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Executive Summary

This report summarises the findings from consumer behavioral research conducted by Busara on behalf of Mr. Green Africa (MGA) in Nairobi. This project was designed to determine the perception of plastic waste management and gauge the current actions of plastic recycling among users of plastics in Nairobi. By applying a lens of behavior, it further revealed behavioral patterns around plastic recycling and identified key user segments.

This report is divided into three sections: it begins with an overview of the qualitative research methodologies, followed by sections on findings and recommendations for each research objective, and lastly analysis of respondent personas and journey maps.

As proposed during the inception phase, we conducted a literature review and 65 In-depth interviews (IDIs) for four categories of target users in Nairobi: house helpers, waitstaff, young population (18 - 35 years), and general tenants. Based on insights drawn from IDIs, we created 3 personas that describe distinct features of 3 typical users of plastic and created a journey map for each person to illustrate pain points during the experience of waste management, which further suggests opportunities for interventions.

The findings from the literature review and IDIs highlighted that 1) providing extra bags and basic PPE such as gloves can remove the situational barriers and facilitate the process of plastic sorting and recycling; 2) introducing recyclable plastics by common plastics products and providing tips on how to recognize recyclable ones can lift the informational barriers and get people on board; 3) barriers to recycling in Nairobi include knowledge, time, convenience, supplies and perceptions of others; 4) conservation attitude and altruism have a positive relation with recycling behaviors, and monetary incentives work better with lower income groups. Personas suggest that Confident Champions, who are mostly graduates or young waitstaff with relatively higher education and earn a low-to-middle monthly income, open-minded, optimistic, and determined on their own decisions, are more likely to initiate or be engaged in plastic recycling.
Context

Project Background

Mr. Green Africa (MGA) is a Nairobi based company that collects, recycles and sells plastics to create a traceable social and environmental impact. MGA, through various consumer-targeted models, plans to implement a research project which aims to:

- Determine the perception of plastic waste amongst users of plastics in Nairobi
- Gauge current actions of users of plastic in Nairobi
- Understand the behaviors of persons responsible for household waste disposal
- Make behaviorally informed recommendations to support interventions that promote recycling among target populations

On behalf of MGA, Busara undertook qualitative consumer insight research to answer the question: How might we increase the adoption of plastic recycling for users of plastics in Nairobi?

Overview of Learning Objectives

This study consists of three phases. First, the Busara team conducted desk research to understand the existing literature on successes and failures in recycling promotion in other countries. This background helped illuminate potential barriers and motivations for recycling that exist in other countries, and thus better target our qualitative research.

Second, Busara undertook in-depth interviews (IDIs) to understand consumers’ perception, motivation and barriers around waste management and plastic recycling among target Nairobi populations. The ultimate goal of this qualitative research was to identify potential opportunities (“levers”) that can motivate individuals towards a desired recycling behavior.

For the IDIs, four categories of respondents were identified within Nairobi: house helpers, waitstaff, young population (18 - 35 years), and general tenants. All interviews were designed to explore waste management behavior in households and/or in restaurants/cafes/bars, including:

- How waste is currently managed
- What types of plastic product are most commonly consumed and by whom
- How much do people know about the plastic they consume (e.g. information gap)
- What types of plastics are typically segregated and/or recycled, if any
● Perception of waste management and plastic recycling
● What would motivate the desired behavior around plastic recycling
● What are the foreseen obstacles and barriers for individuals to consistently practice the desired behavior around plastic recycling

Interview guides for the 4 respondent categories are provided in appendix A.

Finally, focus group discussions (FDGs) were planned for a select group of stakeholders including property caretakers and duka owners to understand their incentives and to design an acquisition structure to engage them as Mr. Green’s agents for plastic recycling. However, due to the Covid-19 pandemic, this activity has been paused until we are able to safely undertake in-person research.

Methodology

Literature Review

Busara conducted a literature review of the existing literature on successes and failures in recycling promotion in other countries to help inform the approach of the formative research phase. It has also brought an initial understanding of what barriers and motivations for recycling possibly exist in the target Nairobi populations.

In-depth interviews (IDIs)

Busara carried out in-depth interviews to understand the context for recycling and waste management, along with motivations and barriers to doing so. Purposive sampling and quota sampling were applied to recruit respondents. First, based on learnings from literature review and projects MGA had previously done, we identified 4 categories of individuals who might have a unique or relevant perspective on the research objectives, namely house helpers, waitstaff, youth (18-35 years), and tenants.

Secondly, we defined a certain number as a recruitment target for each category to ensure it covered critical stratifications (e.g. segments of gender, age, income) under each category. An IDI instrument was developed for each category that included survey questions and guidelines to proceed step by step. Original interview guides are included in the Appendix. IDIs were conducted through phone. Busara’s Field Officers (FOs) reached out to recruited respondents at a previously agreed time, went through IDI instruments in Kiswahili and recorded audio for each interview. Audios were later transcribed and translated into English. A pilot was conducted before the full-scale study to test the flow and inform necessary modifications to IDI instruments.
Behavioral Persona Creation

Based on data returned from IDIs and insights drawn from it, Busara created consumer personas which differentiated from each other by pain points during waste management, the ideal scenario of managing waste, and motivation and barriers to plastic recycling. Each persona is an archetype, a thorough description of a typical or target user (or contact) of plastic. It reveals the behavioral patterns around plastic and makes characteristics of key user segments more salient and memorable for MGA to design user-centered models in the future.

Journey Mapping

Busara used journey mapping as a tool to better understand the steps a participant would have to take in order to carry out the desired action, i.e. segregating waste and recycling plastic. For each persona, Busara developed a journey map to illustrate the experience of managing waste and pain points along the journey. Journey maps help to visualize barriers to get to desired behavior (e.g. recycling plastic), and further reveal opportunities that can turn pain points into interventions.
Analysis and Findings

During the phase of IDI study, 65 respondents in Nairobi were interviewed over phone, 20 from the group of tenants, and 15 each from the rest 3 groups. An interview took about 1 hour on average. Seventy percent of the respondents were female, and females were especially prominent in the groups of house helpers and waitstaff.

<table>
<thead>
<tr>
<th>Category</th>
<th>Female</th>
<th>Male</th>
<th>Education (mode)</th>
<th>Age (yrs)</th>
<th>Monthly Income Range (Ksh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>House Helpers (15)</td>
<td>14</td>
<td>1</td>
<td>Primary, Secondary</td>
<td>22 - 47 (avg. 32)</td>
<td>4,500 - 20,000</td>
</tr>
<tr>
<td>Waitstaff (15)</td>
<td>12</td>
<td>3</td>
<td>Secondary, Diploma</td>
<td>22 - 35 (avg. 25)</td>
<td>10,000 - 90,000</td>
</tr>
<tr>
<td>Youth (15)</td>
<td>9</td>
<td>6</td>
<td>Diploma, University</td>
<td>20 - 31 (avg. 24)</td>
<td>0 - 22,800 (some are students)</td>
</tr>
<tr>
<td>Tenants (20)</td>
<td>11</td>
<td>9</td>
<td>University, Diploma, Secondary</td>
<td>25 - 35 (avg. 31)</td>
<td>1000 - 100,000 +</td>
</tr>
</tbody>
</table>

Insights provided in this report are drawn from 65 IDIs for all respondent categories.

Overview of Household Level Waste Management

**Objective:** To gain an understanding of how waste is currently managed on a typical day.

**Approach:** Respondents were asked about the types of trash commonly found in their home or at the restaurant, and the typical process of managing waste in their home or place of work.

Waste management is an individual responsibility in private homes, and a collective effort in food service establishments

The typical process for waste management differs between private homes and restaurants or clubs. In most private homes, typically either a house helper or an individual household member completes the full waste disposal process, beginning with cleaning and ending with bringing trash to the dumping point. In some exceptional compounds, the house helper or household member only transports bagged waste out of their homes or to
the ground floor, and a worker in the compound comes later to take the trash bags to the dumping point. Overall, the process in private homes is carried out by a single individual.

For most private homes, caretakers were not directly involved in the waste management process until after collectors took all the trash from the dumping point. After waste removal by the collectors, caretakers may be responsible for cleaning the large communal trash bins at the dumping point. Typical compounds did not have a spacious dumping point or dumping room that could be used to store plastics. In general, the foul smell and flies made the dumping point within the compound an unpleasant option for sorting plastic.

At restaurants, the waste disposal process is usually accomplished by a collective effort of multiple waitstaff, who bring trash from table to the kitchen, a steward who puts the trash into the bin, and a steward or a cleaner who brings trash from the bin located in the kitchen to a bigger trash bin outside, the dumping point.

**Single polythene bags provide storage for waste in the home**

In private homes, some house helpers or household members prefer to directly collect all trash into a big polythene bag, while others prefer to first collect trash into small bins and then transfer to a big bin, typically located on the balcony. The polythene bags are distributed by the caretaker in accordance with a per-household quota. Some house helpers expressed that separating plastic from other trash during cleaning would be simple if they could have one more polythene bag for it.

**In most cases, waste management does not occur at a predictable frequency or time of day**

As to the time for dumping trash, it varies by household. Respondents who manage waste themselves (without a house helper) typically dumped the trash when the trash bin was full or before they left home (e.g. in the morning for work). Respondents who worked as house helpers usually started cleaning after doing laundry and/or cooking. Some of them dumped the trash right after cleaning and others dumped the trash before they left work for home.

Cleaning and managing waste happens more frequently at restaurants and clubs, and multiple people are involved in the process. A 24-hour restaurant or club (e.g. those in a hotel) usually has 3 work shifts and organizes twice or thrice trash dumping every day. Other restaurants that operate on limited hours organize at least one trash dumping every day. The cleaner (or a steward in some cases) makes sure that the trash is moved from the kitchen to the dumping point outside before the restaurant opens. Although the steward is
usually the one who puts trash into bins in the kitchen, the waitstaff might do it occasionally when there are few customers. One reason why waitstaff typically only bring trash from tables as far as the kitchen is that they are required to follow sanitation protocols: waitstaff are required to keep hands clean before serving the next customer. In most cases, the waitstaff indicated that their supervisor would be fine if they dealt with trash after shift.

The frequency of dumping household trash varies by respondent, which is largely influenced by how frequently the waste collector comes to collect trash from the dumping point. It ranges from once a week to every day. The frequency of dumping restaurant trash is generally higher, and it ranges from twice a week to thrice a day.

Factors of convenience and safety play in people’s experiences in waste management
The distance an individual must travel to the dumping point varies, ranging from a few meters to a few minutes of walking. Respondents generally did not see distance to the dumping point as a challenge, but the weight of trash can be. Commonly mentioned challenges during waste management include trash being too heavy, climbing stairs, dirty drips or smells from trash, dealing with human waste (e.g. sanitary towel, pampers) or hazardous waste (e.g. broken glasses) with bare hands, and lack of Personal Protective Equipment (PPE). Need to be equipped with PPE was more commonly mentioned among waitstaff than other groups. A potential explanation is that waitstaff deal with a far larger volume of waste on a daily basis and are more often confronted with risky trash like broken glasses, and time pressures that require them to work quickly. Out of 15 house helpers, we found only one who preferred to maintain high standards of personal cleanliness thus wore gloves at work when dealing with waste. In the environment of the restaurant or club, a few cleaners and stewards were found wearing gloves at work, but it did not happen to waitstaff who served customers and cleaned tables.

Waste segregation is an uncommon, but not unknown practice
Overall, waste segregation was an uncommon practice among our Nairobi sample population. About half of the respondents stated that they had never separated waste at their home/restaurant. But the concept of waste segregation was not unknown by all respondents--some were familiar with the concept, although did not practice themselves. Restaurants and clubs were more likely to separate plastics from other trash, relative to private homes.

For private households, about 10% of the respondents practiced waste separation on either a regular or occasional basis, such as putting food residual in a different bag, separating paper from other waste to avoid getting wet and messy, and keeping bottles (including plastic bottles) to reuse. In one case, the gardener would come to sort the plastic
out if he needed extra income. In another case, an undergraduate regularly sorted plastic into a separated bag and left it outside the trash bin at the dumping point, as there was no option for separating waste at his dumping point. There was a case where the house helper was not asked to separate waste, but when she saw bottles, she collected and sold them. In another case, the house owner did not like using plastic generally, but when there was any, the house helper would take it home and use it for other purposes such as lunch boxes for kids, or shared it with neighbors.

For most households, separating plastic at home was not a routine. For the few exceptions where waste was segregated, this was more likely to happen inside the home than at the dumping point.

Some restaurants have multiple bins to facilitate waste segregation
Some waitstaff indicated that they had a specific space for plastics in their restaurants, and these plastics were taken to the dumping point in a separate bag, or in one case by a restaurant employee who had requested to obtain the plastic waste. This employee was allowed to take the plastic after his shift for free. A waitress at a hotel restaurant stated that, “to make it easier for [the collectors], we separate the plastics from other garbage”, and introduced that there were 3 bins in their restaurant: “one for plastics, one for papers and one for leftover food”. These 3 bins were labelled with different colors: green for leftovers food, black for plastics and brown for papers. Separate bins for different trash were also found in some other restaurants. Another waitress introduced that they had three bins: one for plastics and the breakages (i.e. plastic cutlery), one for glasses and the third one for leftover food. From the third bin, leftover food was taken to a compost pit outside. In the case of another restaurant, waste was separated into a wet bin and a dry bin: the wet bin was for leftover food, and the dry bin was for plastic and other containers. Separation was also observed at the dumping point: “[the collectors] start with the wet bin first then the dry bin, which they take somewhere for recycling”.

Plastic sorting around the dumping point by collectors was also observed by some house helpers and residents. Since all kinds of trash were dumped together in most cases, the collectors brought all trash to their truck and separated the plastic items. In the residential compounds, we found only two cases when organic waste was dumped in a separate bin at dumping point. The organic waste was brought elsewhere to make compost.

Highlights & Recommendations:

● Providing extra bags to private homes can facilitate easier plastic sorting. This is likely to remove a situational barrier to recycling we have found in other countries
where households who use a single bin or nylon paper for waste disposal find it challenging to sort plastic.

- Engage both household members and house helpers, and seek for collaboration to allow the house helpers to sort within the compound (e.g. ground floor or on the balcony) other than at the dumping point. Meanwhile, make the responsibility of who should execute plastic recycling clear with each household (a designated person), to avoid the ambiguity and diffusion of responsibilities, which have been proved to hinder recycling in other countries.
- Reduce real and perceived risks of sorting plastics by providing basic PPE such as gloves.
- Some private individuals and waitstaff already have knowledge of the practice of waste segregation, and frequently witness trash collectors sorting plastics and other materials. Lean into this existing knowledge and promote “early adopters” to become educators on waste segregation practices within their communities.
- Multiple people are typically involved in the waste collection process for restaurants and clubs. This could be either an opportunity or a limitation in targeting waste segregation messaging.
- Restaurants and clubs are more likely to separate plastics from other trash, relative to private homes. Some restaurants are already sorting plastic from other types of waste, and have multiple bins to facilitate waste segregation.
- Residents and waitstaff are willing to segregate plastics solely for the convenience of the collectors.
- Households appear to understand that plastic waste carries value, either in sale or in reuse.
Analysis of Common Waste in Dustbins

**Objective:** To gain an understanding of the most common types of plastic waste.

**Approach:** When interviewing respondents who were currently at their home or place of work, respondents were asked to check the trash bins and identify what types of waste were there. More than half of the respondents were able to check the trash bins during the interview. For those who could not, they recalled it from memory.

Restaurants and Nightclubs generate more plastic waste than private households
Leftover food, packaging, wrapping for food, and plastic bottles are the most commonly found types of waste both in an average home or a restaurant in Nairobi. The volume of plastic bottles, however, is much higher at the restaurants or clubs than at home, contributed by customers who wanted water or soft drinks everyday. On an average day, a typical restaurant can generate more than 50 plastic water bottles, and the number can be doubled or tripled at a nightclub. For private households, most respondents reported having a few items of plastic waste on a weekly or monthly basis, but not every day.

Among average households, plastic waste is less common and may be repurposed within the home
At home, the most commonly seen waste in the trash bins includes: leftover food, fruit and vegetable peels, bottles and containers for liquids like yogurt and oil (including plastic bottles), wrapping or packages of food products, and bathroom waste such as tissues. Pampers, a babycare product, was widely seen in homes with small children. In some cases, respondents did not find any plastic waste in their trash bins at home, and indicated that they consumed few plastic products. In one case, a house helper did not find any plastic recyclables and indicated that the household used all plastic bottles for water storage as they had experienced water shortages in the past.

Broken glass and other hazards present a challenge for waitstaff responsible for waste management
At restaurants or clubs, the most common waste in the trash bins includes leftover food, bottles (mainly plastic bottles for water or juice), cups, serviettes, broken glasses, disposable cutlery, wrappings, and packaging materials such as used foils and brown bags. Broken glasses were a common challenge to waitstaff when they cleaned tables or floors, which partly triggered their needs for protective equipment such as gloves at work.

Of note, when describing the waste, a number of respondents differentiated organic waste from non-biodegradable waste. One of them gained this knowledge from a friend who owned a waste management and plastic recycling company. Knowledge of organic vs inorganic waste suggests some individuals have a baseline understanding of different
types of waste, which may be a relevant angle to exploit in introducing concepts of valuable plastics.

**Highlights & Recommendations**

- Restaurants and clubs generate a larger volume of plastic waste relative to private homes. The supply of plastic waste is also more consistent, suggesting such businesses hold greater initial value for MGA engagement.
- Hazards like broken glass coupled with lack of PPE present a challenge for waitstaff in separating plastics. Provision of PPE could motivate more wait staff and other restaurant workers to segregate plastics, even without additional private compensation.
- Some individuals have a baseline understanding of how different types of waste should be managed, which can be a leverage for introducing concepts of different types of plastics.

**Plastic Usage Among Nairobi Populations**

**Objective:** To gain an understanding of what types of plastic products are mostly consumed and by whom.

**Approach:** We asked respondents what types of plastic they could find or usually had in the trash bins, and if they reused plastic in any case.

**Bottles and food packages are the most commonly found plastics**

Plastic waste was less common in homes than in restaurants and clubs, but for all types of establishments, plastic bottles and food packages were the predominant types of plastic waste. Plastic bottles were mostly for water and soft drinks. Common plastic food packages included yogurt containers, wrapping for cereal and snacks, and takeaway containers.

According to the waitstaff we interviewed, more than half of these restaurants and clubs had water dispensers and would provide free water when customers asked. In practice, very few customers ever asked for water from the dispensers as these were placed inside the kitchen. The majority of customers at restaurants and clubs were middle-aged males, though we did not find strong gender discretion in terms of consuming bottled water or bottled soft drinks. Other types of commonly seen plastic waste found at restaurants and clubs included disposable cutlery, food wrappings such as cling film, straws, cups, and containers for takeaways.
At home, plastic bottles were mostly for water or juice, and occasionally for cooking oil, lotions, and other liquids. It was not obvious to some respondents that food wrapping or packaging materials were plastic. To promote waste segregation and plastic recycling at the household level, information and tips on recognizing plastic can be helpful.

**Reusing plastics is common practice in some private homes**

While sorting plastics was not a common routine for households, we observed a wide range of cases where plastics were reused in the home. More than half of the residents and house helpers indicated that they kept and used the water bottles to refill with water or to store other liquids like cooking oil. Water bottles were also used to store water in the event of a water shortage. Yogurt containers were cleaned and used to put spoons, toothbrushes, earrings or coins, or used as cups. Oil containers were also kept for refilling. A house helper mentioned that in the house where she worked, plastic bottles were widely used in the garden for planting. Another house helper noted she had seen her former employer arrange plastics near the swimming pool to prevent the cold breeze.

**Highlights & Recommendations**

- Households are aware that plastics hold value for alternative uses, and tend to keep and re-purpose plastic containers that are in usable condition.
- Residents are usually able to identify bottles as plastic, but are not always able to identify food packages as plastic.
- To promote waste segregation and plastic recycling at the household level, providing information and tips on recognizing plastics can help make recyclable plastics salient, particularly for those who are not sensitive to certain types of plastic (e.g. food wrapping or packaging materials). As observed in other countries, households who do not understand what materials can be recycled will recycle less than those who have accurate information.
Insights on Citizens' Knowledge of Plastics

Objective: To investigate how much people know about the plastic they consume.
Approach: We asked respondents on the types of plastic they knew, the symbols on plastic products, and what they thought of plastic and the relation with plastic.

Plastics are recognized by function, rather than by type of material
When asked “what types of plastic do you know”, almost all respondents started categorizing plastics by the purpose or usages of it, or by the brand attached to the product that comes with a plastic package (including plastic bottles). For instance, plastic is widely perceived as water bottles, soda bottles, or Blue Band containers. Other frequently mentioned types included: oil containers, yogurt cup, jerrycan, nylon bags, buckets, basins, chairs and tables. A respondent who was in his last year in university responded that it requires chemistry knowledge to answer the question and he did not major in environmental science. He started describing the types of plastic by function as well.

Recycling symbols were largely unnoticed by respondents
When asked “what symbols have you seen on plastic materials”, the majority noticed only noticing the brand or company logos such as Blue Band, Coca cola and Sprite. KEBS, Kenya Bureau of Standards, was mentioned by about 10% of respondents and denoted that this symbol certified the plastic material was safe for human use. Many respondents were not aware that there was a particular symbol on plastic products denoting the type of plastic and whether it can be recycled. A few other respondents, most of whom were waitstaff, pointed out the symbol of “someone disposing into a dustbin with some arrows rotating” and interpreted it as “this is how we should dispose” or “we can dispose well like this”. The recycling symbols were only salient to a small number of respondents, most of whom were waitstaff and youth with higher education degrees. They recognized it as “a triangle” or “a triangle with numbers” and knew that it meant recycle. But none of them could interpret what the numbers mean. No respondent mentioned the abbreviations under the “triangle” like PET or HDPE. Only a couple of respondents vaguely stated that they had noticed the symbol but either did not know what it meant or had no interest to seek the meaning.

Respondents are torn between the usefulness of plastics and environmental harm
When asked about their perception of plastic and asked to describe their relation with plastic, most respondents shared conflicted feelings: they acknowledged the usefulness of plastic in daily life while also noting the potential harm to the environment. “Plastics are a must”, said one respondent, giving examples of needing plastic containers to store water,
oil, yogurt, wine and other liquids they consumed on a regular basis. At the same time, they saw how plastics had “made the environment ugly”. “It pollutes rivers, soil, and air when it is burned”, noted by a respondent who had seen people working hard to get the plastic bottles and wrappings out of drainages. A few of them who shared such conflicted feelings went a step further to conclude the dilemma could be avoided if plastic waste was properly disposed of and/or recycled.

While the majority regarded plastic as something necessary and inevitable, a couple of respondents believed that plastics were overrated and had dictated our daily lives. They suggested that lots of plastic products could rather be made from other materials such as clay. Other perceptions of plastic included: plastic products were cheap thus would not incur much loss if they were broken; plastic was a poor conductor of heat and it lost its shape when exposed to high temperatures; and plastic can be recycled.

When asked about how they thought plastic should be handled, “recycle” was a common answer. Of note, some respondents believed that burning was an acceptable method for dealing with plastic waste, including a few who had seen other people recycling plastic. “Plastic does not rot, and it should be burned,” said a number of respondents. A potential explanation here is that these respondents have seen others collect and sell plastic, thus know that plastic is being recycled, however, as they have not recycled themselves, the common practice of burning plastic together with other trash, was more easily recalled and deemed acceptable. These individuals were less likely to have been exposed to examples of upcycling plastic products, and are not able to draw on any personal memories about recycling.

**Turning used plastics into profit was regarded as a win-win opportunity**

When considering the relationship between plastics’ usefulness and environmental harm, many respondents appreciated the opportunity to turn plastic waste into business and regarded it as a “win-win” solution. Many respondents were interested in earning additional income from recycling practice. They further concluded that, “depending on how people use it, it can be plastic waste or recycle materials”, and that “people should be enlightened about plastic management”.

**Highlights & Recommendations**

- Plastics are recognized by function rather than by type of material. It suggests that introducing recyclable plastics by common plastics products (e.g. water bottles) can possibly bring people’s cognitive threshold of plastics to the conscious level and make recyclable materials in the surrounding salient to them.
• Waitstaff and youth with higher education degrees are more likely to notice the symbol on plastic products and understand that it refers to recycling, although this does not appear to be common knowledge among any group in our sample.

• Environmental concerns, including ugly landscapes, foul burning smells and clogged waterways were prevalent among all types of respondents, suggesting environmentalism may be a salient point to sway individuals towards recycling.

• Introduce examples of what happens after the plastic waste gets to recycling companies and how upcycled plastic materials are used to combat the notion that burning is an acceptable practice for dealing with plastic waste. Availability heuristic is a behavioral principle that explains why people still regard burning plastic as a solution even though they have seen others collect and recycle plastic. Availability is a mental shortcut whereby people make judgments about the likelihood of an event based on how easily an example, instance, or case comes to mind. By promoting real-life examples of recycling through certain market channels, it can add such behavior to people’s memories, which when recalled can trigger recycling behavior when they are at the position of dealing with plastic.

• Simplification is a key to close the knowledge gap on recognizing different types of plastic. Given the fact that the majority of respondents did not recognize plastic by its technical features but by functions, leverage from what is already known by the majority and introduce types of plastic and the recyclable ones by given examples of plastic products without going into overwhelming technical details.

• Any information disclosed on recycling symbols should be straightforward and simple. Considering that very few respondents recognize the symbol of recycling, sharing necessary information or tips on how to quickly recognize the recyclable ones will quickly close up the knowledge gap and further make their engagement in recycling more likely. To avoid information overload and decision fatigue, informational materials should only introduce the symbols that indicate the desirable recyclable materials. To refine and target such communication materials, an A/B testing can be run in the next phase to inform the effective way of closing the knowledge gap and getting people onboard with recycling.
Citizens' Perceptions of Recycling

Objective: To gain an understanding of people’s perceptions of recycling and what values they see in plastic recycling.

Approach: We asked respondents for their understanding and thoughts on recycling, as well as examples of practicing recycling either by themselves or someone they know.

*Recycling is widely perceived as reusing*

“Reuse for another purpose” is an intuitive explanation of “recycling” shared by the majority of respondents. They perceived or connected recycling to the behavior of cleaning plastic products such as water bottles or yogurt cups and using them again. Some regarded recycling as the behavior of collecting plastics from trash or dumping points and selling it, as they had seen others do.

Another common perception was that “recycling is using plastic waste to make new plastic materials”. Some respondents briefly described the process of collecting, cleaning, and processing into new products at a recycling company as the behavior of recycling. “It is the act of transforming one product to another, like plastics bottles into a basin. It undergoes a process.” A house helper had been told that black basins are recycled, and she could tell the difference between normal black basins and the upcycled ones.

Some respondents saw recycle behavior to make a product useful again, while a few others expressed their confusion, “I have never quite understood if they are recycled into the same items or something else”.

*Very few respondents knew how or where to recycle should they wish to do so*

A house helper had seen a scrap dealer in Ngong who collected plastics, loaded them into a lorry and took them somewhere. She was aware that the plastics were sold to some recycling companies but did not know what and where these recycling companies were. In fact, most of the respondents who had seen others collect and sell plastics and wanted to do the same did not know where to find these recycling companies. There were only two respondents who knew where to recycle: one house helper stated that she could “collect them and take them for trading at a place called Congo”, while another house helper said she had heard of a place in Kangemi that recycles plastics.

*Improved environment and opportunity to make money are the top reported benefits to recycling*

The most frequently mentioned benefit of recycling is that it is good for the environment. “It preserves the environment if people get to know that they can be recycled and they can make money from it”, said one respondent. Keeping plastic bottles or containers aside for
reusing was considered recycling behavior that could contribute to conservation. In fact, reusing plastic at home was among the most common practices reported by respondents.

Many respondents also recognized the opportunity of earning additional income by collecting and selling plastics to recycling companies. Five percent of the respondents had done this occasionally. A few waitstaff suggested that they would prefer to sell the plastic to suppliers of water and soft drinks, as the process would be easier if suppliers could pick up the plastic when they came to deliver. Waitstaff noted they did not want to bother moving around with a large volume of plastic. Most individuals who already knew the economic opportunity of recycling plastic expressed a strong interest in doing so. A common motivation was to add something extra to their incomes. Some house helpers stated that they would consider doing it full-time if the recycling business could provide more income than what they earned as a house helper. A few respondents also mentioned that recycling could create employment for young people who could collect plastic.

**Recycling is recognized as an answer to conservation**

While a few respondents suggested “burn it” as a solution to plastic, many others recognized recycling as an answer to conservation. Separating waste was the first step they suggested, and noted the separation should cover other types of waste such including biodegradables. A respondent gave an example of how to recycle plastic at home: “you can keep it in your bag and throw it in a dust bin so that the garbage collectors can take them to recycling companies”. A university student proposed that we should conserve by mobilizing and creating awareness among a wider population so that people know how to properly handle plastics. “It is just creating discipline”, he linked to the current Covid-19 situation, “earlier, no one thought of putting on masks but right now we have to put them on because there was a clear sanitary protocol in public. Plastic requires the same discipline applied to the public to keep the environment clean”.

**Highlights & Recommendations**

- Some waitstaff say they would be more inclined to recycle if they could sell plastics back to the suppliers of water and soft drinks who make frequent deliveries to their restaurants. This suggests that convenience plays a particularly salient role in willingness to participate in recycling schemes for restaurant workers. These individuals are often willing to separate plastics even without private benefit, but are not willing to travel far carrying large volumes of plastics.
- Consider suppliers of water and soft drinks to restaurants and bars potential agents. These suppliers have more chances of getting in touch with a large amount of plastic and have vehicles to easily transport the plastic.
• Improved environment is among the top reported benefits to recycling. Evidence from other countries supports a positive relationship between conservation attitude and recycling behaviors. This suggests an opportunity of promoting recycling from the angle of conservation may in fact resonate with Nairobi populations, particularly among younger and more educated individuals. A/B test can further determine the messaging effect of conservation on recycling behaviors, having a control group exposed to no conservation-focused messaging and a few treatment groups exposed to various conservation-focused messaging.

• While the environment is one of the most widely mentioned benefits of recycling, environmental-focused messages may not be enough to spur consistent individual recycling action. Opportunity to make money may be a more salient individual motivator. Environmental-focused intervention might work better with a collective commitment to encourage sustained group behaviors.

• Many respondents want to sell plastics, but don’t know how to find a recycling company. Some asked if they could sell plastic to Mr. Green at the end of the interview. This echoes with the finding in the literature review that lack of knowledge on how recycling works leads to low uptake of recycling, and suggests action of making the process for recycling plastics more visible and actionable.

• Make the information on where to find Mr. Green agents and how they can be engaged in plastic recycling with Mr. Green obvious to people. The information should be easy and convenient to find in their daily routines. Some locations and contents to be considered are the markets where people go for grocery shopping, the gate of residential compounds, matatu stations, or advertisement at restaurants and clubs. Some quick field prototyping can be further applied to test effective market campaign strategies.
Behavioral Patterns Around Recycling in Nairobi

Objective: To gain an understanding of motivations and barriers to recycle and reveal behavioral patterns around plastic recycling.

Approach: We asked respondents to describe the typical process of managing waste at home or restaurant and point out which parts they liked, disliked or found challenging. Respondents were asked to rate from 1 to 5 for their willingness to separate plastic and to give reasons for their rating. We first asked them to rate without mentioning any compensation, and to rate again when compensation could be provided. We also asked respondents to imagine a few scenarios of recycling plastic and captured the foreseen barriers to recycling under each scenario. Particularly when interviewing the youth respondents, we asked questions on how peer opinions could influence respondents’ attitudes and behaviors around plastic recycling.

Motivations to recycle align with general aspirations in life
For most respondents, their personal motivations to recycle were congruent with their general motivations in life, including earning a better income, supporting their family, having a job, and feeling useful. When compensation was provided to recycle plastic, earning cash appeared as a strong motivation for the majority. This is also aligned with the common perception that plastics held value and could generate income. Without compensation, many respondents stated they would still be motivated to recycle plastic because it would contribute to a better environment.

The majority state they are willing to recycle even without compensation
The willingness to recycling plastic can be categorized into the following, ordered by frequency from high to low:

- Yes, I am willing to (scored 4), and will be happy to if compensated (scored 4 or 5 when compensation was provided)
- Yes, very willing to (scored 5), and will be happy to if compensated (scored 5 when compensation was provided)
- No, I am not willing to (scored 2), but will be willing to if compensated (scored 4)
- Not sure, or it depends (scored 3), but will be willing to if compensated (scored 4)
- It depends (scored 3), and it still depends if compensated (scored 4)
- No, I am not willing to (scored 2 or 1), and still hesitate to (scored 2)

The majority expressed the willingness to separate plastics. Without compensation, the common reasons and motivations included: to keep the environment clean, not something difficult to handle, not much effort required, regarding it as part of the job and altruism. One house helper indicated that she would be willing to if an extra polythene bag was provided for putting plastic waste. Another house helper expressed that she had been waiting to do it at the house she worked, and would be very willing to if she was given a
go. “Yes, I am willing to because I know a friend who does that and earns good money” was another motivation given by a young house helper. Some house helpers and waitstaff see separating plastic as part of their job and specified that they would still do it without compensation.

**Altruism and generating employment opportunities for others is a motivator to recycle**

We observed some altruism around willingness to separate plastics. A handful of respondents, most of whom were females, expressed their willingness to separate plastics without compensation. These individuals stated that separating plastic can make others’ work easier, or that they would like to give the plastic to boys on the street who lived on waste picking. There was not sufficient evidence to support a strong correlation between educational background and altruism. Some of these respondents hold a diploma or an undergraduate degree, and some achieved form 3 or form 4 education (i.e. 3rd or 4th year of high school in Kenya).

**Cash was the most desirable compensation**

When compensation was provided, the willingness to recycle was generally higher, and more than 90% of respondents preferred cash. The amount of desired compensation varied, ranging from 50 ksh each time to 1000 per day. In one extreme case, a nightclub supervisor who earned a decent salary and had a strong concern with performing activities he perceived to be beneath his title said he would need 7000 - 15000 ksh per day as compensation to segregate plastics. However, relatively lower-income individuals, mostly house helpers, preferred to add the compensation to their monthly salary, and suggested compensation ranging from “anything” to 12000 ksh per month. Waitstaff on average earned relatively higher salaries and preferred to be compensated on a daily payment. A potential explanation here is that most of the house helpers work full time and will be dealing with cleaning and sorting plastic 5 or 6 days per week, while most of the waitstaff work 3 days per week and saw sorting plastics as a more occasional opportunity, thus preferred to be paid by each time/day when they did it. The daily compensation raised by waitstaff ranged from 300 ksh to 1500 ksh, excluding the extreme case raised by the nightclub supervisor.

Other forms of compensation mentioned included food such as flour, spaghetti and cooking oil, job opportunities (mostly mentioned by students and job seekers in the youth group), and basic PPE (Personal Protective Equipment) such as gloves and gumboots. If the compensation was provided as a discount of commodity prices at dukas, the desired percent off went from anything to more than 25%. Altruism was also observed when it came to compensation. Like a waitress said, “I am passionate about helping street children whenever I can. I would be happy to direct the street children for these opportunities, or direct my compensation towards a children’s home.”
Duka owners are willing to get involved with facilitating plastics recycling

On the side of duka owners, when asking for their willingness to provide a discount for plastics traded in, most duka owners expressed their willingness and indicated that the discount should depend on how much profits they could make from the plastics and/or from the commodities sold based on discount. Some common expectations included that the plastics brought to their shop should be cleaned and not oily, that each customer coming with a discount should purchase multiple items, and that the plastics should be picked up at least 2 or 3 times a week to avoid plastics piling up in their shops or nearby areas.

Barriers hampering people from recycling include time, convenience, supplies and perceptions of others

For those who expressed hesitation on separating plastics, the most common reasons included time consuming, inconvenience, lack of capacity or support (such as PPE), and uncertainty related to the trash piled with plastics. Foreseen challenges in making it a consistent behavior included unexpected illness or emergency. Foreseen challenges in collecting plastics and trading plastic at a duka included transportation, distance to duka, negative opinions of others, and plastics being dirty or smelly.

“It will take too much effort” was the most common reason given for unwillingness to get onboard. Some respondents imagined that sorting plastic would take lots of effort and they were already tired after their current work. “It is a new process and experience so I imagine it will take lots of my time”, noted by a waitress. Lack of support including gloves and extra bags for plastic was another commonly mentioned barrier by those house helpers and waitstaff who expressed their unwillingness. Their high demand for gloves is likely to come from dealing with large volumes of waste as a major part of their work.

“Not sure what I would get into when separating plastic from the trash” was a common concern given by respondents who were unwilling or ambiguous in attitude towards recycling. Some waitstaff were demotivated by bad smell from trash, dirtiness, hazardous waste such as broken glasses, and disgusting waste such as vomit and molded leftover food (which related to how long the trash had been there). This could partly explain why average waitstaff expected a relatively higher compensation for each time they sort plastic, and why waitstaff are generally more demanding for PPE like gloves. For respondents who deal with household waste, some were concerned about encountering unpleasant waste, such as used sanitary pads and pampers. Touching waste that was consumed by others and may contain dangerous bacteria was another concern shared by a wider group of respondents, although this was not necessarily perceived as a fundamental barrier to practice recycling.
When asked to imagine the scenarios where they might skip plastic sorting if it had become part of the work routine, feeling sick or having unexpected emergencies (including urgent needs from kids’ schools) were mostly mentioned. Under the scenario of collecting plastic and trading it at a duka, means and fairs for transportation, along with distance to the trading point were common foreseen challenges. Some respondents were not willing to pay for transportation, thus would prefer to be able to trade plastics at a duka within walking distance. On average, respondents were willing to walk up to 30 minutes. This was particularly indicated by a house helper who did not live with the household she worked for and went home every day, “It will be great and easy for me if the duka is on my way home in the market. I pass by the market to buy vegetables and can stop at the duka.”

A few house helpers mentioned a potential challenge of how residents in the compound might look down on them. “They might think I became a street urchin”, said a young house helper. Similar concern of stigma was expressed by two supervisors of the restaurants/nightclubs. They worried that if other people found them sorting and collecting plastic, which did not match their titles, it would damage their ego or reputation. Plastic being dirty or smelly was another challenge that could push some respondents away.

In a couple of cases, waitstaff mentioned restrictions at their work that prohibited them from leaving with anything at the end of their shift. However, this was not the case for most restaurants or clubs. According to one waitstaff, a colleague of his requested to take away used plastics from the nightclub they worked, and the request was approved. That nightclub has a specific place for storing empty plastic bottles. And after his shift, this college puts plastic into his bag and takes it for free. And in some cases, waitstaff expected the attitude of their supervisors or bosses to be “would not care” or “would be okay with it”.

**Stigma in collecting plastics from trash is recognized but not necessarily a barrier**

When asked about stigma they had encountered or expected to encounter about dealing with waste (including sorting plastic), more than half of the respondents were aware of how society could judge them by simply looking at their appearance and their jobs. But not all of them were intimidated by it. We found more hesitation associated with stigma among waitstaff than other groups. For those who were aware of it but cared less about it, they trusted in their hard work and were highly motivated for opportunities to earn extra money. “This job [separating plastics and collecting plastic door-to-door] is one of those that can make you feel like you are not smart, but it’s just about your hard work. I will do it even for full time if I can earn good money from it”, said a house helper in her late 30s. A
house helper with a diploma did not see the stigma as a challenge because she believed that she could educate others for the importance of plastic segregation.

The rest of the respondents did not seem to perceive the stigma. A house helper believed that separating plastic was not different from what she had been doing at work. A waiter noted that, “I don’t really see it. I guess everyone understands the struggles. We are doing the same thing in the end, which is work.”

**Young persons are less concerned with stigma and believe they can educate others**
Particularly among the group of youth we interviewed, very rarely was stigma perceived or being influential on their decision making. It might have something to do with their educational background, which was generally diploma or higher. When asked about what their friends would say about them sorting and collecting plastic, and how that would influence them, most youth showed their determination - either not being influenced or seeing an opportunity to introduce their friends and classmates to the benefits of recycling plastic. “They will see me as being weird. Others will call me the plastics lady. But I will get used to it”, said an undergraduate student. Another young female respondent explained that, “they will first ask me what has gotten into me and I will tell them the importance of doing that, and I will try to make them change”. She said that she would be motivated even more to create the impression among her peers that the way they handled waste should be improved. Another example of positive views is, “In the beginning, they will view me as a person who has lost hope in life, but after they realize the impact I have made, they will start appreciating what I have been doing”.

When asked about who around them would be more likely to get onboard, some youth (including females) suggested that their male friends could be approachable because they were less likely to discriminate on kinds of work, and thus would not mind the potential stigma from peers. At the same time, other female youth suggested that their female friends were more likely to be engaged, as men would not like to put in extra effort to recycle or would be “hard to be convinced”. Regardless of the gender difference, a shared perspective was that it will be easier to recruit their peers who are jobless or living on casual labor. The income, even just a small amount of pocket money of a few hundred shillings, would motivate them. “Most of them who are jobless are very much willing, but those who have something to put on the table may not be willing.”

Another interesting perspective shared by a recent undergraduate is that his friends and classmates might not say anything special as they see it as a normal practice happening in developed countries. “In most modern countries, that’s what happens, so they will think that I am very modernized”, he added, “if they understand the reason behind the
separation, I think they will be supportive. But if they don’t know why, that will be an issue.”

Highlights & Recommendations

- Pro-conservation was a widely perceived value of plastic recycling and “contribute to a clean environment” was a top motivation for plastic sorting and recycling without compensation provided.
- Other top reported motivation is the desire to help bring employment opportunities to street children or waste pickers. The altruism was mostly observed among female respondents. Literature review suggests that pro-environmental behavior is more often connected with women, though, there is no quantified evidence to sufficiently prove the correlation between gender and recycling in this study.
- In terms of compensation for recycling plastic, cash is the most desirable form, followed by basic PPE such as gloves, food, and job opportunities.
- Unwilling to make an extra effort, lack of time or supplies, inconvenience, and perceptions of others hinder people from recycling plastic. Hazardous waste and unpleasant smell also make some people reluctant to separate plastics from other trash.
- Stigma in collecting plastics from trash is recognized by the majority but not necessarily a barrier to recycling. Eagerness to earn extra money and positive mindset associated with education are the main counter factors to stigma, particularly among house helpers and youth, respectively.
- To evoke social preferences, introducing plastic and conservation via certain market channels will help engage subsets of the population in Kenya, including young people and the more educated. Targeted populations should be engaged with key information or exposure to a context where social well-being is made salient through collective efforts, including by evoking social preferences such as altruism towards street children. How to introduce marketing material and what specific messaging should be used can be tested through rapid field prototyping.
- Demonstrating that the process of recycling is simple may help engage people for whom convenience is a barrier. Breakdown the process and disclose the information step by step to showcase the average time and effort required. This will be particularly useful to onboard with those who are intimidated by an unfamiliar process or overestimate time and effort required.
- Testimony of peers who recycle plastic, earn income and improve the environment can be a trigger, particularly for the youth population, to engage in recycling. By seeing how people they know or people they can relate to by certain demographic or socioeconomic identities (e.g. age, gender, tribe, occupation, socioeconomic...
status), people are more likely to connect the behavior to self and portray the “future self”, which nudges the actions now.

- Youth who are jobless, seeking jobs or currently living on casual labor are a potential subgroup of agents to engage in.
- Showcase how plastic recycling is done on a regular basis in other countries, and explain the reasons behind it. Promote the behavior of recycling plastics as a common practice in modern societies and further normalize the behavior in the current context of Kenya. The effectiveness of comparing Kenya to other “modern societies” should be evaluated through a field experiment such as A/B testing. Field testing may be particularly relevant in this context to unpack whether modernity and comparison to Western nations have positive or negative associations for Kenyans. Specific wording to describe “modern societies” and “Western nations” will be one of the experiment factors for testing.
Ideal Customer Experience for Recycling

**Objective:** To create personas of target users that reveal the behavioral patterns around plastic and make characteristics of key user segments more salient and memorable. To create journey maps that illustrate the experience of managing waste and pain points along the journey to reveal opportunities that can turn pain points into interventions.

**Approach:** After describing the process of waste management in detail, respondents were asked to share their emotions along the journey of handling waste, and the ideal experience of recycling for them. We create three personas to represent typical customers in the context of managing waste and recycling plastic. Each persona is matched with a journey map that illustrates the experience. The major factors that differentiate personas from each other include emotional waves during the process, motives and barriers to recycling, and how the ideal scenario will look like for them.

**Confident Champions**

Most of the youth, majority of waitstaff, and some young house helpers are likely to be Confident Champions. This does not mean that they have exactly the same demographic features, but that they share the motivations, barriers, and ideal scenarios, and have
similar emotional experience during waste management. When managing waste, they go through similar pain points.

Confident Champions are open-minded and conscientious. They may have achieved relatively high levels of education, holding a diploma, a certificate or an university degree. Relative to the Kenyan population, they earn a low-to-middle level of income. They hold positive attitudes towards work and other aspects in life, and are not influenced by how others might judge them. They like to keep things tidy and clean. Therefore, during the journey of managing waste, they are generally positive and feel happy when accomplishing a mission. Creating a clean environment and making work easier for others strongly motivates them to recycle plastic. Meanwhile, they believe that plastic recycling is an easy process to handle and feel encouraged to get more peers to join this practice. If there is anything Confident Champions do not like, it will be touching trash with bare hands, the smell from trash, and getting hands or clothes dirty. They are conscientious about their health and concerned about getting cuts or bacteria from hazardous waste. They do not enjoy going through messy piles of waste and they don’t want to run into surprises.
Therefore, during the waste management their emotion is overall positive and typically drops at the points when they pick up unpleasant trash with bare hands, when they need to pick up the trash spilled on the floor on the way to kitchen, and when they occasionally dump trash. If asked to recycle plastic, they would hope to have gloves and other necessary protective equipment to make sure they are safe, and prefer to separate plastics from trash before everything gets mixed (before the trash becomes foul and they may get dirty).

We identified opportunities for Mr. Green to engage Confident Champions:

- Provide gloves and other necessary protective equipment to enable them.
- Make plastic recycling an instinctive process by encouraging plastic sorting before plastic gets mixed with other trash providing an additional trash bag or a portable basket to put the plastic in while cleaning tables or floors.
- Develop the potential of Confident Champions to become Mr. Green’s champions, who promote the behavior of plastic recycling among peers, recruit peers onboard, and foster the group commitment.
- Public recognition for their championing recycling work will likely be an equal motivator to extra compensation.

Resilient Cultivators

**Catherine Wambua, 37**

**Resilient Cultivators**

**Education:** Form 3  
**Live in:** Kawangware

I am a full-time house helper, working 10 hours a day and 6 days a week. I have 2 children and I am the only one who earns a monthly income in my family. I earn 15,000 Ksh a month. I do not live with the family who I work for.

**Routine at Work**

**Ideal Scenario**

- The household members can dispose their trash properly, especially trash in the bathroom
- I can just collect the trash, and the boy at the compound can come up to take it

**Motivation**

- Monetary compensation, like an increase to salary
- Food items as compensation
- Potential to gain substantial income from collecting - if that happens I will leave my current job

**Barriers**

- Additional costs incurred, e.g. transportation
- It takes too much effort or time
- Too busy on working days
- Negative opinions other might hold on me

**Attitude Towards Work**

It is not something I like doing but I have no other choices. I try to do my duties well. If the supervisor or boss points out something I did wrong, or brings special requests, I’ll do what I am told to do.

**Emotional Wave**

Overall low or negative, and gets lower when trash is scattered everywhere, or when the trash is spilled on the floor and I have to pick it again. Carrying heavy and dripping trash bag downstairs is tiring and I have to pay attention to not tear the bag.
Most middle-aged house helpers, tenants who do not have house helpers, some waitstaff and a few youth are likely to be Resilient Cultivators. They have achieved some secondary education, work hard, and struggle to sustain with a relatively low income. They are highly motivated by compensation in cash or food forms, and eager to develop new income streams. Cleaning and managing waste are not something they enjoy doing, but they try to do it well for the pay. They do not like making repetitive efforts to pick up pieces of trash, and feel repelled by certain types of waste, such as bathroom trash and used napkins. Moving with heavy stuff is tiring for them, and they are sensitive to additional costs incurred by irregular activities such as traveling to a duka for turning in plastic. If possible, they would like to skip making any extra efforts because the current loads of work already consume most of their energies.

For Resilient Cultivators, their emotion is overall low and typically drops when they need to bend multiple times to pick up scattered litter and when they take heavy trash bags downstairs to dump. Repetitive movements of picking up trash and extra effort to avoid tearing trash bags exhaust them.

We identified opportunities for Mr. Green to engage Resilient Cultivators:
● Payment for their extra effort in sorting plastics will help make the activity of sorting plastics worthwhile for Resilient Cultivators.
● Encourage them to separate plastic from other trash whilst picking up pieces of trash. Provide an extra bag to facilitate the process so that they can easily put plastic into the bag and keep the bag aside after cleaning each time.
● Provide gloves as a bonus.
● Arrange door-to-door pickup of plastic, so Resilient Cultivators do not have to worry about transportation costs.
● When the pickup of plastic happens, Mr. Green agents offer to help take the trash downstairs, as an exchange for the plastic.

Established Elites

Most tenants who have their own businesses and some youth are likely to be Established Elites. Established Elites have received higher levels of education and earn decent monthly incomes from their own businesses or stable jobs. They strive to perform well at work and are ambitious to accomplish more goals in careers. They are less likely to be motivated by a small amount of monetary compensation, but are generally caring for public goods and happy to do something for the environment and for others. They are usually occupied by work, feel tired after a long day, and prefer to skip unnecessary efforts in housework. But
they do enjoy a clean and neat environment at home, which redeems their efforts in cleaning. They are more likely to care about how others might judge them.

We observe the emotional drops of Established Elites typically at the points when the process of cleaning takes a long time and when they have to go downstairs for dumping right after cleaning. Occasionally, the smell of waste at the dumping points gives them a hard time, though for a very short moment.

We identified opportunities for Mr. Green to engage Established Elites:

- Promote a habit of keeping plastic at a particular place at home right after consumption. In this way, Established Elites do not have to think about or pay extra attention to plastic while gathering all the energy to clean.
- Arrange Mr. Green agents for door-to-door collection - if not applicable, arrange a drop point at the gate (e.g. to caretakers). Established Elites can easily drop plastics when they leave to work. In both cases, Established Elites will be happy to save time from traveling to a particular location to drop plastic. Established Elites will also appreciate the convenience of collection points where they can avoid being seen carrying plastics long distances.
In the case of door-to-door collection, Mr. Green agents can offer help by taking trash downstairs as an appreciation for getting plastic.

Overall Highlights & Recommendations

- The level of income was found to positively affect waste management behavior of households in the literature review. It is also observed in some other countries that the older generation is more likely to recycle frequently, relative to the younger population. However, we do not observe similar correlations in the Nairobi context. Rather, the group who are more likely to initiate or be engaged in plastic recycling are Confident Champions, who mostly earn a low-to-middle monthly income and are younger, relative to other respondents.
- Target to potential participants with customized strategies based on the personas. Start with demographic features and focus on motivations and barriers to identity personas.
- Provide gloves and necessary PPE for Confident Champions and Resilient Cultivators as a motivation or bonus to ease their negative feelings of touching trash.
- Provide extra bags or portable baskets for Confident Champions and Resilient Cultivators, so that they can easily put plastic into the bags or portable baskets while cleaning. With the extra bags or portable baskets, Confident Champions can avoid mixing plastic with other trash and Resilient Cultivators can skip the repetitive movements to pick plastic up.
- After identifying Confident Champions, explore the potential to develop Confident Champions to Mr. Green champions for plastic recycling.
- Arrange door-to-door pick up for plastics for Resilient Cultivators and Established Elites. When saying “door-to-door”, it covers the doors of residential compounds and the restaurants or clubs. Thus, Resilient Cultivators do not have to worry about additional costs incurred by dropping plastic somewhere, and Established Elites do not need to struggle with finding time to drop plastic.
- In the door-to-door scenario, Mr. Green agents offer to help take trash downstairs or outside as appreciation for getting plastic.
- When door-to-door is not applicable, arrange the drop point at the gate of residential compounds for Established Elites so they can easily turn in plastic on their way out.
Appendix A

MGA IDI: House helpers

Objective

To identify behavioral patterns of house helpers around waste management by understanding in-depth details of their day-to-day life as a house helper. To identify the opportunities of engaging house helpers in the caretaker and duka models, as well as generalized opportunities for them to engage with recycling through MGA.

Note that we will recruit respondents through a phone screen survey to:

- Obtain the consent
- Obtain basic demographic data and make sure it is aligned with the sampling strategy

During the phone screen survey, we will ask for respondents’ preference on the time slots to be interviewed (e.g. before or after work hours, during work hours, etc.). We will also ask whether they will be at their place of work at the time of the interview (so they can check the number of plastics in the dustbins at their place of work).

A pilot will run prior to full-scale IDI. The main purpose of running a pilot is to check whether the instrument will guide us to insightful information and to check if we are recruiting the right people. The pilot can start when we have recruited a few respondents, and continue while recruitment is ongoing. There might be some minor modifications to the instrument after the pilot, based on feedback from the pilot phase.

During the pilot, we will ask randomly selected 50% of respondents to physically check the dustbins for the quantity of plastics, and another 50% to recall plastic quantity from memory. We will assess if results are significantly different to determine the usefulness and feasibility of this plastic counting strategy.

Prior to the interview, we will call respondents to confirm the availability.

Session information

Date:
Session Start Time:
Session End Time:
Interviewer:
Part 1: Icebreaker and background information of respondent

[Introduction] Hello, my name is ..., I am Busara Center for Behavioral Economics. We are currently working with Mr. Green Africa, a recycling start-up based in Nairobi, to understand how household waste, especially plastic, is managed on a daily basis. Thank you for agreeing to take part in this study. This takes about ** minutes of your time.

Let’s start with a small game to get to know more about each other, by telling each other a bit about ourselves and the most cheerful moment of a day. I can start. My name is ..., ..., .... And the most cheerful moment of my normal day is .... What about you?

Thank you, that is interesting to hear. Before we get to the questions, I would like to confirm some of your information provided earlier. [Note down respondent information in the table]:

<table>
<thead>
<tr>
<th>Name</th>
<th>Main Occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Age</td>
</tr>
<tr>
<td>Size of HH</td>
<td>Number of children</td>
</tr>
<tr>
<td>Area living in</td>
<td>Area working in</td>
</tr>
<tr>
<td>Education level</td>
<td>Language spoken</td>
</tr>
<tr>
<td>Monthly HH income</td>
<td></td>
</tr>
</tbody>
</table>

Thank you for confirming the information. Now we are getting to interview questions. I understand that some of the current situations might have been altered due to covid-19. But we are primarily interested in everything before covid-19. So, for each question, please recall what it was like before covid-19.

Part 2: A typical day as a house helper

Section 1: General information at work

1. Could you describe a general daily routine as a house helper? When do you get up, leave home for work? (Probe: how many hours do you work, how many days a week do you work, when do you leave work and get home?)

2. How do you commute to work and get home? (Probe: whether living with the family you work for, any particular challenges associated with this way of commute, scenarios under bad weather, traffic, weekend, etc.)
3. How long have you been working as a house helper at the current residential compound? (Probe: how did you hear about and get this job, have you worked in other areas and/or compounds before, if so, which area, etc.)

4. What are your responsibilities at this job? (Probe: anything you do from entering the compound till leaving, probe for waste management if they do not mention it) [if respondent indicates that s/he is not responsible for waste management at the household, ask who is]

5. What do you like about this job? (Probe: motivation of doing a good job, the favorite part of this job, etc.)

6. If there can be something changed or improved at this job, what would you like to see? (Probe: working hours, flexibility of time, easiness to take time off if you have some emergency to deal with, what would make you switch to another job, etc.)

7. How much do you earn as a house helper per month? (Probe: if respondent refers to per day, per week, convert it to per month and double check)

8. How many people in your household earn some forms of income? (Probe: who are they, what do they do; etc.)

9. Do you have other odd jobs on the side? (Probe: if so, what else do you do, how much time is required for other jobs, including time on commute, etc.)

10. What do you do during the free time after work? (Probe: attend to children, what time during the day and/or week do you do your regular grocery shopping, how easy for you to stop somewhere on the way to work and/or back home, where do you go for regular shopping, how often do you shop from dukas, etc.)

Section 2: Waste management

1. How many people are living in the house? (Probe: are they a family or flatmates, basic demographic about the residents, which floor is it if it is an apartment, how much trash do you take out from the house each time, etc.)

2. [if this respondent is allowed to check the dustbin during the interview] What kind of trash do you see in the dustbin? (Probe: if not able to check dustbin, ask to recall the best memory, food residuals, paper, boxes, drink bottles, cans, bathroom litter, etc.)

3. [if this respondent is allowed to check the dustbin during the interview] What types of plastic waste do you see, if any? (Probe: if not able to check dustbin, ask to recall the best memory, do they know what is plastic, do they know about different types of plastic, etc.)
4. [if respondent indicates in section 1 that s/he is responsible for waste management, confirm it] How much are tenants involved in waste management in the house? (Probe: do tenants leave it on the table/floor and let you clean and dispose, or they put trash in the dustbins and you take it out of dustbins? How many dustbins in the house do you have to clean each time? Where are dustbins kept in the house? etc.)

5. What particular requests or suggestions the tenants would give you, if any? (Probe: waste segregation; what types of plastic is being segregated, if any; etc.)

6. Can you describe a typical process of dealing with the trash at work, step by step? (Probe: when do you start gathering trash, what do you clean out, how do you gather the trash during cleaning, what do you do when you see plastic waste, at what point do you take the trash out of the house, how many bags of trash, do you take elevators or stairs, where do you dump the trash, how far is the dump point, etc.)

7. In an ideal world, what would this process look like for you? (Probe: is there anything that can make this process easier for you, challenges, most difficult or tiring part of this process, who should be involved, who should do what job at what point of time; etc)

8. How do you feel during this process of managing the waste? (Probe: how would you describe your emotions, like “up” at certain points or “down” at certain points; is there any parts during this process you enjoy or do not like, and why; etc.)

9. What does the trash dumping point look like? (Probe: all trash (bags) are dumped into a few big dustbins or there is some segregation? How is trash cleared from the dumping point? If there are contracted trash collectors coming, how often do they come? Is the caretaker or someone at the compound collecting plastic waste separately?)

10. Besides waste management, what else is in your daily work routine? (Probe: what do you do before and/or after handling trash, etc.)

Section 3: Imaginary questions around plastic

1. If you were asked to separate the plastic waste during cleaning, and take it to somewhere, how much extra effort would you imagine is required from you? (Probe: extra time, where to store the plastic if needed; etc)

2. How much are you willing to make this effort, if rating from 1 to 5, with:
   - 1 being ‘not willing at all’
   - 2 being ‘not willing’
3. If you were compensated additionally for sorting plastic waste, how would you rate for your willingness?

4. What types of compensation, or other factors, would motivate you to make this effort of sorting plastic? (Probe: if it is monetary compensation - including cash, airtime, data bundle and other forms that can easily transform to a monetary value, ask for how much)

5. If you were asked to separate the plastic from other waste, at what point would you prefer to do it and why? (Probe: during cleaning, after cleaning the house and before taking it out, after bringing all trash to dumping point)

6. Imagine that separating plastic from other waste has become a routine part of your work, what values do you see in this? (Probe: perception of working on sorting plastic, any stigma related to sorting plastic or waste management you encountered, concern on the stigma, ideas of how to make the work of sorting plastic more respectful, interest in recycling as a business opportunity for themselves; etc.)

7. [if in question 6 respondent does not mention any values they see in plastic, ask] do you know some plastics carry values? (Probe: you can possibly trade certain types of plastic for cash; if they know or have heard about it, ask what types of plastic they know or think can be traded for value)

8. Imagine that separating plastic from other waste and handling it to a collection point in the compound or nearby at a duka has become a routine part of your work, under what scenarios would you possibly skip doing it? (Probe: what do you think the family would feel about you doing this - would they be supportive, unsupportive, wouldn't care; when you have to finish work quickly or rush for some emergency, when it takes long, when it adds travel time between house to collection point, if you need to leave work with kids, if there is objection from the tenants or building owners; etc.)

9. Imagine that you can get a discount at a duka by trading in plastic consistently, what would be the most feasible scenario for you to do this? (Probe: are there some dukas you typically visit on your way home, what would be the furthest distance you would travel to the duka, how often do you see yourself doing this, how much time and transportation costs would you be willing to pay for doing this, etc.)
10. Now let’s say, you are not at work, you are at home, or walking on the street, or going to do some shopping for your family (FOs are free to probe for scenarios the respondent mentioned in section 1 about his/her typical day), now, you see a plastic product not in use, (e.g. bottle, box, container), what would you do with it?

Part 3: More about the plastics and aspirations in life

1. We have discussed quite some topics about plastic. Could you tell me what you know about plastic? (Probe: can you name a few different kinds of plastic; have you noticed the symbol under some plastic bottles or containers; if so, do you know what that means; etc.)

2. What do you think of the relation between plastic and daily life, and the relation between plastic and environment (Probe: the usage of plastic, the impact of plastic, what people you know deal with their plastic waste, what do people you know think of it; etc.)

3. What do you know about recycling and conservation? (Probe: what is recycling for you; any recycling practices you or people you know have done; who do you think can do the conservation, how do plastics relate to environmentalism in your opinion, etc.)

4. What would you describe your relationship with the tenants in the house/apartment? (Probe: how much do you talk each time; what kind of specific requests they bring to you, if any; etc.)

5. What would you describe your relationship with the caretaker, other house helpers, security guards, and other staff working at the compound? (Probe: if the caretaker is not around, whom at the compound will you reach out to for any issues, etc.)

6. What takes up most of your time and energy on a normal day?

7. What do you hope for yourself in the next 5 years?

8. If you have resources to address the top prioritized (or most urgent) challenges in your life, what will you try to solve? (Probe: what are your daily concerns or stress, etc.)
MGA IDI: Waitstaff

Objective

To identify behavioral patterns of waitstaff (including bartenders) around waste management by understanding in-depth details of their day-to-day life as a waitstaff. To identify their ideal engagement scenario with MGA through MGA’s activities and/or engagement models.

Note that we will recruit respondents through a phone screen survey to:
  ● Obtain the consent
  ● Obtain basic demographic data and make sure it is aligned with sampling strategy

During the phone screen survey, we will ask for respondents’ preference on the time slots to be interviewed (e.g. before or after work hours, during work hours, etc.). We will also ask whether they will be at their place of work at the time of the interview (so they can check the amount and type of plastics in the dustbins at their place of work).

A pilot will run prior to full-scale IDI. The main purpose of running a pilot is to check whether the instrument will guide us to insightful information and to check if we are recruiting the right people. The pilot can start when we have recruited a few respondents, and continue while recruitment is ongoing. There might be some minor modifications to the instrument after the pilot, based on feedback from the pilot phase.

During the pilot, we will ask randomly selected 50% of respondents to physically check the dustbins for the quantity of plastics, and another 50% to recall plastic quantity from memory. We will assess if results are significantly different to determine the usefulness and feasibility of this plastic counting strategy.

Prior to the interview, we will call respondents to confirm availability. During the interview, depending on the actual occupation, FOs will replace “waitstaff” by “waiter”, “waitress”, or “bartender”, and replace “restaurant” by “cafe” or “bar” accordingly.

IDI Guide: Waitstaff

Session information

Date:
Session Start Time:
Session End Time:
Interviewer:
**Part 1: Icebreaker and background information of respondent**

[Introduction] Hello, my name is …, I am Busara Center for Behavioral Economics. We are currently working with Mr. Green Africa, a recycling start-up based in Nairobi, to understand how waste, especially plastic, is managed at the restaurant you are working at on a daily basis. Thank you for agreeing to take part in this study.

Let’s start with a small game to get to know more about each other, by telling each other a bit about ourselves and the most cheerful moment of a day. I can start. My name is …, …, …. And the most cheerful moment of my normal day is … . What about you?

Thank you, that is interesting to hear. Before we get to the questions, I would like to confirm some of your information provided earlier. [Note down respondent information in the table]:

<table>
<thead>
<tr>
<th>Name</th>
<th>Main Occupation</th>
</tr>
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<tbody>
<tr>
<td>Gender</td>
<td>Age</td>
</tr>
<tr>
<td>Size of HH</td>
<td>Number of children</td>
</tr>
<tr>
<td>Area living in</td>
<td>Area working in</td>
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<tr>
<td>Education level</td>
<td>Language spoken</td>
</tr>
<tr>
<td>Monthly HH income</td>
<td></td>
</tr>
</tbody>
</table>

Thank you for confirming the information. Now we are getting to interview questions. I understand that some of the current situations might have been altered due to covid-19. But we are primarily interested in everything before covid-19. So, for each question, please recall what it was like before covid-19.

**Part 2: A typical day as a waitstaff**

**Section 1: General information at work**

1. Could you describe a general daily routine as a waitstaff? When do you get up, leave home for work? (Probe: what is your working hour at the restaurant, how many days a week do you work, when do you leave work and get home?)

2. How do you commute to work and get home? (Probe: any particular challenges associated with this way of commute, scenarios under bad weather, traffic, weekend, etc.)
3. How long have you been working as waitstaff at the current restaurant? (Probe: how did you hear about and get this job, have you worked in other restaurants and/or areas before, if so, which area, etc.)

4. What are your responsibilities at work? (Probe: anything you do at work besides serving drinks, any contacts with bottles and other waste left by customers, probe for waste management if they do not mention it) [if respondent indicates that s/he is not responsible for anything about waste management at work, ask who is]

5. What do you like about this job? (Probe: motivation of doing a good job, the favorite part of this job, etc.)

6. If there can be something changed or improved at this job, what would you like to see? (Probe: working hours, flexibility of time, easiness to take time off if you have some emergency to deal with, what would make you switch to another job, etc.)

7. How much do you earn as a waitstaff per month? (Probe: if respondent refers to per day, per week, convert it to per month and double check)

8. How many people in your household earn some forms of income? (Probe: who are they, what do they do; etc.)

9. Do you have other add jobs on the side? (Probe: if so, what else do you do, how much time is required for other jobs, including time on commute, etc.)

10. What do you do during your free time after work? (Probe: attend to children, how easy for you to stop somewhere on the way to work and/or back home, where do you go for regular shopping, how often do you shop from dukas, what time during the day and/or week do you do your regular shopping, self-assessment of “how free I am”, etc.)

Section 2: Plastic consumption at restaurant

1. [Before Covid-19] On a regular day, what are the restaurant’s open hours?

2. On such a regular day, during your working hours, how many customers come to the restaurant, and how many do you serve? (Probe: how many table seats do you have; if it is only for takeaway, note it down; etc.)

3. What do customers usually order for drinks? (Probe: including soft drinks, how is the drink packed, in a glass bottle, can, or plastic bottle, etc.)
4. Does the restaurant offer a water dispenser? And if so, how often do customers use it? (Probe: estimate how many out of 10 customers use the water dispenser, etc. If there is no water dispenser, ask what do you expect to see if there is one)

5. What kind of packages the restaurant will use if customers request a takeaway? (Probe: paper box, paper bag, plastic wrap or container, etc.)

6. [if this respondent is allowed to check the dustbin during the interview] What kind of trash do you see in the dustbin? (Probe: if not able to check dustbin, ask to recall the best memory, food residuals, paper bag, drink bottles, cans, packages, boxes, etc.)

7. [if this respondent is allowed to check the dustbin during the interview] What types of plastic waste do you see, if any? (Probe: if not able to check dustbin, ask to recall the best memory, cutlery, food container, takeaway package, etc.; do they know what is plastic, do they know about different types of plastic, etc.)

8. What are the most commonly seen plastic waste in the dustbin? (Probe: name the top 2 or 3) How many pieces of each type do you see per day? (Probe: just an estimation is fine)

9. What kind of restaurant orders is such plastic waste generated from?

10. How would you describe the group characters of customers who order the food and drinks that generate these types of waste? (Probe: some demographic features, identifiable socioeconomic characters, particular behaviors at the restaurant, etc.)

Section 3: Waste management

1. Who at the restaurant is engaged in collecting and cleaning the waste? (Probe: including collecting leftover from table; which part of this process are you involved in; if the respondent is not involved in this process at all, note down, continue the interview, and consider if to do an IDI with someone who is involved; etc.)

2. Can you describe a typical process of how the leftover from table is managed, step by step? (Probe: who collects the leftovers and plates, when is the collection done, any tools like trays or gloves are used, where is the leftover going to next, any kind of segregation is done during the process, etc.)

3. How many dustbins are there at the restaurant? (Probe: where are they, how much empty space is around the bins, how big is a dustbin, how often are the bins being cleaned, when is the cleaning done, etc.)

4. Now, can you describe a typical process of how waste in dustbin is managed, step by step? (Probe: at what point is the trash taken out of the restaurant, where
is that trash dumped, how far is the dumping point, any kind of segregation is done before the trash is taken to a dumping point, how is the trash taken to the dumping point - e.g. manually moving, using a cart, etc.)

5. In an ideal world, what would this process look like for you, from the table to the dumping point? (Probe: anything that can make this process easier, challenges, most difficult or tiring part of this process, who should be involved, who should do what job at what point of time; etc)

6. [if respondent indicates that s/he is involved in this process] How do you feel during this process of managing the waste? (Probe: how would you describe your emotions, like “up” at certain points or “down” at certain points; are there any parts during this process you enjoy or do not like, and why; etc.)

   [if not] How would you describe the emotional waves of your coworker who takes care of the waste during this process? (Probe: like “up”, “down”, “not much special” at certain points; are there any parts during this process s/he enjoys or does not like, and why; etc.)

7. What does the trash dumping point look like? (Probe: all trash (bags) are dumped into a few big dustbins or there is some segregation? How is trash cleared from the dumping point? If there are contracted trash collectors coming, how often do they come? Is there anyone collecting plastic waste at/near the dumping point separately?)

8. [If the interviewee is not involved in this process] Are there any part of this process you would be interested in participating in, and why?

9. Besides waste management we talked about, what else is in your daily work routine?

Section 4: Imaginary questions around plastic

1. If you were asked to separate the plastic waste at the restaurant, and take it to somewhere, how much extra effort would you imagine is required from you? (Probe: extra time, where to store the plastic if needed; etc.)

2. How much are you willing to make this effort, if rating from 1 to 5, with:
   - 1 being ‘not willing at all’
   - 2 being ‘not willing’
   - 3 being ‘it depends’
   - 4 being ‘willing to’
   - 5 being ‘very much willing to’
   (Probe: if 3 is chosen, depends on what; if others are chosen, ask why)
3. If you were compensated additionally for sorting plastic waste, how would you rate your willingness?

4. What types of compensation, or other factors, would motivate you to make this effort of sorting plastic? (Probe: if it is monetary compensation - including cash, airtime, data bundle and other forms that can easily transform to a monetary value, ask for how much)

5. If you were asked to separate the plastic from other waste, at what point would you prefer to do it and why? (Probe: during the break, at the end of working day, separate the plastic during the day and take it the next day, during the off day, etc.)

6. Imagine that separating plastic from other waste has become a routine part of your work, what values do you see in this? (Probe: perception of working on sorting plastic, any stigma related to sorting plastic or waste management you encountered, concern on the stigma, ideas of how to make the work of sorting plastic more respectful, interest in recycling as a business opportunity for themselves; etc.)

7. Imagine that separating plastic from other waste and handling it to a duka nearby has become a routine part of your work, under what scenarios would you possibly skip doing it? (Probe: what do you think the restaurant owner would feel about you doing this - they be supportive, unsupportive, wouldn't care; what about coworkers; when you have to finish work quickly or rush for some emergency, when it takes long, when it adds travel time between restaurant to collection point, etc.)

8. [if in question 6 respondent does not mention any values they see in plastic, ask] do you know some plastics carry values? (Probe: you can possibly trade certain types of plastic for cash; if they know or have heard about it, ask what types of plastic they know or think can be traded for value)

9. Imagine that you can get a discount at a duka by trading in plastic consistently, what would be the most feasible scenario for you to do this? (Probe: are there some dukas you typically visit on your way home, what would be the furthest distance you would travel to the duka, how often do you see yourself doing this, how much time and transportation costs would you be willing to pay for doing this, etc.)

10. Now let's say, you are not at work, you are at home, or walking on the street, or going to do some shopping for your family (FOs are free to probe for scenarios the respondent mentioned in section 1 about his/her typical day), now, you see a plastic product not in use, (e.g. bottle, box, container), what would you do with it?
Part 3: More about the plastic and aspirations in life

1. We have discussed quite some topics about plastic. Could you tell me what you know about plastic? (Probe: can you name a few different kinds of plastic; have you noticed the symbol under some plastic bottles or containers; if so, do you know what that means; etc.)

2. What do you think of the relation between plastic and daily life, and the relation between plastic and environment (Probe: the usage of plastic, the impact of plastic, what people you know deal with their plastic waste, what do people you know think of it; etc.)

3. What do you know about recycling and conservation? (Probe: what is recycling for you; any recycling practices you or people you know have done; who do you think can do the conservation, how do plastics relate to environmentalism in your opinion, etc.)

4. What would you describe your relationship with the customers and restaurant owners? (Probe: how much do you talk to them; what kind of specific requests they bring to you, if any; etc.)

5. What would you describe your relationship with your coworkers? (Probe: if you need the help from them to collect or return the plastic waste, what do you expect them to say or do, etc.)

6. What takes up most of your time and energy on a normal day?

7. What do you hope for yourself in the next 5 years?

8. If you have resources to address the top prioritized (or most urgent) challenges in your life, what will you try to solve? (Probe: what are your daily concerns or stress, etc.)

MGA IDI: Young population (18-30 years)

Objective
To understand the perception of the young population around waste management and plastic recycling, and further understand their motivations and barriers of plastic recycling. To identify their ideal engagement scenario with MGA through MGA’s activities and/or engagement models.

Note that we will recruit respondents through a phone screen survey to:

- Obtain the consent
- Obtain basic demographic data and make sure it is aligned with sampling strategy

The young population here will include: university graduates, young professionals, and the youth with or without some type of job.

During the phone screen survey, we will ask for respondents’ preference for the time slots to be interviewed. We will also ask where they are likely to be during the interview (so they may check the amount and type of plastics in the dustbin, if there is one around).

A pilot will run prior to full-scale IDI. The main purpose of running a pilot is to check whether the instrument will guide us to insightful information and to check if we are recruiting the right people. The pilot can start when we have recruited a few respondents, and continue while recruitment is ongoing. There might be some minor modifications to the instrument after pilot, based on feedback from the pilot phase.

During the pilot, we will ask randomly selected 50% of respondents to physically check the dustbins for the quantity of plastics, and another 50% to recall plastic quantity from memory. We will assess if results are significantly different to determine the usefulness and feasibility of this plastic counting strategy.

Prior to the interview, we will call respondents to confirm availability.

**IDI Guide: Young population**

**Session information**

Date: 
Session Start Time: 
Session End Time: 
Interviewer: 

**Part 1: Icebreaker and background information of respondent**

[Introduction] Hello, my name is ..., I am Busara Center for Behavioral Economics. We are currently working with Mr. Green Africa, a recycling start-up based in Nairobi, to
understand how household waste, especially plastic, is managed on a daily basis. Thank you for agreeing to take part in this study. This takes about ** minutes of your time.

Let’s start with a small game to get to know more about each other, by telling each other a bit about ourselves and the most cheerful moment of a day. I can start. My name is ..., ..., .... And the most cheerful moment of my normal day is ... . What about you?

Thank you, that is interesting to hear. Before we get to the questions, I would like to confirm some of your information provided earlier. [Note down respondent information in the table]:

<table>
<thead>
<tr>
<th>Name</th>
<th>Main Occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Age</td>
</tr>
<tr>
<td>In school or not</td>
<td>If in school, area of school located</td>
</tr>
<tr>
<td>Education level</td>
<td>Language spoken</td>
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<tr>
<td>Area living in</td>
<td>Area working in</td>
</tr>
<tr>
<td>Monthly HH income</td>
<td>Size of HH</td>
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</tbody>
</table>

Thank you for confirming the information. Now we are getting to interview questions. I understand that some of the current situations might have been altered due to covid-19. But we are primarily interested in everything before covid-19. So, for each question, please recall what it was like before covid-19.

Part 2: Perception, motivation, and barrier

Section 1: General information

1. [if in school] Could you describe a typical day of yours going to school? Like, when do you get up, go to school? (Probe: how many hours do you spend in school, how many hours do you spend on homework after school, what takes up most of your time and energy in a typical day, etc.)

   [if not in school] Could you describe a typical day of yours? Like, when do you get up, what do you do? (Probe: what do you do to earn your primary income, what takes up most of your time and energy in a typical day, how do your weekdays and weekend look like, etc.)

2. [if in school] How do you commute to school and back home? (Probe: any particular challenges associated with this way of commute, scenarios under bad weather, traffic, weekend, etc.)
[if not in school] How do you move around? (Probe: what transportation means do you take to do your daily errands, including walk; any particular challenges associated with this way of commute, scenarios under bad weather, traffic, weekend; etc.)

3. [If in school] What do you do besides school work? (Probe: extra-curricular activities, help with housework, etc.)

4. [If in school] What activities do you do to earn your own pocket money, if any? (Probe: how much do you normally earn from these activities, how often you do it, etc.)

[If not in school] How much do you earn from your primary income source [FOs quote from the primary income source mentioned in question 1, if applicable]? (Probe: if respondent refers to per day, per week, convert it to per month and double check)

5. [If not in school] Besides the primary income source, do you have other odd jobs on the side? (Probe: if so, what else do you do, how much time is required for other jobs, including time on commute, etc. If completely unemployed, what types of jobs have you tried or considered, or would like to try in the future, and why)

6. How many people in your household earn some forms of income? (Probe: who are they, what do they do; etc.)

7. When do you usually have some free time? (Probe: when not occupied by school work or activities, or job obligations)

8. What do you do during your free time? (Probe: any housework you do at home, where do you go for regular shopping, how often do you shop from dukas, what time do you go shopping, etc.)

Section 2: Waste management

1. How many people do you live with? (Probe: basic demographic of the family or housemates, which floor is it if it is an apartment etc.)

2. Who is taking care of the waste at your home? (Probe: how many dustbins are there in the house, where are the dustbins, who collects or dumps trash into dustbins, how often is the trash being taken out, are you and your family or housemates involved in any part of collecting or cleaning, etc.)
3. [if able to check the dustbin during the interview] What kind of trash do you see in the dustbin? (Probe: if not able to check dustbin, ask to recall the best memory, food residuals, paper, boxes, drink bottles, cans, bathroom litter, etc.)

4. [if able to check the dustbin during the interview] What types of plastic waste do you see, if any? (Probe: if not able to check dustbin, ask to recall the best memory, how easy can you tell what is plastic, do you know about different types of plastic, etc.)

5. Could you describe a typical process of the waste at home being handled till the point when it is brought to the dumping point? (Probe: any segregation before waste goes to dustbin, any bags inside the dustbin to hold waste, when is the trash in the dustbin being taken to the dumping point, how heavy it is each time, how far is the dumping point from dustbin, elevators or stairs, how is trash in dustbin being transported to dumping point, etc.)

6. In an ideal world, what would this process look like for you? (Probe: is there anything that can make this process easier, challenges, most difficult or tiring part of this process, who should be involved, who should do what job at what point of time; etc)

7. [if the respondent indicates that s/he is involved in this process] How do you feel during this process of managing the waste? (Probe: how would you describe your emotions, like “up” at certain points or “down” at certain points; is there any parts during this process you enjoy or do not like, and why; etc.)

   [if not] How would you describe the emotional waves of the person who takes care of the waste during this process? (Probe: like “up”, “down”, “not much special” at certain points; are there any parts during this process s/he enjoys or does not like, and why; etc.)

8. What does the trash dumping point look like? (Probe: all trash (bags) are dumped into a few big dustbins or there is some segregation? How is trash cleared from the dumping point? If there are contracted trash collectors coming, how often do they come? Have you seen anyone at/near the dumping point separate and collect plastic waste separately?)

9. [If the respondent is not involved in this process] Are there any part of this process you would be interested in participating in, and why?

Section 3: Perception, motivation and barriers

1. If you were asked to separate the plastic waste at home, and take it somewhere, how much extra effort would you imagine is required from you? (Probe: extra time, where to store the plastic if needed; etc)
2. How much are you willing to make this effort, if rating from 1 to 5, with:
   - 1 being 'not willing at all'
   - 2 being 'not willing'
   - 3 being 'it depends'
   - 4 being 'willing to'
   - 5 being 'very much willing to'

   (Probe: if 3 is chosen, depends on what; if others are chosen, ask why)

3. If you were compensated additionally for sorting plastic waste, how would you rate your willingness?

4. What types of compensation, or other factors, would motivate you to make this effort of sorting plastic? (Probe: if it is monetary compensation - including cash, airtime, data bundle and other forms that can easily transform to a monetary value, ask for how much)

5. If you were asked to separate the plastic from other waste, when and where would you prefer to do it, and why? (Probe: before all waste going into the dustbin, after all waste going into the dustbin and before it is taken to the dumping point, at the dumping point; after finishing homework, weekend; etc.)

6. Imagine that separating plastic from other waste has become a habit of yours, what values do you see in this? (Probe: perception of working on sorting plastic, any stigma related to sorting plastic or waste management you encountered, concern on the stigma, ideas of how to make the work of sorting plastic more respectful, interest in recycling as a business opportunity for themselves; etc.)

7. [if in question 6 respondent does not mention any values they see in plastic, ask] do you know some plastics carry values? (Probe: you can possibly trade certain types of plastic for cash; if they know or have heard about it, ask what types of plastic they know or think can be traded for value)

8. Imagine that it has become a habit for you to separate plastics from other waste and handle it to a collection point on a regular basis, under what scenarios would you possibly skip doing it? (Probe: what do you think your family or housemates would feel about you doing this - would they be supportive, unsupportive, wouldn't care; when you have to finish work/homework, when you need to rush for some emergency, when it takes more than ** hours, when it is raining, when friends and/or classmates make fun of me, etc.)

9. Imagine that you can get a discount at a duka by trading in plastics consistently, what would be the most feasible scenario for you to do this? (Probe: are there some dukas you typically visit, what would be the furthest distance you would travel to the duka, how often do you see yourself doing this, how much time and
transportation costs would you be willing to pay for doing this, how much discount do you expect for this, etc.)

10. Now let’s say, it is just a random moment of your typical day, walking on the street, or going to do some shopping for your family (FOs are free to probe for scenarios the respondent mentioned in section 1 about his/her typical day), now, you see a plastic product not in use, (e.g. bottle, box, container), what would you do with it?

Section 4: Peer influence

1. What do you think your peers think of plastic waste, and what do they do with it? (Probe: classmates, friends, coworkers, etc.)

2. Imagine that your friends and/or classmates see or know that you separate plastics from other waste, what do you think they would say or do? How is that going to influence you? (Probe: how would you feel about what they might say or do, etc.)

3. If you are to reach out and recruit some peers to join this practice of plastic recycling, who do you think is more likely to be engaged in? (Probe: characteristics of these “early adopters”, how would you reach out to them; if no peer, any other “early adopters” in the family and community, etc.)

Part 3: More about the plastics and relationship with family/peer

1. We have discussed quite some topics about plastic. Could you tell me what you know about plastic? (Probe: can you name a few different kinds of plastic; have you noticed the symbol under some plastic bottles or containers; if so, do you know what that means; etc.)

2. What do you think of the relation between plastic and daily life, and the relation between plastic and environment (Probe: the usage of plastic, the impact of plastic, what people you know deal with their plastic waste, what do people you know think of it; etc.)

3. What do you know about recycling and conservation? (Probe: what is recycling for you; any recycling practices you or people you know have done; who do you think can do the conservation, how do plastics relate to environmentalism in your opinion, etc.)

4. Can you describe your relationship with your family/housemates and peers, generally? (Probe: what types of activities you would like to do together, etc.)
5. What do you hope for yourself in the next 5 years?

6. If you have resources to address the top prioritized (or most urgent) challenges in your life, what will you try to solve? (Probe: what are your daily concerns or stress, etc.)

**MGA IDI: Tenants**

**Objective**

To understand the perception of tenants around waste management and plastic recycling, and further understand their motivations and barriers of plastic recycling. To identify their ideal engagement scenario with MGA through MGA’s activities and/or engagement models.

Note that we will recruit respondents through a phone screen survey to:

- Obtain the consent
- Obtain basic demographic data and make sure it is aligned with sampling strategy

The tenants here represent a more general profile of residents in Nairobi. We expect to see a more diverse socioeconomic background in this group. Some of them do not have a house helper, some of them might own a duka, some of them have children and some do not.

During the phone screen survey, we will ask for respondents’ preference for the time slots to be interviewed. We will also ask where they are likely to be during the interview (so they may check the amount and type of plastics in the dustbin, if there is one around).

A pilot will run prior to full-scale IDI. The main purpose of running a pilot is to check whether the instrument will guide us to insightful information and to check if we are recruiting the right people. The pilot can start when we have recruited a few respondents, and continue while recruitment is ongoing. There might be some minor modifications to the instrument after the pilot, based on feedback from the pilot phase.

During the pilot, we will ask randomly selected 50% of respondents to physically check the dustbins for the quantity of plastics, and another 50% to recall plastic quantity from memory. We will assess if results are significantly different to determine the usefulness and feasibility of this plastic counting strategy.
Prior to the interview, we will call respondents to confirm availability.

IDI Guide: Tenants
Session information

Date:
Session Start Time:
Session End Time:
Interviewer:

Part 1: Icebreaker and background information of respondent

[Introduction] Hello, my name is ..., I am Busara Center for Behavioral Economics. We are currently working with Mr. Green Africa, a recycling start-up based in Nairobi, to understand how household waste, especially plastic, is managed on a daily basis. Thank you for agreeing to take part in this study. This takes about ** minutes of your time.

Let’s start with a small game to get to know more about each other, by telling each other a bit about ourselves and the most cheerful moment of a day. I can start. My name is ..., ..., ... And the most cheerful moment of my normal day is ... . What about you?

Thank you, that is interesting to hear. Before we get to the questions, I would like to confirm some of your information provided earlier. [Note down respondent information in the table]:

<table>
<thead>
<tr>
<th>Name</th>
<th>Main Occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Age</td>
</tr>
<tr>
<td>Number of children</td>
<td>Area living in</td>
</tr>
<tr>
<td>Has a house helper or not</td>
<td>Owns a duka or not</td>
</tr>
<tr>
<td>Education level</td>
<td>Language spoken</td>
</tr>
<tr>
<td>Size of HH</td>
<td>Monthly HH income</td>
</tr>
</tbody>
</table>

Thank you for confirming the information. Now we are getting to interview questions. I understand that some of the current situations might have been altered due to covid-19. But we are primarily interested in everything before covid-19. So, for each question, please recall what it was like before covid-19.

Part 2: Perception and engagement of plastic recycling

Section 1 : General information
1. Could you describe a typical day of yours? (Probe: when do you get up, what do you do to earn your primary income, how many hours do you work, what takes up most of your time and energy in a typical day, how do your weekdays and weekend look like, etc.)

2. How do you usually move around? (Probe: what transportation means do you take, including walk; any particular challenges associated with this way of commute, scenarios under bad weather, traffic, weekend; etc.)

3. [for duka owners] What do you sell at your duka? (Probe: how many customers on a typical day, any peak time of business, do you offer credit or discount to customers sometimes, etc.)

4. How much do you from your primary income source [FOs quote from the primary income source mentioned in question 1, if applicable]? (Probe: if respondent refers to per day, per week, convert it to per month and double check)

5. Besides the primary income source, do you have other odd jobs on the side? (Probe: if so, what else do you do, how much time is required for other jobs, including time on commute, etc.)

6. How many people in your household earn some forms of income? (Probe: who are they, what do they do; etc.)

7. What do you do during your free time after work? (Probe: attend to children, what time during the day and/or week do you do your regular grocery shopping, how easy for you to stop somewhere on the way to work and/or back home, where do you go for regular shopping, how often do you shop from dukas, etc.)

Section 2: Waste management

1. How many people are living in the house? (Probe: basic demographic of household members, which floor is it if it is an apartment, how much trash do you take out from the house each time, etc.)

2. Who is responsible for the waste management at your household? (Probe: if the answer is not self, first ask if the respondent is involved to some degree)

[additional question for duka owners] how about the waste at duka? (Probe: is it the same person that handles household waste, how far is duka from where they live, is the waste at duka handled separately from household waste, or together?)

3. [if there is a house helper] What are the responsibilities of the house helper? (Probe: how many times a week does the house helper come, what time during
4. How is waste management done, generally? (Probe: how many dustbins are there in the house, where are the dustbins, who collects or dumps trash into dustbins, how often is the trash being taken out, etc.)

[additional question for respondents who have children above 5 years ago] Are there any part of collecting or cleaning where the children are engaged? (Probe: dump their own trash, help cleaning, etc.)

[additional question for duka owners] how about the situation at duka?

5. [if able to check the dustbin during the interview] What kind of trash do you see in the dustbin? (Probe: if not able to check dustbin, ask to recall the best memory, food residuals, paper, boxes, drink bottles, cans, bathroom litter, etc.)

[additional question for duka owners] how about the dustbin at duka?

6. [if able to check the dustbin during the interview] What types of plastic waste do you see, if any? (Probe: if not able to check dustbin, ask to recall the best memory, how easy can you tell what is plastic, do you know about different types of plastic, etc.)

[additional question for duka owners] how about the dustbin at duka?

7. The waste at home being handled till the point when it is brought to the dumping point? (Probe: any segregation before waste goes to dustbin, any bags inside the dustbin to hold waste, when is the trash in the dustbin being taken to the dumping point, how heavy it is each time, how far is the dumping point from dustine, elevators or stairs, how is trash in dustbin being transported to dumping point, etc.)

[additional question for duka owners] how about the waste at duka?

8. In an ideal world, what would this process look like for you? (Probe: is there anything that can make this process easier, challenges, most difficult or tiring part of this process, who should be involved, who should do what job at what point of time; etc)

9. [if the respondent indicates that s/he is involved in this process] How do you feel during this process of managing the waste? (Probe: how would you describe your emotions, like “up” at certain points or “down” at certain points; is there any parts during this process you enjoy or do not like, and why; etc.)
[if not] How would you describe the emotional waves of the person who takes care of the waste during this process? (Probe: like “up”, “down”, “not much special” at certain points; are there any parts during this process s/he enjoys or does not like, and why; etc.)

10. What does the trash dumping point look like? (Probe: all trash (bags) are dumped into a few big dustbins or there is some segregation? How is trash cleared from the dumping point? If there are contracted trash collectors coming, how often do they come? Is the caretaker or someone at the compound collecting plastic waste separately?)

[additional question for duka owners] is there a collecting point at your duka, or a duka you know? (Probe: if no, how you like to have customers come to your duka and trade in plastics, why; where will you store the plastics, etc.)

Section 3: Perception, motivation and barriers

1. If you were asked to separate the plastic waste at home, and take it to somewhere, how much extra effort would you imagine is required from you? (Probe: extra time, where to store the plastic if needed; etc)

[additional question for those who have children above 5 years ago] How interested do you think your children might be in helping you? (Probe: what do you think they would like to do here, etc.)

[additional question for duka owners] what about separating plastics from other waste at the duka and store it at or near the duka? (Probe: do you think the plastics might get stolen if you put it outside duka, need extra effort for monitoring, etc.)

2. How much are you willing to make this effort, if rating from 1 to 5, with:
   - 1 being ‘not willing at all’
   - 2 being ‘not willing’
   - 3 being ‘it depends’
   - 4 being ‘willing to’
   - 5 being ‘very much willing to’

(Probe: if 3 is chosen, depends on what; if others are chosen, ask why)

3. If you were compensated additionally for sorting plastic waste, how would you rate your willingness?

4. What types of compensation, or other factors, would motivate you to make this effort of sorting plastic? (Probe: if it is monetary compensation - including cash,
airtime, data bundle and other forms that can easily transform to a monetary value, ask for how much)

5. If you were asked to separate the plastic from other waste, at which point would you prefer to do it, and why? (Probe: before all waste going into the dustbin, after all waste going into the dustbin and before it is taken to the dumping point, at the dumping point; etc.)

6. Imagine that separating plastic from other waste has become a habit of yours, what values do you see in this? (Probe: perception of working on sorting plastic, any stigma related to sorting plastic or waste management you encountered, concern on the stigma, ideas of how to make the work of sorting plastic more respectful, interest in recycling as a business opportunity for themselves; etc.)

[additional question for those who have children above 5 years ago] Have your children ever asked you questions about plastics? (Probe: how would you feel if your children tell you they want to recycle plastic or manage waste, etc.)

7. [if in question 6 respondent does not mention any values they see in plastic, ask] do you know some plastics carry values? (Probe: you can possibly trade certain types of plastic for cash; if they know or have heard about it, ask what types of plastic they know or think can be traded for value)

8. Imagine that it has become a habit for you to separate plastics from other waste and handle it to a collection point on a regular basis, under what scenarios would you possibly skip doing it? (Probe: what do you think your family or neighbours would feel about you doing this - would they be supportive, unsupportive, wouldn't care; when you have to finish work/homework, when you need to rush for some emergency, when it long, when it is raining, when friends and/or classmates make fun of me, etc.)

9. [for non-duka owners] Imagine that you can get a discount at a duka by trading in plastics consistently, what would be the most feasible scenario for you to do this? (Probe: are there some dukas you typically visit, what would be the furthest distance you would travel to the duka, how often do you see yourself doing this, how much time and transportation costs would you be willing to pay for doing this, how much discount do you expect for this, etc.)

[for duka owners] Imagine that customers can return in plastics at your duka, and when it accumulates to a certain amount, customers can get a discount for shopping at your duka, what would be the most feasible scenario for you to do this? (Probe: customers clean plastics before bringing in, customers buy more than *** KSH commodities from the duka, there will be someone coming to pick up regularly to clear the space, how often should it be picked, how much discount would you offer, etc.)
10. Now let’s say, it is just a random moment of your typical day, walking on the street, or going to do some shopping (FOs are free to probe for scenarios the respondent mentioned in section 1 about his/her typical day), now, you see a plastic product not in use, (e.g. bottle, box, container), what would you do with it?

Part 3: More about the plastics and aspirations in life

1. We have discussed quite some topics about plastic. Could you tell me what you know about plastic? (Probe: can you name a few different kinds of plastic; have you noticed the symbol under some plastic bottles or containers; if so, do you know what that means; etc.)

2. What do you think of the relation between plastic and daily life, and the relation between plastic and environment (Probe: the usage of plastic, the impact of plastic, what people you know deal with their plastic waste, what do people you know think of it; etc.)

3. What do you know about recycling and conservation? (Probe: what is recycling for you; any recycling practices you or people you know have done; who do you think can do the conservation, how do plastics relate to environmentalism in your opinion, etc.)

4. Can you describe your relationship with your family and neighbours, generally? (Probe: how often do you chat, any activities you would like to do together, etc.)

[additional question for duka owners] Can you describe your relationship with your customers? (Probe: do you know them, who are they, how many of them are frequent customers, etc.)

5. What do you hope for yourself in the next 5 years?

[additional question for these who have children above 5 years] what do you hope for your children?

6. If you have resources to address the top prioritized (or most urgent) challenges in your life, what will you try to solve? (Probe: what are your daily concerns or stress, etc.)