



Terms of Reference for Potential Study Agreement

*Please submit your proposal before **21 December** to project@catalyticfinance.org*

This document serves to provide an overview of the underlying project relevant to the Subnational Climate Fund (SCF), context on data availability and goals of the mandate, as well as an estimated scope of work requested from the consultant. Final details of the mandate should be covered by the subsequent proposal submitted by the consultant.

1. The Subnational Climate Fund

The SCF is a blended finance impact fund formed to pursue attractive risk-adjusted returns for private investors while generating measurable and certified environmental and social impacts. The Fund is focused exclusively on pursuing investments in mid-size climate infrastructure with nature-based solutions in various developing countries across Latin America and the Caribbean, Africa, the Mediterranean, and Asia. The Fund is managed by Pegasus Capital Advisors, a commercial Private Equity impact fund manager and further benefits from a separate, grant-funded Technical Assistance facility managed by The International Union for the Conservation of Nature (IUCN) and implemented by R20, IUCN, and Gold Standard.

2. Context of the Potential Study Agreement

The SCF is considering a potential investment opportunity relating to the expansion of a waste management company in Cambodia. The company provides solid waste collection, transportation, street cleaning and disposal services in four cities (Siem Reap, Banteay Meanchey, Kompong Thom, Phnom Penh) and wishes to modernize its fleet of collection trucks and to explore additional business opportunities, such as the construction of a waste sorting, recycling, and composting plant.

Cambodia's recycling activity is limited due to lack of recycling industry and associated infrastructure, and the market for recycled materials and products. Most recyclable materials are exported to countries with recycling industries, such as Thailand, South Korea, Vietnam, China, Singapore, Malaysia, and Taiwan.

The waste that is not collected today by the company is likely burned on the roadside or dumped in nature or illegal dumpsites. The construction of a waste sorting and composting facility could significantly reduce the GHG emissions from the decomposition of organic waste.

The quantity of exported recyclables declined significantly from 47,916 tons in 2014 to 10,387 tons in 2019. This declining trend continues as the target countries limited and banned importing waste. Currently, the project developer has completed a pilot program to support the feasibility for glass and PET recycling. Waste to Energy is another objective for the project developer, achievable when high investment cost and revenue uncertainty (as energy is required to be sold) is addressed.

The SCF's Technical Assistance Facility is commissioning a feasibility study to support the company in the areas outlined below and is calling for proposals from qualified consultants.

3. Scope of Work for a Feasibility Study

The consultant is expected to provide the following assessment:

3.1 Full technical and economic feasibility assessment of the waste sorting, recycling and composting plant

An independent technical and economic feasibility assessment of the project is to be conducted which should inform SCF's investment decision. The five elements listed below are indicative and can be further specified after the appointment of the consultant.

1. Technical Assessment:

- Analyse the technical feasibility of producing outputs from the sorting plant that can meet the quality and quantity requirements of off-takers, buyers and end-users.
- Infrastructure: Assessment of the plant design, equipment, and technologies for the planned waste sorting and composting plant (as a whole and for each component i.e. sorting, composting). If improvement is needed, the consultant should provide an improved design in collaboration with existing technology partners.
- Capacity Analysis: Assess the capacity of the facilities in terms of waste processing and disposal relative to projected demand.
- Technology Review: Analyse the efficiency, effectiveness, and suitability of the chosen waste management technologies.
- Climate impact: Estimate the climate change mitigation impact (avoided/ removed emissions) by comparing the current operations of the project with vs. without the waste sorting and composting plant by using the appropriate methodology from the [Gold Standard approved methodologies](#) or [CDM methodologies](#).

2. Economic Viability:

- Cost Structure: Break down the capital and operational costs associated with the project, including construction, equipment, labor, maintenance, and operating expenses.
- Revenue Generation: Analyze potential revenue streams, such as gate fee, electricity cost (baseload energy) – other revenue streams to be clarified upon appointment. Please comment on whether these are achievable based on current precedents in the market and region.
- Financial Projections: Provide financial forecasts, including revenue projections, operating expenses, net present value (NPV), internal rate of return (IRR), and payback period.
- Sensitivity Analysis: Assess the project's sensitivity to key variables like waste volume, pricing, and operating costs.
- Validate civil specifications for the plant design provided by the EPC (as a whole and for each component i.e. sorting, composting) and its cost. If needed, provide cost refinement.

3. Market Analysis:

- Market Demand: Study the waste generation rates, demographics, and trends in the project area, also including the commercial waste sources targeted by the project.
- Identify market requirements for the commercialization of organic fraction and recyclables.
- Competitor Analysis: Identify existing waste management service providers and their market share.
- Regulatory Landscape: Understand the relevant waste management regulations and permits required.

4. Risk Assessment:

- Operational Risks: Identify potential operational challenges that could impact the project's success.
- Market Risks: Evaluate the risks associated with changing waste generation rates, competition, and economic conditions.
- Regulatory Risks: Assess the regulatory risks and potential legal issues that might arise during the project's implementation.

5. Recommendations:

- Summarize the findings from the assessment and provide recommendations for mitigating risks (contingency plan), improving operational efficiency, and ensuring economic viability.

3.2 Waste characterization study

To assess the MSW amount as feedstock and its composition, a waste characterization study should be conducted by the consultant. In close collaboration with the project developer, the consultant is expected to:

1. Clearly define the purpose of the waste characterization study, such as understanding the composition, types and quantities of waste generated in the project area.
2. Specify the geographic area that the study will cover.
3. Specify the waste streams to be analysed.
4. Methodology: Describe the methods and techniques that will be used to collect and analyze waste samples, including sampling locations, sampling frequency, and sample size.
5. Data Collection: Explain how data will be collected, whether through field surveys, waste audits, interviews, or a combination of methods.
6. Data Analysis: Detail the process for analyzing the collected data, including statistical methods, categorization of waste types, and determination of waste composition percentages.
7. Stakeholder Engagement: If the study involves engaging with stakeholders, outline the approach for involving local communities, waste management agencies, government bodies, or other relevant groups.
8. Quality Assurance: Describe the measures that will be taken to ensure the accuracy and reliability of the study, including quality control procedures and validation processes.

3.3 Assessment and Integration of informal waste pickers

The consultant is expected to assess the informal waste-picking and develop a concept and plan on how the informal waste pickers could be integrated into the project to ensure social acceptability of the project and sufficient feedstock. The concept and plan should also include actions to improve living conditions of workers before, during and after implementation of the project.

4. Deliverables

A final report in English (Word Format) consisting of the following elements:

- Executive Summary
- A table of acronyms
- Analytical part
- Bibliography
- Follow the SCF’s template for TA studies (provided by Catalytic)

5. Indicative Timeline

Work is expected to commence immediately after the consultant is appointed. The work is expected to be completed within **four months** after signing the service contract. The delivery of services and reporting timeframes are anticipated to be as follows:

Feasibility Study	
Activity / Deliverable	Indicative timeline
Kick-off meeting Establish communication channels for initial information exchanges, confirm the project schedule, confirm the reference framework, and review document availability. Throughout the study, regular working group call with all relevant stakeholders should take place (project developer, consultant, SCF team etc).	Week 1 after appointment of consultant.
Draft report 1 provided to Catalytic, review and incorporation of comments.	Month 3
Final report 1 provided to Catalytic.	Month 4

6. Form of Proposal & Requirements

Please prepare a brief proposal for the performance of this work, including the scope of work, project team and qualifications, and estimated costs.

- 1) **Scope of Work:** The scope of work should include a description of the specific activities that will be performed in order to accomplish the required tasks identified in Section 3. This should include any proposed site visits/reconnaissance, documents to be reviewed, interviews, etc. If the Consultant feels that additional tasks or components within a required task are suggested or warranted, these should be stated and delineated as “Optional Tasks”.
- 2) **Project team and qualifications:** This should include the name of the principal staff members and any sub-contractors, and a brief description of their role within the project team. Qualifications of staff should include relevant technical capabilities, full CVs, specific previous experience similar to this assignment, specific in-country experience and knowledge.

3) Estimated costs:

A total time and expenses cost estimate (not to be exceeded), in US Dollars, must be provided for the required scope of work. A breakdown of the estimated costs by task must also be presented in tabular format and should include Direct Labour Costs (number of hours or days per staff and their associated unit costs) and Indirect Labour Costs (i.e. travel, per diem, sub-contractors, etc.). Please note that R20 is exempt from VAT. Your financial proposal should therefore not include VAT. If field visits are necessary, travel costs will be covered by the SCF separately from the consultancy fee.

4) Conflicts of interest:

As part of the proposal, the Consultant shall also confirm that they do not have a conflict of interest and that they are in a position to provide an adequate, accurate and objective review.

7. Submission

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