth country insight, and global expertise, drawing on experience with governments around the world.

A. Project management /Leadership team

The project management/ leadership team will oversee the project. The project leadership team will provide quality assurance on final deliverables, ensuring that the work draws on all collaborating forms' collective regional and global experience.

A dedicated Project Leadership team will oversee the development of the project, including managing relationships with key leaders and stakeholders in the government and private sphere, facilitating individual consultations and project planning documents and selecting critical meetings, and leading the development of the final deliverables. The Project Leadership team will serve as overall project managers, acting as a lead point of contact for the PIU.

B. Technical Expert Team

The Team Leader will lead experts, drawing on the wider expert pool as required, and work to bring subject-level expertise to the project, particularly as related to the design, conduct, and analysis of primary data collection and all surveys. They will also provide continual insight, analysis, and guidance on marine pollution and plastic waste management, for all deliverables.

Key team composition for;

A. to support the development of a national plastic waste management plan and establishment of it based monitoring and reporting mechanism for Pakistan is given below;

Role	No experts	Total months
Key Staff		
Project Team Leader / Environmental Modeler Expert	1	9
Data Base Management expert	1	3
Environmental Economist	1	3
Plastic Waste Management Expert	1	3
Policy Planning Expert	1	9
Behavioral and Stakeholder Management Expert	1	9
Senior Analyst	1	9
Non-key staff		
Junior Analyst 1	1	9
Junior Analyst 2	1	9
Total	9	63

B. Team composition for the development of a Dashboard for the IT Solution

Description	Total Man months
Key staff	
Team Lead/Database management expert	5.9
Backend Developer 1	5.9
Frontend Developer 1	5.9
User Interface (UI) and User Experience (UX) (UI/UX)	1.7
Non key staff	
Frontend Developer 2	5.9
Backend Developer 2	5.9
Backend Developer 3	5.9
Mobile Developer	4.2
Mobile Developer 2	5.0
DevOps (development (Dev) and IT operations (Ops)	5.7
Quality Assurance	5.7
Total	57.4

In addition to the above-listed positions of professionals, the consultant should decide and submit CVs at the proposal submission stage for other experts and support professionals with adequate experience in relevant fields match to approximately 120.4 Man-months. During the technical evaluation process, non-

key staff will not be evaluated individually. However, they will be considered collectively along with other support staff, if any, under the “Work Schedule and Staffing” criteria of evaluation.

EXPERIENCE AND EXPERTISE REQUIRED FOR THE CONSULTING FIRM:

The Consulting firm should have a Minimum of 5 years of professional experience working in a similar field, especially in developing and delivery of similar strategies including plastic waste estimation, review of existing policies, development of a national action plan, and database development. Additionally, financial capability and capacity to mobilize expertise within project areas are required.

VII. TERMS OF REFERENCE OF CONSULTANTS

11. Generally, each individual consultant will work under the direct guidance/supervision of the designated team leader of the firm of consultants in close consultation with the Ministry of Climate Change Pakistan, SACEP, and PLEASE Project Implementation Unit (PIU). The outline terms of reference of the individual consultants are briefly described below.

12. COMPONENT A

Composition of Key Staff

a. Team Leader/ Environmental Modeler Expert

The Team Leader is preferred to have a Master' degree in environmental engineering or similar disciplines and should have a minimum of 12 years of experience in the field. Experience in project management and waste management sectors is important. Should have Environmental Modeling experience of a minimum of 7 years preferred. Experience in data modeling of different modeling frameworks; public sector and climate change experience will be an added qualification. In addition to its line functions, the Team leader is expected to supervise, manage, and advise the team in the implementation of the project. The team leader will coordinate the efforts of the project management team, to ensure that management and technical policies are correctly and consistently implemented in all aspects of the project. The team leader will be a point of contact and lead meetings to monitor the scope and schedule of the implementation of the activities as per the program. The team leader will also oversee the agenda of the project team meetings and folders and back up all pertaining documents for proper documentation. Monitoring team performance and intervening whenever necessary as required to ensure the successful delivery of projects are also important. It is a compulsory requirement to deploy the team leader on a full-time basis for 9 months period throughout the consultancy service or any other time agreed by both parties.

b. Database Management Expert

13. The Database Management Expert should have More than 7 years of experience in a similar field. At least a bachelor's degree; a master's degree in data sciences will be preferred. He/she should assist the Team Leader in carryout out the tasks as per the TOR.

c. Environmental Economist

Environmental economists should have a minimum of 7 years of experience in the same field. At least a bachelor's degree; and a master's degree in environmental sciences, environmental economics, climate finance or related will be preferred. Experience working in environmental economics, and renewable energy space; experience in the public sector will be preferred. The expert is responsible for all the activities relating to the environmental economics functions under the TOR.

d. Plastic Waste Management Expert

Plastic Waste Management Expert should have a minimum of 10 years of experience in the field. At least a bachelor's degree; and a Master's degree in environmental sciences, or a related or similar field will be preferred. Experience working in plastics, and circular economy; experience in the public sector and multilateral organizations will be preferred. The expert is responsible for tasks under the TOR relating to plastic waste management-related activities which are not defined by any other consultants under the TOR.

e. Policy Planning Expert

Policy planning experts should have a minimum of 7 years of experience in the given field.

At least a bachelor's degree; and a master's degree in public policy, public administration, or related will be preferred. Experience working in policy formulation, developing strategies, and implementing plans for governments is required. The expert is responsible for policy-related activities under the TOR.

f. Behavioral and Stakeholder Management Expert

Behavioral and Stakeholder Management Experts should have a minimum of 7 years of experience in the relevant field. At least a bachelor's degree and a master's degree in behavioral economics or related fields will be preferred. Experience working in designing and implementing behavioral change strategies/campaigns; public sector experience will be preferred. The Expert is responsible for the activities of behavioral and Stakeholder Management aspects under the TOR.

g. Senior Analyst

Senior Analysts should have a minimum of 7 years of experience in the field. Bachelor's degree and Experience in project management and data analytics is preferred. The experts will be responsible for data analysis under TOR.

Composition of Non-Key Staff

h. Junior Analysts 1 and 2 (two positions)

Junior Analysts 1 and 2 should have a minimum of 2 years of experience in the field. Bachelors degree And Experience in project management and data analytics is preferred. The experts will be responsible for data analysis under TOR for the Senior Analysts.

**14. Component B
Composition of Key Staff**

a. Project Team Leader /Database management Expert

The expert should have an Advanced University Degree (Master's or equivalent) preferably in Information Technology and Business Administration/ or a related field is required. An expert should have a minimum of 10 years of experience in the relevant field as a Team leader/project manager together with database management experience of a minimum of 4 years' experience. A first-level university degree (Bachelor's or equivalent) with (2) two additional years of experience may be accepted in lieu of the Advanced University Degree.

b. Backend Developer 1

A Master's Degree, preferably Computer Science, or another relevant discipline with a minimum of experience of 5 years is required. A Bachelor's degree in combination with additional two years of experience may be accepted in lieu of a master's degree. Secondary education in combination with additional six years of experience may be accepted in lieu of a master's degree.

c. Frontend Developer 1

A Master's Degree, preferably in computer science, information systems, information technology or other relevant disciplines with a minimum of 5 years of experience is required. A Bachelor's degree in combination with additional two years of experience may be accepted in lieu of a master's degree. Secondary education in combination with additional six years of experience may be accepted in lieu of a master's degree.

d. UI/UX

A Bachelor's degree in computer science, computer engineering or a related field with a minimum of 5 years of experience in the relevant field is required. Secondary education in combination with additional five years of experience may be accepted in lieu of a Bachelor's degree.

Composition of Non- Key Staff

e. Backend Developer 2 and 3 (two positions)

A Bachelor's degree in Computer Science or another relevant discipline with a minimum of 2 years of experience is required. Secondary education in combination with additional five years of experience may be accepted in lieu of a Bachelor's degree is required.

f. Frontend Developer 2

A Bachelor's degree, preferably in computer science, information systems, information technology, or other relevant disciplines, with a minimum of 2 years of experience is required. Secondary education in combination with additional five years of experience may be accepted in lieu of a Bachelor's degree.

g. Mobile Developer-1

A Bachelor's degree, in computer science, information systems, mathematics, statistics, or a related field with a minimum of 3 years of experience in the relevant field is required. Secondary education in combination with additional five years of experience may be accepted in lieu of a Bachelor's degree.

h. Mobile Developer 2

A Bachelor's degree, in computer science, information systems, mathematics, statistics or a related field with a minimum of 2 years of experience in the relevant field is required. Secondary education in combination with additional five years of experience may be accepted in lieu of a Bachelor's degree.

i. DevOps

A Bachelor's degree in computer science, computer engineering or a related field with minimum 10 years of experience in the relevant field is required. Secondary education in combination with additional five years of experience may be accepted in lieu of a Bachelor's degree.

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j. QA

A Bachelor's degree in computer science, information technology or a related field with minimum 5 years of experience in the relevant fields required. Secondary education in combination with additional five years of experience may be accepted in lieu of a Bachelor's degree

VIII. REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES

15. The total duration of the assignment is expected to be 120.4 months for the Selected consultants, and the consultant team will focus its efforts to facilitate the activities identified in the TOR. The selection of the consultancy firm will be based on the Quality and Cost Based Selection (QCBS) method with a quality-cost ratio of 80:20. Additionally calling for a Full Technical proposal will be used at the time of calling for proposals. All consultants, including the firm and individuals, will be recruited in accordance with World Bank's 'Procurement Regulations for IPF Borrowers'(Procurement in Investment Project Financing- Goods, Works, Non-Consulting and Consulting Services, July 2016 Revised November 2017 and August 2018), setting forth the World Bank's policy on conflict of interest.

16. The quarterly progress report format will be developed by the consultant in consultation with the Ministry of Climate Change Pakistan which will meet the requirements of the World Bank/SACEP. An inception report and interim reports will be prepared. A draft final report will be submitted to the World Bank/SACEP as stated below. World Bank's /SACEP comments, and the comments of the Ministry of Climate Change Pakistan will be provided before the commencement of the dissemination stage. In addition, the Consultant will prepare any reports required in relation to the project as requested by the SACEP/ Ministry of Climate Change Pakistan. The deliverables expected in this consulting service is explained in section 9 of TOR.

IX CLIENTS' INPUT AND COUNTERPART PERSONNEL

The following condition will be applicable to this requirement:

- a) The Consulting Firm shall use its own office and other resources to provide the services under TOR.
- b) The Ministry of Climate Change of Pakistan and SACEP will have strict reporting requirements which will be agreed upon with the contracting party at the outset of the project. The Consultant will report progress on all deliverables and milestones in an agreed timeline and will report any deviations or issues at regular intervals. Different teams within the consulting team will also have to strictly report to the overall project leadership team with regular updates.
- c) The Consultant will also report to the Ministry of Climate Change and regular periodic updates will be given on the status of implementation. The Ministry will provide nominated officials who will receive these updates and look over the assignment.
- d) The project will contain a strong monitoring and evaluation process to ensure overall deliverable quality and accuracy, including regular checks of the data collection team, regular check-ups of the report-writing process, and stakeholder engagement process.
- e) The Inception Report will also include a detailed success factor analysis, laying out the processes, tools, plans, skills, communication methods, and management techniques that will be used to ensure the success of the project. The project will be evaluated against this metric at regular intervals to ensure adherence to overall project success and quality.

17. Services, facilities, and property to be made available to the consultant.

The Ministry of Climate change of Pakistan will provide available reports, data, and information relevant to Consulting assignments. The provisional sum has been allocated for office furniture for team leaders, managerial officers, and other office staff and for carrying out surveys. The equipment and furniture purchased under this item is considered the property of the Project. However, the consultants have to

make the arrangements for obtaining the required utilities such as stationery, telephone, internet facility, etc.

18. **Professional support counterpart personnel to be assigned.**

The will provide adequate counterpart support to the consultant's team for this assignment.

X. INFORMATION TO FACILITATE PROPOSAL

19. Upon written request from the consultants, the Ministry of Climate Change will provide the consultants with all available data.