



ADAPTATION FUND

**PROGRAM ON INNOVATION:
SMALL GRANTS PROJECTS THROUGH DIRECT ACCESS MODALITY**

REQUEST FOR PROJECT FUNDING FROM THE ADAPTATION FUND

The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email or fax.

Please type in the responses using the template provided. The instructions attached to the form provide guidance for filling out the template.

Please note that a project must be fully prepared when the request is submitted.

Complete documentation should be sent to

The Adaptation Fund Board Secretariat
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PROGRAM ON INNOVATION: SMALL GRANT PROJECT PROPOSAL

PART I: PROJECT INFORMATION

Country: Uganda

Title of Project: ACCESS (Adaptive and Affordable Clean Cooking Enables Sustainable Solutions - in Masaka)

National Implementing Entity: Ministry of Water and Environment

Executing Entity: Mercy Corps and PESITHO

Amount of Financing Requested: 5,000,000 (in U.S Dollars Equivalent)

1. Project Background and Context:

1.1 Background

Around the world, approximately 1 gigaton of carbon dioxide equivalent is produced every year from burning wood fuels, equal to 1.9-2.3% of global emissions¹ - comparable to the emission caused by the aviation sector in 2021.² Black carbon is the main waste from wood fuels and a key contributor to global warming as per unit of mass, being 460-1,500 times stronger than CO₂.³ It is apparent that clean cooking is a key tool in reducing these emissions. In turn, the way people cook impacts their capacity to adapt to a changing climate, as natural resources become more scarce, impacting the time and energy required to fetch biomass to burn, instead of engaging in productive and social activities.⁴ About 2.4 billion people are without access to clean cooking, costing the world more than USD 2.4 trillion in damage to the climate and local economies and contributing to 3.2 million premature deaths each year. By relying on polluting cooking practices, such as open fires and inefficient stoves, over 120 megatons of GHGs are emitted every year. In Uganda, 94% of households depend on biomass for cooking, of which 73% is firewood and 21% charcoal⁵, which results in wood fuel emissions accounting for more than 50% of the country's total emissions.⁶ In Uganda, the per capita firewood and charcoal consumption stand at 240 kg and 680 kg per annum respectively and this has broad repercussions on the environment in terms of deforestation

1 [Balancing opportunity and risk: Harnessing carbon markets to expand clean cooking](#)

2 [Aviation – Analysis - IEA](#)

3 [The Problem The Solution CLIMATE, ENVIRONMENT, AND CLEAN COOKING Environmental Impacts of Cooking](#)

4 “Women and girls can spend up to 10 hours a week on fuel collection and four hours a day cooking over traditional stoves — effectively keeping them from higher-value, income-generating activities and perpetuating gender inequality and economic poverty while trapping them in a life of drudgery.” [Accelerating Clean Cooking as a Nature-based Climate Solution](#)

5 Uganda Bureau of Statistics (UBOS), 2021. Uganda National Household Survey 2019/2020. Kampala, Uganda; UBOS.

Source: [Here](#)

6 The carbon footprint of traditional woodfuels | Nature Climate Change

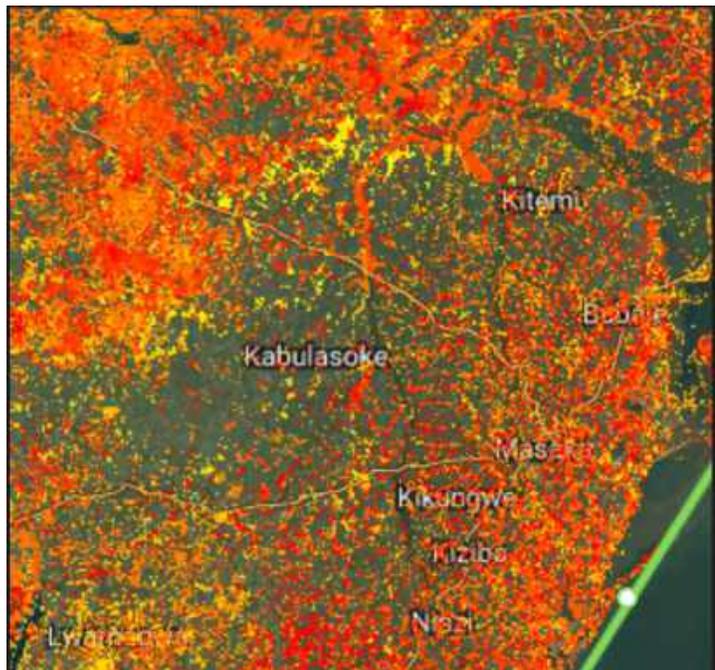


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and carbon emissions from biomass burning, individual and household health, climate change, and gender dynamics.

In 2022, Mercy Corps contributed to the Clean Cooking Alliance's report on "Accelerating clean cooking as a nature-based climate solution" and experiences directly the "*foundational and reinforcing role that clean cooking plays in nature-based solutions as well as wildlife and forest conservation programs. Transitioning to sustainable and cleaner sources of fuelwood is central to placing communities at the heart of nature-based solutions and addressing the core drivers of forest degradation and deforestation in the first place*".⁷ The present program, ACCESS (Adaptive and Affordable Clean Cooking Enables Sustainable Solutions - in Masaka) fits into Mercy Corps Uganda's ethos which puts nature-based solutions at the core of its approaches within humanitarian and development programs, such as with REVIVE (Restoring Ecological Vitality In Vulnerable Ecosystems), a UK's Foreign, Commonwealth & Development Office - funded project which focuses on ecosystem services as a core adaptation pathway for smallholder farmers, refugee communities, and women. Through an incentives-based model, REVIVE aims to increase forest cover over 10,000 hectares of degraded landscape and work with smallholder farmers to implement agroforestry and woodlots over 2,000 hectares. We expect to sequester approximately 1.8 million tCO₂e over 10 years.

To act in support of the connections between climate adaptation and access to clean energy sustainably, in May 2022, Mercy Corps conducted an Energy Access Assessment to understand the viability of market-based energy access solutions in displacement settings in Uganda and to recommend appropriate energy access interventions at selected sites. These assessments showed that most households in these settlements continue to use inadequate energy sources with the use of dry cell batteries for lighting and firewood for cooking remaining the norm for many households. The lack of an alternative source of fuel has resulted in the persistent use of biomass fuel (charcoal and wood fuel), with average wood fuel consumption standing at over 2kg/person/day. Moreover, according to the state of Uganda's environment, report 2016, 95% of Uganda's energy is from biomass, 90% of Ugandans use fuelwood as the main source of energy with rural households relying on the fuel-inefficient 3 stone stoves that lose 93% of the energy generated during cooking and led to increased deforestation⁸. According to



⁷ Accelerating Clean Cooking as a Nature-based Climate Solution

⁸ U-WN-YU-BD FAO Rapid Woodfuel Assessment 2017 Baseline for Bidi Bidi. Source: [Here](#)



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Global Forest Resources Assessment (FAO, 2020), an estimated 1.2 million hectares of forest cover (approximately 5 percent of Uganda's total land area) was lost in the period from 1990 to 2020. The average annual loss of forest cover was 41,300 hectares between 1990 and 2020.⁹ The image below illustrates the specific forest total loss between 2001 and 2021 for the area of Masaka where ACCESS would be implemented (the darker the red, the more recent the loss).¹⁰

To promote climate adaptation through clean energy cookstoves, Mercy Corps has implemented a field technology testing program in collaboration with PESITHO - a Denmark-based private company - to promote and scale the use of the solar-powered ECOCA cookstoves as one of the most eco-friendly and fuel-efficient technologies, in Bidi Bidi settlement, West Nile Region, targeting both refugees and host community members. However, one of the main challenges to transitioning from biomass-based cooking to solar electric cooking is the high upfront capital costs. As such, PESITHO and Mercy Corps - with the support of Elrha's Humanitarian Innovation Fund and CISCO Foundation - focused on strengthening the supply chain for the ECOCA cookstove and on increasing the affordability of the system via reliable PAYGo and Pay As You Cook (PAYC) models. PAYC uses a digitized payment option that spreads the installment payment over a period to support those that are unable to make an upfront payment. PAYGo units operate seamlessly on the same principles except that PAYGo has the extra capability of allowing the cook stove users to self-renew their leases using a system-generated token alert message that comes to their mobile phones after completing payment via mobile money.

Over time, cooking using the ECOCA is more affordable, and a better investment for the household, when calculating the savings on cooking fuel and income potential. The ECOCA is a one-time investment that eliminates daily expenditures on wood fuel and charcoal as well as lighting and charging options because the availability of solar energy for cooking, lighting, and charging with the ECOCA is free daily. An average household spends UGX 80,000 (\$22) of its disposable income on a bag of charcoal per month for cooking. Acquiring the ECOCA on an installment basis would mean using this saving **UGX 80,000** (\$22) for a period of two years to buy off the ECOCA unit cost of **UGX 1,890,910** (\$520) without using other alternative sources to finance its purchase; this covers the affordability gap. In terms of calculating the savings on cooking fuel and cooking time, the ECOCA is more energy-saving than cooking with charcoal and firewood. On top of removing completely the need for biomass for cooking, the ECOCA uses 0.45kwh of solar-generated energy to cook 1 kilogram of beans equivalent to UGX 400 (**\$0.11**) for the current grid base-tariff¹¹. Cooking the same kilogram of dry beans traditionally would take about 3 hours and cost UGX 1,500 (**\$0.41**) in charcoal or UGX 3,000 (**\$0.82**) in firewood. As the ECOCA has no running cost for cooking, a breakeven on the investment will be achieved typically over 0.5 to 3 years depending on the baseline expenditures for cooking for the particular family. The ECOCA is also an income-generating unit in off-grid areas with its capacity to charge over 10 mobile phones daily and other

⁹ [Global Forest Resources Assessment 2020](#)

¹⁰ This image was created using the Earthblox tool, with "Hansen Global Forest Change" dataset. These data show annually updated global-scale forest loss data, derived using Landsat time-series imagery from 2000-present. The data are provided by the Global Land Analysis and Discovery (GLAD) laboratory at the University of Maryland, in partnership with Global Forest Watch (GFW) and represent a relative indicator of spatiotemporal trends in forest loss dynamics globally.

¹¹ Data coming from the ECOCA embedded (metered) technology, internal Pesitho study.



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Direct Current (DC) portable devices like radios and solar lanterns. Money generated from this venture can be saved to cater to household needs.

The product also contributes towards improving health - through reduced inhalation of smoke from biomass fuel - and nutrition as ECOCA users confirmed that their families eat more regularly since they do not have to lose time collecting wood fuel. The adoption rate of the ECOCA in the Bidi Bidi settlement has proven even higher than expectations with 930 sold in three rounds over 6 months per round and a backlog of requests in the range of 1000+ units. However, despite the great enthusiasm toward the ECOCA, households with very low incomes would struggle to acquire cookers without subsidies to bridge the affordability gap. To overcome the initial investment cost and achieve a sustainable business model, innovative subsidies are required combining PAYC technology and potentially carbon financing using carbon credits to subsidize the capital cost of the ECOCA and guarantee their consistent utilization for cooking during and after the installment period. This combination will contribute to addressing the affordability challenge that prevents a wider uptake of the ECOCA. The initial pilot phases in the West Nile region have allowed PESITHO and Mercy Corps to refine the business model for large-scale uptake of the ECOCA, building on the lessons learned throughout implementation. These include:

Climate Adaptation:

Avoiding emissions from forest degradation. Switching from traditional three-stone open fires to ECOCA removes the pressure on local forests. As fewer trees are cut down, more permanent regrowth of woodland and forests occurs. In terms of charcoal, estimates¹² range from 5 to 10 tons of wood to produce just 1 ton of charcoal depending on the type of kiln used. As part of Uganda's Nationally Determined Contribution, a key sector is Agriculture, Forestry, and Other Land Use (AFOLU) - which is one of the main contributions to Uganda's emissions, including deforestation for energy use. The Government of Uganda is committed to halting deforestation and reversing forest loss by 2030. It is estimated that through the current project, 9800t CO₂eq emissions will be avoided, and annually 7350t CO₂eq beyond the project (not counting the additional market potential and health benefits generated).

Improving clean air and reducing negative health impacts of air pollution. Globally, exposure to smoke from cooking fires causes an estimated 3.2 million premature deaths yearly and remains one of the predominant causes of pollution-related disease and death in Africa.¹³ Globally, 16% of ambient air pollution comes from household air pollution.¹⁴ Switching from three-stone open fires to ECOCA, a smoke-free option drastically reduces smoke exposure to PM_{2.5} and other toxic elements.

Increasing women's time and safety while reducing drudgery. Globally, women conduct 91% of the work to obtain fuel and cook, while women and children account for over 60% of all premature deaths from household air pollution.¹⁵ The risks extend to spinal, nerve, and muscle damage while cooking, as

¹² AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass --- Version 13.0

¹³ Tracking SDG7: The Energy Progress Report, 2022 – Analysis - IEA

¹⁴ McDuffie et al (2021), Source sector and fuel contributions to ambient PM_{2.5} and attributable mortality across multiple spatial scales. Nature Communications (12).

¹⁵ Burning opportunity: clean household energy for health, sustainable development, and wellbeing of women and children



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well as the risk of rape, abuse, injury, animal attacks, and communal conflict while collecting wood.¹⁶ In Uganda, women and girls can spend up to 19 hours a week on fuel collection and four hours a day cooking over traditional stoves — effectively keeping them from higher-value, income-generating activities and perpetuating gender inequality and economic poverty while trapping them in a life of drudgery. By switching to ECOCA, women and girls will gain 19 hours/week that can be used for productive and social activities, while also improving community peace and cohesion.

Enabling sustainable livelihoods. The ECOCA technology has also proven to strengthen local livelihoods and well-being for two main reasons: 1) Time savings from improved cooking practices can potentially be used for leisure or income-generating activities; 2) The USB charging portal embedded in the cookstove has been used by some households to provide charging stations to the benefit of the community at large in exchange for a small fee, thus directly contributing to improving income. Furthermore, the project has a direct impact on the local community, as it localizes production through the establishment of an assembly center and a local retailer network. It is envisioned that 30 jobs will be created throughout the project duration, offering alternative livelihood opportunities for local communities and especially youth.

Access: Mercy Corps and PESITHO, through PESITHO's Ugandan subsidiary ECOCA East Africa (EEA) Limited, successfully established two (2) distribution hubs in the Bidi Bidi settlement thus cutting down the distance between the clients and the assembly center where actual production takes place resulting in the rapid uptake of cookstove-related goods and services. The knowledge and awareness of community members around the benefits of clean cooking have also improved; with most community members becoming e-cooking champions and change agents. Uganda NDC specifically calls for a key action for 50% of energy and clean cooking at the household level to be powered by electricity by 2025; targets are 35% powered by electricity and 15% by LPG during the same period for commercial uses (including schools).¹⁷

Affordability: A clean cooking market assessment and design study conducted at the onset of the project showed that 97% of the respondents expressed willingness to acquire the solar-powered cookstove. Mercy Corps and PESITHO met this demand through the successful sale of 221 ECOCA units - out of which 23 were PAYGo systems. The team has undergone an informative learning journey on clean cooking-related carbon financing, which is a key component of the financial model of PESITHO. Through Carbon financing, PESITHO can scale up its outreach by increasing access to pre-financing for sales and distribution of ECOCA. While Pesitho had already absorbed the costs for project development and verification methodology under UNFCCC that will in turn result in lower costs for the end-users, PESITHO and EEA are also part of the discussion on the much-needed revision of carbon credit calculation for electric cookers and a fair balance between all cookstove technologies, to reflect realistic carbon emission reduction. Carbon credit remains an area of interest for PESITHO and EEA as this scheme is strategic for the users both at the household and institutional level through lowering the cost of acquiring the cookstoves and attracting debt investors to the sector increasing PESITHO and EEA's production capacity. Creating premium carbon credits remains a lever for PESITHO to lower the price of the ECOCA,

¹⁶ [Women & Clean Cooking](#)

¹⁷ [Updated Nationally Determined Contribution \(NDC\) | UNFCCC](#)



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to make it even more affordable for bottom-of-the-pyramid households. A premium credit is one with both environmental and social attributes. Credits from the ECOCA will contribute to several Sustainable Development Goals (SDGs), such as 1- no poverty, 2- zero hunger, 3 - good health and well-being, 4 - education, 7 - affordable and clean energy, and many more. PESITHO and EEA are also concluding a Memorandum of Understanding with Equity Bank Uganda Limited through its 'Equi Green Loan' so the bank can provide end-user financing thereby reducing the potential burden of the initial deposit on the ECOCA for lower-income households.

Sustainability: The project showed the importance of localizing production and building local capacity for production, distribution, repair, and maintenance systems to ensure lean operation, local ownership, and sustainability. As such, Mercy Corps in collaboration with PESITHO established a network of 15 young retailers (three women) - all below 35 years of age - across the project area and trained them as technicians, marketers, and data collectors. The project also assembled the retailers into cooperatives that deal in climate-smart products to ensure that relevant products continue to be sold and marketed during and after the project. Furthermore, PESITHO established ECOCA East Africa (EEA) Limited, a local Ugandan Company (a subsidiary of PESITHO) to oversee local Ugandan production of ECOCA's, the retailer network, and provide technical advisory for on-site customers and stakeholders including debts management of the PayGo system. EEA will continue to maintain and monitor the solar cookstoves after the project.

1.2 Project context

1.2.1 Climate Change Context

Uganda lies within a relatively humid equatorial climate zone, but the topography, prevailing winds, and water bodies cause large differences in rainfall patterns across the country. The average annual rainfall ranges from 800 mm to 1500 mm, and the average daily temperature is around 28 °C but varies with altitude. The country is endowed with significant portions of the world's most spectacular biodiversity and rich natural resource base, which deliver numerous ecosystem goods and services that are shared by millions of people across the country. With a total land area of 241,038 km², about 34% of Uganda's land is suitable for agriculture.

Uganda's economy, therefore, fundamentally depends on the careful management of a delicate balance between safeguarding the integrity of the environment and natural resource base and meeting the increasing economic needs of land users, particularly the rural vulnerable poor. Striking this balance amidst a changing climate coupled with other stresses such as the increasing human population and a multitude of anthropogenic pressures presents an enormous challenge that undermines and threatens their capacity to provide ecosystem goods and services for local communities. Currently, Uganda experiences significant impacts of climate change manifested in the form of changing weather patterns, drop in water levels, and increased frequency of extreme weather events such as floods, landslides, and harsher droughts, whose socio-economic impacts render communities highly vulnerable.

The Climate of Masaka District is tropical in nature and modified by the near presence of Lake Victoria. The rainfall pattern is bimodal, having two rainy seasons: one between March, April, and May and one from September to December; and two seasons with dry spells between July and August, and January



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to March. The annual average rainfall received is between 1100mm – 1200mm with 100 – 110 rainy days. The total geographical area of the district Masaka is about 1603.3sq km out of which 801.5sq km are open water, wetlands, and marshlands, and 308.3 hectares are under cultivation. Nowadays, the total gazette forest estate is about 8905.6 hectares, constituting about 6.38% of the total land area of the district, a huge reduction compared to 2010 when Masaka had 104kha of tree cover, extending over 29% of its land area.¹⁸ As a result of this deforestation process in Masaka, between 2001 and 2021, an average of 338kt per year was released into the atmosphere. In total, 7.09Mt of CO₂e was emitted in this period.¹⁹

1.2.2 Social-Economic Context

Uganda faces several developmental constraints, including a high population growth rate of 3.3% p.a., post-conflict conditions in the north, soil erosion, and degradation, among others. The increase in the population and upcoming developments, including the continuous growth in the refugee population, triggers pressure on natural resources which is reflected in deforestation and ecosystems' degradation such as the degradation of wetlands for rice cultivation, brick manufacturing, food, water, and other construction materials.

Masaka district is generally warm, however, the weather pattern (extreme seasonal rainfall and temperature variation) continues to be consistently attributed to negative Human-environmental interactions directly affecting the real livelihoods of smallholder farmers since they lose their ability to plan for the season resulting in poor crop productivity and exposing households to risk of food insecurity and starvation.

The gender dimension of energy poverty, with women being direct users of cooking products and responsible for cooking and fetching biomass to burn, poses a further strain on the lives of women and girls and raises protection concerns (sexual harassment and other forms of violence) as they move miles away to collect firewood or burnt charcoal to help prepare their daily meals. Women and girls in rural, off-grid areas are disproportionately affected by a lack of access to clean cooking facilities. Without access to affordable clean cooking solutions, Sustainable Development Goal 7 (Ensure access to affordable, reliable, sustainable, and modern energy for all) will not be met. A very large number of households are now resorting to unhealthy coping mechanisms resulting from shortage of wood fuel that include but are not limited to skipping meals, eating not well-cooked food regularly, preparing foods that are easy to cook, such as vegetables and porridge instead of a desired meal for the day and above all cooking with materials such as crop residues that produces a lot of smoke which risk the health of those charged with cooking responsibilities mostly women and girls.

1.2.3 Environment Context

The 1994 National Environment Management Policy (NEMP) objectives embrace the enhancement of the health and quality of life of Ugandans and the promotion of long-term, sustainable socio-economic development through sound environmental and natural resource management and optimizing resource

¹⁸ Republic of Uganda, The Official website of Masaka District, Source: [website](#)

¹⁹ Global Forest Watch, Masaka, Source: [website](#)



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use and achieving a sustainable level of resource consumption. According to the Farm Income Enhancement and Forest Conservation Project Baseline Survey Report (2007) and NEMA (2011) on average, a household uses 150 kg of fuelwood per month: 58.9 % of the firewood used for cooking is obtained from natural forests, and trees growing naturally on the farm, and 34.6 % is collected from the plantation/planted forests (NEMA 2011). However, fuelwood supplies have been rapidly decreasing due to population growth and agricultural expansion which has in turn led to increased deforestation. The National Biomass Study of 2005 indicates that 73% of all the districts in Uganda are experiencing a deficit of accessible woody biomass for fuelwood.

Located in central Uganda, Masaka district is situated on 1603.3sq km, with only about 6.38% (8905.6 hectares) of the total land area gazette as forest estate with only about 308.3 hectares available for cultivation. The district has the vision to eliminate poverty by building a strong and self-sustaining local economy which is only made possible through investing in efficient natural resource management and utilization.

Between 2001 to 2021, Masaka lost 14.9kha of tree cover, equivalent to a 15% decrease in tree cover since 2000, and 7.09Mt of CO₂e emissions.²⁰ Population growth, urbanization, and heavy reliance on biomass for cooking are heavy contributors to deforestation, and - at the current deforestation rate - it is expected that Uganda will lose most of its forest cover in less than 25 years, as the National Environment Management Authority (NEMA) had already warned in its State of the Environment for Uganda Report (2008). The loss expected above can only be reversed by investing in clean cooking solutions that will limit encroachment into the natural forest to derive biomass-based cooking fuel (firewood and charcoal) and in addition, curbing down associated health risks linked to smoke and charcoal dust exposure during cooking while giving room for natural forest cover regeneration or growth across the country.

1.3 Project Site

Under this proposed expansion, Mercy Corps and PESITHO will apply the proposed business model beyond refugees' settlements to **target 3,000 households and 5 schools in Masaka District** to enable affordable and sustainable access to energy for off-grid clean cooking through ECOCA for an estimated **17,500 individuals**.

Based on the initial baseline assessment, market assessment, and willingness to pay the assessment, the program will target all categories of household (HHs) especially those with persons with special needs (physically disabled, chronically ill, living with orphans <18 years, elderly > 65+ years), female-headed HHs, HHs with pregnant and/or lactating women, and HHs with children <5 years. Based on the demonstrated average HHs' income, the targeted HHs will be divided into low-income, middle-income, and high-income households. To ensure that the project is inclusive and reaches the last-mile participants who are most in need, Mercy Corps and PESHITO would like to propose non-rigid support mechanisms. For the most vulnerable, low-income households the project will set up a rigorous subsidy system that will increase the affordability of the ECOCA, while middle-income and high-income households will receive none to minimal subsidies. The targeting strategy and selection criteria will involve working with

²⁰ Global Forest Watch, Masaka, Source: [website](#)



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local leaders and/or representatives of the vulnerable groups to help identify the right persons without causing rifts or dissatisfaction within the selected communities.

The project's proposed duration is 30 months, running from 1 July 2023 until 31 December 2025.

2. Project Objectives

To increase the resilience of households and local forest ecosystems through access to affordable and sustainable clean energy for off-grid cooking for vulnerable communities in Masaka District, Uganda.

2.1 Specific Objectives

SO1: Reduce household vulnerability to climate risks through increased access to clean cooking technologies.

SO2: Development of a gender-inclusive and sustainable local market-based system model to support climate-adapted livelihood opportunities.

SO3: Ensure efficient and effective Project Management and continuous learning and adaptation.

2.2 Project Components and Financing

Project Components	Expected Outputs	Concrete	Expected Outcomes	Amount (US\$)
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<p>1. Reduce household vulnerability to climate risks through increased access to clean cooking technologies</p>	<p>Output 1.1.1 Enhanced knowledge of targeted communities on the benefits of clean cooking and reduced deforestation</p> <p>Output 1.1.2 3000 vulnerable HHs and 5 schools have access to energy for clean cooking through ECOCA.</p> <p>Output 1.2.1 Targeted HHs biomass fuel collection and usage is reduced</p> <p>Output 1.3.1 Pay as You Go (PayGo) model rolled out for low- and middle-income households.</p> <p>Output 1.3.2 Innovative financing schemes /subsidy products developed and implemented (Carbon credits, Smart subsidies) to enhance the affordability of the ECOCA</p>	<p>Outcome 1.1 Increased Adoption and Utilization of clean cooking practices and technologies</p> <p>Outcome 1.2 Reduced deforestation linked to biomass fuel collection and usage for cooking in the program area.</p> <p>Outcome 1.3 Increased affordability of ECOCA by vulnerable community members through innovative financing schemes.</p>	<p>3,314,917</p>
<p>2. Development of a gender-inclusive and sustainable local market-based system model to support climate-adapted livelihood opportunities</p>	<p>Output 2.1.1 ECOCA East Africa (EEA) SMC Ltd local production /assembly center established in Masaka.</p> <p>Output 2.1.2 Local Retailer Network established and scaled up for ECOCA.</p>	<p>Outcome 2.1 Increased alternative and climate-adapted livelihood opportunities for women and youth in the area</p>	<p>136,038</p>



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3. Ensure efficient and effective Project Management and continuous learning and adaptation	Staff Salaries Project Monitoring and Evaluation Costs	Outcome 3.1 Improved Adaptive Management throughout the project cycle	952,012
Project Execution cost			205,328
Total Project Costs			4,608,295
Project Cycle Management Fee charged by the Implementing Entity			391,705
Amount of Financing Requested			5,000,000

3.0 Projected Calendar

Indicate the dates of the following milestones for the proposed project/program

Milestones	Expected Dates
Project Start Date	1 July 2023
Semi-Annual Report 1 (1 st July 23 – 31 st Dec 23)	31 st January 2024
Annual Report 2023-2024 (1 st July 23 – 30 June 24)	31 st July 2024
Semi-Annual Report 2 (1 st July 24 – 31 st Dec 24)	31 st January 2025
Annual Report 2024-2025 (1 st July 24 – 30 June 25)	31 st July 2025
Project Completion date	31st December 2025
Final Project Completion Report	28 February 2026

PART II: PROJECT JUSTIFICATION ²¹

A. Describe the project components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience.

Component 1: Reduce household vulnerability to climate risks through increased access to clean cooking technologies.

Outcome 1.1 Increased Adoption and Utilization of clean cooking practices.

Output 1.1.1 Enhanced knowledge of targeted communities on the benefits of clean cooking and dangers of biomass fuel for cooking

During the proposed project, Mercy Corps will work with the Ministry of Energy and Mineral Development, the Ministry of Water and Environment, the Uganda National Alliance on Clean Cooking (UNACC), community representatives, and existing, Village Savings and Loans Associations (VSLAs) or any organized groups with the community as entry points for community sensitization and awareness creation around the dangers of biomass fuel for cooking to the current and future generations vis a viz the benefits and importance of climate-smart and energy-saving technologies focusing on behavior change

²¹ Parts II and III should jointly not exceed 10 pages.



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communication, including IEC materials, radio broadcasting, demonstrations and community drama to increase the demand, uptake and use of the ECOCA.

Output 1.1.2 3000 vulnerable HHs and 5 schools have access to energy for clean cooking, lighting, and charging through ECOCA.

The project proposes to distribute ECOCA cook stoves to 3,000 HHs and 5 schools across Masaka District throughout two and a half years of implementation to reduce deforestation, adapt to climate change impacts and reduce indoor air pollution. The institutional stoves given to schools will be a testing ground to target in the future and with additional funding institutions such as hospitals, restaurants, and barracks as a step toward understanding the market dynamics of urban demand for the institutional stoves. It will also include commissioning and training school staff and cooking personnel. The ECOCA uses ground-breaking technology to eliminate the need for biomass, allowing for the total absence of smoke and particulate matter. The proposed technology consists of a cooking base with a built-in battery pack, an LED display for user interface (showing date, time, cooking temperature, time and selected cooking option), two USB ports for charging and lighting, a solar panel, two highly insulated cooking pots (six liters each), and three-in-one wired LED lights. Via a package of a 275 Watt solar panel, 24V lithium battery, a chargeable lamp, a torch, and an additional out-of-the-package 3in1 bulbs and 1in1 bulb depending on the number of rooms in a household, after dark, the ECOCA can cover the electricity needs of a typical rural off-grid household, including lighting and the charging of phones and other small appliances. ECOCA is the first of its kind contributing to solving the challenge of clean, sustainable, and reliable cooking whilst also preventing environmental degradation caused by deforestation. It uses 100% renewable energy, and it is designed to be used for three meals per day for a family of seven (measured on statistics from June - the month with the lowest solar irradiance in Uganda). Considering a 90% reduction, the ECOCA will reduce 5 tCO₂eq annually, and at the same time provide a basic solar home system that comes with bulbs for light and can be used for phone charging.

Mercy Corps and PESITHO have piloted ECOCA in the Bidi Bidi settlement showing how this technology is greatly accepted and matches traditional cooking behavior - limiting disruption to established cooking patterns - while being suitable for end-users staple food, including beans. Aside from the innovative technology, the primary benefit of the ECOCA is its extremely low operating costs which means the product gains competitiveness over time, making it distinct from other improved cookstoves. Virtually non-existent operating costs make this a competitive product that can provide savings for households.





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The photos show a PayGo-enabled ECOCA, a user in BidBidi settlement showing off her stew, the ECOCA solar cookstove with lights, and the same user mingling Posho/Ugali/maize flour bread in her ECOCA while charging her mobile phone on the ECOCA. Photo credit: Ruth Akiiki Komuntale, EEA

Outcome 1.2 Reduced deforestation linked to biomass fuel collection and usage for cooking in the program area.

Output 1.2.1 Targeted HHs biomass fuel collection and usage are reduced.

During the inception phase, the project will conduct a household-level survey to understand average wood fuel collection, what type of wood is collected (tree species), and usage rates. This assessment will serve two purposes: 1) it will help estimate how much HHs' wood consumption contributes to the ongoing deforestation rate, and 2) to track changes in HHs' behavior when it comes to woody biomass fuel usage due to ECOCA adoption.

Furthermore, the project will track changes in the tree coverage in the project area during the baseline and end-line assessments. Acknowledging that deforestation is driven by many factors beyond household-level fuel consumption, the project seeks to verify if the increased adoption of ECOCA - and subsequent reduction of the need to collect solid fuels - can positively contribute to a reduction in the deforestation rate in the project area. This will also provide some evidence on the rate of deforestation in the target areas which is specific to HH fuel use, specifically for cooking, thus supporting Uganda's deforestation targets and activities in the drafting of their NDC.

Outcome 1.3 Increased affordability of ECOCA by vulnerable community members through innovative financing schemes.

Output 1.3.1 Pay as You Go (PayGo) model rolled out for low- and middle-income households.

Although the ECOCA has good value for money, most vulnerable HHs cannot cover the up-front cost of the stove. Even though many users normally achieve break-even within 1-3 years using the ECOCA, it cannot be expected that many will be capable of paying the full commercial price, even a subsidized price. To target the most in need, the users require financial support; in addition to innovative payment models, and patient capital to sustainably deploy the ECOCA and reach a sizeable number of vulnerable households.

The current market price for the full package (base, battery, controls, solar panel, pots, and lights) is \$520. PESITHO and EEA have launched the possibility of offering a range of capacity upgrades, making the ECOCA even more adaptable to each family structure and needs for cooking. The product will be offered in four (4) variations where the capacity of the battery and/or the solar panel can be increased. The price of these products varies, ranging from \$520 to \$950.

PESITHO conducted a pilot near Masaka in Rakai in 2020 with 100 ECOCA units for 100 vulnerable coffee farmer families. Tests were made to understand the combined energy saving for a family, by converting from biomass for cooking and replacing expenses for energy needs for phone charging, batteries, and lamps. The combined savings on fuel and electricity by switching to the ECOCA was USD



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34 per month per HH on average among the 100 households. The average saving on biomass for cooking was USD 19, and an additional USD 15 was from energy savings.

With the support of the Ugandan Government, we will be able to offer the end user a “Lease-To-Own” model for all four (4) variants with a cost between USD 8-15 per month. As such, the selected vulnerable HHs will be offered the products with a down payment of \$80, and a monthly lease of USD 8-15 depending on the variation chosen²². This means the energy savings per month increase the monthly lease of the ECOCA and improves the household economy already for the first day of use. It also means a breakeven of the investment can be achieved fast, even with considering cost-of-finance. Depending on the baseline spending of the household, the following table shows savings and breakeven over 10 years of use of the ECOCA:

ECOCA Costs and Savings	Baseline		With ECOCA										Breakeven Years	
	Fuel Expenditures (month)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10			
Replacement factor	80%	\$	2	\$ -504	\$ -308	\$ -112	\$ 4	\$ 80	\$ 276	\$ 472	\$ 588	\$ 784	\$ 980	4.5
Cost of ECOCA	\$ 700	\$	4	\$ -485	\$ -270	\$ -55	\$ 80	\$ 175	\$ 390	\$ 605	\$ 740	\$ 955	\$ 1,170	4.1
Energy savings (month)	\$ 15.0	\$	6	\$ -466	\$ -232	\$ 2	\$ 156	\$ 270	\$ 504	\$ 738	\$ 892	\$ 1,126	\$ 1,360	3.8
Subsidy	\$ -	\$	8	\$ -446	\$ -192	\$ 62	\$ 236	\$ 370	\$ 624	\$ 878	\$ 1,052	\$ 1,306	\$ 1,560	3.5
Rent-To-Own financing		\$	10	\$ -427	\$ -154	\$ 119	\$ 312	\$ 465	\$ 738	\$ 1,011	\$ 1,204	\$ 1,477	\$ 1,750	3.3
Interest rate p.a.	10.0%	\$	12	\$ -408	\$ -116	\$ 176	\$ 388	\$ 560	\$ 852	\$ 1,144	\$ 1,356	\$ 1,648	\$ 1,940	3.0
Period (years)	5	\$	14	\$ -389	\$ -78	\$ 233	\$ 464	\$ 655	\$ 966	\$ 1,277	\$ 1,508	\$ 1,819	\$ 2,130	2.9
Down-payment	\$ 80.00	\$	16	\$ -370	\$ -40	\$ 290	\$ 540	\$ 750	\$ 1,080	\$ 1,410	\$ 1,660	\$ 1,990	\$ 2,320	2.7
Cost of finance p.a.	\$ 39.55	\$	18	\$ -350	\$ -	\$ 350	\$ 620	\$ 850	\$ 1,200	\$ 1,550	\$ 1,820	\$ 2,170	\$ 2,520	2.5
Total Payment	\$ 897.77	\$	20	\$ -331	\$ 38	\$ 407	\$ 696	\$ 945	\$ 1,314	\$ 1,683	\$ 1,972	\$ 2,341	\$ 2,710	2.4
Monthly Payment	\$ 14.96	\$	22	\$ -312	\$ 76	\$ 464	\$ 772	\$ 1,040	\$ 1,428	\$ 1,816	\$ 2,124	\$ 2,512	\$ 2,900	2.3
		\$	24	\$ -293	\$ 114	\$ 521	\$ 848	\$ 1,135	\$ 1,542	\$ 1,949	\$ 2,276	\$ 2,683	\$ 3,090	2.2
		\$	26	\$ -274	\$ 152	\$ 578	\$ 924	\$ 1,230	\$ 1,656	\$ 2,082	\$ 2,428	\$ 2,854	\$ 3,280	2.1
		\$	28	\$ -254	\$ 192	\$ 638	\$ 1,004	\$ 1,330	\$ 1,776	\$ 2,222	\$ 2,588	\$ 3,034	\$ 3,480	2.0
		\$	30	\$ -235	\$ 230	\$ 695	\$ 1,080	\$ 1,425	\$ 1,890	\$ 2,355	\$ 2,740	\$ 3,205	\$ 3,670	1.9
		\$	32	\$ -216	\$ 268	\$ 752	\$ 1,156	\$ 1,520	\$ 2,004	\$ 2,488	\$ 2,892	\$ 3,376	\$ 3,860	1.8
		\$	34	\$ -197	\$ 306	\$ 809	\$ 1,232	\$ 1,615	\$ 2,118	\$ 2,621	\$ 3,044	\$ 3,547	\$ 4,050	1.8
		\$	36	\$ -178	\$ 344	\$ 866	\$ 1,308	\$ 1,710	\$ 2,232	\$ 2,754	\$ 3,196	\$ 3,718	\$ 4,240	1.7
		\$	38	\$ -158	\$ 384	\$ 926	\$ 1,388	\$ 1,810	\$ 2,352	\$ 2,894	\$ 3,356	\$ 3,898	\$ 4,440	1.6
		\$	40	\$ -139	\$ 422	\$ 983	\$ 1,464	\$ 1,905	\$ 2,466	\$ 3,027	\$ 3,508	\$ 4,069	\$ 4,630	1.6
		\$	42	\$ -120	\$ 460	\$ 1,040	\$ 1,540	\$ 2,000	\$ 2,580	\$ 3,160	\$ 3,660	\$ 4,240	\$ 4,820	1.5
		\$	44	\$ -101	\$ 498	\$ 1,097	\$ 1,616	\$ 2,095	\$ 2,694	\$ 3,293	\$ 3,812	\$ 4,411	\$ 5,010	1.5
		\$	46	\$ -82	\$ 536	\$ 1,154	\$ 1,692	\$ 2,190	\$ 2,808	\$ 3,426	\$ 3,964	\$ 4,582	\$ 5,200	1.4
		\$	48	\$ -62	\$ 576	\$ 1,214	\$ 1,772	\$ 2,290	\$ 2,928	\$ 3,566	\$ 4,124	\$ 4,762	\$ 5,400	1.4
		\$	50	\$ -43	\$ 614	\$ 1,271	\$ 1,848	\$ 2,385	\$ 3,042	\$ 3,699	\$ 4,276	\$ 4,933	\$ 5,590	1.4
		\$	Sparepart costs (incl.)			\$ 80	\$ 120		\$ 80					

Furthermore, the project will ensure the ECOCA is affordable through a pay-as-you-go (PAYGO) model, which will be tailored to suit households’ ability to pay - through a mechanism that allows the user to pay per usage over a maximum period of 5 years. This PAYC model will increase the affordability of the ECOCA ensuring equitable access to the product for vulnerable community members who cannot afford to pay upfront, whilst also enabling us to gather further market data on PAYGo solutions.

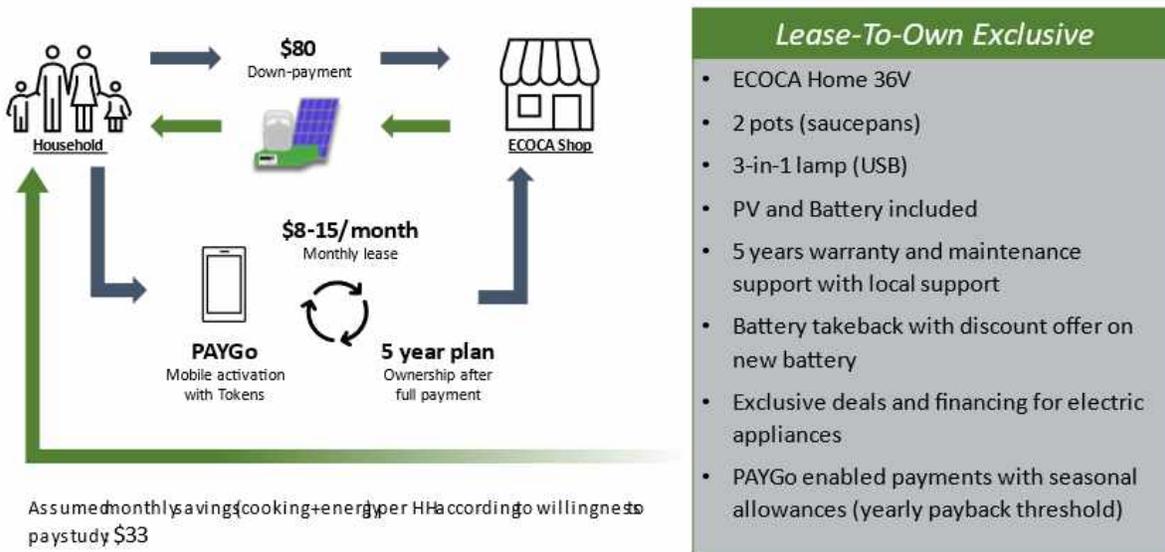
²² From willingness-to-pay studies conducted on the ECOCA, the study in Rakai shows an average energy saving (cooking + access to energy for charging and lights) of \$33 per month per HH. With the Lease-To-Own model, the HHs will experience an improved economy already after a few months of using the ECOCA.



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The household will own the system after five (5) years as the full price has been paid off with the down payment and the monthly/seasonal payments. During the leasing period, the end-user will gain additional benefits such as 5 years of warranty and maintenance support with local support, battery takeback with discount offers on a new battery, exclusive deals and financing for other electric appliances, PAYGo-enabled payments with seasonal allowances (yearly payback threshold). The lifespan of solar products is usually determined by battery and solar panel lifespan. The industry standard and production warranty for most solar panels is 25-30 years²³, lithium iron phosphate batteries can last 5-6 years or 2000-5000 charge/discharge cycles²⁴ and at 5-6 years, the battery capacity reduces to about 80%, therefore cooks much slower. It is expected that at 5-6 years, the ECOCA customer will return the battery to EEA for a takeback and then purchase a new battery at a discount. This gives the household another 5-6 years of cooking and the process is repeated until the life cycle of the solar panel runs out and the same will also be disposed of by EEA/PESITHO and a new one purchased from the same. The rest of the ECOCA components are made from the highest quality material like stainless steel and polished iron but should they deteriorate from natural wear and tear or negligence, PESITHO/EEA offers them as spare parts for sale.

PESITHO Lease-To-Own PAYGo enabled Business Model– Uganda



As such, this model allows for a 100% revolving mechanism, where the money spent per ECOCA can be used to purchase a new ECOCA after the lease period using the payments coming from the end user. Mercy Corps' prior work in Uganda has shown us that PAYGo technologies enable households and small businesses across refugee and host communities to access and eventually own high-quality, reliable,

²³ [End-of-Life Management for Solar Photovoltaics](#)

²⁴ [Introduction to LiFePO4 Marine Batteries](#)



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and sustainable energy products by making small regular payments via their mobile money. This model also enables local private sector actors (energy providers) to enter new markets as they can design shorter-term repayment plans to address the risk of flight. The payment scheme will vary based on the average household income with low-income HHs receiving highly subsidized ECOCA stoves and middle-income ones with neither or minimal subsidies. All funds that are coming back from user repayments will be used for reinvestment into the expansion of the model to cover other households and other locations. This revolving mechanism will be designed to continue even after the project has ended.

Output 1.3.2 Innovative financing schemes /subsidy products developed and implemented (Carbon credits, Smart subsidies) to enhance the affordability of the ECOCA

ECOCA business models include a component of carbon credit financing to increase end-user affordability and extend the warranty mechanism offered to clients. In the past years, PESITHO has been collaborating with certification agencies, such as Gold Standard and Clean Development Mechanism (CDM) to design frameworks to facilitate digital reporting and build on the methodologies developed with World Bank (ESMAP) support. In the past months, MECS and other key stakeholders agreed to revise the Gold Standard – ClimateCare methodology for certifying CO₂ emissions for renewable energy modern cooking appliances to adequately consider (solar) electric cooking as well. The ECOCA leverages its embedded technology to simplify emission measurement and reporting requirements.

Specifically, the proposed model aims at integrating a Carbon Credit Scheme for extended product warranty. By integrating a carbon credit scheme into localized production, the business model aims to overcome the maintenance cost while ensuring high-quality control. The inclusion of a carbon credit subsidy decreases end-user repair and maintenance costs significantly. Another advantage of the carbon model is that it contributes to the general emission reduction for the country of Uganda, making the country a front-runner in the green and renewable transition.

During the proposed project, PESITHO will work to identify a third-party carbon project developer to engage in the establishment of a carbon credit scheme under the Voluntary Carbon Market so that an extended warranty can be given to the users from one year up to five years. By generating some revenue from carbon credits, the users will be able to receive continuous warranty services (repair and maintenance costs of the ECOCA) while contributing to the reduction in carbon emissions throughout five years. If the users extend the lifetime of the ECOCA for another five years, PESITHO can also extend the warranty for the same period, giving users access to warranty services for a total of 10 years. During this period, the ECOCA only requires a change of battery, which the user will be able to afford from the extensive savings generated, and the high potential for additional income generated by the user.

Component 2. Development of a gender-inclusive and sustainable local market-based system model to support climate-adapted livelihood opportunities

Outcome 2.1 Increased alternative and climate-adapted livelihood opportunities for women and youth in the area



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Output 2.1.1 ECOCA East Africa (EEA) SMC Ltd local production /assembly center established in Masaka.

To further the potential for scalability of the business model, we propose continued development of the EEA supply chain to embed the ECOCA into the local market, helping to reduce costs. To achieve this, the project will include the establishment of a production/assembly center in Masaka. Mercy Corp will set up an assembly center in the target area in coordination with PESITHO. The assembly center will serve as a production hub for ECOCA solar cookstoves for the central region, managed by EEA. The assembly center will also act as a central service point for the ECOCA after the project.

Output 2.1.2 Local Retailer Network established and scaled up for ECOCA.

In parallel, and following the initial market assessment, the program will focus on group formalization and market activation by strengthening retail and distribution networks including repair and maintenance services. Numerous VSLAs and farmers groups - with a focus on youth and women - will be leveraged by the program to quickly establish and scale up a local Retailer Network for ECOCA, who will be trained by EEA to become sales agents and technicians for the product. The process of refining and codifying the supply chain is expected to yield a 15% drop in the market price within two years. PESITHO and EEA will train local youth in the assembly, handling, usage, repair, and maintenance of the ECOCA. From experience in Bidi Bidi settlement, PESITHO/EEA have noticed that women flourish more with the Cooking Advisory role and as such have preserved this strictly for women as they not only enjoy making cooking demonstrations but are also more accepted by society when they advise on cooking and handling of cooking technologies. The skills acquired by the locals will reduce the costs of hiring experts and the risk of abandoning the technology by creating a sense of ownership and inclusiveness among the technicians. The technicians trained during the project will earn a commission based on units assembled and will continue to offer repair and maintenance services to project participants. Furthermore, Mercy Corps will build the capacity of VSLAs and farmers groups, and existing retail networks to strengthen their business skills - as this has emerged as an area of weakness to support scale and uptake of the ECOCA.

Component 3. Ensure efficient and effective Project Management and continuous learning and adaptation.

Outcome 3.1 Improved Adaptive Management throughout the project cycle.

Under this component, Mercy Corps and PESITHO will set up a project management and knowledge management structure to ensure effective and efficient implementation of components 1 and 2 throughout the entire project duration (01 July 2023 - 31st December 2025). On Mercy Corps' side, ACCESS will have a dedicated Program Manager, Senior Program Officer, Program and Communication Assistant, and MEL Officer and it will receive operational and financial support from the dedicated country support staff. Reporting to Mercy Corps Program Manager are PESITHO and EEA staff with a dedicated Project Manager (PESITHO), EEA Project Manager, and EEA Field Officer and with key support staff allocated at various levels of efforts with a focus on a PESITHO Carbon Program Manager (40%) and Resource and Development Director (30%), and EEA Business Manager (25%). This project management



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structure: i) will ensure that the project implementation is on time, within scope, and within budget through the use of verified Project Management tools in compliance with Mercy Corps Program Management Policy (PM@MC); and ii) will verify compliance with internal and relevant external policies and procedures (e.g. Child Safeguarding Policy, Fraud and Corruption Policy, Goods Distribution SOPs, etc.). Furthermore, in collaboration with Mercy Corps global Technical Support Unit Energy Access department, the team will ensure continuous learning and adaptation through the setup of knowledge management and learning systems - such as monthly and quarterly review meetings - as described in section E of this document. These systems will lead to the production and dissemination of 4 Assessment reports produced (Baseline Assessment, Market Assessment, Willingness to Pay studies, HHs Survey on wood fuel consumption), 3 Lessons learned briefs, 1 Midline assessment, and 1 Endline assessment.

B. Describe how the project provides economic, social, and environmental benefits, with reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project will avoid or mitigate negative impacts, in line with the Environmental and Social Policy of the Adaptation Fund.

Economically:

From the layout of the project, introducing ECOCA solar cook stoves will provide economic benefits by directly contributing to the incomes of the community members. The ECOCA has been shown to also improve household income and well-being as customers have set up small phone charging businesses and the lighting bulbs and torches have improved their safety and supported school-going children doing their homework and revisions. The ECOCA has the capacity to charge over 10 phones daily at a rate of \$0.14 per charge, amounting to \$40 monthly. Of 97.6% of the respondents interviewed during endline evaluation confirmed that the cookstove is timesaving (reduced average time spent on cooking from 3.1 hours to 1 hour) and 71.5% found it more convenient than other traditional biomass-based sources of cooking fuel meaning the time saved can be deployed by people charged with cooking responsibilities to carry out other income generating activities. The production center in the Bidi Bidi settlement is positioned within the community and it has provided employment opportunities for willing and trainable youth from both the refugees and host communities. This similar setting will benefit the Masaka community that will host the center as they will have the opportunity to supplement their income by working as technicians, trackers, and cooking advisors across the project area as there is already evidence that trained technicians to go the extra mile with the same set of knowledge to support the community by repairing other electronics including radios and basic phones. The project will employ about 15-20 staff in Masaka.

Socially:

The project is designed to promote access to energy for clean cooking of the most vulnerable groups within communities and households by supporting them through partially subsidized financing schemes to increase the affordability of the solar cooking stove among the most vulnerable categories. In addition, as shown by the period phase of *Journey to Scale*, the project will greatly reduce the need to purchase or collect charcoal and firewood thus reducing the protection risks that women and girls are exposed to when fetching firewood in the forest. Other than increasing social cohesion as a result of reduced chances for conflicts over resource utilization in the community, girl children will therefore have more time and a reliable light source to revise their books and attend to their school work which increases their chances



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both to stay in school and excel. Additionally, other than cookstove users reporting that the ECOCA have saved them from the risk of inhaling smoke while cooking with firewood and other crop residues which they believe not to be healthy, there have been cases of some males or those that are less charged with cooking responsibilities (mostly men) supporting cooking using ECOCA stoves since it is clean and easy to deploy for cooking and generally user friendly. Overall, issues and proposed actions specifically have been captured and incorporated in the design of the project to ensure equitable participation in the project activities and access to project benefits by all groups including men, women, and elders.

Environmentally:

The project is intended to benefit the environment by guarding against biomass fuels used for cooking and reducing Uganda's carbon footprint (Ministry of Water and Environment projects an increase from 90.1MtCO₂e in 2015 to 148.8MtCO₂e by 2030), deforestation, and creating an opportunity for forest regeneration across the project area. The interventions highlighted among others follow the Adaptation Fund Environmental and Social Policy. Environmental and social impact assessments, and gender analysis supported by a community accountability and reporting mechanism (CARM) or their equivalent will be taken into consideration during project implementation. To sustain the benefits to vulnerable groups in the targeted communities, the project-monitoring plan as well as CARM shall incorporate gender equity and women empowerment issues for follow-up during project implementation and ensure that project reports provide and emphasize sex and age-disaggregated data. During the Journey to Scale project endline, some ECOCA cookstove users confirmed that they now greatly rely on this stove for cooking than before when a bag of charcoal was barely sufficient for a month compared to currently when a bag of charcoal lasts for 2 to 2.5 months since they only require charcoal on long rainy days or those days with poor solar radiation. Aware that electronic waste is highly dangerous for our environment, Mercy Corps and PESITHO will sensitize the cookstove users to return worn-out parts to the assembly center for repair and reuse or safe disposal for those parts that cannot be brought back to their useful life. On the other hand, Mercy Corps is currently piloting used lithium battery repair and packing with an American-based firm ACELERON, a collaboration that can be leveraged to help clean the project area of e-waste in addition to repair opportunities for worn-out batteries. Furthermore, Mercy Corps entered a partnership with IOM (International Organization for Migration) to implement the Innovation Norway-funded E-waste Project: Greening Humanitarian Responses through Recovery, Repair and Recycling of Solar Products in Displacement Settings. The projects aim to identify solutions that reduce and manage E-waste from solar lanterns and solar home systems and their accessories that have been distributed in displacement settings through community sensitization activities around e-waste, the establishment of a repair and maintenance service center and a system for safe disposal of e-waste and close collaboration with ACELERON.

C. Describe how the project encourages or accelerates the development of innovative adaptation practices, tools, or technologies and/or describe how the project helps generate an evidence base of effective, efficient adaptation practices, products, or technologies, as a basis for potential scaling up.



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As mentioned above, 94% of Ugandan households depend on biomass for cooking, of which 73% is firewood and 21% charcoal²⁵. This is putting immense pressure on the existing forest cover resulting in accelerated deforestation and adverse effects of climate change. To reduce dependence on and consumption of biomass, the government, its development partners, and NGOs have put efforts into increasing biomass energy efficiency through promoting biomass cookstoves which still use charcoal or less wood and emit less smoke but more still needs to be done to increase awareness and uptake since to-date, - 94% of Uganda's population still depends on wood fuels. Besides solar energy's contribution to the national grid, its technologies on the market are mainly for lighting, charging and other low-energy consumption uses.

Various development organizations and NGOs (Non-governmental Organizations) have played a pivotal role in distributing Photovoltaic appliances such as solar lamps at no cost or at subsidized prices, which has helped light-up many rural areas that are off-grid. However, the use of solar for cooking and other heavy industrial processes, which consume a significant amount of power, needs to be significantly expanded to achieve positive outcomes.

It is against this background that PESITHO developed and designed the innovation, the ECOCA- an off-grid solar-powered electric cookstove that operates on 100% energy tapped from the sun to meet the cooking and lighting needs of households in rural off-grid communities but also in urban communities where cooking with electricity is still expensive and unreliable due to load shedding. Unlike other solar cooking technologies that uses a solar reflective dish or box to heat the cooking pot, the ECOCA technology converts solar to electricity, which is then used for heating food, just like a real electric cooktop house on the grid (using the highly insulated pots that also act as a food flasks) and the USB ports for lighting and charging. The highly insulated pots also ensure that only the contents are cooked and not the surroundings. The ECOCA is also able to store solar electricity in its in-built battery to allow for cooking after dark or in bad weather. This innovation is the first of its kind specifically designed in Uganda and for local Ugandan households. It has also been enhanced to meet the cooking and lighting needs of institutions like schools, hospitals, and hotels that prepare meals for larger populations daily. The technology also marries renewable energy with efficiency as it not only cooks faster than the traditional biomass options but also keeps food hot for many hours, thereby reducing the need to consume more energy to warm leftover food as well as time spent warming food. The ECOCA is 90% efficient, compared to traditional stoves which are between 10%-30% efficient. This technological innovation successfully passed the piloting phase (executed in off-grid refugee settlements) and is clear to be scaled out in other parts of the country struggling with access to modern clean energy for cooking and lighting. It's envisaged that scaling up the ECOCA innovation at both household and institutional levels will heavily reduce the rampant deforestation and environmental degradation in the project area in search of fuelwood to meet the daily energy cooking needs. Furthermore, during the Piloting phase, the project team learned that the assembly and service technicians gained more knowledge and confidence from continued and bulk interaction with the technology which has been the main point of technology transfer. The same assembly technicians today support and train field service technicians who are deployed to; collect data on ECOCA

²⁵ Uganda Bureau of Statistics (UBOS), 2021. Uganda National Household Survey 2019/2020. Kampala, Uganda; UBOS. Source: [Here](#)



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usage bi-monthly, turn in beneficiary feedback and provide repair and maintenance services at communally known meeting points like the Innovation Centers in Refugee Settlements.

Pesitho intends to find local production options in Uganda for certain sub-modules of the ECOCA. The company has already identified a potential producer for steel cabinets and a potential partner for printed circuit boards (PCBs). This will give Pesitho reduced time to market, and reduced costs on shipping, overall contributing to a lower cost of the ECOCA over time.

D. Please confirm whether the project meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and is in line with the Environmental and Social Policy of the Adaptation Fund.

The project is expected to conform and contribute to the various relevant National technical standards and policies; including the Uganda Vision 2040 whose goal is to transform Uganda from a predominantly peasant and low-income country to a competitive upper middle-income status country by 2040. It provides the overall leadership and policy direction for job creation and priority setting. The Uganda Vision 2040 sets out the country's commitment to efforts to attain a green and clean environment. The project contributes to the Kyoto Protocol an international treaty that extended the 1992 United Nations Framework Convention on Climate Change (UNFCCC) that commits state parties like Uganda to reduce greenhouse gas emissions, based on the scientific consensus that (part one) global warming is occurring and (part two) that human-made CO₂ emissions are driving it. The project strives to contribute to Uganda's vision for 2040 and the Kyoto Protocol, by creating clean and green jobs for the youths of Iganga and at the same time reducing carbon emissions through the operationalization of the vertical shaft brick kiln technology. The project contributes to Social Development Goals (SDGs) specifically SDGs 1, 13, 15, and 17²⁶ which aim at eliminating poverty, climate action life, and land, and promoting partnerships for developing the knowledge base and effective capacity development, Environment, and social policies which the projects allude to. The project is in line with the Climate Change Policy (NCCP) 2015.

Furthermore, Uganda is developing a National Agricultural Policy (NAP), whose major focus will be on food security, increased household incomes, improved value chains, increased domestic and international trade, and improved sustainable natural resource management. Some of the proposed NAP-specific goals revolve around "Promoting and encouraging efficient biomass energy production and utilization technologies to reduce biomass consumption" and "Diversify energy sources by promoting the use of alternative renewable energy sources (such as solar, biomass, mini-hydro, geothermal, and wind) that are less sensitive to climate change. Promote energy-efficient firewood cook stoves and solar and liquefied petroleum gas (LPG) Cookers." Therefore, this project aims to contribute to potential NAP sectors in Forestry and Energy by ensuring that (1) deforestation is reduced; and (2) consistent access to efficient cooking is achieved through solar technologies and reduces reliance on an already depleting natural resource due to both climatic and human pressure.

²⁶ <https://pesitho.com/sustainability-2/>



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All products imported into the country must meet either local or international standards to protect the health and safety of the public and the environment against dangerous and sub-standard products. Currently, Uganda has not yet developed standards for e-cooking appliances, but such products must adhere to internationally recognized standards of their category. The ECOCA and all its components meet the ISO standards and conform to the entire Pre-Export Verification of Conformity (PVoC) process mandated by UNBS before importing into the country as well as the Imports Inspection and Clearance Scheme

The country recognizes that climate change is one of the greatest challenges facing humanity. The overarching policy objective is to ensure that all stakeholders address climate change impacts and their causes through appropriate measures while promoting sustainable development. The project contributes to Uganda's Updated NDC | UNFCCC

Under this updated NDC, there are several mitigation measures in the energy sub-sector envisaged to be put in place in the Energy sector by 2030. For example, under the Energy-use subsector, the mitigation action is to introduce lighting energy efficiency in households whereby the measure intends to introduce more energy-efficient lighting technologies (CFLs, LEDs, etc) and to replace lighting fuels (kerosene) with cleaner energy sources. This can lead to emission reductions of approximately 0.003 MtCO_{2e} by 2030. The use of the ECOCA replaces the use of kerosene and candles with energy-efficient LED lights for lighting.

Still, under the Energy-use subsector, the mitigation plan under this NDC is to introduce cooking mitigation measures, including energy efficiency and fuel switch. This measure aims to improve energy efficiency during cooking by adopting efficient charcoal and fuelwood stoves and changing from using biomass as the main source of energy for cooking to the use of cleaner energy resources. This can lead to emission reductions of approximately 1.09 MtCO_{2e} by 2030. The ECOCA is a 100% solar-powered electric cookstove that facilitates a complete transition or fuel switch from dependency on biomass for cooking to solar electricity. The ECOCA also achieves a 90% energy efficiency compared to the 10%-30% energy efficiency of traditional cooking stoves. This project will therefore demonstrate and contribute to the realization of Uganda's energy NDC targets by 2030.

[The National Environment Management Policy 1995](#) sets out the overall policy goals, objectives, and principles for environmental management in Uganda. Its overall goal is sustainable social and economic development, which maintains and enhances environmental quality and resource productivity to meet the needs of present generations without compromising the ability of future generations to meet their own needs. It recognizes that Uganda faces several environmental issues including soil degradation, deforestation, loss of biodiversity, increasing pollution, and environmentally related diseases. These problems are compounded by poverty, low amounts of environmental awareness, and low levels of technology. The policy recognizes climate as a vital natural resource that needs to be monitored to better direct land use, encourage sustainable economic development, manage air pollution and GHG emissions in future programs; and accelerated project financing for NDC implementation. All project components 1, 2, and 3 are in line with the objectives of this overarching policy. [The National Forest Policy 2001](#). The key issues addressed by the Forestry policy include maintenance and enhancement of the Permanent Forest Estate, improve the management of forest resources on private and customary land, addressing the underlying causes of deforestation, including lack of policy support, market failure, weak regulation,



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and rural poverty, capitalize on the economic, social and environmental opportunities in forestry without undermining the resource base, ensure the survival of forest biodiversity and to balance this with the pressing development needs of the country, how to rehabilitate and conserve key watershed forests, how to promote and maintain the greening of the urban environment, as well as ensuring improved tenure to land and trees that act as an incentive for individuals, and women in particular, and communities to invest in forestry among others. Forestry plays a very important role in enhancing the resilience of ecosystems and some of the activities under component 3 are confirmed to be in line with this policy. Both men and women will participate and benefit from the project outcomes. In this regard, the Uganda National Gender Policy 2007 is an integral part of the national development policies and is a framework for redressing gender imbalances as well as a guide to all development practitioners.

The project is gender-sensitive, as it emphasizes and recognizes "gender" as a development concept useful in identifying and understanding the social roles and relations of women and men of all ages, and how this impacts development. This applies to all three project components and efforts shall be made to ensure that all categories of people benefit from the project without discrimination. The National Environment (Noise Standards and Control) Regulations, 2003. Section 7 of these regulations requires that no person shall emit noise above permissible noise levels unless permitted by a license issued under these Regulations. Section 8 imparts responsibility onto project developers to use the best practicable means to ensure that noise does not exceed permissible noise levels. This applies to sub-projects under components 1 and 3 that are confirmed to contribute to this specific regulation.

E. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

The learning and knowledge management of this project falls under Component 3 (ensure efficient and effective Project Management and continuous learning and adaptation) and will be managed closely by ACCESS Program Managers from MC, PESITHO, and EEA, dedicated MEL Officer, and Program Communication Assistant with the support of the Country MEL Manager. The learning and knowledge management side of this component focuses on:

Continuous Monitoring: Monitoring activities will feed into an iterative process to continually improve the project activities through real-time analysis of data and the production of relevant reports. ACCESS will begin with a Market Assessment, Willingness to Pay assessment, and Market Segmentation analysis in Masaka District, the findings of which will add to the vulnerability criteria used for the selection of project participants and will be followed by a Baseline and Mapping Assessment. Throughout the project, routine data collection will take place monthly to track progress toward our indicators through surveys, FDGs, KII, and spot checks among others. ACCESS will also conduct Midline and Endline Assessments to check progress toward outcomes and the extent of the intervention in reaching the overall goal. The data and information from the midline and endline are important for learning and that will feed into improving programming.

Furthermore, a Community Accountability Reporting Mechanism (CARM) has been developed in Uganda as part of Mercy Corps' global initiative to prevent exploitation and abuse. CARM provides a channel for all community members to provide feedback, suggestions, complaints, and concerns, in a manner that is



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safe, confidential, transparent, and accessible, enabling Mercy Corps to make adaptations to program activities and/or address any safeguarding concerns. The proposed project will collect feedback through a toll-free number, WhatsApp, and email and by setting in place a context-appropriate structure (e.g., community ambassadors, etc.). The feedback will then be safely stored in a centralized database for further analysis and closure of the feedback loop. For any feedback - positive or negative - related to the implemented activities the program team and CARM focal point will meet monthly to address the issue and make necessary programmatic adaptations to make sure that the project remains responsive to the community needs. These observations will constitute an essential part of the lessons learned during program implementation.

Learning and Adapting: This will involve a process of systematically documenting all aspects of the project implementation through a well-articulated Knowledge Management Strategy and Learning Plan that will be revisited quarterly to ensure that the strategy remains relevant to the project objectives and evolving context. Learning questions and learning agenda will be established to guide the documentation of evidence and products /materials to be utilized for learning. The project will operationalize monthly meetings and quarterly review sessions involving key partners and stakeholders to foster broader knowledge sharing and adaptive management. The program will ensure documentation of best practices, lessons, and development of policy briefs and publications in partnership with research institutions or industry groups. Mercy Corps will use its existing network of contacts to disseminate knowledge. Mercy Corps sits on the steering committee of the Global Plan of Action for Sustainable Energy in Situations of Displacement; are part of the Action Group of the Smart Communities Coalition, and co-chairs the Safe Access to Fuel and Energy working group. Results and lessons learned from this partnership will be shared across these platforms and including the Clean Cooking Alliance, Uganda Clean Cooking Alliance, and Ministry of Energy and Environment as we work to create stronger communities of practice across the clean cooking sector. Mercy Corps’ Energy and Climate Technical Support Unit (TSU) will provide support for program implementation excellence in addition to the development and dissemination of learning materials. The dissemination will take the form of online and/or in-person workshops. At project closure, ACCESS will develop a comprehensive Endline and Learning report.

Reporting: Activity progress, feedback from communities (CARM) and key stakeholders, and lessons learned will form the basis for the preparation of five progress reports, to be submitted every six months to the accredited National Implemented Entity for review as follows:

Semi-Annual Progress Report 1 covering 1 st July 23 – 31 st Dec 23	Submitted on 31st January 2024
Annual Report 2023-2024 covering 1 st July 23 – 30 June 24	Submitted on 31st July 2024
Semi-Annual Report 2 covering 1 st July 24 – 31 st Dec24	Submitted on 31st January 2025
Annual Report 2024-2025 covering 1 st July 24 – 1 st July 25	Submitted on 31st July 2025
Final Project Completion report covering 1 July 23 - 31st December 25	Submitted on 28 February 2026

F. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project. Describe how the project will engage, empower and/or benefit the most



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vulnerable communities and social groups, including gender considerations, in line with the Environmental and Social Policy of the Adaptation Fund.

Environmental risk (E-WASTE): The problem associated with end-of-life and waste from electric and electronic equipment (EEE) within a given period and acquisition-related issues which the ECOCA clean cookstoves fit is broadly recognized as a serious environmental and social concern. The increasing penetration and generation rate of electronic products including those that support clean cooking that comes with periodic replacement cycles of their parts is the major reason for the current exponential growth of the amount of electronic waste (e-waste) in Uganda. Improper disposal of e-waste such as worn-out solar panels, batteries, wire cables, and circuit boards poses environmental, health, safety, and security risks. This will require even more vigilance in Masaka district which borders one of the world's largest freshwater bodies providing a huge habitat for a wide range of aquatic life. The National Environment Management Authority (NEMA) Uganda together with the National Enterprise Corporation (NEC) launched the first National E-waste Management Center for Uganda in 2021 to counter the above challenge which the project will position its project participants to benefit from in a bid to mitigate risks. E-waste management will also provide excellent opportunities for material recovery, refurbishment, and possible reuse. PESITHO/EEA will offer to take back batteries at the end of life from households and also provide new ones at a discount. The Assembly Center will also be used to collect end-life solar panels and other ECOCA components. During the community awareness program on radio, through drama and physical meetings, proposal disposal of electronic waste will be emphasized, and households encouraged to return end-life components or notify retailers/technicians of the same for collection. PESITHO is also exploring the possibility of building backup battery packs from re-charged end-life batteries or partnering with an entity already doing this. Furthermore, Mercy Corps will leverage the partnerships developed under IOM E-WASTE projects (e.g. WEEE Center) to promote linkages with the project and ensure different options are available for a proper management of e-waste for a safer environment.

Participants engagement: Based on the initial baseline assessment, market assessment and segmentation, and willingness to pay the assessment, the program will target all categories of household (HHs) especially those with **persons with special needs** (physically disabled, chronically ill, living with orphans <18 years, elderly > 65+ years), **female headed HHs, HHs with pregnant and/or lactating women, and HHs with children <5 years.** The program's target groups include individuals that are part of VSLAs, cooperatives, SMEs, and local authorities (formal and informal). The focus on women and female youth is driven by the fact that they are often responsible for supporting the household, including wood collection, food preparation, and generating income through SMEs. Gender-based violence is a significant concern for women and female youth. A major consideration of this program is how to effectively address women's time poverty and work burden and introduce products and knowledge that improve their well-being. Furthermore, People with Special Needs (PSN) will be considered in both the targeting and approaches adopted across the program, including increased barriers to accessing support and information. The project will recruit mostly youth and women as retailers, assembly, and/or maintenance technicians and also preserve the role of Cooking Advisors for women.

The action will use proven approaches in identifying the target population and ensuring their input and participation, which includes a step-by-step vulnerability mapping, stakeholder input, and verification



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process. This process will be supported by Mercy Corps' robust M&E systems. The targeting approach will involve multi-stakeholder participation and engagement throughout the lifecycle. This includes a consultation process with local community members and leaders and government agencies and development partners.

G. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

The proposed project activities comply with full cost of adaptation reasoning because they are costs that are interpreted as “the costs associated with implementing concrete adaptation activities that address the adverse effects of climate change”, as specified in the OPG main text. This states that in the OPG Annex 5 “the proposal should demonstrate that the project/program activities are relevant in addressing its adaptation objectives and that, taken solely, without additional funding from other donors, they will help achieve these objectives.

Component 1: Reduce household vulnerability to climate risks through increased access to clean cooking technologies | \$ 3,314,917.

The budget includes:

- Behavior changes communication activities (radio talk shows, jingles, etc.) costs including but not limited to IEC material (flyers, banners, t-shirts, etc.), procurement of mobility equipment (tri-cycle, motorcycle, and bicycles, etc.) to support movement and delivery solar units and services within the project area, onboarding cost and stipend for last mile distribution agents
- Costs related to creating access to clean renewable cooking with the ECOCA for estimated 17,500 individuals (3,000 HHs and 5 schools). people. The ECOCA comes in 4 versions with different price tags in the range of \$520 to \$950 including PAYGo option. The average price will be known after the clients have made their purchase. In the event clients choose ECOCA variations that are less than \$700 (estimated average), the project will be able to reach more than 5000 people in the first year of the project, and more than 10000 people in the second year.
- Costs related to the Installation of Pesitho ECOCA for five schools' institutional kitchens. The school kitchens are estimated to accommodate 500 students per school. When we select the schools and design the final solutions, the price will vary per school, but we will at minimum be able to provide school kitchens for at least 2500 students. The institutional ECOCA version is now on the open market and can be tailored to serve other institutions like hospitals, restaurants, barracks, etc. But in this project, the beneficiaries are schools. PESITHO can design institutional kitchens serving 100-6000 people on a daily feeding program and can also customize the energy needs of an institution by cooking 1-3 meals a day. Besides cooking, these institutional ECOCA's can also be designed to provide lighting to the institution's building(s) or premises.

Component 2: Development of a gender-inclusive and sustainable local market-based system model to support climate-adapted livelihood opportunities | \$ 136,038.

The overall budget for this outcome includes training local youth to become technicians and salespeople for the repair and maintenance of cooking stoves and maintaining and training personnel for the local production facility.



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It also includes costs related to onboarding a local financial institution to develop pro-poor financial products including offering tailored financial literacy training (to savings groups - Village Savings and Loans Associations (VSLAs), SACCOs, and or farmers organizations), learning visits to select and organize groups and project participants and associated training cost including that of an external facilitator/s. The overall budget for this outcome includes costs related to the formation and formalization of business groups such as the assembly center, and cooperatives, and their strengthening activities including but not limited to training and meeting costs, procurement of consultants to produce and make available learning video and audio to promote learning and adaptation including awareness creation in line with the new clean cooking innovation. Cost for subsistence allowance for technicians offering support across the project areas covering accommodation, meals, and communication.

Component 3: Ensure efficient and effective Project Management and continuous learning and adaptation | \$ 952,012.

Costs under this component cover:

- **Salary and Benefits of project and supporting staff (\$ 805,202):** From Mercy Corps' side, ACCESS will have a dedicated (100%) Program Manager, Senior Program Officer, Program and Communication Assistant, and MEL Officer and it will receive operational and financial support from the dedicated country support staff at 6% except for Country MEL Manager (10%), CARM Assistant (30%) and Subaward staff (25%) to ensure appropriate support. Reporting to Mercy Corps Program Manager is PESITHO and EEA staff with a dedicated (100%) Project Manager (PESITHO), EEA Project Manager, and EEA Field Officer and with key support staff allocated at various levels of efforts with a focus on a PESITHO Carbon Program Manager (40%) and Resource and Development Director (30%), and EEA Business Manager (25%).
- **Monitoring, Evaluation, and Learning costs (\$ 146,810)** to cover the cost of all assessment to be conducted (Baseline And Mapping, Endline and Learning report, 3 technical Studies/assessment), Monthly MEL technology and enumerators costs to support data collection to track progress against targets, CARM related costs (toll free line roll out, trainings, IEC material), Program quarterly internal review meetings targeting all relevant stakeholders aimed at tracking progress and documenting learnings, Communication Materials, Graphic Design, Video/audio Production for learnings dissemination, and Final Performance Internal Review (FIPR), Close out meeting, and Celebrating achievements

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project/program implementation.

The project implementation is arranged as below: -

No	Organization	Roles and Responsibilities
1	Ministry of Water and Environment	<ul style="list-style-type: none"> ● The accredited National Implementing Entity ● Oversee overall financial and monitoring aspects of the project. ● Reporting of project consolidated results to the Adaptation Fund ● Approval of project annual work plan and budget from the Executing Entity



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		<ul style="list-style-type: none"> • Approval of annual financial and technical reports from the Executing Entity • Provide administrative and management support to the executing entity
2	Mercy Corps	<ul style="list-style-type: none"> • The Executing Entity • Coordinate project management and implementation. • Ensure that the project creates an impact on the targeted beneficiaries. • Project Monitoring and Evaluation and Community Accountability • Ensure compliance of project interventions with the national frameworks • Prepare and submit semiannual and annual work plans and budgets to MWE. • Provide semiannual and annual progress reports to MWE. • Provide designated key personnel for coordination of project execution such as the Project Manager, Project Officer, and Monitoring, and Evaluation Officer • Ensure liaison on project activities among and between the MWE, target beneficiaries, and key relevant key stakeholders
3	PESITHO	<ul style="list-style-type: none"> • Ensure the supply of ECOCA units. • Build local production excl. building. • Train technicians with ongoing support/training • Train sales force • Train cooking advisors • Training of Trainers • Build School Kitchen • Train service technicians • Investigate and integrate carbon credit scheme. • Manage PAYGo and token generation incl. user management. • Technology and quality monitoring
4	Retailers and VSLAs	<ul style="list-style-type: none"> • Participate in direct implementation of project interventions. • Participate in planning and implementation of project interventions
5	Beneficiaries (Youths, Women, People with disabilities)	<ul style="list-style-type: none"> • Participate in direct implementation of project interventions

B. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan.

Monitoring and Evaluation



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Led by Mercy Corps in coordination with PESITHO, the J2S program will establish an effective system to monitor and evaluate program implementation; use data to drive decision-making in enhancing quality implementation; generate concrete evidence to account for impact; use the data and evidence generated to improve programming and contribute to learning. Deploying Mercy Corps' MEL policy and minimum standards, monitoring, and evaluation processes will ensure high-quality disaggregated data collection and management (at minimum, by gender, age, and disability), and effective performance measurement through quarterly analysis, dissemination, and utilization of lessons learned to facilitate integration and program adaptation.

Supported by the project manager, the MEL activities will be overseen by a dedicated MEL officer which will play a pivotal role as the focal point for Mercy Corps and PESITHO in the harmonization and standardization of tools and data management systems across the program to ensure consistent and accurate routine monitoring, data collection, quality assurance and reporting of activities and milestones (see below). Mercy Corps Uganda country MEL manager will provide overarching technical and back stocking support. At the inception stage, the program MEL plan, performance indicators, draft data collection and analysis plan, learning agenda, roles, and responsibilities will be clearly defined in consultation with the funder.

A baseline and market assessment with targeted participants and any groups will be undertaken to establish access, affordability, and willingness to pay for clean energy for cooking. A household level survey on wood fuel consumption will be also undertaken to estimate how much HHs level collection and consumption contributes to deforestation in the areas and as well as to track the impact the project has in incentivizing the reduction of wood collection and therefore contributing to diminish the overall deforestation rate. As continuous support and in strengthening implementation, routine data will be collected including post-distribution monitoring assessments as after-sales service of the clean energy products to better understand the implementation processes, utilization of the products, gather emerging urgent needs of the participants, and areas of improvement as relates to the energy cooking system. Performance evaluation will gather data from participants and their households, as well as smallholder businesses utilizing the ECOCA energy system. The evaluation will broadly look at information related to access and affordability of the energy cooking system; utilization (attitude and behaviors); gains through using the energy system (time and income); environmental protection realized. A mixed-method approach to the evaluation will be adopted applying quantitative and qualitative methods.

During the implementation of the project, Mercy Corps will continue to collect and respond to community feedback through the implementation of its Community Accountability and Reporting Mechanism (CARM). CARM has been developed in Uganda as part of Mercy Corps' global initiative to prevent exploitation and abuse. CARM provides a channel for all community members to provide feedback, suggestions, complaints, and concerns, in a manner that is safe, confidential, transparent, and accessible, enabling Mercy Corps to take safeguarding decisions and community-informed program adaptations to the proposed activities.

Quality Assurance, Data, and Information Management

Using ONA, which is Mercy Corps' recommended MEL Tech platform, data will be collected by deploying tools on tablets and/or smartphones for digital data collection. The collected data from the field will be



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uploaded onto the server (cloud) to be retrieved, cleaned, analyzed, and interpreted to produce reports. The projects' results framework will be hosted onto the Tola Data system where all the indicators will be uploaded, monitored, and tracked through monthly updates of results linked to evidence filed on Google Drive /SharePoint. All data will be disaggregated by sex, age, and disability whenever possible.

Regular data quality assessments on agreed indicators will be assessed in line with Mercy Corps MEL policy and minimum standards to check for their validity, reliability, timeliness, precision, and integrity. Data will be maintained through strict compliance with Mercy Corps policies and global policies (e.g., GDPR) to safeguard and prevent unauthorized access or distribution of personally identifiable information, demographically identifiable information, and other sensitive data.

Project monitoring and evaluation costs| \$ 146,810

Key Monitoring and Evaluation activities are highlighted in the table below and the attached budget for a total cost of \$ 146,810 (incorporated under Component 3 total budget) for 30 months of implementation to cover: Inception Studies, CARM Budget (toll-free line rollout, training, IEC material), Regular monitoring (spot check, etc.), Midline, Endline & Learning Reports, Program quarterly internal review meetings targeting all relevant stakeholders aimed at tracking progress and documenting learnings , Communication Materials, Graphic Design, Video/audio Production, Including, Final Performance Internal Review (FIPR), Closeout meeting.



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C. Include a simple results framework for the project proposal, including milestones, targets, and indicators.

Hierarchy of objectives	Project Outcomes	Outcome Indicators	Method of collection	Frequency of data collection	Output	Output Indicator
Overall Goal: To increase the resilience of households and local forest ecosystems through access to affordable and sustainable clean energy for off-grid cooking for vulnerable communities in Masaka District, Uganda.		% of households accessing and using affordable and sustainable clean energy for off-grid cooking within the vulnerable communities of Masaka district	Endline	Annual		
SO1: Reduce household vulnerability to climate risks through increased access to clean cooking technologies	Outcome 1.1 Increased Adoption and Utilization of clean cooking practices and technologies	% of community members with knowledge on the benefits of clean cooking in the targeted community	Household surveys	Baseline	Output 1.1.1 Enhanced knowledge of targeted communities on the benefits of clean cooking and reduced deforestation	Number of cookstove users reporting know-how, utilizing, and promoting the ECOCA
		% of vulnerable households and schools utilizing clean cooking technologies.	Counting (Review of sales documents)	Quarterly		
		% of people who perceive a positive change in their well-being after using the clean energy product	Household surveys	Annual		



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	<p>Outcome 1.2 Reduced deforestation linked to biomass fuel collection and usage for cooking in the program area .</p>	% reduction in deforestation linked to biomass fuel collection and usage for cooking	Forest coverage mapping/Earth Observations /Households surveys	Baseline	<p>Output 1.2.1 HHs biomass fuel collection and usage is reduced</p>	Number of households reporting reduction in biomass wood fuel consumption
	<p>Outcome 1.3 Increased affordability of ECOCA by vulnerable community members through innovative financing schemes.</p>	% adoption and utilization of Pay as You Go (PayGo) and Pay as You Cook (PAYC) system by low- and middle-income households	Household surveys	Baseline	<p>Output 1.3.1 Pay as You Go (PayGo) model rolled out for low- and middle-income households.</p>	Number of households adopting PayGo model/system
		% reduction in end user price due to innovative financing schemes allowing vulnerable households afford ECOCA	Goal Standard Guideline and Household surveys (kitchen test), data file of ECOCA	Baseline	<p>Output 1.3.2 Innovative financing schemes /subsidy products developed and implemented (Carbon credits, Smart subsidies) to enhance the affordability of the ECOCA</p>	Number of innovative financing schemes products developed and implemented to enhance the affordability of the ECOC
<p>SO2: Development of gender-inclusive and sustainable local market-based system model to support</p>	<p>Outcome 2.1 Increased alternative and climate-adapted livelihood opportunities for</p>	% of targeted women and youth with alternative and climate-adapted livelihood opportunities.	Household surveys	Annual	<p>Output 2.1.1 ECOCA East Africa (EEA) SMC Ltd local production /assembly center established in Masaka.</p>	Number of retailers and assembly center staff employed
					<p>Output 2.1.2</p>	



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climate adapted livelihoods opportunities	women and youth in the area				Local Retailer Network established and scaled up for ECOCA.	
SO3: Ensure efficient and effective Project Management, continuous learning and adaptation	Outcome 3.1 Improved Adaptive Management throughout the project cycle	% Budget burn rate	Budget Variance Analysis	Monthly	Output 3.1.1 A learning culture within the projects is strengthened	Number of assessments and learning products produced Number of staff who embraced and practicing learning culture
		Staff performance rate	Performance Appraisal (value for money through returns on investment)	Annual		
Monitoring and Evaluation						
Inception Studies Baseline and Assessment studies		4 Assessment reports produced: 1 Baseline Assessment 1 Market Assessment 1 Willingness to Pay studies. 1 HHs Survey on wood fuel consumption	Surveys, FDGs, KII	At the beginning of the project		
Quarterly joint monitoring, spot checks + reviews		8 joint monitoring and spot checks	Spot checks Report	Quarterly		
Lessons learned briefs		3 lessons learned briefs produced	Learning briefs	Quarterly		



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CARM sensitization and feedback collection		At least 8 CARM sensitization and feedback sessions held	CARM report	Quarterly		
Midline Assessment		1 midline conducted	Midline report	After 15 months		
Endline Assessment		1 endline conducted	Endline report	End of project (30 months)		
Procurement of core administrative costs						
Payment of Staff Salaries		Dedicated Project staff and Support staff	Staff Contracts	Daily		



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E. Demonstrate how the project/program aligns with the Results Framework of the Adaptation Fund. This is explained as per the reflections in the table below: -

Project Objective(s) ²⁷	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (\$)
To increase the resilience of households and local forest ecosystems through access to affordable and sustainable clean energy for off-grid cooking for vulnerable communities in Masaka District, Uganda.	% of households accessing and using affordable and sustainable clean energy for off-grid cooking within the vulnerable communities of Masaka district	<p>Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies</p> <p>Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas</p>	<p>8. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level.</p> <p>6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods</p>	4,608,295
Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (\$)

²⁷ The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology, but the overall principle should still apply



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<p>Outcome 1.1 Increased Adoption and Utilization of clean cooking practices and technologies</p>	<p>% of vulnerable households and schools utilizing clean cooking technologies.</p> <p>% of community members with knowledge on the benefits of clean cooking in the targeted community</p> <p>% of people who perceive a positive change in their well-being after using the clean energy product</p>	<p>Output 8: Viable innovations are rolled out, scaled up, encouraged and/or accelerated.</p>	<p>8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated</p>	<p>3,314,917</p>
<p>Outcome 1.2 Reduced deforestation linked to biomass fuel collection and usage for cooking in the program area.</p>	<p>% reduction in deforestation linked to biomass fuel collection and usage for cooking.</p>			
<p>Outcome 1.3 Increased affordability of ECOCA by vulnerable community members through innovative financing schemes.</p>	<p>% adoption and utilization of Pay as You Go (PayGo) and Pay as You Cook (PAYC) system by low- and middle-income households</p> <p>% reduction in end user price due to innovative financing schemes allowing vulnerable households afford ECOCA</p>			
<p>Outcome 2.1 Increased alternative and climate-adapted livelihood opportunities for women and youth in the area</p>	<p>% of targeted women and youth with alternative and climate-adapted livelihood opportunities.</p>	<p>Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability</p>	<p>6.1.1.No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies</p>	<p>136,038</p>



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Outcome 3.1 Improved Adaptive Management throughout the project cycle	% Budget burn rate Staff performance rate	Output 8: Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	8.2. No. of key findings on effective, efficient adaptation practices, products and technologies generated	952,012
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F. Include a budget, including a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs.

The budget and budget description are attached.

G. Include a disbursement schedule with time-bound milestones.

Milestones	Disbursement Schedule	Amount in %ages
A Notification of Project Start (1 July 23)	3,000,000	60%
Annual Report 2023-2024 (31 st July 2024)	1,500,000	30%
Annual Report 2024-2025 (31 st July 2025)	500,000	10%
Total		100%



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PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government²⁸

Provide the name and position of the government official and indicate the date of endorsement. If this is a regional project/program, list the endorsing officials of all the participating countries. The endorsement letter(s) should be attached as an annex to the project/program proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/program:

Mr Ramathan Ggoobi	Date: 07 th September 2023
--------------------	---------------------------------------

B. Implementing Entity certification

Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/program contact person's name, telephone number, and email address

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (capacity strengthening for adaptation to climate change, strengthening gender considerations .. listed here.....) and is subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/program in compliance with the Environmental and Social Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/program.	
Name, title, and Signature: Joseph Lule Principal Policy Analyst	
Date: 07 th September 2023	Tel. and email: +256773313107 Josephlule2@gmail.com
Project Contact Person: Edward M. Simiyu	
Tel. And Email: +256770829283, esimiyu@mercy Corps.org	

²⁸ Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and program proposed by the implementing entities.

Telephone : 256 41 4341305/230487
Fax : 256 41 4233524
Email : finance@finance.go.ug
Website : www.finance.go.ug
Plot No. 2-8 Apollo Kaggwa Road
In any correspondence on
This subject please quote No. ALD 79/251/02



Ministry of Finance,
Planning & Economic
Development,
P.O Box 8147
Kampala, Uganda

7th September 2023

The Adaptation Fund Board,
C/O Adaptation Fund Board Secretariat
Email: afbsec@adaptation-fund.org
Fax: 202 522 3240/5

**ENDORSEMENT LETTER FOR THE ADAPTIVE AND AFFORDABLE
CLEAN COOKING ENABLES SUSTAINABLE SOLUTIONS IN
MASAKA (ACCESS) PROJECT**

In my capacity as the Designated Authority for the Adaptation Fund in Uganda, I confirm that the above national project proposal is in accordance with the Government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Uganda.

Accordingly, I am pleased to endorse the above project with support from the Adaptation Fund. If approved, the project will be implemented by Ministry of Water and Environment and executed by Mercy Corps and PESITHO.

Ramathan Ggoobi

PERMANENT SECRETARY / SECRETARY TO THE TREASURY

Copy to:

- The Hon. Minister of Finance, Planning and Economic Development,
- The Permanent Secretary, Ministry of Water and Environment,

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In any correspondence on
this subject please quote Ref. No. **ADM/61/70/01**

September 09th, 2023

The Manager
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SUBMISSION OF A PROJECT CONCEPT ON ADAPTIVE AND AFFORDABLE CLEAN COOKING ENABLES SUSTAINABLE SOLUTIONS - IN MASAKA, UGANDA - ACCESS

The Ministry of Water and Environment in partnership with Mercy corps Uganda has developed a project concept note on Adaptive and Affordable Clean Cooking Sustainable Solutions in Masaka, Uganda.

The project objective is to increase the resilience of households and local forest ecosystems through access to affordable and sustainable clean energy for off-grid cooking for vulnerable communities in Masaka District, Uganda. Specifically, the project will: Reduce household vulnerability to climate risks through increased access to clean cooking technologies; Develop a gender-inclusive and sustainable local market-based system model to support climate-adapted livelihood opportunities; and, Ensure efficient and effective Project Management and continuous learning and adaptation.

The project concept has been developed in consultation with various Government of Uganda stakeholders, including among other, Ministry of Agriculture, Animal Industry and Fisheries, Food and Agricultural Organization (FAO), Ministry of Finance, Planning and Economic Development (NDA), Uganda National Meteorological Authority and is in line with the AF objectives and the Government of Uganda National priorities of building a climate resilient economy, as stipulated in the Uganda Vision 2040, the National Development Plan, the Nationally Determined Contributions and the Uganda National Climate Change Policy, among others.

The expected project investment is estimated to be USD 5,000,000 for a period of 2.5 years targeting the AF innovation window. When approved, the project will be implemented by the



Ministry of Water and Environment, as a National Implementing Entity in partnership with Mercy Corps and PESITHO as Executing Entities.

The purpose of this letter therefore, is to submit to you the project document for review and further guidance.

The Ministry looks forward to your positive consideration.



Alfred Okot Okidi

PERMANENT SECRETARY

Copy: Minister of Water and Environment
Minister of State for Water
Minister of State for Environment
The Permanent Secretary/Secretary to the Treasury/NDA Focal Person Ministry of
Finance Planning and Economic Development.
Country Director, Mercy Corps Uganda