

Terms of Reference

Title: Scoping Study for Carbon Finance in Larkana

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Project Background

Pakistan is a rapidly developing country with the highest rate of urbanization in South Asia¹. The country is plagued with several development challenges, one such being its inefficient waste management system. Pakistan produces 49.6 million tons² of solid waste per year and 3.3 million tons worth of plastic waste annually, equating to the height of two K-2 mountains,³ fuelling widespread environmental pollution and associated health hazards. A glaring example of the mismanaged waste sector is the hazardous and inefficient management of waste in its cities, visible in the forms of open landfills, mismanaged dumps, polluted waterbodies and environment. Inefficient waste management by municipal and other relevant authorities and a lack of comprehensive hierarchical and organized framework along with an unregulated informal sector has proliferated the waste crisis in Pakistan, highlighting the urgent need for intervention to ensure sustainable growth. In this context, emission and pollution reduction interventions through carbon markets are a viable solution for Pakistan, offering multiple co-benefits and ensuring an efficient and safe waste management system.

Rationale

Larkana, the fourth largest city of Sindh province, is one of the localities experiencing the waste crisis. With a population of 1,784,453⁴, it is estimated that Larkana generates about 500 tons of waste every day which is left to open burn or pollute the environment due to inefficient and inadequate waste management system⁵. An alarming indicator of the drastic mismanagement is the historic Rice Canal, which used to be a source of sweet clean drinking water but due to unregulated waste management about 22 million gallons per day (MGD) of waste is disposed into it, severely contaminating the water and leaving it unfit for consumption⁶. In recent developments, the provincial government has taken a notable stride by allowing Sindh Solid Waste Management Company to take over Larkana's waste management system, and collaborating with Gansu, a Chinese Company to initiate the city's first waste management program⁷.

As a developing and urbanizing city, Larkana's waste management requires innovative and effective interventions to ensure an efficient, inclusive and safe waste management system to ensure sustainable development as envisioned in the National Climate Change Policy 2021 and Nationally Determined Contributions 2021. This concept note highlights that carbon markets present a suitable solution to the waste crisis, promising not only an improved waste sector but multiple co-benefits ranging from health to environmental regeneration. Global carbon markets reached \$949 billion last year⁸, signifying the growing demand for sustainable

1 <https://www.undp.org/pakistan/urbanisation-pakistan>

2 <https://www.trade.gov/country-commercial-guides/pakistan-waste-management#:~:text=Pakistan%20generates%20approximately%2049.6%20million,more%20than%202.4%20percent%20annually.>

3 <https://www.undp.org/pakistan/blog/good-bad-and-ugly-plastics-pakistan>

4 <https://www.pbs.gov.pk/content/announcement-results-7th-population-and-housing-census-2023-digital-census>

5 <https://tribune.com.pk/letter/2254621/waste-management-3>

6 <https://tribune.com.pk/story/1515983/waste-disposal-rice-canal-deprives-larkana-residents-potable-water>

7 <https://ppinewsagency.com/%EF%BB%BFsolid-waste-management-board-to-takeover-larkana/>

8 <https://www.reuters.com/markets/commodities/global-carbon-markets-value-hit-record-949-bln-last-year-lseg-2024-02-12/>

and emission-neutral interventions. Pakistan’s cities, especially Larkana, stands at a unique position as it has put in place the necessary plans, however, it must align these plans with actions. Harnessing the potential of carbon markets to initiate waste sector improvement in Larkana, Sindh, promises emission reduction in a sustainable manner, producing several co-benefits and paving the way towards sustainable development and climate resilience, ensuring the path to progress for the city.

Scope of Work

Objectives

1. Analysis of Larkana’s Waste Sector Potential for Emission Reduction
2. Development of 01 concept note for carbon market opportunities to improve Larkana’s waste sector

Proposed Activities and Outcomes

Deliverable 1: Inception Report

1.1	Inception meeting	Following a meeting with the contractor/officials/officers, the consultant will be expected to formulate an Inception Report inclusive of the following sections: <ul style="list-style-type: none"> • Preliminary research on Larkana’s Waste Sector • Project Implementation Plan and Schedule (Workplan and Methodology) • Impact Description • Monitoring and Evaluation Strategy • Stakeholder Consultation and Identification Plan
1.2	Development of Inception Report and associated sections	
1.3	Submission of Inception Report	

Deliverable 2: Larkana’s Waste Sector Profile

2.1	Desk review to assess Larkana’s Waste Sector	The consultant is expected to undertake a thorough desk research, analysis of policy and regulatory landscape and extensive stakeholder consultations to formulate a Waste Sector Profile for Larkana city. The primary goal of this report is to provide a data-driven and updated situational analysis of Larkana’s waste sector, its capacities and potential gaps and opportunities. This must include a gender, environment and social impact assessment to gauge how Larkana’s existing waste sector operations and management may impact vulnerable groups, livelihood and its environmental impacts. The
2.2	Gender, environment and social impact assessment	
2.3	Policy and regulatory landscape review	

2.4	Finalization of Larkana's Waste Sector Profile	primary goal will be to assess the institutional, technical, social and regulatory landscape within which Larkana's waste sector operates.
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Deliverable 3: Larkana's Waste Sector Emission Profile and Reduction Potential Report

3.1	Desk review and baseline assessment of Larkana's waste sector emission profile	<p>The primary goal of this Waste Sector Emission Profile and Emission Reduction Potential is to identify the potential of Larkana's Waste Sector to engage in Carbon Market opportunities and successfully pursue sustainable development while generating carbon credits. To do so, the Consultant will conduct both primary and secondary data collection and analysis. A comprehensive baseline assessment and desk review will be conducted to gather information pertaining to Larkana's waste sector emission profile and its potential for emission reduction interventions. In this activity, all previous and on-going projects pertaining to the waste sector in the city will be analyzed along with a thorough review of federal and provincial waste sector policies and provincial institutional landscape.</p> <p>Consultant will be responsible for developing and finalizing the methodology for emission inventory ensuring accuracy, transparency, consistency, comparability, and completeness.</p> <p>Stakeholder consultations at both provincial and district levels in Larkana will be conducted to gather information pertaining to Larkana's waste sector and its emission profile and emissions associated with different segments of waste management. The consultations will aim to gauge Larkana's existing capacities and infrastructure for waste sector interventions and potential to utilize carbon markets while devising the best way forward. Stakeholders will range between government officials and entities, to research and academic institutions, civil society organizations and the private sector. This activity will also include a preliminary short-listing of possible sub-themes within the waste sector that may be prioritized for funding.</p>
3.2	Stakeholder consultations	
3.3	Review of waste sector emission reduction projects	
3.4	Waste sector emission calculation	
3.5	Short-listing of potential sub-themes for carbon market opportunities	

Deliverable 4: Identification and feasibility of 01 sub-theme from Larkana's Waste Sector to develop for funding

4.1	Development of a criteria to identify sub-theme	<p>This segment entails extensive stakeholder consultations and utilization of Deliverables 2 and 3 to finalize 01 sub-theme and develop it for funding. Possible themes may include projects based on landfill gas, recycling, composting or food waste. The Consultant will develop a comprehensive criterion and perform the feasibility analysis to short-list the sub-theme, which includes:</p> <ul style="list-style-type: none"> • Emission reduction potential • Financial and economic feasibility • Technical Feasibility • Legal and regulatory assessment • City readiness to implement the project • Gender, environment and social impact assessment • Cost-benefit and risk analysis <p>This activity will also include identification of potential investors.</p>
4.2	Stakeholder Consultation to identify sub-theme	
4.3	Conduct project feasibility analysis (technical, economic, environmental, social)	
4.4	Identification of potential investors and standard setting body	
4.5	Finalize 01 concept note	

Deliverable 5: Finalization of Funding Stream for 01 Concept Note for Larkana’s Waste Sector

5.1	Stakeholder Consultation to gather feedback	<p>In this activity, a stakeholder meeting will be conducted to gather feedback on the sub-theme finalized to participate in Carbon Market funding opportunities. This feedback will be incorporated into the final idea notes. In addition to the development, this segment also entails the approval of the concept note and fostering of ownership amongst stakeholders, especially those belonging from Larkana. This includes aligning the project and developing associated documents with the criteria set by the Standard setting body (Verra, Gold Standard, etc.)</p>
5.2	Finalization of 01 Carbon Market funding note	
5.3	Finalization of stakeholder plan for project	
5.4	Development of project documents and details aligned with the requirements of standard-setting body	
5.5	Submission of 01 project for Carbon Market opportunity	

Deliverables and Payment Schedule

Deliverable		Timeline
1	Inception Report	10 days from signing of contract
2	Larkana city’s Waste Sector Profile	20 days from signing of contract

3	Larkana city's Waste Sector Emission Profile and Reduction Potential Report	30 days from signing of contract
4	Identification and feasibility of 01 sub-theme from Larkana's Waste Sector to develop for funding	60 days from signing of contract
5	Finalization of Funding Stream for 01 Concept Note for Larkana's Waste Sector	75 days from signing of contract

Consultant Requirements

Consultant Firm will be expected to closely collaborate with the PIU and Provincial stakeholders to deliver the project activities. The Consultant Firm is expected to possess a minimum of 3 year' of work experience in the field of climate change, environmental sustainability, mitigation and adaptation efforts, preferably in the waste sector. The Firm is expected to have a significant presence in Pakistan with access to a diverse network of stakeholders and a successful record of working closely with national and provincial stakeholders, including local communities. The Firm shall provide examples and evidence of at least 5 projects that are able to demonstrate the following:

- Access to a diverse network of public and private stakeholders (international and national)
- Experience in climate change environmental sustainability, adaptation and mitigation, preferably in the waste sector
- Experience of working on internationally sponsored projects
- Knowledge of research, planning, carbon stock assessment and emission profiling and review, stakeholder engagement
- Demonstrated experience of undertaking Carbon Market projects and activities

Based on the workload and keeping in view the skill and expertise to be required, it is worked out the following key staff would be needed to implement the project smoothly:

- Waste Sector /Circular Economy Expert
- Waste Policy and Planning Expert
- Gender and Social Inclusion Expert
- Carbon Market Expert
- Emission Inventory expert

Selection Process:

Firm will be selected in accordance with the CQS (Consultant's qualifications-based selection) set out in the World Bank's World Bank Procurement Regulations for IPF Borrowers November 2020.

Time Frame

The evaluation will be conducted over a period of four (4) months starting from July 2024.