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The U.N. World Food Program distributes USAID-donated rice in Liberia
Source: Morgana Wingard, 2014

BUREAU FOR HUMANITARIAN ASSISTANCE (BHA)

CIRCULAR ECONOMY PRIVATE SECTOR LANDSCAPE ASSESSMENT (PSLA)

December 14, 2021

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TABLE OF CONTENTS

ACRONYMS

ACEA	African Circular Economy Alliance
AfDB	African Development Bank
BHA	U.S. Bureau for Humanitarian Affairs (Formerly FFP and OFDA)
CCBO	Clean Cities Blue Oceans
COVID-19	2019 Novel Coronavirus or 2019-nCoV
CRGE	Climate Resilience and Green Economy
CSO	Civil Society Organization
DFC	Development Finance Corporation
EABC	East African Business Council
EAC	East African Community
EPR	Extended Producer Responsibility
FAO	Food and Agriculture Organization
FDRE	Federal Democratic Republic of Ethiopia
GACERE	Global Alliance on Circular Economy and Resource Efficiency
GEF	Global Environment Facility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Society for International Cooperation)
GSC	Global Shelter Cluster
HAO	Humanitarian Assistance Organization
ICRC	International Committee of the Red Cross
IDP	Internally Displaced Peoples
ILO	International Labour Organization
KAM	Kenya Association of Manufacturers
KAWR	Kenya Association of Waste Recyclers
KEPSA	Kenya Private Sector Alliance
KIPPRA	Kenya Institute for Public Policy Research and Analysis
MCC	Millenium Challenge Corporation
MoEF	Kenyan Ministry of Environment and Forestry
MoTI	Kenyan Ministry of Trade and Industrialization
NAMA	Nationally Appropriate Mitigation Action
NEMA	National Environment Management Authority
NGI	Norwegian Geotechnical Institute
NGOs	Non-Governmental Organizations
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
PACE	Platform for Accelerating the Circular Economy
PEPSE	Promoting Excellence in Private Sector Engagement (USAID project)
PET	Polyethylene Terephthalate
PP	Polypropylene
PPP	Public Private Partnership
PSE	Private Sector Engagement
PSLA	Private Sector Landscape Assessment
rPET	Recycled Polyethylene Terephthalate
SANREM	Sustainable Agriculture and Natural Resource Management Africa
SME	Small and Medium Enterprises

SOW	Scope of Work
SWM	Solid Waste Management
UN	United Nations
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Programme
UNHCR	United Nations High Commissioner for Refugees
USAID	United States Agency for International Development
WASH	Water, Sanitation, and Hygiene
WEF	World Economic Forum
WEMAK	Waste and Environment Management Association of Kenya
WFP	World Food Programme
WRI	World Resources Institute

EXECUTIVE SUMMARY

The United States Agency for International Development's Bureau for Humanitarian Assistance (USAID/BHA) and the broader humanitarian community have identified that the packaging used to deliver food assistance and non-food items often becomes an unintended waste stream in recipient countries. As one component of addressing this challenge, USAID/BHA engaged the Promoting Excellence in Private Sector Engagement (PEPSE) program to conduct a Private Sector Landscape Assessment (PSLA), which aimed to understand the interests, challenges, main actors, and opportunities for engaging the private sector in managing humanitarian assistance packaging waste in recipient countries. This PSLA focused on opportunities that USAID/BHA and the humanitarian community can employ to leverage circular economy and market-based approaches for managing, recycling, and reusing food packaging for food and non-food items in Kenya and Ethiopia. Circular economy can be defined as "a systems solution framework that tackles global challenges like climate change, biodiversity loss, waste, and pollution, based on the elimination of waste and pollution, circulation of products and materials (at their highest value), and regeneration of nature" (Ellen Macarthur Foundation, 2021).

The PSLA focused on the following research questions:

1) What is the market demand for humanitarian packaging waste?
2) What are opportunities for the private sector to use circular and market-based approaches to manage humanitarian packaging waste?
3) What companies are already working on waste management & where?
4) What gaps or challenges exist for the private sector in circular economy approaches to humanitarian packaging waste management?
5) What lessons learned (e.g., unintended consequences, foreseen or unforeseen results, etc.) or best practices currently exist?
6) What are opportunities for greater collaboration across USAID and USAID/BHA with regards to humanitarian packaging waste?

The research team investigated these questions through a combination of desk review, interviews with humanitarian organizations, and interviews with private sector actors over the course of seven months.

Circular Economy PSLA Findings

The PSLA team uncovered five distinct business models that organizations in Kenya and Ethiopia are using to implement circular and traditional approaches to waste management. For three of the five business models identified, the PSLA team found only one example for these models. These business models include:

- **For Profit (Unassisted):** Private sector organizations using this model operate profitably, or are close to achieving profitability, and do not receive financial support outside of their service offerings. Over three-quarters of the companies interviewed (29 of 38) fall into this category.
- **For Profit (Assisted):** This model describes private sector businesses that intend to operate profitably, unassisted, but have not been able to achieve that goal. These organizations receive funding from other entities, such as governments, grants, or other organizations to operate. Fifteen percent of the companies interviewed (six of 38) fall into this category.

- **Public-Private Partnerships:** This business model describes the collaboration between a government agency and a private sector company to collectively finance and build projects. While common elsewhere in the development space, this model is rare in solid waste management (SWM) in the countries examined in this report. One of 38 companies interviewed fall under this category.
- **Non-Profit-Driven:** These are models driven by creating a collective public benefit and are not focused on creating profit for its owners. One of 38 companies interviewed fall under this category.
- **Government-Driven:** These organizations are either part of or dependent on funding from national, local, international, or regional government actors to operate their business. One of 38 companies interviewed fall under this category.

Private sector actors across Kenya, Ethiopia, and the other countries interviewed listed a number of recurring challenges to engaging in packaging waste management. These challenges include:

Challenges faced by the private sector in engaging with packaging waste management generally.

- **Finances:** Operation costs and lack of access to finance from local institutions impede the emergence and growth of financially viable enterprises.
- **Logistics:** The high cost, inefficiencies, and cumbersome process of collecting, sorting, storing, and transporting large amounts of waste, particularly given the remoteness of some humanitarian operations, remain a challenge for the private sector.
- **Infrastructure:** The lack of infrastructure, such as sufficient recycling points, composting facilities, and road networks along the supply chain challenges waste management and circular interventions.
- **Awareness:** Almost all private sector companies identified a lack of citizen and consumer awareness around waste segregation, recycling, and proper waste disposal as a hindrance to circular approaches to waste management.
- **Behavior:** Awareness of the issue of packaging pollution and greener waste disposal is important for behavior change, but not effective by itself.
- **Markets:** The value of the waste, particularly plastic waste, internationally can be heavily influenced by the cost of oil and international markets. This can create market volatility when the waste collected has severely reduced in value.
- **Supply:** Recyclers need a continuous, reliable supply of waste to process. Often, humanitarian assistance organizations (HAOs) cannot commit to a specific amount of waste for a given timeframe, posing a risk for a potential private sector partner.
- **Taxation and Regulation:** High importation taxes on waste management equipment and technology and regulations banning waste transportation across administrative borders can restrict companies' abilities to expand operations.
- **Labor:** End-of-life management relies heavily on informal and formal labor, which increases costs for organizing, facilitating, and operating such enterprises.

Challenges faced by the private sector in engaging with HAOs for humanitarian packaging waste management.

- **Humanitarian Operations and Processes:** The time it takes to partner with development or humanitarian actors and their specific requirements for contractors can be a deterrent for some waste management companies.

- **Internal Planning:** A lack of waste management planning by HAOs, due to a historical lack of prioritization and attention, leads to waste mixing and thus value reduction, waste contamination, lack of waste data, and inefficient or nonexistent private sector engagement.

Opportunities and Recommendations

From the challenges identified and an understanding of national context and best practices, the PSLA team identified six opportunities for USAID/BHA and USAID to engage the private sector in advancing circular economy approaches to end-of-life management of packaging waste. These opportunities are ordered based on short- (less than 1 year), medium- (1-3 years), and long-term (more than 3 years) timelines to start implementation. USAID/BHA and USAID can undertake initial steps in medium- and long-term opportunities earlier, but the PSLA recommends focusing the bulk of effort on implementing opportunities in sequence as the earlier opportunities build the foundation for later/longer-term opportunities. The report outlines the challenges addressed by each opportunity, recommendations for USAID/BHA and USAID to pursue, and the overall prioritization of the opportunity (options include Limited, Moderate, Significant, and Very Significant). The overall prioritization is a summary of a set of evaluation criteria applied to each opportunity.

Short-term Opportunities

Opportunity	Recommendation	Overall Prioritization
Partner with Private Value Chain Actors	USAID/BHA and implementing partners can partner with value chain actors (recyclers, collectors, others in the end of life management space) to channel waste from humanitarian sites into circular economy value chains.	Very Significant
Address Logistics and Transportation Barriers from Humanitarian Sites	USAID/BHA can work with implementing partners to investigate options for aggregating waste, utilizing reverse logistics, and introducing technologies that create logistics efficiencies.	Moderate (Kenya) Moderate (Ethiopia)
Institute Internal Waste Management Procedures	USAID/BHA and implementing partners can create a waste management plan framework to sort and track the waste created on-site in both camps and dispersed sites to facilitate better private sector engagement. Each site would tailor this framework to meet requirements based on their unique circumstances.	Moderate

Medium-term Opportunities

Opportunity	Recommendation	Overall Prioritization
Facilitate Circular Economy Policy Advocacy	USAID/BHA can increase private sector participation, collaboration, and input into policies, standards, procurement, and end-of-life solutions.	Significant
Build Capacity of Informal Sector with Development Partners	USAID/BHA can work with other USAID divisions/programs and the Millennium Challenge Corporation (MCC) to provide safety and technical training, raise awareness, and facilitate organizing informal workers in crisis-affected communities to better engage with the private sector.	Significant

Long-term Opportunities

Opportunity	Recommendation	Overall Prioritization
Catalyze Finance for Waste Management Infrastructure	USAID/BHA can work with USAID, DFC and other development partners to establish and facilitate finance mechanisms for infrastructure, logistics, and equipment improvements.	Significant

1. INTRODUCTION

1.1 Context and Background

1.1.1 Purpose of the Private Sector Landscape Assessment

United Nations volunteers and citizens unload food supplies delivered by a U.S. helicopter
Source: Navy News Service, 2010

The United States Agency for International Development's Bureau for Humanitarian Assistance (USAID/BHA) delivers life-saving assistance in response to disasters and emergencies across the globe. This includes both food assistance (e.g., grains, vegetable oil, flour, etc.) and non-food items (e.g., shelter kits, medical supplies, hygiene products, kitchen tools, etc.). The packaging in which these items are delivered can be both an asset to those receiving assistance, and an unintended source of waste. These communities often do not have the necessary systems and infrastructure to manage packaging waste effectively, leading to significant environmental, social, and health impacts. This has led to solid waste management (SWM) and recycling becoming a growing priority for USAID/BHA and the broader humanitarian community.

To help address this challenge, the USAID/BHA Supply Chain Management division identified using a circular economy framework[1] as a key element of the USAID/BHA's strategy to improve packaging waste

[1] The Circular Economy framework is underpinned by a transition to renewable energy and materials. Transitioning to a circular economy entails decoupling economic activity from the consumption of finite resources (Ellen Macarthur Foundation, 2021).

management in humanitarian assistance.[2] Given the private sector's prominence in SWM, USAID/BHA wanted to better understand the current and potential role of the private sector in managing packaging waste from humanitarian assistance (World Bank, 2017). At the same time, it is difficult to generalize across different and unique contexts of many of these communities. USAID/BHA also wanted to identify opportunities that USAID/BHA can leverage and/or replicate to minimize the impact of packaging and turn waste into opportunities for communities. This includes examining existing waste management operations or potential private sector engagement and market-based approaches to recycling/reuse and management of packaging waste.

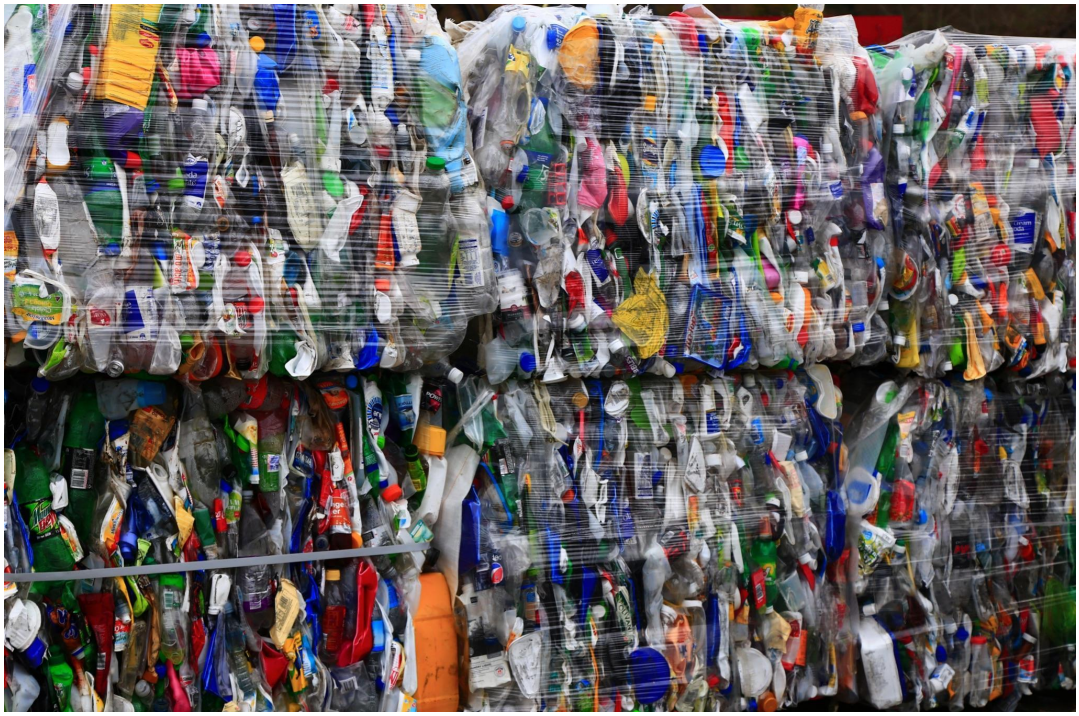
USAID/BHA engaged the Promoting Excellence in Private Sector Engagement (PEPSE) program to conduct a Private Sector Landscape Assessment (PSLA) about humanitarian assistance packaging waste management. More specifically, this PSLA focused on end-of-life opportunities that leverage circular economy and market-based approaches for managing, recycling, and reusing packaging from humanitarian commodities that produce significant waste streams in areas with large-scale humanitarian assistance activities.

The PSLA set out to help USAID/BHA answer the following questions:

1) What is the market demand for repurposed humanitarian packaging and material waste?
2) What types of companies are already working on waste management initiatives, and where?
    a) What types of companies may be interested in becoming involved?
3) What are opportunities for the private sector to use circular and market-based approaches to manage and reuse humanitarian packaging waste? More specifically:
    a) How is packaging reused by the private sector and/or beneficiary communities in creative ways (e.g., recycling, disposal, other reuse, etc.) and at what scale/volume is packaging being reused compared to the scale/volume of waste being produced?
    b) What are the different circular business models for SWM (e.g., re-use, waste collection/sorting/recycling, trading, etc.) at the local and regional levels? And, if applicable, how does the informal economy fit into these models?
4) What gaps, challenges, or barriers exist for private sector participation in circular economy approaches in the humanitarian packaging waste supply chain?
5) What lessons learned (e.g., unintended consequences, foreseen or unforeseen results, etc.) or best practices currently exist?
    a) What is being done well and what makes these practices successful?
    b) Is there existing demand for business models and/or current initiatives among BHA partners that USAID/BHA could leverage or bolster?
6) What are some opportunities for greater collaboration across USAID and USAID/BHA with regards to humanitarian packaging waste?

[2] These efforts also align with the Joint Initiative for Sustainable Humanitarian Assistance Packaging Waste Management, created in 2019 in collaboration with USAID, the World Food Programme, and the Global Logistics Cluster.

1.1.2 Circular Economy of Packaging Waste in Humanitarian Operations



Cubes of cleaned plastic waste, ready for processing
Source: Nareeta Martin, 2021

Packaging waste from humanitarian activities, which is used to deliver food and non-food commodities, includes virgin woven polypropylene (PP) bags, steel cans, plastic bottles, cardboard cartons, and metalized flexible plastic sachets and pouches. These materials fall into three categories: primary packaging, which is packaging for an individual good, such as a meal replacement sachet; secondary packaging, which is packaging for a collection of products, such as cardboard cartons holding steel vegetable oil tins; and tertiary packaging, which is packaging used to transport or store humanitarian assistance products, such as wooden pallets (USAID, 2020). Plastic is the most widely used material for packaging in the world and polyethylene terephthalate (PET) is the largest driver of plastic waste due to its cheap price (Unilever, 2021).

Unsustainable SWM, which is expected to worsen in the coming years, is one of the most underfunded global development challenges (USAID, 2020). In 2016, the world generated 242 million tonnes of plastic waste—12 percent of all municipal solid waste (World Bank, 2018). This crisis is especially challenging for countries that lack the infrastructure to handle existing municipal solid waste as well as solid waste that results from humanitarian assistance activities.

One of the most promising ways to reduce packaging waste in the humanitarian lifecycle is through a circular economy approach, which aims to improve how goods and services are used throughout the

supply chain to maximize resource usability and eliminate waste. While there is no singular definition for the circular economy, this assessment adapted the following from Korhonen, et al.:

> *"The circular economy is a sustainable development approach focused on reducing the linear production-consumption system of materials and energy flows by applying materials cycles, renewable and cascade-type energy flows to the linear system. The circular economy promotes high-value material cycles alongside traditional recycling and develops systems approaches to encourage the cooperation of producers, consumers, and other societal actors in this work" (Korhonen, 2018).*

Several actors and initiatives have convened to address humanitarian packaging waste in response to this crisis. USAID/BHA facilitates the Joint Initiative for Sustainable Humanitarian Assistance Packaging Waste Management (to be referred to henceforth as the Joint Initiative), which includes partners such as the World Food Programme (WFP), the International Committee of the Red Cross (ICRC), and the United Nations High Commissioner for Refugees (UNHCR), to address humanitarian packaging waste management. ICRC has taken steps to work with its suppliers to reduce the packaging used for humanitarian products like kitchen sets by using cardboard packaging (ICRC, 2021). The Global Shelter Cluster called on organizations that distribute shelter to eliminate all but essential plastic packaging in relief items by the end of 2020 (GSC, 2019). In refugee camps in Kenya and Ethiopia, UNHCR works with engineers to recycle plastic waste into building materials (slabs, bricks) and items such as chairs, bowls, basins, and buckets (NGI, 2018). These actions and others demonstrate increased attention and action toward both circular economy approaches and the problem of humanitarian packaging waste.

Steel VO cans converted into charcoal grills at Minalesh Tera market, Ethiopia
Source: Fasil Reta, 2021

Circular economy approaches are also becoming increasingly popular as pathways to achieving the Sustainable Development Goals and advancing sustainable development more generally. For example, the World Economic Forum (WEF) spun out the Platform for Accelerating the Circular Economy (PACE) in 2017. Now hosted by World Resources Institute (WRI), the platform has over 100 organizations from

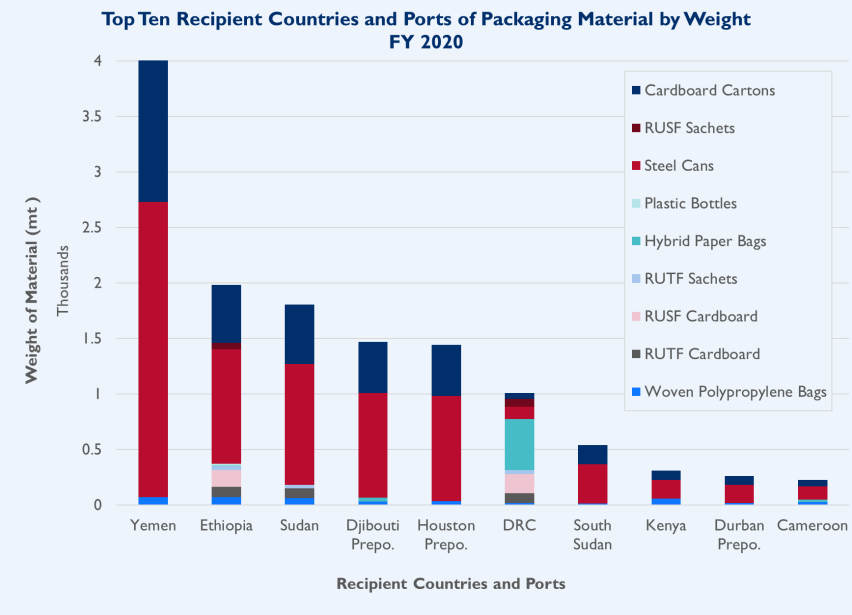
the public, private, and civil society sectors working together to accelerate the transition to a circular economy (WEF, 2020). More recently, 11 nations, including Kenya, Rwanda, and South Africa, joined with UN organizations and the European Commission to launch the Global Alliance on Circular Economy and Resource Efficiency (GACERE) in 2021 (European Commission, 2021). While these show a broad and growing interest in circular economy approaches, these high-level alliances and humanitarian sector actors have not yet partnered on strategic or operational activities.

1.1.3 Geographic Focus of the Private Sector Landscape Assessment

The PSLA focused on identifying opportunities and business models in Sub-Saharan Africa, with an emphasis on East Africa and specifically Kenya and Ethiopia. Kenya and Ethiopia were chosen because USAID/BHA has significant humanitarian assistance activities and there is potential and promise of successful circular economy approaches in both countries. Kenya is home to many waste management companies, transportation routes, and favorable legislation. For example, Kenya's Green Bond Programme established a domestic green bond market that can be leveraged for circular approaches. Additionally, the Climate Innovation Centre supports green businesses in Kenya. By 2030, Kenya is estimated to produce 5.5 million tons of waste annually, which may contribute to growth in the waste management sector (Republic of Kenya Ministry of Environment and Forestry, 2021).

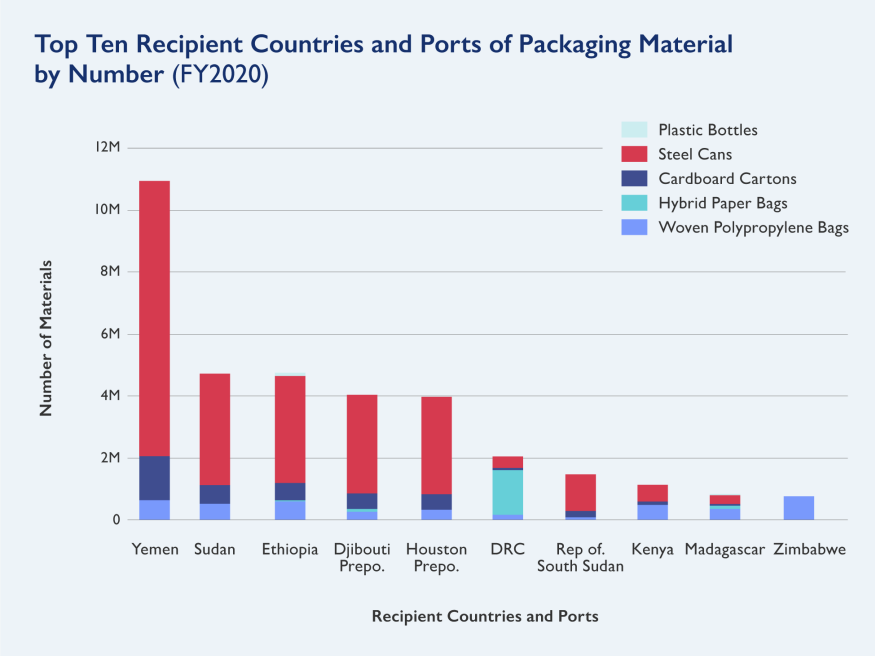
Ethiopia receives a large amount of humanitarian assistance and packaging material (as detailed in Figures 1 and 2) and has existing waste recycling initiatives on which USAID/BHA can build. In Ethiopia,19.2 million people required humanitarian assistance in 2020 alone (USAID, 2020). Additionally, reuse and recycling have long been a cultural practice in Ethiopia[3], creating opportunities for companies focusing on the end-of-life section of the waste management chain.

Figure 1: Top Ten Recipient Countries and Ports of Packaging Material by Weight (USAID, 2020b)



[3] Due to limited purchasing power for new items, a common cultural practice in Ethiopia is reusing and repurposing everyday items.

Figure 2: Top Ten Recipient Countries and Ports of Packaging Material by Number (USAID, 2020b)



1.2 Methodology

1.2.1 PSLA Design and Scope of Work Development

The PSLA team used a phased approach to understand the private sector landscape of packaging waste management in Kenya and Ethiopia, identify the private sector's challenges and opportunities, and develop opportunities and recommendations for USAID/BHA. The timeline of the PSLA was as follows:

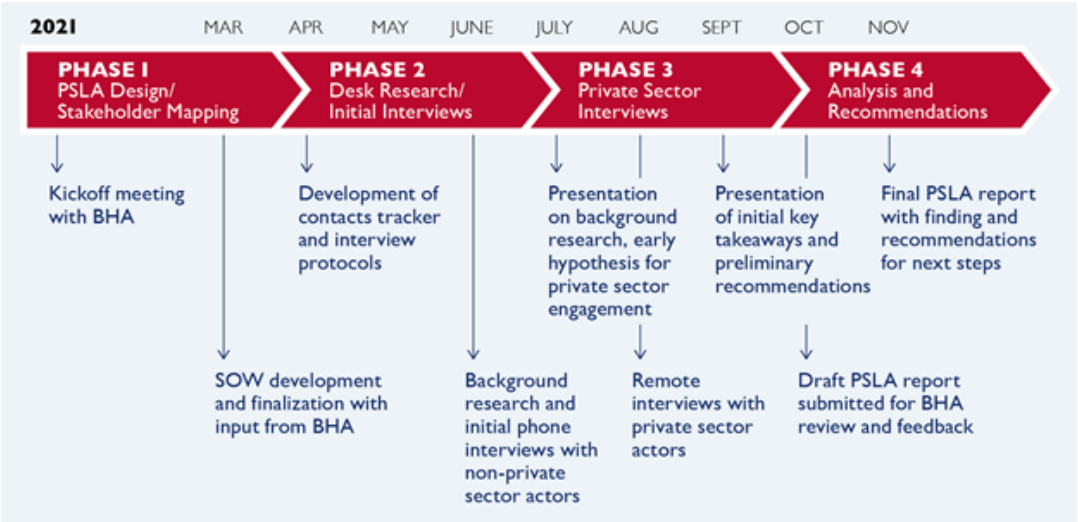


Figure 3: PSLA Timeline and Key Activities

During Phase 1 in March of 2021, the PSLA team worked with USAID/BHA to identify the focus and objectives of the Circular Economy PSLA. This involved an introductory kick-off meeting (conducted on March 30, 2021), which resulted in an approved scope of work that outlined the USAID/BHA Circular Economy PSLA context, geographic focus, objectives, key stakeholders, implementation plan, deliverables, team composition, and timeline. Through Phase 2, the PSLA team sought to understand existing business models for engaging with packaging waste management. The PSLA team conducted private sector interviews during Phase 3 to understand the private sector's role in the circular economy of humanitarian packaging waste, costs associated with end-of-life businesses, and how companies engage with the informal sector. Phase 4 included an analysis of recommendations, opportunities, and challenges stemming from the interviews, research, and feedback collected from the earlier phases.

1.2.2 Desk Research and Non-Private Sector Interviews

The PSLA team reviewed 25 reports, analyses, and articles from USAID/BHA, research organizations, mass media, and more. Learnings and key takeaways from the desk research phase informed the private sector interviews. The desk research phase of the PSLA was guided by the following questions:

- What are existing or potential circular business models for solid waste management, particularly in humanitarian packaging and/or East Africa, that we can ask interviewees about?
- Who are key companies, coalitions, and non-governmental organizations (NGOs) working at the intersection of the circular economy and packaging waste in East Africa that we could interview or research further?
- What are the dominant types of solid waste that are being integrated into circular economy models, particularly in East Africa, and what is the demand for those types of solid waste in circular economy models?
- What are relevant regulations, customs, or cross-border policies that impact the transit of packaging waste between countries in East Africa?
- Which countries hold the most potential for USAID/BHA to engage in circular economy activities around humanitarian packaging waste?
- What are common challenges to implementing circular economy business models to deal with humanitarian packaging waste?

The PSLA team conducted sixteen non-private sector interviews with USAID/BHA implementing partners, multi-stakeholder alliances, USAID bureaus, NGO thought leaders (including Chatham House and African Circular Economy Network), and USAID/BHA research partners to establish contact, relationships, and learn from priority actors within USAID/BHA's and the Joint Initiative's networks. These interviewees were identified with USAID/BHA based on USAID/BHA's experience, the PSLA team's network, and desk research. Non-private sector interview findings then informed the development of the private sector interview guide.

1.2.3 Private Sector Interviews

The PSLA team conducted 38 private sector interviews as this amount was necessary to generate a sufficient understanding of the target private sector context in Kenya and Ethiopia and to learn from lessons in other countries. The PSLA team interviewed the most relevant recycling and circular economy enterprises in Kenya and Ethiopia within the 38 interviews. Furthermore, 38 interviews were feasible based on the time and resources available to the PSLA team.

Through the desk research and interview outreach phase of the PSLA, the PSLA team identified a dearth of formal enterprises employing relevant reuse models. Interviews with humanitarian actors (Care Denmark, 2021), private sector companies (Cambridge Industries, 2021), and additional desk research revealed that reuse of waste is primarily conducted by individuals, communities, and informal workers operating outside of the realm of businesses and formal markets. As such, the PSLA team focused on recycling enterprises, which are more robust and mature, in Kenya and Ethiopia.

Most of the private sector interviewees were in Ethiopia and Kenya, with case studies in Uganda, Rwanda, Madagascar, Tanzania, Nigeria, and South Africa[4] (see Figure 4). These interviewees represented a range of business types including small and medium enterprises (29 interviews), large businesses (3), and associations (6). The PSLA team identified interviewees during check-ins with USAID/BHA, Phase 2 interviews, and by local informants and experts.

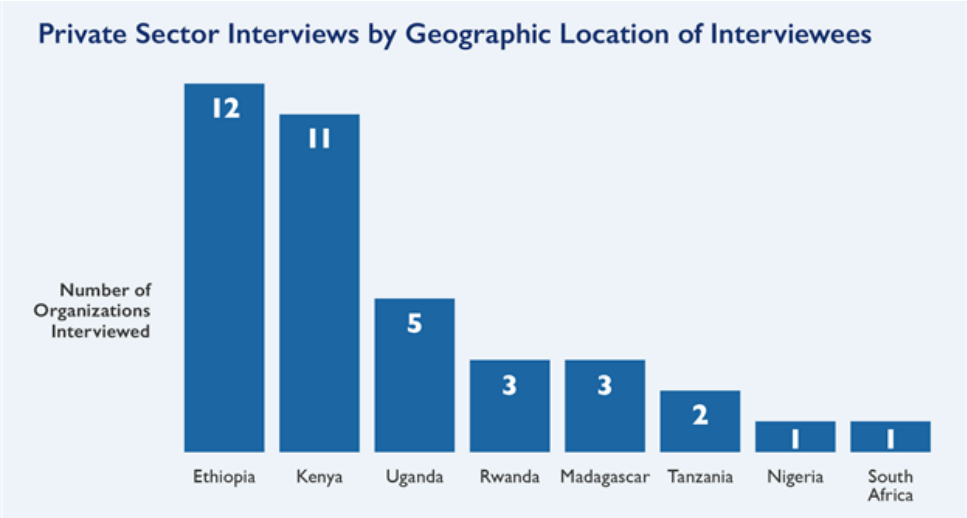


Figure 4: Private Sector Interviews by Geographic Location

The purpose of the private sector interviews was to identify opportunities for PSE for USAID/BHA and better understand the private sector's role in contributing to a circular economy. Examples of questions for the private sector interviews include:

- What types of recycled materials and products are in the highest demand, and from what types of organizations and geographies?
- What are the biggest costs associated with end-of-life businesses?
- How do end-of-life companies engage with the informal sector, if at all?
- Where in the value chain do companies see the most traction for circular approaches?
- What role does the private sector see USAID/BHA or other development-oriented actors playing in facilitating the expansion of circular approaches to waste management?

1.2.4 Analysis

After completing the private sector interviews, the PSLA team coded the interviews according to the PSLA's key questions and objectives. This involved coding 82 categories, such as "private sector (PS)

[4] Coca-Cola South Africa was interviewed for the PSLA due to the company's large regional presence and involvement in the SWM industry.

challenges to circular economy," "opportunities for USAID/BHA PSE," "demand for different types of waste," "policies and regulation," and "engagement with the informal sector" (see Annex 5.4 for a complete list of codes). The PSLA team analyzed codes to identify key themes in each category and develop key recommendations, opportunities, and challenges for USAID/BHA. The PSLA team conducted a mid-point findings presentation and two final (one internal and one external) out briefing presentations with USAID/BHA and Joint Initiative partners to share observations from interviews and PSLA conclusions.

2. PRIVATE SECTOR LANDSCAPE FOR WASTE MANAGEMENT IN EAST AFRICA

The companies interviewed noted working with different types of waste, as demonstrated in Figure 5 below. This data includes companies that collect, process, manufacture, and sell the various materials. The most frequently reported type of waste that companies work with is plastics, and more specifically PET, while some companies worked with multiple types of waste.

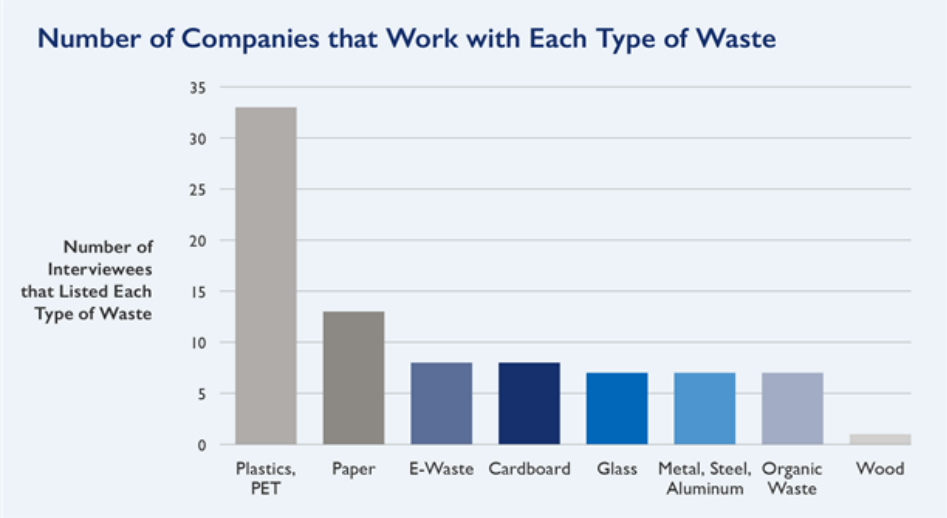


Figure 5: Number of Companies that Work with Each Type of Waste

The PSLA team also assessed the types of waste reported by interviewees by country, see Figure 6. This figure demonstrates that between Ethiopia and Kenya, interviewees work with a similar proportion of various wastes, with plastics being the most commonly-listed waste type in both countries.

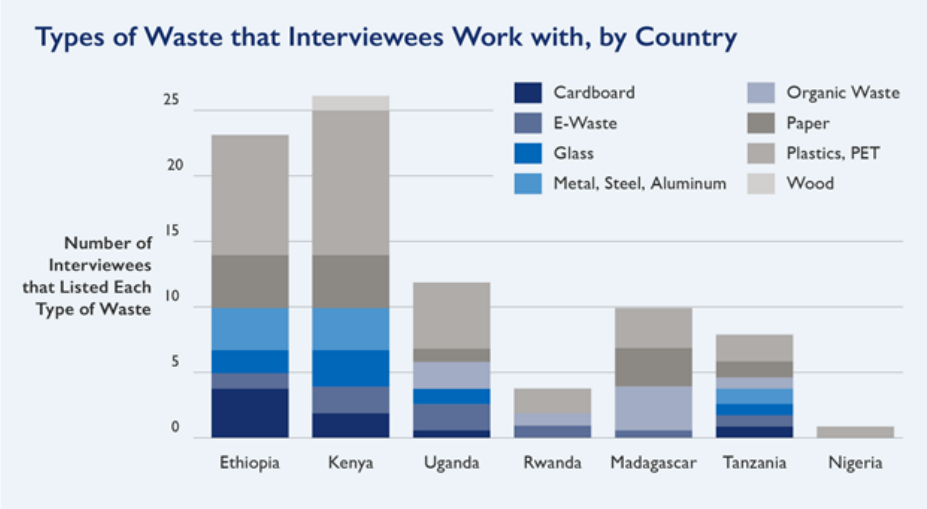


Figure 6: Types of Waste Collected by Each Country

2.1 Packaging Waste Management Business Models

Five types of business models emerged from the private sector interviews as described below. The examples of companies provided below for each category are not exhaustive, and some companies may fall across multiple categories. However, the majority of companies interviewed are for-profit and unassisted.

2.1.1 For Profit – Unassisted

Private sector organizations that operate under this model operate profitably, or are close to achieving profitability, and do not receive additional financial support. They gain capital through the production and sale of services and/or products. Of the 38 private sector companies interviewed, 29 fall into this category. Some examples include Clean Addis Recycling in Ethiopia, Gjenge Makers and Mr. Green Africa in Kenya, and AgroPlast Ltd. in Rwanda.

USAID/BHA could benefit from engaging with groups that use this business model as they are likely to be more established, have existed longer in the communities in which they work, and are more likely to be in a position to overcome barriers to partnership with USAID/BHA, such as long timelines to partner and specific operating requirements.

Entrepreneur
Source: Emile Manigat, 2013

2.1.2 For Profit – Assisted

This model describes private sector businesses that intend to operate profitably, unassisted, but have not yet achieved that goal. Like the category above, they operate through the production and sale of services and products. However, the income generated from those services and products does not fully cover their costs so they receive funding from other entities such as governments, grants, or NGOs to maintain operations.. Six companies interviewed fall into this category (of 38 total private sector companies). Big Ship Group, out of Kenya, is an example of this.

These companies can provide value to USAID/BHA through their niche knowledge of on the ground operations, local actors, value of various waste types, and proven models for involving communities. This can help USAID understand local waste management operations, identify formal and informal enterprises in the space, and identify high-value waste types.

2.1.3 Public-Private Partnership

This business model describes the collaboration between a government agency and a private sector company to collectively finance and build projects. While common elsewhere in the development space, only one of the companies interviewed reported that they were in a public-private partnership (PPP): Enviroserve Rwanda Green Park. The PPP model could be a valuable way for USAID/BHA to provide private sector companies with additional financial streams to further invest in their companies and better serve SWM needs.

2.1.4 Non-Profit-Driven

The PSLA team only interviewed one non-profit that operates in the circular economy of packaging waste: PETCO Ethiopia. It is important to note that PETCO Ethiopia does not process waste themselves, but rather promotes recycling education and awareness. However, participation of non-profit organizations like PETCO have played a vital role in the industry through raising awareness on waste management safety and other best practices for SMEs. Other notable examples were the Red Cross Kenya Waste Packaging in Dadaab Refugee Camp. A challenge with non-profits in this model is that SWM operations are expensive and largely undertaken within a limited donor allowed timeframe. If the NGO is not making a profit through their SWM operations, the operations may struggle to scale effectively and modernize to meet future demand.

2.1.5 Government

These organizations are part of, or dependent on, funding from national, local, international, or regional government actors to operate their business. Of the companies interviewed, two were government-funded or connected: Bamato Environmental and Sanitation Project in Kenya and Cambridge Industries in Ethiopia. Partnerships with businesses that rely on government funds may run into the same problems as partnerships with NGOs, in that they may have limited or unsustainable funding, and may not be able to adapt quickly enough to market needs. While a mature organization run by an administration that is informed and dedicated to environmental programs may be more reliable, this will vary significantly by country.

2.2 Kenya Findings

Humanitarian Assistance

Up to two million people in Kenya face food insecurity and other emergencies, including malnutrition, conflict, and drought. Several years of record low rainfall levels have resulted in poor harvests and declining livestock conditions, causing a greater need for humanitarian assistance (Kenya National Drought Management Authority, 2021). The humanitarian situation in Kenya has been worsened by the COVID-19 pandemic, while occurring against a backdrop of drought, floods, and a locust infestation.

All of these factors have exacerbated existing vulnerabilities across Kenya, particularly for the urban poor, migrants, refugees, and asylum seekers (OCHA, 2020). As such, humanitarian assistance in Kenya has increasingly focused on expanding livelihood opportunities for women, youth, and traditionally marginalized groups and strengthening market systems (USAID Kenya and East Africa, 2020).

Waste Management Sector

Kenya generates an estimated 22,000 tons of waste per day and eight million tons per year for its current population of 45 million people, with 40 percent of that waste originating from urban areas (GIZ, 2019). Most waste ends up in rivers or on streets, or is burned, posing numerous health and environmental concerns for the country; the remaining waste is disposed of in urban landfills. Major types of waste include industrial (25 percent), commercial (20 percent), domestic (45 percent), and agricultural (10 percent) (NEMA, 2014). Household waste is poorly managed countrywide due to a lack of collection points and awareness of proper waste disposal. By 2030, urbanization in Kenya is estimated to increase by ten percent, and waste generation is expected to reach 5.5 million tons of waste annually (Kaudia, 2018).

Relevant Policies

Effective, sustainable waste management is a key national priority for Kenya. The Ministry of Environment and Forestry (MoEF), the Ministry of Trade and Industrialization (MoTI), and multilateral agencies have developed legal and policy frameworks to ensure policy priorities are budgeted and appropriated for greener initiatives. Kenya plans to embed circular approaches in recycling and waste management sectors to improve SWM (KIPPRA, 2021). The following laws are pushing Kenya toward a more holistic and circular framework for sustainable waste management. Successful adoption of these new policies will depend upon how effectively and consistently the laws are enforced.

- The Environmental Management and Coordination Act (EMCA, 2015) and EMCA (1999) is the framework act on environmental management and conservation. The EMCA established, among others, the following institutions: National Environment Management Authority, Public Complaints Committee, National Environment Tribunal, National Environment Action Plan Committees, and County Environment Committees.
- The Sustainable Waste Management Bill established a legal and institutional framework for greener waste management, the right to a clean and healthy environment for all, and tax incentives for circular economy businesses (KEPSA, 2019).
- The Nationally Appropriate Mitigation Action (NAMA) on a Circular Economy Municipal Solid Waste Management Approach for Urban Areas in Kenya promotes the diversion of 90 percent of

collected waste from disposal sites towards various recycling practices, and an alternative to the existing waste value chain (Republic of Kenya Ministry of Environment and Natural Resources, 2017).

- The Green Economy Strategy and Implementation Plan calls for separation and waste collection at the source and aims to recover 50 percent of recyclable waste and compositing (KEPSA, 2019).
- The National Environmental Management Authority (NEMA) Waste Management Strategy establishes a common platform for action between stakeholders to systematically improve waste management in Kenya by creating employment opportunities and reducing environmental pollution (NEMA, 2014). NEMA also published the Waste Management Regulations (2006), which define rules for the management of waste in general and for the management of solid waste, industrial waste, hazardous waste, pesticides, and toxic substances, biomedical waste, and radioactive substances.
- Kenya instituted a ban on plastic bags in 2017 (BBC News, 2017), and recently banned single-use plastics in protected areas (UNEP, 2020b).

Private Sector Engagement in Packaging Waste

The Kenya Plastics Action Plan outlines long-term plans for engaging the private sector on the sustainable manufacture, use, recycling, and disposal of plastics. In Kenya, the plastics sector feeds into about 90 percent of locally manufactured products and is primarily used for packaging (KEPSA, 2019). Of the waste generated by Nairobi in 2020, only 45 percent was able to be recycled, reused, or converted for additional use (World Bank, 2021a). Several social enterprises have originated in recent years, such as Gjenge Makers and Taka Taka Solutions, that use plastics to develop alternative building materials and other repurposed items. Gjenge Maker turns recycled plastic into construction materials, like bricks, and has recycled 20 tons of plastic and created 120 jobs in Nairobi since 2017 (Hasty, 2021). Taka Taka Solutions is a waste collection and resource recycling business that creates jobs for youths from lower income areas and provides training to local communities on waste separation (United Nations Framework Convention on Climate Change, 2021).

2.3 Ethiopia Findings

Humanitarian Assistance

Ethiopia is a major recipient of humanitarian assistance in Africa, with more than four million internally displaced peoples (IDPs) sheltered in the country in 2021 (USAID, 2021). Ongoing conflict, desert locust invasion, recurring climatic shocks such as floods and droughts, and the socioeconomic impact of COVID-19 are the key drivers of food insecurity and humanitarian needs in Ethiopia (OCHA, 2021). Populations across Ethiopia—including portions of the Afar, Amhara, Benishangul-Gumuz, Oromia, Somali, and Tigray regions—will likely continue to experience record-high levels of food insecurity through at least the middle of 2022 (UN, 2021).

There are over 70 international humanitarian assistance organizations (HAOs) actively operating in Ethiopia. The new Civil Societies Proclamation introduces a number of positive changes, including clear recognition of the right to operational freedom, the lifting of restrictions on finances considered "foreign," particularly for those working on human rights, and expansion of fundraising capabilities (UNHCR, 2019).

Waste Management Sector

Ethiopia lacks proper solid waste management practices and protocols. About 20 to 30 percent of the waste generated in Addis Ababa remains uncollected (Tilaye, 2014b). The country's recent economic growth has been accompanied by rapid urbanization, which has stressed cities' infrastructure and municipal services, including municipal solid waste management. In Addis Ababa, waste generation is rising at a rate of five percent each year. According to existing SWM practices in Addis Ababa, it is estimated that solid waste is generated at about 0.45 kg per capita per day. The physical composition of solid waste includes: 17.4% recyclable, 74.3% biodegradable organic, and 8.3% potentially hazardous waste (Gelan, 2021). Inadequate solid waste management increasingly threatens the health and livelihoods of the city's inhabitants and the environment (World Bank, 2021b).

Processing beverage bottles
Source: Emile Manigat, 2013

In 2018, the country transformed the Koshe dump site, the only landfill in Addis Ababa, into the first waste-to-energy plant. The plant has plans to incinerate up to 1,400 tons of waste every day—roughly 80 percent of the city's waste (UNEP, 2019). In Addis Ababa, community awareness of SWM has been improving, with more than 70 percent of community members willing to pay for door-to-door solid waste collection services (Dika, 2019). As noted by a representative of the waste management company Cambridge Industries, Ethiopia has a long culture of reuse, although popular culture has recently started to erode this system of reuse (Cambridge Industries, 2021).

Relevant Policies

There are a number of policies and regulations Ethiopia has enacted that significantly affect its waste management practices.

- In 2011, the Government of Ethiopia introduced a ban on the production and importation of non-biodegradable plastic bags (The Africa Report, 2011).
- Ethiopia's 2011 Climate Resilience and Green Economy (CRGE) Strategy identified building green cities as a key priority, specifically improving waste management in growing cities (FDRE, 2011).
- In 2017, Ethiopia released its Policy for the Use and Implementation of Public-Private Partnerships, which provides a framework for promoting partnerships as part of the country's pursuit of green growth (UNEP, 2020a).

- Solid waste handling is regulated in the Government's "Solid Waste Management Proclamation" from 2007, empowered by its Environmental Protection Agency. Responsibility is passed down to the lowest administrative levels of the local governments, with the objective also to include private households and public participation in waste segregation (GIZ, 2020).

Private Sector Engagement in Packaging Waste

In 2004, the city government of Addis Ababa intervened in solid waste collection by institutionalizing micro-enterprises in a plan to privatize and regulate SWM (Tilaye, 2014a). Municipal waste management companies collect municipal waste and bring it to landfills while informal collectors and so-called "Korales" gather recyclables from streets and landfills (GIZ, 2020).

As part of the reforms, the city government promoted integrated SWM by local administrations and strengthened the role of formal, informal, public, and private sector actors in solid waste collection, transportation, disposal, and recycling activities and instituted aspects of Extended Producer Responsibility (FDRE, 2003). Unfortunately, these laws are poorly implemented. Only six out of eleven regions had established regional environmental authorities in 2020, which would regulate and implement recycling policies (GIZ, 2020). Several companies are involved in waste management and recycling in Ethiopia, but most of them operate exclusively in populated areas in and around Addis Ababa due to transportation, technology, supply, and other factors.

2.4 Challenges to Private Sector Engagement in Packaging Waste

During Phase 1 and Phase 2 interviews, the PSLA team identified several challenges to private sector engagement in packaging waste management. This includes both challenges the private sector faces in packaging waste management, as well as challenges for the private sector in engaging with HAOs for waste management initiatives. These are listed and categorized below.

Challenges faced by the private sector in engaging with packaging waste management:

2.4.1 Finances

Access to finance was most commonly cited by interviewees; 31 of the 38 private sector actors interviewed identified lack of access to finance as a key challenge. Lack of finance from local institutions impedes the emergence and growth of financially viable enterprises. Access to financial services (i.e., credit and insurance) is a challenge due to the risk-averse nature of financial institutions in the region, which are often unaware of circular economy business models. Impact Madagascar noted that local SWM companies have little capacity to expand their businesses and purchase the necessary machinery due to limited access to capital (Impact Madagascar, 2021. In both Kenya and Ethiopia, limited access to finance and limited investment in waste infrastructure makes entrance or expansion in the waste management sector difficult, particularly for small and medium enterprises (SMEs).

2.4.2 Logistics

The logistics of collecting, sorting, storing, and transporting large amounts of waste remains a challenge for the private sector. This is partly due to a lack of infrastructure and trucks to move the materials. Additionally, transportation over large areas is costly. The Recycler, a Tanzanian recycling company, noted, "The cost

of transport and the process of organizing reverse logistics around recycling material is a big challenge—you have to think about how to get waste from one location to another where it will be able to be recycled and used as another purpose." (The Recycler, 2021). Additionally, most Sub-Saharan African cities and towns do not have the necessary logistics, procedures, or infrastructure for separating waste by material type, which is important for efficient recycling. Separating waste by material type at the source reduces material contamination and can create additional jobs to help sort the materials on site, reduce cost of separating the materials at a recycling facility, and an increase in revenue for the recycled material due to lower contamination rates (Kihila, et al., 2021).

2.4.3 Infrastructure

The lack of infrastructure along the supply chain, including insufficient recycling points and composting facilities, poses an additional challenge for the private sector. For example, a waste collector has minimal financial incentive to travel outside of a city center to collect a relatively small amount of waste from a refugee camp, because transportation routes are costly and limited. Additionally, the investments required for infrastructure are often expensive but necessary, particularly for waste collection and treatment, to support the transition to a circular economy approach to waste management. Gjenge Makers noted that their production capacity is limited by a lack of access to machinery and that if they could expand production, they would recycle more and enhance the circular economy systems that are currently in place (Gjenge Makers, 2021).

2.4.4 Awareness and Advocacy

Almost all private sector companies identified a lack of knowledge of the problem of waste, especially plastic waste, by governments and citizens as a hindrance to waste management. While waste within humanitarian camps may be sorted into human, organic, and recyclables, if the recyclables are not sorted before disposal, it will hinder collection and further sorting by SWM companies. Seradelis Waste Management in Kenya noted that "despite collection bins being marked plastic, metal, etc., citizens are still not responsible enough to sort them out. This is a big challenge considering the time and cost involved in sorting" (Seradelis Waste Management, 2021). When waste is not managed effectively, this creates difficulties with waste management down the value chain.

Additionally, many private sector organizations in Kenya and Ethiopia have not engaged with HAOs and are unaware of how to engage. This lack of clarity prevents collaboration with HAOs. Of the 38 private sector companies interviewed, only 15 had formally engaged with HAOs, 11 were aware of the possibility of engaging with HAOs, and 12 had no experience whatsoever.

2.4.5 Behavior

Increased levels of awareness of waste separation and of the negative impacts of packaging pollution is necessary for there to be a collective change in public waste disposal. However, increased awareness does not automatically translate to behavior change and waste management infrastructure needs to be in place before awareness can begin. Ugandan recycler Yo Waste noted that a big challenge for them has been that the concept of recycling is new to most people in Uganda and household waste is usually not sorted before disposal. Recently, the company launched a free residential plastic pick-up service, showing local residents how to separate waste and providing them with waste receptacles to influence behavior change (Yo Waste, 2021).

2.4.6 Markets

The recycling market plays a large role in global trade, fueled by growing demand for raw materials in emerging economies. The value of the waste internationally, notably plastic waste, can be heavily influenced by the cost of oil and international markets; such influence can create severe changes in waste value. When oil is cheap, it is more cost effective to produce virgin plastics than to pay for recycled plastic, and vice versa (Szczepanski, 2016). The value of oil greatly affects the value of recycled plastics and can make the economics of a recycling operation challenging. he Ugandan recycler and plastics manufacturer Plawaste Group reduced the amount of PET they process due to China's National Sword Policy[5] and similar regulations in India and Taiwan to ensure their products are better insulated from global market changes (Plawaste Group, 2021). Trade in recycled materials plays a large part in international markets, with the recycling market becoming increasingly globalized. Growth in demand from these highly populated, rapidly growing economies is driving a sustained trend in rising commodity prices while increasing demand for recycled materials. Finally, as indicated in Section 2 above, PET is the most common material for the private recycling market; however, PET is not a common material used by HAOs for relief packaging, in which case there would not be a strong business case for companies to connect with HAOs for packaging waste management purposes.

2.4.7 Supply

Recyclers need a continuous, reliable supply of waste to process. Often, HAOs cannot commit to a specific amount of waste for a given timeframe, posing a risk for a potential private sector partner. An interview with the International Organization for Migration (IOM) noted, "Profitability is another challenge. It can be difficult to find value in waste, especially if the supply of waste is low-quality materials (especially plastics), and therefore it can be hard to find value in the services" (IOM, 2021). A measurable and reliable stream of waste is a lower risk for a private sector waste management company because they can calculate if the engagement is financially viable.

2.4.8 Taxation and Regulation

High importation taxes on waste management equipment and technology as well as regulations banning waste transportation across administrative borders can restrict companies' abilities to expand operations. For example, a representative from DK PLC in Ethiopia said, "The domestic import tax policy is high for importing processing and recycling machineries, and importing trucks is almost impossible due to the high excise tax requested on it. The waste transporters charge high fees since they are small in number" (DK PLC, 2021).

2.4.9 Labor

End-of-life management relies heavily on informal and formal labor, which increases the costs for organizing, facilitating, and operating such enterprises. Adequate training of informal workers is needed to ensure the waste is managed properly for subsequent processing. "It's all about training," said a representative from DA Packaging PLC. "If people collect materials, we find it's not up to our standard to use

[5] This policy, which took effect on January 1, 2018, bans the import of most plastics for recycling.

in our machines. It creates a kind of disagreement between the factory and the collectors" (DA Packaging PLC, 2021). Additionally, containment measures to slow the spread of the COVID-19 virus in developing countries have resulted in disruptions, resulting in job losses and financial deterioration across the public and private sectors (IFC, 2020).

Challenges faced by the private sector in engaging with HAOs for humanitarian packaging waste:

2.4.10 Humanitarian Operations and Processes

HAOs in Kenya and Ethiopia are not accustomed to working with the private sector, and many have not built up robust private sector engagement (PSE) capacity and planning. The time it takes to partner with development or humanitarian actors and their specific requirements for contractors can be a deterrent for some waste management companies. "There's a lot of red tape and long processes that often don't result in anything material. It took us a long time to sign something with [a large donor], and they still haven't collected waste. Is it really worth putting time into these types of organizations?" said a representative from Mr. Green, a waste management company in Kenya (Mr. Green, 2021).

2.4.11 Internal Planning

A lack of waste management planning by HAOs has detrimental effects on SWM including waste mixing and thus value reduction, waste contamination, lack of waste data, and inefficient or nonexistent private sector engagement. "Is there a humanitarian standard for waste management? Waste management is taking place, but there is no standard way—we don't have the knowledge or agreed approach on how to tackle waste management," (Global Logistics Cluster, 2021). Because many HAOs do not have waste management plans that address sorting waste on site or estimating the volume of that type of waste, it is difficult for waste management organizations to engage. Waste management organizations are reluctant to send trucks to collect waste without knowing the volume as they may over or underestimate the trucks (an expensive error) and the contaminated waste may not cover the cost of the waste management.

3. OPPORTUNITIES AND RECOMMENDATIONS

Cross-Cutting Opportunities

While private sector interviewees mentioned several cross-cutting challenges to engaging in waste management, the PSLA team also identified opportunities and recommendations for how USAID/BHA can work with the private sector in addressing some challenges directly. They are categorized and described below.

3.1 Institute Internal Waste Management Procedures

Most HAOs do not have internal plans to track, categorize, or manage the packaging waste created by humanitarian assistance. Several HAOs noted that when managing on-the-ground operations, they prioritize assistance provision over waste management.[6] Additionally, the team found limited examples of standard operating procedures for solid waste management in camps, sites, or organizations, leaving ambiguity in waste management responsibility. Thus, HAOs do not sort the waste to optimize what can be recycled and they are currently unable to accurately track the volume of waste on-site that would be ready for pickup. Not having and implementing an internal waste management plan creates a major barrier for SWM businesses and organizations, as they cannot accurately assess the business value of picking up and managing that waste, especially since the waste available has a high likelihood of being low quality.

Opportunities

HAOs interested in improving the end-of-life management of packaging materials have the opportunity to establish waste management norms and best practices in collaboration with private sector actors and the Joint Initiative[7]. Each site would tailor this framework to meet the requirements based on their unique circumstances. While some HAO administrative offices in populated areas have their waste managed through local waste management collection services, these plans would apply specifically to camps and dispersed sites in the target geographies.

Recommendations

USAID/BHA could partner with SWM companies and HAOs in the areas with large humanitarian operations to create a waste management plan framework to sort and track the waste created in both camps and dispersed sites. The framework should ensure the waste is sorted appropriately (i.e., organic, plastic, cardboard/paper, metal, and e-waste), establish a methodology for accurately estimating the

[6] PSLA interviews with CARE Denmark, Global Camp Coordination and Camp Management Cluster, Global Livingston Institute, and Global Shelter Cluster, UNEP, 2021.

[7] In addition to end of life solutions, the Joint Initiative is mapping available recycling infrastructure in operating countries.

baseline and future waste volume and composition rates from camps and dispersed sites (EPA), and include a plan to aggregate and consolidate the waste for transportation.[8]

- For camps, this framework would integrate with camp creation and management plans to ensure that there are appropriately distanced collection points for each type of waste. This plan could include opportunities to provide camp residents with employment to assist with managing the sorting and tracking of the waste and act as advocates within the camp to make residents aware of the need to sort waste and where it should be disposed.
- For dispersed sites, USAID/BHA can establish the same guidelines for sorting and tracking volume with partners as with campsites, but create strategically dispersed waste drop-off points for the different types of waste to be collected.

Next Steps

1. Develop a waste management framework that covers the three basic components (waste sorting, tracking, and consolidation) while allowing for specific adaptation to different geographies where HAOs operate, through the following tasks:
   a. Establish a multi-stakeholder group to lead the development and distribution of the waste management framework for HAOs. Ensure that the group has the buy-in and participation of senior leaders at each organization who can help facilitate wider approval of this framework. Engage private sector SWM subject matter experts to ensure the framework aligns with industry needs and standards.
   b. Evaluate HAOs' existing waste management plans for packaging waste to identify gaps, particularly around the inclusion of waste sorting, tracking, and consolidating.
   c. Evaluate any operational barriers, concerns, and hesitations to implement the three components and establish frameworks for addressing these barriers.
2. Reach out to private sector organizations and governments to better understand the level of existing infrastructure through waste flow mapping, relevant regulations, and interests and hesitations the private sector organization may have in partnering with HAOs. Incorporate these considerations into the framework.
3. Develop a comprehensive waste management framework that all HAOs can customize. The framework may need to be customized by country according to the needs and priorities of various USAID/BHA offices and HAOs.
4. Share the framework widely amongst HAOs so each may adapt it for their own operations and share with local governments to inform waste management infrastructure needs.

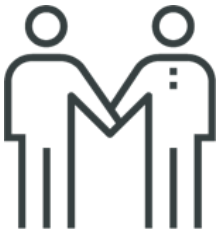
Partnership Opportunities

BHA can act as a thought leader and convener and should partner with waste management organizations and subject matter experts, other HAOs, the Joint Environment Unit, and the greater network of USAID at large. Initial discussions with other HAOs in the space could help inform an understanding of any

[8] The main methods for measuring waste volumes are modeling and physical measurement. Modeling involves using generic waste generation rates from a similar community to estimate future waste volumes, and though this approach is cost-effective, it increases the likelihood of miscalculating waste volumes. Physical measurements are more accurate but also more expensive, and involve sampling the waste stream at camps/dispersed sites to develop a waste profile through statistical methods to estimate future waste volumes. There are a number of physical measurement techniques that can be applied based on the context and areas such as measuring a sample at the point of generation, examining records maintained by waste generators, and conducting waste vehicle or transfer station surveys.

existing plans to examine and build from. The United Nations Environmental Program (UNEP) and WFP are in various stages of developing waste management policies and could be good thought partners in establishing a framework for USAID/BHA and its HAO partners. PLAWASTE Group, Cambridge Industries, and the Big Ship Group span several sections of the value chain and can be potential thought partners in understanding local waste management process capabilities and infrastructure.

3.2 Partner with Private Sector Actors



Most private sector actors the team interviewed stated they were unaware of the opportunity to engage HAOs on in-field humanitarian packaging waste management. Additionally, there is a perception from some private sector actors that the timeline and due diligence requirements to establish a partnership with an HAO are prohibitive.

Opportunities

There is an opportunity to improve the awareness of partnerships between USAID/BHA, HAOs, and private sector actors. HAOs can identify and share specific partnership opportunities with private sector SWM actors. HAOs can share these partnership opportunities locally—through their own communication channels and directly with SMEs, SWM associations, and PETCOs—and regionally through development partners and circular economy networks like UNEP, the Joint Initiative, OCHA, and the African Circular Economy Alliance. Additionally, HAOs can work with private sector actors to help remove barriers to partnership, such as long timelines to establish partnership and complex due diligence requirements.

Recommendations

USAID/BHA should build direct relationships with private sector organizations in the SWM sector and connect them with implementing partners, while also encouraging implementing partners to directly reach out to the private sector to open lines of communication. Establishing these relationships will help USAID/BHA and implementing partners socialize opportunities and roles for private sector organizations to engage in humanitarian operations as subject matter experts, advocates, collectors, balers, logistics managers, policy experts, etc. This will help the private sector better understand how they can work with HAOs.

Next Steps

1. For HAOs interested in working with the private sector, identify specific ways in which the HAO would like to engage the private sector. Are they looking for a subject matter expert? An on-site sorting manager? A baler operator? Logistics? A fleet of trucks? Establish the end-of-life management needs with a clear idea of how the private sector actor could engage.
2. Begin or continue building relationships with private sector actors in the target geography, leveraging companies interviewed in the PSLA (see Annex 5.3). Share the partnership opportunities with the private sector so that they can get a clear understanding of the opportunity and see the willingness of HAOs to engage.
3. As opportunities for partnership between HAOs and the private sector arise, share them widely through local channels and relationships. Provide clear information on the timeline to establish the partnership and the requirements that the private sector partner must meet so that the private

sector actors can have a clear idea of the opportunity. Ensure that relationships and communication channels remain open and supportive of the private sector actor's questions about the opportunity.
4. Continue to build upon the established relationships and partnerships by co-creating partnership opportunities, running workshops on waste management needs of HAOs and other relevant topics, and maintaining forums for knowledge sharing.
5. Communicate partnership opportunities for private sector SWM organizations focused on end-of-life packaging waste, e.g., SMEs that collect, bale, or transport waste.

Partnership Opportunities

USAID/BHA can act as a facilitator and broker to establish partnerships with private sector SWM companies in the target geographies and between private sector SWM companies and other HAOs with interest in managing their end-of-life packaging. While many interviewees mentioned a desire for USAID-provided funding, the following companies had specific ideas about USAID and USAID/BHA partnerships and the PSLA recommends reaching out to explore value chain partnerships: Asante Waste Management, DK PLC and Tsidu Waste Recycling, EKT Trade and Investment PLC, Bizsmart Enterprises Ltd (Go GREEN), Impact Madagascar, and PLAWASTE GROUP.

Country-Specific Opportunities

3.3 Catalyze Finance for Waste Management Infrastructure

3.3.1 Kenya

Kenya lacks adequate financing mechanisms for waste management infrastructure (NEMA, 2019). Limited political and economic prioritization of waste management has resulted in inadequate budgetary allocations both by government and private financiers. Banks and other formal lenders do not fully understand how they can be involved profitably in the waste management sector, partly due to lack of knowledge and the complicated and unregulated nature of the sector. This lack of financing particularly impacts SMEs, which have less opportunity to adopt appropriate technologies, acquire equipment, and improve their businesses. Thus, most SMEs have to rely on personal savings and soft loans from friends and networks to expand their businesses (Kenya Bankers Association, 2020).

Opportunities

While the waste management sector in Kenya lacks sufficient finance from existing mechanisms, emerging policies and financing strategies hold promise for funding circular economy initiatives, waste management SMEs, and informal sector players (NEMA, 2014). In Kenya, refugee camps provide an opportunity for cultivating commercially viable circular economy enterprises that can access new finance mechanisms. In Dadaab for instance, there are 220,000 refugees, generating at least 80 tons of waste daily (UNHCR, 2021). Such a large scale of waste indicates adequate supply can be generated to support profitable recycling and waste management businesses.

HAOs have also demonstrated interest in expanding financing of waste management. For example, the Red Cross has promoted financing and partnerships with the private sector to demonstrate that grant funding from HAOs for logistics and transportation of waste—from camps to final processing

plants—can facilitate private sector investment and market-based models for waste management in humanitarian operations (ILO, 2019).

Recent Kenyan policies and green financing programs also pave the way for increased financing for the waste management and circular economy sectors. The Kenyan government has established a Green Financing Programme that can be leveraged to finance circular economy waste management companies and infrastructure, with the government funding USD $2.4 billion in climate-related investments in 2018 (Climate Policy Initiative, 2021). Kenya's National Waste Management Bill establishes incentives for improved waste management and financing of waste management by county governments. The incentives include transfers of funds or preferential access to finance and grants and award schemes and special funds for the informal sector (KEPSA, 2019). They apply to (a) importers of sustainable waste management equipment, air pollution control equipment, and recycling and composting equipment; (b) investors to expand their investment in waste recycling and circular economy enterprises; and (c) operators of certain classes of waste management equipment, including equipment for recycling and composting (KEPSA, 2019).

> *… it will be viable if USAID/BHA can partner with recyclers like us and cost share on supplying the informal sector with small machines for cleaning and baling."*
>
> — EKT Trading, 2021

Recommendations

USAID can collaborate with USAID/Kenya and U.S. Government agencies like the Development Finance Corporation (DFC) and the Millennium Challenge Corporation (MCC) to develop innovative financial mechanisms that coordinate public, private, and donor funds to scale financing in circular economy business models and waste management infrastructure in Kenya, including with humanitarian operations.

There are a number of actions USAID and USAID/BHA can take to mobilize, finance, and develop new mechanisms for funding circular economy approaches. For one, USAID can facilitate and provide technical assistance and training to waste management SMEs to strengthen their business and financial management skills to prepare for financing. Additionally, USAID can provide conditional or pay-for-results grants jointly with HAOs and SWM companies (for infrastructure and equipment) to pilot and demonstrate private sector waste management initiatives connected to humanitarian operations.

Catalyzing long-term finance of recycling and other circular business models will require engaging financial institutions in developing long-term finance mechanisms. USAID and USAID/BHA can identify and rank waste management financing opportunities in humanitarian operations and develop recommendations on the most suitable financial mechanisms.

Next Steps

1. Engage other HAO finance-focused initiatives like the Internal Labour Organization's (ILO) PROSPECTS and UNHCR's Doing Business in Dadaab to identify and rank waste management financing opportunities in humanitarian operations, and develop recommendations on the types of financing instruments needed for SMEs, transporters, big processors, and others in the SWM sector.

2. Engage development partner finance programs and initiatives like the Africa Enterprise Challenge Fund to co-develop training and workshops for financial institutions to improve the understanding of circular economy business models and develop tailored financial products for the SWM sector.
3. Support the development of alternative financing mechanisms including blended finance, pay-for-results, and impact investments that support financing of waste management SMEs and infrastructure.

Partnership Opportunities

USAID/BHA can engage with ILO PROSPECTS and UNHCR's Doing Business in Dadaab to identify and rank waste management financing opportunities in humanitarian operations. USAID can also work with USAID/Kenya and the DFC to scope, design, and catalyze finance mechanisms and funds for circular economy business models, prioritizing the waste management sector connected with humanitarian operations. Other potential partners include the Kenya Association of Manufacturers, Global Environment Facility (GEF) that is planning a large plastics program, and the Kenya National Environment Trust Fund State Corporation established by the Environmental Management and Coordination Act of 1999, National Appropriate Mitigation Action.

3.3.2 Ethiopia

One of the main challenges for the private sector in Ethiopia, including the SWM sector, is the underdeveloped formal financial system with limited range of financial products and services available to support businesses, especially SMEs. Lending in Ethiopia is based on a collateral system with high collateral requirements for loans. Also, a lengthy and complicated loan process often discourages most SMEs from even applying. All of the private sector recyclers interviewed indicated that the long loan process and collateral requirements limits their operational capacity for effective waste management. The lack of a stock market and investment banks limits access to long-term financing for many businesses, and financial institutions have a limited understanding of the financial return, risk profile, and environmental and social benefits of emerging businesses and sectors, including the circular economy and waste management sectors. The banking industry is also closed to international investors and dominated by state-owned institutions, even larger businesses are blocked from receiving loans from foreign banks.

Opportunities

Despite the significant barriers in the financial market, there has been growth in the number of NGOs in Ethiopia providing grants to SMEs and youth and women entrepreneurs for innovative solutions to address environmental issues. These grant programs could offer financing support to SMEs and informal worker micro-associations in SWM, while bringing in more private financing in Ethiopia.

There are also a number of current and future development programs that USAID/BHA and USAID/Ethiopia can leverage that address SME and circular economy-related financing in Ethiopia. The World Bank, through its Ethiopia SME Finance Project, is developing a credit facility for banks to on-lend to SMEs, improving the enabling environment for SME finance, and providing business development services to SMEs to make them more bankable (World Bank, 2021c). The UNEP Finance Initiative is a global partnership established with the financial sector to mobilize private sector finance for sustainable development, including commitments to pursue best practices in recycling and waste reduction (UNEP,

2011). The African Development Bank (AfDB) is also developing a Green Growth Investment Program in Africa focused on waste management and the circular economy, which will include a near-term focus on unlocking opportunities for public, private, and public-private investment projects in Algeria, Ethiopia, and Rwanda.

Recommendations

Recycling business worker
Source: Kendra Helmer, 2013

USAID/BHA can collaborate with USAID/Ethiopia, other development partners, and U.S. Government entities like DFC to establish a solid waste management SME finance facility to support companies in purchasing waste sorting, collection, and management machinery, and other critical technologies. USAID/BHA can also engage USAID and NGOs to co-fund grants to SMEs to pilot and demonstrate private sector waste management initiatives connected to humanitarian operations, and mobilize blended finance with national governments for larger infrastructure investments in reuse and recycling. Finally, USAID/BHA can partner with SME recyclers to co-finance small machinery for informal sector workers for cleaning and baling at humanitarian sites.

Next Steps

1. Define and rank waste management opportunities connected to humanitarian operations based on their potential to attract financing and investment. Identify the types of finance needed by private recyclers, transporters, and large processors, and engage different financing sources (development organizations, private financiers, and public sector) to identify interest and linkages with investment opportunities and private sector financing needs.
2. Link with current USAID/Ethiopia programs supporting investment and financing in renewable energy and sustainable landscapes programs, and explore expansion to circular economy models and SMEs in waste management.
3. Partner with local country-based fund managers, financial institutions, banks, and private recyclers for grant and fund facilitation.

Partnership Opportunities

USAID/BHA can collaborate with development organizations, such as the World Bank, UNEP, and AfDB, who implement SME finance and/or investment in circular economy approaches to waste management. USAID/BHA can engage financial institutions (e.g., Addis Micro Finance, Eagle Micro Finance, Buna Bank,

Awash Bank, and Enat Bank) to build awareness of the circular economy and SWM business models, and explore de-risking approaches to financing SMEs and the informal sector. Lastly, USAID can engage private recyclers (e.g., EKT, NN Recycling, and Coba Impact) and private waste processors (e.g., D.A. Packaging, Clean Addis, and Dynamic Sanitary Service) to identify financing needs and investment waste management opportunities.

3.3.3 Lessons Learned for Other Geographies

Addressing SME financing. Many of the SMEs interviewed in Rwanda, Tanzania, Uganda, and Madagascar highlighted access to finance as a significant challenge to scaling their businesses (see quote for an example). As in Ethiopia and Kenya, SMEs in the waste management and recycling sector in these four countries find it difficult to access finance from traditional financial institutions because of risk aversion and lack of familiarity with circular business models. Many of the SMEs the PSLA team interviewed mentioned they lacked capacity as a result of limited capital to purchase equipment to mechanize and build collection and storage facilities. Several SME recyclers in Tanzania and Rwanda also highlighted challenges with the cash intensity of their operations and the cost of cash-limiting investment in the equipment, facilities, and infrastructure necessary for expanding operations (Agroplat Ltd and Recycler, 2021) . Several organizations also mentioned the lack of public or public-private funding to set up regional waste and recycling collection centers that could unlock collection and investment by the private sector (Big Ship, Coca Cola, and Plawaste Group 2021).

> *"It's very difficult … to get traditional financing or asset financing to improve machinery—they always have to save up enough funds to buy something… financing is something that probably everyone is going to talk about."*
>
> —The Recycler, 2021

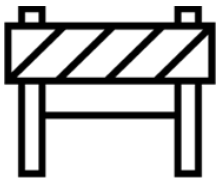
Scaling regional investment in the circular economy and SWM. Like the situation in Ethiopia and Kenya, the magnitude of circular economy challenges, opportunities, and capital needs of a range of actors—from informal SMEs to large businesses—across Sub-Saharan Africa surpasses the funds available from governments and donors. Traditional financial institutions in the region have limited understanding of the financial return, risk profile, and environmental and social benefits of the circular economy and waste management business models.

Marketing events generate demand for Sangery's innovative product
Source: Sanergy, 2012

USAID/BHA could collaborate with other parts of USAID and the U.S. Government, like DFC, MCC, and USAID Green Cities to develop innovative financial mechanisms that coordinate public, private, and donor financing to scale financing in circular economy business models and waste management infrastructure, including leveraging climate-related funds such as the Adaptation Fund, the Global Environment Facility, the Green Climate Fund, and the African Solidarity Trust Fund (WEF, 2021a). Lessons can be drawn from successful USAID regional investment programs in Sub-Saharan Africa, such as Power Africa's expansion of clean energy solutions, to address critical barriers, bridge the financing gap, de-risk investments in circular economy businesses in specific countries, and replicate and scale them across the region.

3.4 Address Logistics and Transportation Barriers from Humanitarian Site

3.4.1 Kenya



A major challenge and hindrance to effective circular economy approaches to humanitarian packaging waste is the inaccessibility of sites by waste service providers. Refugee and internally displaced peoples camps are located far away from processors (the road distance from Nairobi to Dadaab and Kakuma Refugees camps are roughly 475km and 730kms respectively[9]). Additionally, informal settlements in densely populated areas with close-knit houses and poor road infrastructure make it difficult for trucks to operate freely. In these areas, waste operators and SMEs use handcarts to collect waste.

Transportation of waste in Kenya also relies on vehicles that are often poorly maintained and outdated; frequent breakdowns routinely immobilize collection vehicles for extended periods of time (Wambui Mugo, 2019). Another logistical challenge is the lack of waste segregation at the source. This leads to mixed wastes that are not separated by recyclable and end-of-life products. In the rare cases when sorting is successful, the challenge is compounded by the non-existence of vehicles that segregate materials during transit, leading to remixing.

Within the humanitarian sector, waste management programs and recyclers working with humanitarian actors lack balers and other equipment that can reduce the volume, thereby reducing the transport cost, and increase the density of recyclable material.

Opportunities

The government of Kenya is increasingly emphasizing and planning for permanent settlements instead of temporary camps. For example, in 2016, UN-Habitat started a project to plan, develop, and construct a new refugee settlement in Kalobeyei, in northwestern Kenya, expected to host over 60,000 refugees (UN Habitat, 2018). The Kalobeyei project has been designed to help shift the paradigm from humanitarian support to sustainable development. The more permanent nature of settlement planning presents an opportunity to plan for aggregation, logistics, and transportation of waste. The refugee camp in Dadaab will also be turned into a settlement, which can be leveraged to create more strategic logistic and transportation pathways.

[9] Google Maps, accessed 10/22/2021.

Recommendations

USAID/BHA can work with humanitarian supply chains, NGOs, municipal governments, and private sector actors to establish waste hubs and stations in key aggregation points within Kenyan counties. These waste hubs would effectively be for waste sorting, classification, and packaging for markets. In addition, USAID/BHA can work with humanitarian organizations and private sector actors to deploy technologies such as balers and transport vehicles to enable and facilitate logistics improvements. As the circular economy gains importance, USAID/BHA can also work with USAID to promote innovations in circular economy transport and logistics through programs like the Development Innovation Ventures (DIV).

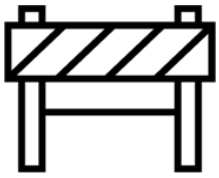
Next Steps

1. Coordinate with HAOs to adopt collection and storage in their operating procedures.
2. Facilitate discussions with HAOs to explore changing transport procurement rules including return waste packaging materials to regional depots or capital cities.
3. Partner with HAOs and recyclers to pilot balers and other technologies in select sites.

Partnership Opportunities

USAID/BHA can partner with informal waste collectors, self-help groups, NEMA, NGOs, landfills, logistics service providers, KEPSA, and the Kenya Association of Waste Recyclers to adopt and implement waste collection, waste aggregation, and improved logistics.

3.4.2 Ethiopia



The PSLA identified logistics and transportation as critical challenges to the circular economy of humanitarian packaging waste. Humanitarian camps and sites are mostly populated in rural areas of the country whereas recyclers and processors are found in urban cities. Due to the distance, lack of reliable roads, and insufficient availability of trucks, transportation costs are often prohibitively high for recyclers. Additionally, the humanitarian assistance organizations interviewed noted that they don't have mechanisms for waste collection, storage, and sorting, which results in an inconsistent waste supply for private sector actors.

> *HAO project sites are mostly far from Addis Ababa, with the cost of transport being the main challenge."*
>
> — DK PLC, 2021

Opportunities

Regional solid waste management offices in Ethiopia are interested and motivated to work with federal initiatives related to solid waste management and environmental protection. Additionally, HAOs in Ethiopia have initiated waste management projects in different refugee camps already, such as in Jewi, Nguenyyiel, and Kebribeyah, which USAID/BHA can leverage for momentum and action on improving logistics and transportation.

Recommendations

USAID/BHA can coordinate with HAOs to prearrange waste collection, sorting, and storage for proper waste management in humanitarian camps and other sites. At the same time, USAID/BHA can assess and pilot the development of depots or warehouses for aggregating and sorting waste collected from humanitarian sites. These depots should be developed in coordination with regional governments and be established within driving distance of Addis Ababa to enable access by private recyclers. Additionally, USAID/BHA can coordinate with HAOs and logistics providers to facilitate reverse transportation of sorted waste from humanitarian sites to regional depots or capital cities. USAID/BHA can also pilot technologies that increase the efficiency and cost-effectiveness of transit through use of balers and compactors.

Next Steps

1. USAID/BHA to coordinate with HAOs to prearrange waste collection, sorting, and storage in their internal operating procedures.
2. USAID/BHA to facilitate and HAOs to coordinate with regional governments (regional solid waste management offices, regional environmental offices, and regional land management offices) to assess and pilot accessible waste storage depots.
3. USAID/BHA to facilitate discussions with HAOs to explore changing transport procurement rules, including returning waste packaging materials to regional depots or capital cities.
4. USAID/BHA to partner with HAOs and private recyclers to pilot the availability and supply of bailers and other technologies at selected sites.

Potential Partners

USAID/BHA can partner with active HAOs (e.g., UNHCR, WFP, and Mercy Corps), logistics and transport companies, regional government offices (regional dry waste management offices and regional land environment control offices), technology suppliers, and private recyclers (e.g., COBA Impact, EKT PLC, DA Packaging, and NN Recycling). While the PSLA did not interview these companies, research indicates that potential logistic and transport company partners include Pan Africa, MAACFA and Gate AS, and Freighters and potential technology suppliers include Dante Trade Assistant, A.H. Saya PLC, and Abadir Enterprise.

3.4.3 Lessons Learned for Other Geographies

Regional SWM technology and innovation initiative. Several SMEs interviewed in Rwanda, Uganda, Nigeria, and Tanzania mentioned the cost of transportation as a key barrier to expanding services to remote areas, and they had limited access locally to cost-effective technologies to increase the efficiency and cost-effectiveness of transporting waste e.g., through use of balers, shredders, and compactors (AgroPlast Ltd, Bin It Services Ltd, Environserve Rwanda Green Park, Plawaste, and Recylan 2021). USAID/BHA could work with USAID and other HAOs to launch a regional SWM technology and innovation initiative in East Africa, which could support the piloting and distribution of waste collection and sorting technology and exchange knowledge locally, nationally, and regionally about innovations that address logistics and transportation challenges. USAID/BHA could also engage with the Massachusetts Institute of Technology's Lincoln Labs to introduce small-scale sorting machinery, such as mobile balers, and work with HAOs like Care Denmark to implement training programs to create livelihoods for refugees repairing and maintaining these machines locally. The technology and innovation initiative could

also link to the financing SWM infrastructure opportunity, by improving access to financing for SMEs to purchase collection and compaction machinery and technology.

> *Logistics is the biggest challenge… It becomes expensive to transport waste if it's not baled. The easiest way to get around that is to have logistics partners or bailing machinery."*
>
> —Yo Waste, 2021

Extended Producer Responsibility (EPR) schemes to enable large scale collection. Waste collection was mentioned as the most challenging and the most important aspect of most SWM value chains in interviews with businesses in Ethiopia, Kenya, and other Sub-Saharan Africa. Coca Cola South Africa and Aquila Recycling (Uganda) both suggested EPR schemes and programs as promising private sector-led models for addressing and funding the collection of waste for recycling for large-scale projects. Individual companies can finance waste collection for recycling when waste volumes are small, but with larger amounts of waste, an EPR system with multiple companies investing may be needed to keep collection and payback high. USAID/BHA can learn from the successful South Africa PETCO, founded by Coca Cola and other companies, which established a PET Recycling Company in 2004 representing the country's PET industry and financed by a voluntary levy paid by converters on PET purchased. Coca Cola mentioned that they are looking to expand the EPR/PETCO model to additional non-PET waste streams including closures, labels, aluminum cans, shrink wrap, cardboard, and more. Recently-formed PETCOs in Kenya and Ethiopia could play a role in expanding industry involvement in humanitarian packaging waste collection, with PETCO Ethiopia suggesting a role for BHA in supporting temporary regional waste storage depots.

3.5 Facilitate Circular Economy Policy Advocacy

3.5.1 Kenya

Circular economy and recycling firms are challenged by policy gaps in the financial sector—financial institutions do not have standard criteria, requirements, or parameters for lending to and financing waste management and recycling enterprises. High taxes on importing waste management and recycling equipment decreases the opportunities and incentives for developing the sector.

SMEs are largely excluded from meaningful policy discussions in the waste management and circular economy sectors. Thus, they are not able to contribute to fiscal and other policy discussions that could accelerate progress in circular economy approaches.

Opportunities

While Kenya lacks favorable fiscal policies for end-of-life management, the country has established a number of national-level frameworks that promote a more regulated and formalized waste management sector. The National Solid Waste Management Strategy (NEMA, 2014) sets a vision for policies, legislation, and economic instruments to promote sustainable management of solid waste and the development and harmonization of county legislations on waste management. Furthermore, Nairobi and Mombasa counties have already developed waste management bills under this strategy. Additionally, Kenya has a number of institutional bodies that represent waste management and recycling businesses that can be leveraged as platforms for policy and advocacy change. Such institutional bodies include the

Waste and Environment Management Association of Kenya (WEMAK), the Kenya Association of Waste Recyclers (KAWR), and the Kenya Association of Manufacturers (KAM).

Recommendations

USAID/BHA and USAID can play an active role in prioritizing potential policy interventions to improve packaging waste management and increase sustainability throughout the humanitarian assistance sector. USAID/BHA and USAID can do this by facilitating engagement between policy-makers and private sector associations such as KAWR, KAM, and WEMAK and increasing private sector opportunities for participation, collaboration, and input into government policies and standards. While USAID is in a better position to organize such platforms, USAID/BHA can contribute and provide expertise on topics that affect their operations and partners. This can include facilitating connections between the platform and their partners, providing targeted issue briefs regarding the need for humanitarian waste management, and sharing insights regarding the field-level impacts of proposed policy changes.

Additionally, USAID can engage with the Secretariat of the African Circular Economy Alliance (ACEA), which is a growing coalition of African nations dedicated to expanding the circular economy. Among their other priorities, the ACEA serves as a platform for developing regional and domestic policies that incentivize the circular economy. While neither Kenya nor Ethiopia are currently members of ACEA, the ACEA is interested in engaging with both national governments and when they do, USAID can convene private sector actors with the ACEA to develop policies that can encourage circular approaches to humanitarian packaging waste.

Next Steps

1. USAID/BHA and USAID to support a rapid assessment of policy interventions that can improve packaging waste management with private sector actors operating in humanitarian supply chains and commodities.
2. USAID/BHA and USAID can validate the policy interventions with the Ministry of Interior (Refugee Secretariat) through consultative workshops for policy advocacy and dialogue between relevant Kenyan humanitarian agencies and private actors.
3. USAID can then work with apex entities, such as KEPSA, to promote a policy framework that enables shifts in fiscal policies and subsidies for circular economy businesses as well as other identified policy priorities.

Potential Partners

BHA can work with the Kenyan PPP Unit, NEMA, KEPSA, Kenya Association of Waste Recyclers, Sustainable Agriculture and Natural Resource Management Africa (SANREM)[10], Kenya Association of Manufacturers, and the Kenya Revenue Authority.

[10] SANREM is an international non-governmental organization that aims to promote and implement agricultural development, environmental management, sustainable development practices, policies, and strategies. These are done especially in Kenya and in the East African region through practical programmes, projects and activities with communities, dissemination of information, training, education, research, advocacy, and campaigning.

3.5.2 Ethiopia

Even though the Ethiopian government has indicated their interest and disposition for circular waste management, the policy framework in Ethiopia remains a hurdle for the private sector. Private recyclers and collectors in Ethiopia listed the main policy roadblocks as the general import tax policies on equipment and trucks, stipulations and policies restricting bank credit, and the land lease policy of the country (Clean Addis Recycling, 2021; D.A. Packaging PLC, 2021; EKT Trading, 2021).

Opportunities

The Ethiopian government has initiated PPPs and developed industrial zones in each region of the country that provide affordable leases for facilities and tax exemptions for manufacturing machinery (Ethiopian Revenue and Customs Authority, 2017). This action indicates that the Ethiopian government is interested in improving and addressing fiscal policies that currently block the manufacturing and processing sector, and that they may also be interested in improving and addressing such blockages in the waste management sector. Additionally, Ethiopia's new civil society proclamation (ECS No. 1113-2019) outlines a fairly comprehensive change in how civil society organizations (CSOs) can operate in the country, including expanding the type of work CSOs can undertake, making it easier for CSOs to register, and allowing CSOs to expand their sources of funding (FDRE, 2019). This new proclamation indicates the government's interest in developing more open relations with NGOs and CSOs, including HAOs.

Recommendations

An enabling environment for impact-oriented SMEs is crucial to addressing humanitarian packaging waste. USAID/BHA and USAID can promote such an enabling environment by working with the Ethiopia Investment Commission to address investment disincentives, the National Bank of Ethiopia to improve access to finance policies for SMEs in the recycling sector, federal and regional land administration agencies to improve land leases, and the Ethiopia Revenue and Customs Authority on tax reform for recycling and circular economy business models. USAID/BHA and USAID can work with both private companies and policy makers to create policy dialogue venues and advocacy to help private actors be competent in the market.

Additionally, USAID can engage with the Secretariat of the ACEA. While Ethiopia is not a current member of ACEA, the ACEA is interested in engaging in Ethiopia and when they do, USAID can convene private sector actors with the ACEA to develop policies that can encourage circular approaches to humanitarian packaging waste.

> *If USAID/BHA can work with different stakeholders on policy advocacy, for example on tax policies, it will help us a lot."*
>
> — NN Recycling, 2021

Next Steps

1. USAID to identify priority policy issues that limit SME capacity to engage with HAOs for packaging waste management.

2. USAID and USAID/BHA to engage policy research institutes and universities to study alternative policy solutions regarding access to finance for circular economy businesses, land lease policy, and tax policy for waste management.
3. USAID and USAID/BHA to facilitate consultative policy dialogue sessions and develop policy advocacy documents via its implementing partners.

Potential Partners

USAID/BHA can partner with a variety of policy agencies and institutions (e.g., the Ethiopian Investment Commission, the National Bank of Ethiopia, and the Ethiopian Revenue and Customs Authority), private and government universities (e.g., AA University, Jimma University, Bahirdar University, and St. Mary University), private recyclers (e.g., COBA Impact, EKT PLC, DA Packaging, and NN recycling), HAOs (e.g., USAID, UNHCR, WFP, and Mercy Corps), and NGOs (PETCO).

3.5.3 Lessons Learned From Other Geographies

Limited supportive policies and incentives for circular waste management solutions. Similar to Ethiopia and Kenya, SMEs located in other East Africa countries mentioned the lack of policies supporting circular models, high domestic and import taxes, and the government's limited understanding of circular waste management opportunities as major barriers to growing their waste and recycling businesses. Several SMEs also mentioned that restrictive policies across the East Africa region made it difficult to operate beyond their business's home country, despite interest from some companies in scaling to other countries.

At the same time, the East African Community (EAC) is developing an Electronic Waste Management Framework and Management of Plastic and Plastic Waste Disposal, and passed the EAC's Polythene Materials Control Bill in 2017 with the goal of adopting common terminology, standards, obligations, and enforcement mechanisms to hinder the proliferation of plastic waste (Cocker, 2020). The East African Business Council (EABC) is the formal apex private sector forum to the EAC involved with private sector support for the development and implementation of EAC plastics disposal and waste management frameworks. USAID/BHA could work with USAID/East Africa, EABC, and SWM companies to promote the adoption of standards and incentives that support the expansion of circular approaches and businesses, including SMEs, in SWM in the region. This could potentially focus on and link with the regional SWM technology and innovation initiative highlighted under Section 3.4.3.

Regional harmonization of policies and standards on the cross-border recycled waste movement in East Africa. Several interviewed companies mentioned that the most financially viable and efficient way to handle higher-value waste material, such as rPET, in smaller countries would be to move across borders to regional recycling centers. However, this is not possible in much of Africa, including East Africa, as countries restrict or put high taxes on trade of most waste—even semi-processed recycled material. For example, Coca Cola South Africa mentioned they are looking to create a network of PET recycling and processing hubs in Africa and that the most efficient approach would be to move semi-processed (flaked PET) and rPET material across borders. However, the lack of regional harmonized policies on the rPET trade could make this model and investment impossible.

Developing harmonized regional policies on the trade and movement of PET between countries in East Africa would help ensure sufficient raw material for large investments and viable recycling value chains

and circular economy business models, including those linked to humanitarian packaging waste (WEF, 2021a). USAID/BHA could work with USAID/East Africa and other missions and bureaus to engage Coca Cola. USAID/BHA could also collaborate with the WEF's Regional Action Group for Africa and the African Circular Economy Alliance, which is exploring a common regional standard for food-grade rPET that would help reduce non-tariff barriers to trade in recycled plastic bottles and other circular plastics (WEF, 2021b).

3.6 Build Capacity of Informal Sector with Development Partners

3.6.1 Kenya

Employment of informal workers in the private sector makes up approximately 13 percent of total waste management labor (UNECA, 2020). The waste management sector is plagued by challenges that limit the private sector's ability to engage informal workers. For one, informal workers tend to be unorganized which means it is difficult for private enterprises to facilitate trading, the supply chain, and technical assistance or capacity building with such groups. Other challenges that hinder the effectiveness of informal workers include informal groups that extort money from those who wish to work at dumpsites, the fluctuation of market prices, inadequate infrastructure, unsanitary working conditions, and a lack of occupational safeguards.

Informal waste pickers constitute the large base-of-the-pyramid workforce in humanitarian settings (and urban settings) where they perform the most labor-intensive first steps of recyclables extraction. Despite their relevance, they are subject to systematic marginalization. They have to cope with unbalanced power relations, long hours of work, exploitation, volatile prices, a lack of training, and a lack of basic equipment and tools of the trade.

Opportunities

In Kenya, informal workers are highly involved in collecting and sorting all types of waste, including humanitarian waste. The informal SWM sector is a significant source of income for the most vulnerable in many communities, including in camps and urban areas where humanitarian actors are supporting sustainable waste management programs.

Recommendations

USAID/BHA can work with USAID/Kenya and other USAID operating units (Green Cities Division), MCC, and humanitarian actors to facilitate the organization of informal workers in humanitarian sites, thus further expanding already established circular economy approaches to managing humanitarian packaging waste. This can include mapping and consolidating various segments of the informal sector—women, youth, and other waste pickers—within each humanitarian site.

It is important to ensure that informal workers are consulted and included in the development and implementation of a waste management strategy for humanitarian actors. USAID/BHA could work with implementing partners, USAID/Kenya and MCC to facilitate training for informal workers on health and safety, sorting, and waste collection, while receiving input from informal workers on how to improve SWM in humanitarian sites. This training could be expanded to urban areas, thereby improving the quality and efficiency of collection for recycling-focused SMEs.

Next Steps

1. Work with local and regional waste management offices to identify and engage informal sector stakeholders.
2. Study gaps in informal workers' safety, data collection, and capacity to operate.
3. Partner with NGOs like PETCO and others to provide training and tools to workers.

Potential Partners

Engage NGOs like PETCO, waste management companies, regional waste management offices, micro associations of informal workers (e.g., the KEPSA Informal/MSME Working Group), SMEs that engage informal collectors (e.g., KCIC Consulting Ltd.), and manufacturer associations (e.g., the Kenya Association of Manufacturers and Jua Kali Association). Additionally, PACE and ILO are jointly designing projects around the intersection of decent work and end-of-life circular economy initiatives. While neither Kenya nor Ethiopia are focal countries of these projects currently, BHA and USAID can consider PACE and ILO as potential future partners.

3.6.2 Ethiopia

Nearly a sixth (16.1 percent) of Ethiopia's urban workforce was employed informally in 2020 (CIPE, 2021). That figure is likely higher today. The uptick of migration from rural to urban areas, the inaccessibility of credit and land leasing to formally open a shop, and the onerous tax burden placed on small businesses operating formally have all been noted by Ethiopian academics as push factors that are driving the move towards informality (CIPE, 2021). Waste collection, sorting, and storing services in Ethiopia are highly dominated by the informal sectors. "Korales' " are the firsthand informal workers who collect household recyclable or reusable items. Their main challenges are safety, child labor, the unavailablity of sorting and storage areas, the unavailability of technology, and weak collection and transportation systems.

> *Informal sectors are our back bones. Without them, we will not do any business on waste collection and recycling."*
>
> — COBA Impact, 2021

Opportunities

USAID can partner with the Ethiopian national government to support formalizing the informal waste management sector, by giving Korales an opportunity to organize as a micro association. The Government incentivizes these associations based on the weight of the cargo they have collected to motivate formal involvement in the industry. As per the PSLA interviews, organizations like PETCO and private recyclers (EKT and COBA Impact) support this informal sector by providing training and baling machines, underscoring broad and growing interest in formalizing the sector.

Recommendations

The SMEs we interviewed highly recommend that USAID/BHA and USAID/Ethiopia support informal workers in order to improve the quality and efficiency of collection by recycling-focused SMEs. USAID/BHA can work with USAID/Kenya, USAID's Green Cities division, MCC, and other development partners to provide safety and technical training (e.g., on supply safety cloths, how to sort dangerous and non dangerous waste, and how to lift heavy materials), awareness campaigns about the importance of waste management (e.g., via social media and billboards), provision of SWM equipment (e.g., baling machines and trucks), and technical training on how to operate the machines to informal workers in humanitarian sites. Supporting the government on incentivizing workers to bring them into the formal waste collection system will play a wide role in creating sustainable waste collection and supply for recycling-focused SMEs.

> *Supporting the associations with baling machines, providing awareness, and capacity-building trainings may help the industry."*
>
> — COBA Impact, 2021

Next Steps

1. Collaborate with USAID, MCC, implementing partners, and NGOs to provide technical assistance and training for informal workers.
2. Assist SMEs in supporting the informal sector by facilitating the procurement and provision of SWM equipment, such as baling machines and trucks.
3. Coordinate with municipal solid waste management offices to incentivize formal value chain players to attract informal workers to formal channels.
4. Involve implementing partners or NGOs in the creation of media awareness campaigns about proper waste management.
5. Collaborate with technical schools to develop training on machinery and truck operation.

Potential Partners

USAID/BHA and USAID can partner with private recyclers (e.g., EKT, COBA Impact, NN Recycling, and Cambridge Industries), NGOs (PETCO), municipal solid waste management offices, federal and regional technical universities, and FM radio stations (not interviewed, but potential partners include Sheger FM, FANA FM, Ethiopian Broadcasting Corporation, and Oromia Broadcasting Network). Additionally, PACE and ILO are jointly designing projects around the intersection of decent work and end-of-life circular economy initiatives. While neither Kenya nor Ethiopia are focal countries of these projects currently, USAID/BHA and USAID can consider PACE and ILO as potential future partners.

3.6.3 Lessons Learned from Other Geographies

Create more transparency in the waste-picking value chain. Yo Waste highlighted a successful model they are deploying in Uganda to improve engagement with the informal sector by focusing on working directly with waste pickers to create transparency and ensure a higher fee is paid to the pickers. In South Africa, Coca Cola is collecting data in real-time about the types of materials collected in buy-back centers in partnership with Banqu and ultimately working to formalize these workers (Coca-Cola South Africa, 2021). They plan to transition this initiative to PETCO South Africa to scale and sustain the program in collaboration with other industry players, and are interested in expanding the model to other countries in Africa. Coca Cola is looking for additional partners to scale this transparency initiative, and USAID/BHA could explore working with USAID to engage Coca Cola, other

companies like Yo Waste, and PETCOs to build transparency around the role of informal waste pickers in Kenya and Ethiopia.

Capacity-building and awareness-raising on sound waste management practices. Like Kenya and Ethiopia, many private sector actors interviewed mentioned a general lack of awareness and knowledge in communities and local governments in other East African countries about recycling and waste sorting and separation. Many of the waste management SMEs mentioned a need for better awareness campaigns and training programs to improve knowledge, motivation, and skills in local communities and with informal pickers about best practices on waste sorting and management.

Civil society and NGOs play a key role in empowering communities to engage in sound waste management practices (UNEP, 2018). Governments and donors can also work with the private sector to co-develop and implement awareness and capacity-building programs on best practices in waste separation and collection. Regionally, UNEP is supporting awareness building about waste generation and management, and launched initiatives to introduce graduate courses in waste management in a number of African universities to equip students to tackle waste issues in an integrated manner. USAID/BHA can engage with UNEP, the ACEA, large brands like Coca Cola, and SWM companies to link these awareness and capacity-building programs to SWM partnership opportunities in humanitarian operations in Kenya, Ethiopia, and other countries in Africa.

3.7 Prioritization of Opportunities

The partnership and PSE opportunities outlined in this report vary in potential impact, private sector interest, risks, timeline, and transaction costs. In this context, the PSLA team has developed and conducted an initial prioritization of the six top PSE opportunities, based on the following criteria: (1) impact, (2) sustainability, (3) level of effort, (4) private sector will, and (5) timeline for implementation. This prioritization is meant to provide USAID/BHA with a foundation to determine whether, when, and in what sequence to pursue the opportunities (See Table 3.1 below for the Prioritization Rubric).

Table 3.1 Prioritization Rubric

Criteria	Description	Scoring Guide
Impact	Level of impact the opportunity could have on expanding circular models to manage and reuse humanitarian packaging waste, and the extent to which it represents an innovative market-based model that can be replicated and scaled by USAID/BHA and the broader humanitarian community.	Limited Moderate Significant Very Significant
Sustainability	Extent to which the opportunity contributes to building local capacity to manage humanitarian waste, and the likelihood that the engagement and impact will last beyond USAID/BHA's involvement.	Limited Moderate Significant Very Significant

Private Sector Alignment	Extent to which the opportunity aligns with private sector core business models, creates new sources of revenue or market entry points, and/or solves key challenges or remove obstacles, costs, or business risks. Extent to which the private sector is poised to provide the commitment, contributions, and capacity to ensure the success of the engagement.	Limited Moderate Significant Very Significant
Level of Effort	The level of effort USID/BHA, HAO partners, and other USAID mission and bureau staff would need to devote for the opportunity or engagement to succeed.	Limited Moderate Significant Very Significant
Timeframe	Suggested timeline for implementing the opportunity. Note some steps in an opportunity may be started earlier, but the timeline is based on when the majority of the steps/activities will occur.	Short-term: < 1 year Medium-term: 1-3 years Long-term: >3 years

The scoring guide, as visualized in the scorecard below, is color-coded along a gradient that represents more positive traits as darker blue and more negative traits as lighter and white colors. All of the criteria represent Very Significant as dark blue and Limited as white except for the level of effort criteria, as Very Significant is considered a more negative trait and Limited level of effort is considered a more positive trait. This color scheme is summarized in Table 3.2

Table 3.2 Scoring Guide Legend

Impact, Sustainability, Private Sector Alignment, and Overall Criteria Color Guide	**Level of Effort Color Guide**
Very Significant	Limited
Significant	Moderate
Moderate	Significant
Limited	Very Significant

Table 3.3 The Opportunity Prioritization Scorecard below presents the PSLA team's analysis of the six opportunities, based on the four criteria (Impact, Sustainability, Private Sector Alignment, and Level of Effort) in descending order of priority.

Table 3.3 Opportunity Prioritization Scorecard

Opportunity	Impact	Sustainability	Private Sector Alignment	Level of Effort	Overall
Partner with Private Value Chain Actors	**Very Significant** Value chain partnerships can provide significant impact in collecting, transporting, and recycling materials.	**Very Significant** Shared value partnerships that generate profit for value chain actors have a strong likelihood of sustaining.	**Very Significant** Strong alignment with private interests depending on the goals and value chain position of specific actors.	**Significant** Developing and brokering value chain partnerships will take effort to cultivate, negotiate, and identify areas of shared value.	**Very Significant** Very significant impact potential and potential for sustaining by private sector actors and HOAs, with high upfront effort to develop partnerships.
Build Capacity of Informal Sector with Development Partners	**Moderate** Informal sectors are not well-networked in rural areas of both Kenya or Ethiopia and thus impact will be difficult to scale.	**Moderate** The current lack of organizational or institutional planning of informal workers means there is a risk of capacity gains not being realized.	**Very Significant** Informal sectors are the backbone of many private waste management value chains and thus improvements in this area can ripple across said value chains.	**Moderate** In Kenya, this approach will likely be carried out by NGOs and private offtakers, while in Ethiopia this approach will largely be carried out with government offices and the private sector. In both cases, the level of effort is anticipated to be moderate.	**Significant** Informal workers are a critical part of the waste value chain; supporting them is of high interest to the private sector, but lack of organization of workers means impact and sustainability will be a challenge.

Facilitate Circular Economy Policy Advocacy	**Significant** Policies are a major impediment to the circular economy and market-based approaches to waste management, and emerging government programs in Kenya and Ethiopia express a commitment to circular approaches, so there is potential for significant impact.	**Moderate** The sustainability of policy change rests on successful implementation, which is often limited and may be inconsistent over the long-term.	**Significant** Improved policies and tax reductions were key issues raised by the private sector as limiting their ability to scale and invest in their businesses.	**Moderate** Requires facilitation and coordination support in aggregating private companies in policy dialogue.	**Significant** A supportive policy environment aligns with private sector interests and can address major challenges to market-based solutions to SWM in both countries, including for humanitarian waste management, but implementation of policy reforms may hinder impact sustainability.
Catalyze Finance for Waste Management Infrastructure	**Very Significant** Most recycling and SWM companies and projects activities are limited by a lack of finance; expanded financial mechanisms can spur growth and sustainable business models in both Ethiopia and Kenya and .	**Significant** Injecting new finance can create sustainable outcomes in SWM and establish sustainable business models., But sustaining results depends on private sector organizations' capacity to absorb capital and scale market-based solutions, and the capacity of most SMEs in SWM in both countries is limited.	**Significant** Private sector actors are very interested in finance, but their capacity to manage such finances will determine how well they can commit to and sustain such opportunities.	**Very Significant** Implementing this opportunity will require continuous and intensive discussions with finance providers and other actors to implement.	**Significant** Significant impact potential and alignment with the private sector, but it will take very significant effort and work with multiple actors to design and scale new financial mechanisms in both Kenya and Ethiopia.

Institute Internal Waste Management Procedures	**Moderate** The immediate impact is limited, but it is crucial for creating long-term impact.	**Very Significant** These procedures can build the capacity of humanitarian organizations to manage waste post-USAID/BHA activities.	**Limited** The private sector relies on such procedures to engage with humanitarian organizations, but such procedures are not core to their business models.	**Moderate** Compared to the other opportunities, this requires less effort to coordinate and organize.	**Moderate** Limited private sector alignment, but an important foundation for engaging the private sector in other opportunities, strong sustainability, and moderate effort required.
Address Logistics and Transportation Barriers from Humanitarian Sites	**Significant** Kenya and Ethiopia both have rudimentary logistics systems and processes, and improvements in transportation and logistics can address a major issue in SWM for humanitarian waste in rural areas and dispersed locations.	**Moderate** Addressing transportation barriers in Kenya and Ethiopia can increase long-term private investment and interest in the sector, but the number of factors and stakeholders to be engaged is high.	**Significant (Kenya)** The private sector is already involved and interested in waste logistics through the Kenya Private Sector Alliance and the Kenya Association of Manufacturers. **Moderate (Ethiopia)** Logistical barriers are so high that the private sector would need to see significant and reliable increase in revenue.	**Very Significant** There are a large number of stakeholders involved in logistic and transportation chains in Kenya and Ethiopia, requiring time and effort to synchronize.	**Moderate (Kenya)** Strong alignment with the private sector, and significant potential for impact, but involves a major time commitment to work with the number of private sector actors in the sector. **Moderate (Ethiopia)** Significant potential for impact, but challenges with private sector interests and a major time commitment.

The Timeline of Opportunities below (Table 3.4) categorizes the opportunities based on short, medium, and long-term timelines for implementation to assist USAID/BHA and USAID in sequencing the PSE opportunities. USAID/BHA and USAID can undertake initial steps in medium and long-term opportunities earlier, but the PSLA recommends focusing the bulk of effort on opportunities in sequence (short, medium, and long) as many build the foundation for later/longer-term opportunities. For example, Ethiopia's financial sector regulatory environment will need to be improved to build the capacity of domestic banks and allow for foreign capital to enter in support of the circular economy and SWM, which is why we recommend facilitating circular economy policy advocacy in the medium term, and catalyzing finance in the long-term.

Table 3.4 Timeline of Opportunities

Opportunity	Timeline
Institute Internal Waste Management Procedures	**Short-term:** Immediate priority that can be started in less than a year and is an important foundation for other private sector opportunities and addressing humanitarian packaging waste management.
Partner with Private Value Chain Actors	**Short-term:** USAID/BHA can start immediate outreach to private sector organizations to build relationships, beginning with the companies highlighted in the opportunity. Developing and brokering private sector partnerships will take some time, but this opportunity has significant potential for impact and alignment with private interests.
Address Logistics and Transportation Barriers from Humanitarian Sites (Kenya)	**Short-term**: Opportunity to start engaging with existing HAO partners and active humanitarian sites, and capitalize on the existing humanitarian logistics capabilities. New policy in place in Kenya requiring specific types of vehicles for waste collection and transportation necessitates immediate action in three to nine months.
Address Logistics and Transportation Barriers from Humanitarian Sites (Ethiopia)	**Short-term:** Opportunity to start engaging with existing HAO partners for storage development at active humanitarian assistance sites, coordinating with transport companies, and finding regional humanitarian assistance depots. In the long-term, focus on engaging with regional dry waste management offices for building new depots.
Facilitate Circular Economy Policy Advocacy (Ethiopia and Kenya)	**Medium-term:** Requires additional research to identify the specific policy bottlenecks and recommended actions to facilitate circular economy solutions in waste management. Also, USAID/BHA will need to work with USAID, HAOs, and other development partners to engage key private sector actors in SWM to increase channels for communication and input into policies, standards, and end-of- life solutions (i.e., suppliers and recyclers).

Build Capacity of Informal Sector with Development Partners (Kenya and Ethiopia)	**Medium-term:** Requires outreach to developmental organizations, government bodies, NGOs, and the private sector to identify how to best engage and organize the informal sector.
Catalyze Finance for Waste Management Infrastructure (Ethiopia)	**Long-term**: High demand for financing exists in Ethiopia for SWM, especially for SMEs, and it's a critical component of growing the infrastructure for waste management. USAID/BHA will need to work through USAID, DFC, and other development partners to implement this opportunity, and the domestic financial sector regulatory environment will need to be improved to build the capacity of domestic banks and allow for foreign capital to enter in support of the circular economy and SWM.
Catalyze Finance for Waste Management Infrastructure (Kenya)	**Long-term:** Bringing in finance to support infrastructure and businesses will be critical to scale SWM solutions, however, this opportunity will require engaging and working through USAID, DFC, and other development partners to execute—and that will take time. Local financial institutions in Kenya will require outreach, awareness, and support to engage in the SWM sector. Also, though circular economy policy is a priority for the Kenyan Government via the Big Four Agenda, funds will only be mobilized in three to seven years.

3.8 Case Study of Opportunity in Action

The opportunities presented are meant to both guide the strategic direction of USAID/BHA and their implementing partners and provide a tangible roadmap for USAID/BHA and implementing partner activities. Below is a hypothetical example that exemplifies how these opportunities can be implemented, using Ethiopia as a country for context. This example is intended to serve as a reference for USAID/BHA and implementers as they contemplate how to implement the PSLA recommendations.

Ethiopia Hypothetical Example: Pilot Circular Economy Approaches in and with Refugee Camps

In this example, USAID/BHA and implementing partners can pilot circular economy approaches and opportunities in refugee camps in the Gambela region of Ethiopia. Within Gambela, USAID/BHA could specifically pilot projects in the Jewi and Nguenyyiel refugee camps. Gambela is a secure area to pilot circular economy approaches, as it is relatively safe compared with conflict-affected areas in Northern Ethiopia and Tigray. The Jewi and Nguenyyiel refugee camps both have more than half a million refugees from internally displaced people and also refugees from South Sudan. Furthermore, in 2018 Norwegian Church Aid facilitated a project whereby waste was collected from camps and sold to private recyclers. Implementing in this area and in these camps would build on previous work by Norwegian Church Aid by including efforts to institutionalize sorting, transporting, storage and waste management, and private sector linkages throughout the end-of-life supply chain (Norwegian Church Aid, 2019).

A project in Gambela would involve focusing efforts on managing plastic, cardboard, and metal packaging waste from the Jewi and Nguenyyiel refugee camps. This effort would involve working with and strengthening community social business enterprises and informal waste collectors, developing a waste storage depot, overcoming transportation and logistic barriers, and institutionalizing long-term relationships with private sector partners.

Through such a project, USAID/BHA and implementing partners would implement the PSLA's recommendations and opportunities as outlined below. Note that these are listed in the order in which we would suggest implementing them.

1. **Institute Waste Management Protocols and Procedures with Humanitarian Assistance Organizations**

   USAID/BHA would first work with the humanitarian organizations present in the Jewi and Nguenyyiel refugee camps, such as Norwegian Church Aid and UNHCR, to create a unified framework for collecting, sorting, and storing waste in the camps. From this shared framework, each organization would make its own waste management plan, but they would each be created with common goals, objectives, and contextual understanding. These waste management plans, and the overarching framework, would establish a shared vision for how the HAOs would engage with informal waste collectors, the refugee community, how waste will be monitored, how waste will be sorted and stored, and how responsibilities will be distributed. Additionally, these plans would incorporate a scoping section for which private sector recyclers can be engaged in the recycling value chain. Developing a unified waste management framework is the first essential step upon which all other activities can be built.

   Once the internal waste management procedures are in place, USAID/BHA and implementing partners can begin implementing two opportunities in parallel: Build Capacity of Informal Sector

(described in step two) and Address Logistics and Transportation Barriers from Humanitarian Sites (described in step three). The informal sector will likely play a critical role in the success of any collection efforts, and transportation and logistics issues will need to be addressed to institute long-term private sector partnerships.

2. **Build Capacity of Informal Sector within Jewi and Nguenyyiel Refugee Camps**
   Building on the waste management plans developed in the previous step, USAID/BHA could develop partnerships with HAOs and the USAID/Ethiopia mission to deliver training, an awareness campaign and communication materials, and business development to waste collectors. The training would include creating awareness around recycling and waste management procedures and proper safety protocols for effective waste management. Additionally, USAID/BHA could collaborate with implementing partners, USAID/Ethiopia, and MIT Lincoln Labs to introduce small-scale machinery and equipment, such as compactors and balers, for informal collectors to use. The Gambela Regional Youth and Women Association would also be a priority partner for developing strategies and activities for engaging youth and women in informal waste collection enterprises. The youth and women association will have members or connections with those who are informal waste collectors and can be leveraged to organize such collectors.

3. **Address Logistic and Transportation Barriers from the Jewi and Nguenyyiel Refugee Camps**
   Concurrently with building the capacity of the informal sector, USAID/BHA and implementing partners would also work with transportation, logistics, and private recycling companies to identify and address the barriers they face in collecting waste from the Jewi and Nguenyyiel refugee camps.

   A challenge that came up during interviews was the need for an aggregation location for waste from humanitarian sites. One way that USAID/BHA and implementing partners could overcome this barrier would be by allocating space for aggregating and storing packaging waste in one or some of the distribution sites, warehouses, and depots used to transport, aggregate, and move humanitarian assistance across Ethiopia. USAID/BHA and implementing partners would need to assess how much space they would need, how much space is available, and what capacities and resources would be needed to maintain such a storage space and facility.

   If depot spaces run by humanitarian organizations are not available, USAID/BHA, implementing partners, and USAID/Ethiopia could work with municipal waste management offices and, potentially, private companies to process the material, identify and select an ideal location for waste storage, develop a depot for storing waste, and facilitate a management plan for that depot. Based on the interviews conducted, the ideal location would likely be one near Addis Ababa along a main highway in and out of the city. USAID/BHA and implementing partners could begin this process by first investigating the feasibility of developing infrastructure in Ambo, as the town fits the aforementioned criteria. USAID/BHA and implementing partners could hold consultations with the Oromia Region dry waste management office, the Ambo town dry waste management office, and the Oromia land and environmental protection bureau. USAID/BHA and implementing partners would also need to closely work with private recyclers to ensure the location, governance, and management of the depots enables them to source and collect from these sites. Relevant recycling companies that USAID/BHA and partners could work with include Coba Impact Manufacturing PLC, EKT PLC, Penda Manufacturing PLC, NN Recycling, and DK PLC.

For either of these options—a depot hosted in humanitarian facilities or a depot hosted in public facilities—USAID/BHA and implementing partners would need to coordinate the reverse logistics of transporting waste to these sites. This could include USAID/BHA facilitating contracts between implementing partners and transporters to include waste packaging return to the depots after subsequent assistance deliveries.

4. **Partner with Private Value Chain Actors**

   In this case study, USAID/BHA and implementing partners would discuss and scope opportunities with the private sector throughout the previous steps. These scoping discussions would need to include gauging how to incorporate the private sector into waste management plans and what infrastructure and logistics they need to overcome transportation barriers.

   Once depots are established and transportation and logistics barriers have been mitigated, USAID/BHA and implementing partners would formalize partnerships with recycling companies to collect and process recycling material. For these partnerships to be sustainable, they will need to plan for a long-term supply of waste, sharing of collection and waste volume data, frequency of collections, and quantity and type of waste needed to maintain profitable supply chains. While partnerships would be formalized after the previous steps, these discussions and scoping need to occur throughout the previous steps to inform the implementation of the other opportunities.

4. CONCLUSION

This PSLA notes a number of opportunities and recommendations for USAID/BHA, USAID, and humanitarian organizations to pursue to strengthen the circular economy of humanitarian packaging waste. These opportunities, their timeline to start, and overall prioritization are summarized below.

Short-term Opportunities

Opportunity	Recommendation	Overall Prioritization
Partner with Private Value Chain Actors	USAID/BHA and implementing partners can partner with value chain actors to channel waste from humanitarian sites into circular economy value chains.	Very Significant
Address Logistics and Transportation Barriers from Humanitarian Sites	USAID/BHA can work with implementing partners to investigate options for aggregating waste, utilizing reverse logistics, and introducing technologies that create logistics efficiencies.	Moderate (Kenya) Moderate (Ethiopia)
Institute Internal Waste Management Procedures	USAID/BHA and implementing partners can create a waste management plan framework to sort and track the waste created on site in both camps and dispersed sites, to facilitate better private sector engagement.	Moderate

Medium-term Opportunities

Opportunity	Recommendation	Overall Prioritization
Facilitate Circular Economy Policy Advocacy	USAID and USAID/BHA can increase private sector participation, collaboration, and input into policies, standards, procurement, and end-of-life solutions.	Significant
Build Capacity of Informal Sector with Development Partners	USAID/BHA, through its implementing partners, can provide safety and technical training, raise awareness, and facilitate organizing informal workers to better engage with the private sector.	Significant

Long-term Opportunities

Opportunity	Recommendation	Overall Prioritization
Catalyze Finance for Waste Management Infrastructure	USAID/BHA can work with USAID to establish and facilitate finance mechanisms for infrastructure, logistics, and equipment improvements.	Significant

Further Research and Study Limitations

While this PSLA identified a number of opportunities for USAID/BHA and USAID to engage with end-of-life circular economy models, the assessment revealed a number of considerations and opportunities for further research and study. For one, desk research and interviews with humanitarian organizations indicated the critical role that donor procurement policies play in shifting packaging waste outcomes. By reducing the amount of packaging required and making those materials more recyclable, USAID/BHA, USAID, and their suppliers can drastically increase the potential for circular flow of their packaging waste.

This assessment did not interview suppliers or producers of packaging material, but rather focused on end-of-life companies. As such, the findings do not include opportunities related to engaging producers and suppliers. However, to create a more circular economy around humanitarian packaging material, USAID/BHA and USAID will need to understand the interests, challenges, and potential of material producers.

The PSLA included some findings and recommendations that are specific to waste management for refugee camps. It is important to note that as not all HAOs work in camp settings, these recommendations will only be relevant in specific contexts and may not be applicable to all HAO priorities or ways of working.

Due to the COVID-19 pandemic and inability to travel, the PSLA team had to conduct its interviews entirely remotely. This involved using online platforms such as Zoom and WhatsApp to schedule and hold interviews with stakeholders remotely. Connectivity problems resulted in a few instances of interviews with stakeholders being canceled or rescheduled. It is also important to note that the PSLA team recorded the perceptions of the targeted sector representatives and this report represents the aggregated opinions of the interviewees. Their insights and suggestions informed the PSE recommendations, but do not represent a complete analysis of the private sector for waste management in Kenya and Ethiopia.

5. ANNEXES

Annex 5.1: References

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Annex 5.2: PACE Overview

History

The Platform for Accelerating the Circular Economy (PACE) was created in 2018 by the World Economic Forum to drive public-private action and accelerate circular economy solutions. Since 2019, it has been hosted by the World Resources Institute and facilitated by a full-time team in the Hague, Netherlands.

Network Function and Partners

PACE is the global network of circularity leaders committed to championing the circular economy at the highest levels of global leadership, using their own position and network to drive change at scale. Currently PACE has a Leadership Group of nearly 100 Chief Executive Officers, Ministers, and heads of civil society and multilateral organizations. With PACE, major regional circular economy coalitions have been launched in Africa and Latin America, with others forthcoming in 2021-22. To date, PACE works with the teams of PACE Board Member organizations, funders, Knowledge Partners, and Leadership Group organizations, to increase their levels of action and alignment with the Circular Economy Action Agenda.

Operational Model

PACE operates through three key pillars: leadership, knowledge, and projects. 1) PACE was created to connect leaders who are committed to creating a circular economy. It catalyzes leaders who have a clear vision and the power to make things happen. 2) The transition to the circular economy must be supported by evidence and science. Therefore, PACE works with leading thinkers, researchers, and practitioners to transform the PACE community's knowledge into an evidence-based collective action agenda, and identify areas where action needs to be initiated or scaled up. 3) PACE works on projects that are pioneering or scaling the circular economy by connecting the public and private sectors. Projects led by the PACE community can be affiliated, and the secretariat brings leaders together to create new initiatives.

Funding

PACE is enabled through a diverse group of supporters who share our commitment by supporting PACE partners and our centralized activities through the PACE Secretariat. The PACE 2020 Annual Report provides a list of the 19 companies, governments, and foundations supporting the PACE Secretariat. In 2020, about 60 percent of the PACE Secretariat's core funding was provided by governments, 30 percent by companies, and ten percent by foundations. The Secretariat also receives in-kind contributions from PACE partners.

Achievements

PACE has doubled the size of the leadership group in the past two years. This growth has witnessed an increased number of public, UN, and civil society actors. In early 2021, PACE launched the Circular Economy Action Agenda, which was developed with 200+ experts from over 100 organizations, for five focus areas (food, plastics, electronics, textiles, and capital equipment). PACE is aligning the leadership organizations behind the Circular Economy Action Agenda, which now serves as the basis for impactful collaboration. PACE oversees 21 Affiliated Actions and one Core Action to closely develop the Action Agenda moving forward. Additionally, there are over 65 Actions involving PACE leaders that represent specific next steps in the calls-to-action. As a global convener, PACE has a strong presence in high-level global events. PACE has become a trusted partner of the World Circular Economy Forum—the largest global convening in the circular economy, designing and delivering sessions with a rising, united global voice.

Organizational Structure

PACE's Board of Directors is composed of a diverse and distinguished group of corporate, government, and civil society leaders. The Board helps shape the strategy, objectives, and priorities related to acceleration and scale-up of the transition to a circular economy, including, but not limited to, acting as ambassadors of PACE and engaging the Leadership Group throughout the year. The Executive Committee of the Board supports the Secretariat on tactical and strategic issues and in preparing meetings and decisions for the Board. The Secretariat currently consists of seven direct staff: Global Director, Leadership Lead, Knowledge Lead, Project Lead, Communications Lead, Programme Coordinator, and a Special Projects Lead. Beyond supporting PACE's governance, the Secretariat facilitates the work of its community: Leadership Group, Knowledge Partners, and donors. Although these three groups are not part of the governance body of PACE, they do form the network through which PACE carries out its theory of change.

Relation to WRI

PACE has been hosted by WRI as a delivery platform since 2019, and there is no plan to change the construction in the foreseeable future. This relationship is complementary, enhancing both sides. PACE brings circular economy expertise and global leadership in the circular economy to WRI agendas, such as those on Food, Loss, and Waste; WRI brings world-class data, analysis, and decision-relevant tools, as well as an extensive set of knowledge and delivery partners, to the PACE community and strategy, which is shaping new policy and economic analysis initiatives that will help advance the circular economy agenda and embed circularity in countries' Nationally Determined Contributions.

Annex 5.3: Stakeholder Interviews

Non-Private Sector Interviews

Organization Name	Type of Organization
Africa Circular Economy Network	NGO Thought Leader
CARE Denmark	USAID/BHA Implementing Partner
Chatham House	NGO Thought Leader
Global Camp Coordination and Management Cluster	Multi-Stakeholder Alliance
Global Livingston Institute	Multi-Stakeholder Alliance
Global Shelter Cluster	Multi-Stakeholder Alliance
International Committee of the Red Cross	USAID/BHA Implementing Partner
International Organization for Migration	USAID/BHA Implementing Partner
MIT Lincoln Labs	USAID/BHA Research Partner
United Nations Environmental Program	USAID/BHA Implementing Partner
United Nations High Commissioner for Refugees	USAID/BHA Implementing Partner
USAID/BHA Markets Team	USAID Bureau
USAID/BHA Supply Chain Management Division	USAID Bureau
USAID Development, Democracy and Innovation	USAID Bureau
World Food Program	USAID/BHA Implementing Partner

Private Sector Interviews

Company Name	Type of Company	Country	Types of Waste(s) Collected
Agroplast Ltd	SME	Rwanda	Plastics/PET
Alternative Energy Systems	SME	Kenya	Plastics/PET
Aquila Recycling Plant	SME	Uganda	Plastics/PET
Asante Waste Management	SME	Uganda	Organic Waste, E-waste, Cardboard, Paper, Plastics/PET
Bamato Environmental & Sanitation Project	Association/Other	Kenya	Paper, Plastics/PET
Big Ship Group	Association/Other	Kenya	Glass, Cardboard, Paper, Plastics/PET
Bin It Services Ltd	SME	Uganda	Organic Waste, E-waste, Glass, Plastics/PET
Cambridge Industries	SME	Ethiopia	E-waste, Metal/Steel/Aluminum, Plastics/PET

Clean Addis Recycling	SME	Ethiopia	Cardboard, Paper, Plastics/PET
Coba Impact PLC	SME	Ethiopia	Glass, Plastics/PET
Coca Cola	Large Business	South Africa	Glass, Metal/Steel/Aluminum, Plastics/PET
Coped Group	SME	Rwanda	Organic Waste
D.A. Packaging PLC	SME	Ethiopia	Metal/Steel/Aluminum, Cardboard, Paper, Plastics/PET,
DK PLC and Tsidu Waste Recycling	SME	Ethiopia	Cardboard, Paper,
Dynamic Sanitary Service	SME	Ethiopia	Glass, Metal/Steel/Aluminum, Cardboard, Paper, Plastics/PET,
EKT Trade and Investment PLC	Large Business	Ethiopia	Plastics/PET,
Enviroserve Rwanda Green Park	SME	Rwanda	E-waste, Cardboard, Plastics/PET,
Enviroserve Kenya Limited	SME	Kenya	E-waste, Glass, Plastics/PET,
Genet Hawaz	SME	Ethiopia	Plastics/PET,
Gjenge Makers	SME	Kenya	Plastics/PET,
Go GREEN	SME	Kenya	Metal/Steel/Aluminum, Plastics/PET,
Impact Madagascar	Association/Other	Madagascar	Organic Waste, Paper, Plastics/PET,
Mr. Green Africa	SME	Kenya	Plastics/PET,
NN Recycling	SME	Ethiopia	Plastics/PET,
PETCO Ethiopia	Association/Other	Ethiopia	N/A "Petco doesn't buy any waste, nor own any part of the value chain. Does not operate its own collection systems, does not operate any part of the value chain."
Plawaste Group	SME	Uganda	Plastics/PET
Premier Industries	SME	Kenya	Plastics/PET
Recyclan	Large Business	Nigeria	Plastics/PET
Recycle at OZTI	SME	Tanzania	Plastics/PET
RocBo Multipurpose Society	Association/Other	Kenya	Paper, Plastics/PET
Seradelis Waste Management Limited	SME	Kenya	Metal/Steel/Aluminum, Paper, Plastics/PET, Wood
Sino Alu Fiber	SME	Ethiopia	Plastics/PET
Société de Production d'Articles Hygiéniques (S.P.A.H.)	SME	Madagascar	Organic Waste, Paper, Plastics/PET

Technology and Innovation Institute	Association/Other	Ethiopia	N/A "commercial waste"
The Recycler	SME	Tanzania	Organic Waste, E-waste, Glass, Metal/Steel/Aluminum, Cardboard, Paper, Plastics/PET,
Vohitra	SME	Madagascar	Organic Waste, E-waste, Paper, Plastics/PET,
WEEE Centre	SME	Kenya	E-waste
Yo Waste	SME	Uganda	Plastics/PET

Annex 5.4: Qualitative Coding Tree