



Project/Consultancy Title: Plastic Upcycling Alliance Externalities and Impact Research

Project Location(s): Remote or in-country (Dili, Timor-Leste)

Background

Like many countries around the world, Timor-Leste faces the urgent challenge of finding waste management solutions for plastic. Currently, plastic is burned in trash piles, clogs critical drainage infrastructure or washes up on the country's once pristine beaches, which causes risks to human health and jeopardizes the potential of the nascent, but promising, tourism industry.

Since 2019, the Plastic Upcycling Alliance (PUA) is a 3.5-year program implemented by **Mercy Corps** with support from the **United States Agency for International Development (USAID)**, which seeks to protect the natural beauty of Timor-Leste as well as the health and safety of its people. The program's goal is to support Timor-Leste on its path to 'plastic neutral' status whereby unnecessary plastic use is curtailed and replaced, and plastic waste is collected and recycled into locally sought-after products.

Utilizing market-based solutions, the program seeks to establish a value chain for used plastic that will add to Timor-Leste's small manufacturing base, bring a measure of diversification to an oil-dependent economy, and expand valuable employment and entrepreneurship opportunities.

At its core, the program takes a market systems development approach which empowers private sector actors to invest resources into the research and development of new product lines and applications, marketing, and income generating opportunities around plastic waste collection, recovery, and processing, while simultaneously stimulating market demand for products made from recycled plastic.

To achieve that, PUA co-finances key risk-mitigation activities dedicated to:

- (1) Investment in value chain solutions (e.g., purchase and importation of processing technologies to establish Timor-Leste's first commercial scale recycling facility in collaboration with private sector partner Caltech); and
- (2) Ecosystem support (e.g., market analysis, R&D, prototyping and testing, demonstration installations, marketing, networking, etc. for upcycling MSMEs and recycling partner Caltech).

Purpose

As part of PUA's documentation, communication, and dissemination efforts, Mercy Corps is looking for a qualified research and consulting firm (the "Consultants") to study the economic, environmental, and social impacts of PUA's intervention in Timor-Leste.

The research conducted by the Consultants will take a comparative approach to assess the impacts of the early recycling and upcycling capacity supported by PUA over the past two years, compared to business-as-usual/pre-existing disposal options. Where possible, the study will seek to quantify the effect of upcycling and recycling on the local economy, particularly through a tourism, commerce, and industry lens.



Consultant Scope of Work

In other words, the report produced by the Consultants will aim at assessing the environmental, social, and economic value creation/destruction of plastic materials collected and managed by PUA's partners compared to other plastic waste disposal scenarios in Timor-Leste.

The extent to which the positive impacts could be scaled, and negative impacts reduced through different end-of-life approaches (including for example, the roll-out of a potential nationwide plastic asphalt strategy) will be discussed, considering local context and constraints in terms of policy/investment decisions.

Activities

Throwaway culture hits poor people and poor countries first and worst. Current plastic use and disposal patterns in Timor-Leste exacerbate health, climate, and natural disaster risks for which the country is not adequately prepared.

Today, plastic waste is either sent to the national dumpsite – where standards are far from those of a controlled landfill and waste fires are constant – or littered/burned in trash piles/openly dumped in the environment before it gets to the dumpsite.

Increasing research suggest that plastic has negative end-of-life effects on health, wildlife, and climate when not recycled or disposed of in a controlled manner, which may include:

- (a) Clogged drainage networks increasing flood risks and creating stagnant water, which causes health, hygiene, and safety issues.
- (b) Greenhouse gas emissions releasing methane and ethylene when discarded plastic is exposed to solar radiation in air and water.
- (c) Ocean plastic affecting marine organisms when breaking down into microplastics, and further disrupting global carbon dioxide/oxygen conversion cycles.
- (d) Microplastics saturating water bodies, entering food chains, and poisoning wildlife triggering growing concerns in terms of human and animal health.
- (e) Open burning producing air pollutants and particles, which contribute to diseases and global warming.

These are some of the reasons that pushed PUA to consider the impact of plastic pollution an urgent development challenge, and to explore the potential of the circular economy to gradually close the loop on plastic in Timor-Leste.

In this context, it is essential for PUA and its partners to understand the extent to which the introduction of recycling and upcycling in Timor-Leste may positively influence the effects of plastic on climate, health, social, economic, and natural disaster risks (i.e., what are the positive/negative impacts of capturing and processing certain plastic items with the tools enabled by PUA, compared to the business-as-usual scenarios?).



Consultant Scope of Work

The Consultants will first establish a baseline of current end of life management looking at plastic waste flows (i.e., what is collected, what is not collected, what happens to it, etc.). The Consultants will provide guidance to specify the most relevant plastic items and/or sources that the analysis should focus on.

The Consultants will subsequently investigate the effects of the plastic recovered by PUA compared to the business-as-usual baseline situation.

Budget and timeline permitting, the Consultants will discuss the impact of a potential scale up in collection and recycling, including for example, through the roll-out of a potential a nationwide plastic asphalt strategy.

The findings of the above evaluation will be presented in a report documenting the aforementioned impacts of PUA's action.

Field work and travel

Further to the guidance provided by the Consultants at proposal stage, Mercy Corps and the Consultants will jointly define the most pertinent approach to field work and travel under this assignment. Any related travel will be arranged and paid for separately.

Timeframe and deliverables

The Consultants will complete the following deliverables during the months of November 2022-January 2023.

| # | Deliverable | Estimated level of effort | Target deadlines |
|---|--|---------------------------|--------------------------------------|
| 1 | Kick-off meeting with program team to confirm alignment on methodology and implementation practicalities | 1 day | Within 2 weeks of signing agreement |
| 2 | Detailed work plan for the research and report | 1 day | Within 3 weeks of signing agreement |
| 3 | Draft report (max. 25 pages) | 20 days | Within 12 weeks of signing agreement |
| 4 | Consultative presentation of the report with program team | 3 days | Within 13 weeks of signing agreement |
| 5 | Final report incorporating feedback from consultation | 5 days | Within 11 weeks of signing agreement |

The report will be based on applicable Mercy Corps templates and styles.

Payment schedule

The payment schedule will be:



Consultant Scope of Work

- Upon completion of deliverables 1-2: 25% of total consulting fee.
- Upon completion of all deliverables and acceptance of final report: 75% of total consulting fee.

The completion of each deliverable will be based on sign-off by Mercy Corps on the quality of the deliverable.

The Consultants will report to

Clement Albano, Circular Economy Manager.

The Consultants will work with

Circular Economy Team.

Proposal

Interested parties are requested to provide the following information and documents:

- Company presentation, business profile or portfolio description.
- A brief concept note (maximum 5 pages) describing the approach, methodology, and indicative work plan for performing the activities presented in this scope of work, including any anticipated field work or travel.
- Team composition and CVs of key personnel.
- Quote for the full scope of work, providing an estimated number of working days required to complete each deliverable or activity and specifying the total consulting fee covering all deliverables.

Required experience and skills

Mercy Corps seeks candidates with proven knowledge of plastic recycling; excellent analytical and writing skills; and experience with the Asia-Pacific region. Key requirements include:

- Demonstrable expertise in the circular economy, plastic recycling/upcycling processes and markets.
- Experience in the Asia-Pacific region (knowledge of Timor-Leste and island/remote situations preferred).
- Excellent English writing and communication skills.
- Strong ability to present information logically and concisely.
- Ability to facilitate planning processes, work as part of diverse teams, drive consultation, and integrate feedback.