CASE STUDY REPORT

Study location	*Lamu, Kenya*
Organization or researcher that developed the case study	*The Flipflopi Project*
Dates	*May 2024*

A METHODOLOGY TO ASSESS THE LIVING INCOME OF WASTE PICKERS

Introduction to the document:

Context:

In 2024, the study "A living income for the informal waste sector" piloted a methodology with local NGOs to assess the concept of a "living income" for informal waste workers with the goal to create a practical methodology to promote the provision of a living income within these supply chains. Case surveys were developed in 2023 in locations in India, Ghana and Brazil.

This toolkit was developed in the first half of 2024, as part of Phase 2 of the Living Income Assessment. The toolkit is open to be used by anyone and can be used under the CC 4.0 license.

Structure of the overall toolkit:

There are three components to the overall toolkit: a PowerPoint manual, an Excel document and a Word template.

1. A PowerPoint toolkit gives a complete overview of the full methodology.
2. An Excel document is for the final data of the conducted assessment to be recorded.
3. This Word document to record the background of the case study, note down critical assumptions taken in the Final Data sheet (Tab 2) in the Excel document, and summarize key learnings and recommendations.

Recommended length of the word document

(for guidance only):

- Intro and methodology - 0.5 pages
- Establishing a baseline - 1 page
- Living income - 1 page
- Benchmarks - 0.5 pages
- Key learnings and recommendations - 0.5 to 1 pages

Total 3 to 4 pages

Template Input

Introduction & methodology

The purpose of the research was to gain insight into the informal waste picker supply chain in Lamu. Interviews were conducted by three Flipflopi Project staff- Lynette Aloo, Davina Ngei, and Abu Bakr Khalid in Amu Town and the Flipflopi Project Site (both on Lamu Island). A majority of the interviews were collected between the 10th and 22nd of May.

Survey questions provided by Systemiq were entered into a Google Form with a few additional questions included to help us form an estimation for decent living (health costs, education, food, utilities etc).

Several respondents were interviewed and 40 made it to the final database - 23 were regular Flipflopi plastic collectors, 5 collected plastic for multiple buyers, and 12 collected other materials (wood, flip flops, metal). This sample selection is intended to be representative of the waste picker supply chain in Lamu.

To engage the metal collectors, two metal buyers were contacted, to give us access to their network.

A – Establishing a Baseline

1. The metal waste pickers are more established; some have worked in this sector for decades. In comparison, picking plastic waste is more recent, with most starting this work during the last three years.
2. Most of the waste pickers are low-income and vulnerable members of the community. Picking waste is often a result of no available income streams (42.5% had waste picking as their only income stream), little to no job opportunities, and barriers caused by a lack of formal education or training. Many of the women waste pickers also started this work to provide food and school fees for their children.
3. There is a cultural barrier that prevents Swahili women and men from taking part in waste picking. The Swahili are one of the largest and most prominent ethnic groups in Lamu and have historically been comprised of the wealthier members of society. Few of the plastic waste pickers are Swahili, and most of the metal waste pickers have come from other parts of the country.
4. Most of the waste pickers work independently. Among the plastic waste pickers, competition is high for plastics as many other collectors are involved. This also poses a big hindrance to increasing earnings from this work.
5. Most of the metal waste pickers treat their work as a business. They are more aware of recurrent sources for collection and are clearer on the volumes of material they sell.
6. The nature of plastic waste picking and metal waste picking is different. Metal workers sell more frequently, while plastic waste collectors will accumulate a larger volume to sell. This could be due to the respective prices of the material, storage capacity, and the fact that plastic is voluminous but light in weight.
7. A small percentage of waste pickers had a financial obligation to their buyer - most of whom were metal waste pickers. Furthermore, a lot of buyer-seller relationships are trust-based.
8. Food insecurity is high among waste pickers, regardless of the material picked or total earnings.
9. An overwhelming majority (92.5%) of waste pickers have access to a form of transportation, the most common being pushcarts, tractors, boats, donkeys, and motorbikes. Aggregators also had access to trucks for onward transportation to larger towns.
10. Despite the many modes of transport available (as seen in the point above), it is one of the more challenging aspects of the work. Many waste pickers will traverse long distances looking for material and will only use transport to ferry large volumes for storage or to their buyer.
11. The metal waste pickers will travel far distances for work (including to other islands) and stay out of the home during this period. This is not a trait that was recorded for any female waste pickers or plastic waste collectors.

B - Living Income Estimate

B1 – Healthy Diets Survey

The costs of a healthy diet in Lamu are estimated at KES 36,000 per household per month.

The Living Wage Report in rural Kericho (Kenya) led by the Anker Research Institute in 2022[1] mentioned the following:
"*The estimated cost of the model diet is KES 154.1 per person per day or KES 23,429 per family per month (i.e., 23,429 KES = 154.056 KES x (365/12) x 5). This corresponds to USD 1.28 per person per day or USD 195 per family per month*".

Given the specific geography of Lamu and its remoteness and what it implies in terms of access to food, we felt that the analysis conducted in Kericho should be adapted to the Lamu context.

The minimum dietary diversity was investigated in the Demographic Health Survey conducted in 2022 in Kenya[2].

Minimum dietary diversity is defined as consuming foods from 5 or more of the following 10 food groups:
a. grains, white/pale starchy roots, tubers, and plantains;
b. pulses (beans, peas, lentils);
c. nuts and seeds;
d. dairy (milk, cheese, yoghurt, other milk products);
e. meat, fish, poultry, organ meats;
f. eggs;
g. dark green leafy vegetables;
h. other vitamin A-rich fruits and vegetables;
i. other vegetables;
j. other fruits.

In addition, the DHS provides a list of unhealthy foods. It includes sweet foods such as cakes, sweet biscuits, candies, chocolates, ice cream, or ice lollies; and fried and salty foods such as crisps, chips, ngumu (*half cake*), mandazi (*fried pastry*), samosa (*fried pastry)*, bhajias (*fried snack)*, or Indomie (*noodles*).

Assuming that 3 meals must be eaten daily, we selected the 6 most common food groups consumed in Lamu and created 3 typical affordable local meals excluding unhealthy foods.

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[1] https://www.globallivingwage.org/wp-content/uploads/2023/07/LIVING-WAGE-REPORT_Rural-Kericho-Kenya-FINAL.pdf

[2] https://www.knbs.or.ke/wp-content/uploads/2023/07/Kenya-DHS-2022-Main-Report-Volume-1.pdf

The 6 most common food groups consumed in Lamu are the following:
a. grains, white/pale starchy roots, tubers, and plantains;
b. pulses (beans, peas, lentils);
d. dairy (milk, cheese, yoghurt, other milk products);
e. meat, fish, poultry, organ meats;
f. eggs;
g. dark green leafy vegetables;

Based on these categories, three common local and affordable meals are:

- Cassava/bread, milk tea, eggs;
- Rice, beans;
- Fish, Leafy vegetables, Ugali.

Given the local prices, the cost of these meals are on average KES 90, 100 and 140[3] per person respectively, hence a total of KES 330 per day per person.

On average, the interviewed waste pickers spend KES 578 per day for food for their household, which equates to KES 109 per person per day (considering the actual household size of our sample).
8 binary questions (yes/no answers) on diet vis-a-vis available financial resources over the last 12 months were asked during the interviews. On average the interviewed waste pickers answered “yes” to 7 of these questions. We can thus assume that what they are spending on food is not enough to satisfy their nutritious needs.

We then have 3 estimates:

- KES 154.1 per person per day for Kericho in 2022, which would be equivalent to KES 165.9 (154.1*1.0767) considering the 2023 inflation rate for Kenya, which does not correspond to the remoteness specificity of Lamu;
- KES 330 per person per day for Lamu based on our analysis;
- KES 109 per person per day based on the actual waste picker expenditures which do not represent a healthy diet.

Given the limited scope of our local analysis, we opted for a conservative estimate of KES 300 per person per day for the cost of a healthy diet in Lamu.
Which represents KES 36,000 for a family of 4[4] per month.

[3] For instance, one single egg varies from KES 25 to 30 in Lamu (as opposed to 15-20 in Nairobi for instance), 250g of beans cost KES 70, 250g of rice KES 60, 500ml of milk KES 90, 1 kg of Ugali (maize flour) KES 90 and the cheapest fish you could get is KES 100.
[4] The average household size is 3.6 for Lamu West Sub-County according to the 2019 Kenya Population and Housing Census (https://dataspace.princeton.edu/handle/88435/dsp01f1881p79p)

B2 - Decent Housing Survey

The costs of decent housing are estimated at KES 6,579[5] per household per month.

A. Rent

The rent costs per household per month are estimated at KES 3,929.

Among our sample, it is more common to rent rather than own a house or an apartment. This is why we considered the price for rent to estimate the cost of decent housing.

24 waste pickers were asked about their rent per month. Excluding one outlier (the highest value), the average rent per month is KES 3,500. But of course, this also considers non-decent housing.

Considering only the waste pickers who responded “Yes” to 9 or 10 of the decent housing questions (out of 10), the average rent is KES 3,929 per month (with 7 answers considered). Which is comparable to what was estimated by the Anker Research Institute in rural Kericho in 2022 (KES 3,542).

B. Utilities

The total utility costs (electricity, cooking fuel and water) per household per month are estimated at KES 2,650.

The Anker Research Institute estimated the following utility costs in rural Kericho in 2022:

- electricity costs = KES 600 per month (i.e. KES 646 adjusted for inflation in 2023);
- cooking fuel (firewood and charcoal being dominant in rural Kericho) = KES 1,000 (i.e. KES 1,076.7 adjusted for inflation in 2023);
- water = 175 KES (i.e. KES 188.4 adjusted for inflation in 2023).

Electricity

The electricity costs per household per month are estimated at KES 750.

24 waste pickers were asked about their electricity expenditures per month. Excluding the outliers (and the 4 waste pickers using solar systems), their expenditures were KES 540 per month (15 responses considered).
We also asked 4 non-waste picker workers (2 vegetable vendors and 2 security guards) about their monthly electricity expenditures, the average was KES 1,050.

[5] KES 5,317 were estimated for rural Kericho in 2022.

We thus decided to use an estimate between the average of the waste pickers (which may not cover a fully satisfactory use of electric appliances) and the average of the non-waste pickers workers, hence KES 750.
This is close to the estimate made by the Anker Research Institute in 2022 in rural Kericho adjusted for inflation in 2023, i.e. KES 646.

Cooking fuel
The cooking fuel costs per household per month are estimated at KES 1,500.

The characteristics of rural Kericho and Lamu are similar in terms of cooking fuel. Firewood and charcoal are also the most common cooking fuel in Lamu, and based on the 24 waste pickers who were interviewed on this topic, as in rural Kericho, it is frequent to collect fireweed for free in Lamu.
Nevertheless, for the 15 waste pickers who reported a monthly expenditure for firewood or charcoal, the average was KES 1,773. This may reflect the price difference between the locations as per the food items.
To be on the conservative side, given the small size of our sample, KES 1,500 is considered for the monthly cooking fuel expenditures.

Water
The water costs per household per month are estimated at KES 400.

13 of the 24 waste pickers interviewed on this topic do not have water expenditure because they use water from a well for free. Based on the Living Wage Report in rural Kericho led by the Anker Research Institute, these wells are most likely unprotected and do not meet the Anker Research Institute decency standard. This is even more true in Lamu, being an island, as well water could become salty during some periods of the year.
11 waste pickers reported a monthly expenditure for water. Excluding the one outlier, the average is KES 490 per month per household. These expenditures are mainly related to drinking water, as the other water needs are covered by water from a well.
To be conservative, given the small size of our sample, KES 400 is considered for the monthly water expenditures.

B3 – Healthcare Costs

The health costs per household per month are estimated at KES 1,686.

The Anker Research Institute estimated the healthcare costs in rural Kericho in 2022 to be KES 800 per household per month (family of 5 people), this represents KES 160 per person. This would represent KES 640 for Lamu since the average family size is 4 based on the last census conducted in 2019.

The 2018 Kenya Household Health Expenditure and Utilization Survey estimated the annual per capita out-of-pocket health expenditure for Lamu County to be KES 2,600, and KES 1,800 for Kericho County. This represents KES 217 per person for Lamu County and KES 150 for Kericho County.

These two data sources give comparable estimations for Kericho County. Given that the 2018 Kenya Household Health Expenditure and Utilization Survey has county-specific data, it has been decided to follow their estimation and adjust it for the annual inflation rates between 2018 and 2023 (i.e. 5.2% in 2019, 5.41% in 2020, 5.62% in 2021, 7.66% in 2022 and 7.76% in 2023). A monthly per capita out-of-pocket expenditure of KES 296.5 is thus found. This represents KES 1,186 per household per month (for a family of 4 people).

Since most of the waste pickers, being informal, are not registered in NHIF, KES 500 (the minimum voluntary monthly deposit) should be added to the previous estimation to consider the exclusion cost endured by the waste pickers (NHIF covers the nuclear family which includes the principal member and legally declared spouse and children[6]).

B4 – Education Costs

The education costs per household per month are estimated at KES 7,084.

According to the Living Wage Report in rural Kericho led by the Anker Research Institute in 2022, "*The median monthly cost for primary school according to workers and head teachers is 816 KES per month. For secondary school, the median monthly cost estimated by workers and head teachers is 2,233 KES*".

From our understanding, these amounts refer to costs per child and cover all the costs inherent to sending a child to school (uniforms, books etc.).

If we try to apply the calculation method presented in the methodology to these figures, we would find an estimate of KES 9,147 per household per month for an average family with 3 children in rural Kericho.

Considering that an average family in Lamu has 2 children, we would have an estimate of KES 6,098 per household per month.

To consolidate this, 24 waste pickers were asked about their education expenditures. School fees for primary and secondary education per child were asked, as well as expenditures per child related to school items and exams.

[6] https://www.nhif.or.ke/members/

For the primary education fees, the answers had a wide range, from KES 1,800 to KES 13,500. Excluding two outliers (the lowest and the highest values), the average primary school fees per child per year are KES 6,182.

For the secondary education fees, the answers had also a wide range, from KES 12,000 to KES 75,000. Excluding one outlier (the maximum), the average secondary school fees per child per year are KES 27,900.

For school items expenditures, the answers had also a wide range, from KES 2,000 to KES 30,000. Excluding three outliers (the lowest value and the two highest values), the average expenditure for school items per child per year is KES 7,607.

For the exam fees, the answers varied from KES 100 to KES 2,000. Excluding the lowest and the highest values, the average per child per year is KES 817. It should be noted that for 40% of the waste pickers interviewed, the exam fees are included in the school fees.

The education costs per child per year are thus as follows:

- primary school fees = KES 6,182;
- secondary school fees = KES 27,900;
- school items = KES 7,607;
- exam fees = KES 817.

Hence a total of KES 42,506 per child per year.
Considering the average family in Lamu with 2 children, this represents KES 7,084 per household per month.

This is comparable to what can be estimated for Lamu using the figures presented in the Living Wage Report for rural Kericho (i.e. KES 6,098). Considering that cost of living is higher in Lamu than in Kericho and to take into consideration the inflation between 2022 and 2023, we chose to follow our estimation of KES 7,084.

B5 – Costs of decent work

The cost of decent work per household per month is KES 16,761.

The vast majority of the interviewed waste pickers walk to reach the places where they collect waste. Nevertheless, some mentioned that they have to cover quite a distance before reaching the place where they collect waste (dumpsite, beach or mangroves).
In Lamu, a short to medium-distance motorbike ride costs KES 100 (there is no public land transport on Lamu Island). Hence a daily cost of KES 200 for safe transport is estimated.
This represents KES 4,000 per month (200 x 5 days per week x 4 weeks per month (considering that the interviewed waste pickers work on average 5 days a week)).

To this cost must be added the cost to transport the waste from where it is collected to the buyer. This cost is higher for waste pickers focusing on metal. All waste pickers combined, this cost represents on average KES 5,000 per month.

Two shops were visited in Lamu to investigate the local prices of personal protective equipment (PPE). The average prices are as follows:

- cloth masks = KES 50;
- safety gloves (as opposed to medical ones) = KES 200;
- overall = KES 2,500.

Assuming that waste pickers use 4 masks per year, 1 pair of gloves per month and 2 overalls per year, the estimated cost for PPE is:

- masks = KES 200 per year;
- gloves = KES 2,400 per year;
- overall = KES 5,000 per year.

Hence a monthly cost for PPE of 7,600 per year (633 per month).

The total cost of decent work is thus KES 9,633 per month multiplied by the Full time worker equivalent specific to Kenya (1.74), hence KES 16,761.

B6 – Saving

The savings are set at 10% of the total living income, hence KES 6,811 per month.

C – Compiling Benchmark Incomes

The 2021 Kenya Poverty Report of the Kenya National Bureau of Statistics estimates the overall poverty lines in monthly adult equivalent terms were at KES 3,947 and KES 7,193 for rural and urban areas, respectively.

In 2022, the minimum wage in the formal sector for areas different from Nairobi, Mombasa, Kisumu, Nakuru cities and all former municipalities and town councils of Mavoko, Ruiru and Limuru was set at KES 8,109.09 for the general labourer (including cleaner, sweeper, gardener, children's caregiver, house servant, day watchman and messenger).

As a comparison, this minimum wage in the formal sector was set at KES 15,201.65 for Nairobi, Mombasa, Kisumu and Nakuru cities.

The Living Wage Report of the Anker Research Institute estimated the living wage for full-time workers in rural Kericho at 26,932 KES (224 USD) per month in 2022, which would represent KES 28,998 if adjusted for inflation in 2023.

In Lamu County, formal waste collectors have different salary pay grades depending on their experience and time spent on the service. However, the average pay grade is rated KES 800 per day, which is equivalent to KES 12,800 per month.

4 workers in each of the following sectors were interviewed about their monthly income:

- agricultural workers = KES 7,500 per month;
- construction workers = KES 12,000 per month;
- food vendors = KES 6,000 per month.

Observations & Lessons Learnt

- Waste segregation needs to occur at the household level, and this can only occur if households understand the importance and value of this activity (supported by policy to do so). Many metal waste pickers bought their material from households, who had kept it aside knowing that collectors come to make the purchase. Segregation is the only way to dignify and sustain waste collection, otherwise, waste pickers are forced to collect from formal and informal dumpsites/transit stations which contain contaminated hazardous waste.
- Waste pickers should be formalised into cooperatives, where they can benefit from free healthcare services, free education for their children, personal protective equipment, and subsidised food. These costs were a challenge to meet for most interviewees, with nearly all foregoing any PPE.
- Sensitisation campaigns need to be conducted among residents of the islands, to understand the importance of waste collection. The burden of this work falls on the most vulnerable, who are also shamed or discouraged from taking part in this work. One of the waste collectors stated that she had not seen any benefits from collecting plastic waste over the years, and was upset that the benefits scheme offered by her buyer was not sufficient. She remarked that even during a holy month like Ramadhan, she expected some support but saw none. Additionally, one of the plastic waste collectors explained how he often gets shamed by people who pass him on the street, however, he sees the work as better than begging for food or stealing. Formalising the collectors and recognising their work is critical (see point above).
- The price of waste is meagre - plastic has a very low financial return and most metals have only slightly more. Without a fee for household collection, a County budget for waste management, or landfill gate fees, waste pickers are completely dependent on fluctuating earnings that are not equivalent to the work put in. As a livelihood, waste picking is unsustainable. With low barriers to entry, lack of cooperation and more competition will make the little earnings even more scarce.
- Following the above, a lot of the existing waste in Lamu is multi-layered flexible packaging which doesn't have a market. While waste pickers are doing an incredible job of cleaning the environment, the large volumes of unrecyclable material are still destructive and need to be addressed at the primary manufacturing level.

Appendix - Assumptions When Asking Questions

Below are some questions from the survey, as well as an explanation of how we asked them/assumptions we made when asking them.

15. Do you have access to a vehicle (e.g., pushcart or a car)?
Answers here reflect the types of transport used by waste pickers to carry out their work. The assumption is that they have access to a vehicle, they can afford it, and they have used it at least once for their work. Vehicles considered were tractors, trucks, boats, pushcarts, motorbikes, and donkeys.

17. How far do you travel to the buyer?
The answers are based on the distance between the collector's home and the buyer's location. It does not consider the distance travelled by the waste pickers from the areas where they collect to the areas where they store before selling.

31. Do you own or have access to any of the following? [31.1 A house build with acceptable materials?]
Acceptable materials are assumed to be permanent materials e.g. stone, mud, wood, makuti (weaved palm leaves), and iron sheets. Unacceptable materials are assumed to be impermanent/temporary materials, such as nylon, plastic sheets, and plastic sacks.

31. Do you own or have access to any of the following? [31.2 Access to electricity?]
‘Yes’ answers also include solar.

31. Do you own or have access to any of the following? [31.9 Safe outside environment?]
Safety included security (from theft or wild animals), as well as safety from floods and landslides (natural threats).

31. Do you own or have access to any of the following? [31.10 No production in your house (no animals)]
‘Yes’ answers mean that there is no production. ‘No’ answers mean that there is production - animals are sleeping in the same room.

33. What alternative job opportunity do you have?
This question was asked in two ways: what other opportunities for work do waste pickers currently have and based on their existing skills, what other opportunities could they possibly have?

34. Why do you waste pick over another job?
This question assumes that you can only do one job at a time. We believe this is an incorrect assumption.