Request for Proposal

Invitation to Innovation Challenge on:

PLASTIC WASTE RECYCLING AND LOCAL MANUFACTURING OF PRODUCTS MADE FROM THE RECYCLED PLASTIC IN UGANDAN REFUGEE SETTLEMENT

Introduction

Globally we face two immense global challenges that are woven together: climate change and the refugee crisis.

Never before have so many children, women and men fled their homes because of food insecurity as a result of drought, insecurity due to political instability, conflict over resources, etc. And never before have the man-made pressures on the climate been as great as they are now, showcased by extreme weather events and the global notion that we must both demand and deliver change.

The global refugee situation weaves into the social, economic and environmental effects on the thousands of refugees and the settlements that house them. From the separation of families and communities, the lack of resources and opportunities to provide for oneself, to the environmental impact of deforestation that comes with clearing new camp in a crisis situation. The reality is that we need to act now. Care has taken it upon themselves to be part of this conversation. To act and deliver change that will help push this narrative forward. One of the key settlements accessible to delivery this first line of change is Uganda.

Today Uganda hosts a total of **1,293,582 refugees and asylum seekers** as of 30th June 2019 (Uganda refugee response report 2019), primarily from South Sudan and DR Congo. The many refugees live in large settlements distributed in Uganda, and this creates a great pressure on the country, which is already struggling with poverty and climate change. In western Uganda, close to the border with DR Congo, lies the large settlement of Kyangwali. There are currently more than **90,000 refugees** living here and the settlement faces major challenges with both living conditions for residents and negative consequences for the environment.

In Kyangwali, natural resources are somewhat depleted, soil fertility vastly declining, seeds difficult to obtain, water restricting, and the natural forests depleted. All affecting **4 major challenge arenas: food, water, nature and homes**. However, opportunities for more long- lasting solutions are possible with the positive collaboration shown by the OPM Settlement Commandant and the UNHCR. Both parties are very supportive and appear open for considering new approaches in planning and management.

Many refugees grow small amounts of corn, sweet potatoes, banana and cassava but due to e.g. limited access to land the yield is extremely modest and can by no means cover the family's food needs let alone generate enough to sell produce on the local markets. Therefore, all families are continuously depended on food provided by aid organizations. Furthermore, the refertilizing potentials imbedded in the bio-waste generated in the camp are not exploited. At the same time there is at present no system in place for handling waste, and therefore no collection and exploitation of e.g. plastics and other non-organic waste types. This means that potentials for reuse and/ or recycling of materials are not utilized.

It is estimated that up to **one ton of plastic waste is generated in the Kyangwali settlement on a weekly basis** (calculated using figures based on experience from a Refugee Youth Recycle Plastic Waste project in refugee settlements in West Nile sub-region). Much of this waste comes from soda and water bottles, packing bags, food raps, utensils, among others. The vast majority of the plastic waste is not collected, and it therefore lay scattered around on the ground, being blown around by the wind. This leads to waste polluting households, agriculture, composting systems and open water ways, reducing yields and causing increased health related risks for both people and domestic animals. The limited amounts of the plastic waste, which are collected, are discharged by burning it on open fires, leading to local hazardous smoke pollution risks.

The nearby forest areas are under extreme pressure. The trees are being felled and used for firewood for primarily cooking, and it is estimated that by 2020, at least 40% of the surrounding forest will have disappeared. In Kyangwali the daily consumption of wood constitutes up to around 300 tons which are being logged in the surrounding forests. In addition to the massive negative effect on the natural forests the harvesting of firewood has it also constitutes negative social implications. Women and children are responsible for collecting the firewood, and besides the many hours they spend every day doing that, they are also somewhat vulnerable as they are at risk of being assaulted when they travel far from the settlement.

Generally, there is a lack of employment or income generating opportunities in the settlement, and thus people have little prospect of creating a better life for themselves.

Additional background

Uncontrolled use and insensitive way of disposing plastic is one of the major causes of environment degradation in the world today and Uganda as well.

It is estimated that at least 600 tonnes of plastics are consumed every day in Uganda and the vast majority of it is not collected and recycled. It is believed that more than half of it is used and disposed off in and around Kampala. At least 51% of plastic garbage in the city is left uncollected. Plastic waste is the major cause of clogging sewage systems in the city.

In the year 1972, on average a person used up to two kilogrammes of plastic, but today a person uses up to 43kg of plastic annually. Since the 1950s, at least 8.3 billion tonnes of plastic have been produced worldwide. According to the United Nations, ingestion of plastic kills an estimated one million marine birds and 100,000 marine animals each year. In the world's beaches and shorelines 73% of waste are plastic materials. Plastics are artificially made of toxic chemicals and when they are badly disposed of groundwater and reservoirs are susceptible to leaking environmental toxins.

In most countries, only 9% of plastic is recycled. In Uganda generally less than 5% of plastic is recycled. Plastic can take over 450 years to decompose completely. They are left in our rural areas, gardens and wetlands uncollected causing serious threat to agriculture, water and soil pollution. Plastic pollution is the major cause of water contamination in lakes causing serious threat to marine life. A school of thought believes that plastic pollution kills more people than malaria and HIV/AIDS combined. A study suggests that about 14% of children between the ages of eight and 14 living in Kampala have bronchial asthma.

When plastic is burned, they emit toxic chemicals causing respiratory problems. Uganda does not have any serious environment laws on burning plastics and the existing laws are never enforced. After few decades, it will cost millions of dollars to clean up the polluted land, water and air, not forgetting the health problems they could have caused in those years.

According to Ecowatch, between 500 billion and one trillion plastic bags are used worldwide annually.
A British environment report mentions that about one million plastic bottles are bought around the world every minute, and this number is set to increase by another 20% by 2021 if laws are not made and enforced. The same report says that more than 480 billion plastic drinking bottles were purchased in 2016 across the world — up from 300 billion a decade ago.

The plastic situation described above is not unique for neither the Kyangwali settlement or Uganda in general and in many areas around the world this causes major challenges.

The innovation challenge:

This project seeks to develop / introduce a solution, by which plastic waste is recycled and the material used to produce new products, based on renewable energy technology, combined in a mobile/movable building/unit. The process line must include solutions which processes and recycles the collected plastic and enable manufacturing of new locally commercially viable products or commodities (e.g. chicken wire, baskets, building materials, etc.), which add value and opportunities in the local community. The solution(s) must be adaptable to produce different types of products, based on local needs and design processes, as well as include a business model for establishment, and operational aspects.

Expected effects and prerequisites of the solution(s)

- Dramatically reduce – and over time eradicate – local plastic pollution
  The solution and imbedded activities should have clear, obvious, demonstrable and measurable positive effect on the recycling of plastic waste.

- Enable production of plastic products made from the recycled plastic
  The solution and imbedded activities should have clear, obvious, demonstrable and measurable positive effect on manufacturing of new products made from the recycled plastic, or from a base material manufactured using the recycled plastic.

- Mobile sorting and production unit
  The solution and embedded technology should be installed in one mobile / movable unit which enable tests in different locations in the settlement or host community if more viable and relevant, and/or be moved if influx of plastic waste in this particular area is reduced.

- Renewable and accessible energy
  The solution and imbedded activities should be based on renewable and fiscally accessible energy production and storage.

- Climate positive: The activity should have clear, obvious, demonstrable and measurable positive effect on the climate impact linked to waste handing in the settlement.

- Creates income and employment: The solution(s) should create income and employment for refugees and host community through adding value to collections of plastic waste, processing of the collected material and manufacturing of new products and /or materials which can be commercialized.

- Creation of sustainable business: The activity must have a clear business case, showing how it will develop into a durable, thriving business. The business should include local employment or other positive local livelihoods effects. Part of the business case should be clear identification of a local

market, either existing or likely to be developed, and be affordable in the local context. In addition, the proposed solutions for business set up should include plans for future maintenance and repair, and aspects related to e.g. reuse and recycling of production equipment.

- Improves living conditions and reduces risks for women, youth and children: The activity should preferably demonstrate how it will lead to improved social conditions and reduced risks for women, youth, and children - taking into consideration the demographics of the settlement (55% below the age of 18 and 63% female).

- The solution must be safe to operate and use, and needed occupational health and safety measures (e.g. needed safety equipment) must be provided and maintained.

- Increases joint activity and accept between host community and refugees: The tests of the solutions should illustrate that it benefits both the refugee and host community

- The description of the implementation process should consider practical and cultural aspects of waste collection and recycling, as well as production and subsequent sales of products.

CAMP+

The innovation challenge is anchored in CAREs initiative of creating the world's first sustainable refugee settlement, called CAMP+. We call the initiative CAMP+ because the project is aimed at turning minus to plus. Water and food is managed and produced in a self-sufficient manner, waste becomes new materials and products, lack of necessities stimulates production and job creation, and human misfortune is instead leading to new communities arising, and dignified lives. Therefore CAMP +.

CARE has in-depth knowledge and understanding of the challenges that affect both humans and the environment and other are experts when it comes to innovative and technical solutions.

When the right competencies contribute with individual expertise and CARE secure that CAMP+ is being developed as a unified ecosystem, it ensures that the best solutions, in the specific local context, are chosen, and that the synergies between the different solutions are utilized. In addition, throughout the development and realization of the project, the connection and co-operation with the surrounding community will be in focus.

Pilot collaboration

The pilot will be conducted in Kavule, a subsection of the Kyangwali refugee settlement in western Uganda. Kavule is home to around 10.955 people. 55% of the population is below the age of 18 and 63% are female. They primarily derive from DRC.

CARE has a strong presence in Uganda, which also includes an office in the settlement and working relationships with the settlement authorities and other key stakeholders. Additional technical staff are based in our office in Kampala, which includes staff capacities related to private sector engagement, gender and women's empowerment, humanitarian response, M/E, and natural resources management. CARE will hence be able to provide on the ground support related to e.g. community involvement, collaboration with settlement authorities and local partners, and monitoring. The role of CARE and local partners during pilot testing will be agreed with the vendor during the planning and design phase.

Process and timing

Date	Action
11th October	Market dialogue session (virtual conference call)
14th October	Market dialogue session in Kampala, Uganda
1st November	Request for proposal published
18th November	Deadline for vendors to ask clarifying questions
6th December	Deadline for submission of proposal
January 2020	Design sprint with vendor(s) and key project stakeholders
February 2020	Develop pilot model
March 2020	Initiate field test in Uganda
June 2020 (expected)	Adjustments based on first test
October 2020	Evaluation and plan for commercialization

Submitting proposal

Proposal (RFP) are to be uploaded to EU-supply by December 6th 2019.

Additional questions can be submitted to Morten Fauerby Thomsen (mthomsen@care.dk) by November 18th, 2019 the latest.

Contents of the Proposal

The proposal should include the following two parts.

PART A - Technical (max 10 pages in PDF)

The technical part of the proposal should be in PDF format and should include the following sections:

1. **Executive Summary** (2 pages max). Provide a brief overview of your understanding of the problem, summary of your approach to deliver the solution per the requirements, and financial summary.

2. Description of the proposed **approach, methodology, solution** to meet the requirements and processes described in the *Expected Effects of the Solution(s)* section. Summarize what is already developed or out-of-the-box in your solution, and which ones will need to be developed or customized. Please include list of expected sub suppliers in the manufacturing process.

3. Please describe the expected **Sample size** needed to meet the *Expected effects and prerequisites of the solution(s)* and illustrate prove of concept

4. Illustrate and briefly describe the **Technical Architecture design**. Provide a graphical representation of the technical architecture design identifying the process line and its different components as well as processing and production capabilities.

5. Describe the **facility energy need** and **renewable energy generation capabilities** for running the process.

6. Describe the approach for **scalability** of your solution assuming successful pilot implementation. Describe how your solution could be integrated in other settings and adapted to fit under different circumstances.

7. Please describe your business model and commercial ways of working, and potential costs to beneficiaries, and include related demographical considerations, targeting women, youth and children.

8. **Project team**. Describe the members of the project team / consortia, roles, and include their CV's. Describe the work location, availability and percent dedication of the proposed team members to our project.

9. **High-level work plan** with breakdown of activities, time schedule, and outputs that are clearly linked to the information in the *Process and Timing* section.

PART B - Financial (max 2 pages in PDF)

The financial part of the proposal shall be structured in the following sections and described in detail what is included in each of the costs and assumptions taken:

1. One-time implementation / setup cost of the full solution based on requirements
    a. Itemize and provide details of the costs (state assumptions)
    b. Describe if a development or staging (pre-production) environment is included with the production environment
2. Recurring monthly costs (e.g. license fee, hosting, support & maintenance, minor enhancements, etc.)
3. Equipment specific costs.
4. Training (online training, in person train the trainers, and materials that will be produced)
5. Daily rates for consulting or custom development
10. Travel costs, if any

Visual examples of plastic pollution in the settlement