

CASE STUDY REPORT

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| Study location | <i>Nairobi, Kenya</i> |
| Organization or researcher that developed the case study | <i>The Flipflop Project</i> |
| Dates | <i>June 2024</i> |

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

This research aimed to gain insight into the informal waste picker supply chain in Nairobi. Interviews were conducted by one Flipflopi Project staff - Davina Ngei and two consultants - Wavinya Mutua and John Kimani, in Dandora, Mathare, Mukuru, and Kibra. The interviews were conducted between the 10th and 13th of June.

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 42 made it to the final database. This sample selection is intended to be representative of the waste picker supply chain in Nairobi.

To engage the waste collectors, we engaged the Alliance for Waste Pickers, Amusha network, Muungano wa Vijiji, and a consultant from Taka Taka Solutions.

A – Establishing a Baseline

1. Many of the interviewed waste pickers at Dandora sell to aggregators on the dump site, and therefore, do not need to concern themselves with paying for transport. A few of the waste pickers have, however, decided to engage larger recyclers away from the dumpsite to get a better price.
2. Waste pickers tend to sell their materials daily, especially for those who lack storage to accumulate large volumes. The ability to get cash daily is seen as a positive for many of the waste pickers interviewed, as they can cater to their daily needs. However, this means that they struggle to enter jobs where the payment frequency is less e.g. weekly or monthly.
3. There is diversity in the materials demanded at the dumpsite, including plastic, paper, cardboard, animal bones, organics, hair pieces, and glass.
4. Several of the waste pickers are in debt to their aggregators. For some of them, this debt is simply an advance given to support urgent payments/emergencies, hence, why waste pickers prefer to work with aggregators who they trust and who can support them when they need it.
5. Waste pickers at Dandora are highly dependent on third-party forces. They collect/buy from incoming private trucks, however, the frequency of these trucks is unreliable. When no new trucks are coming in, work stops. When the trucks come at night, this poses a disadvantage to women waste pickers who have to care for their families and who are unable to work night shifts. Additionally, each private truck that comes in is assigned by larger players (nicknamed *big fish*), to certain groups of collectors. To get assigned to trucks that have recyclable materials is competitive.
6. Previously, the county government would pay private contractors to bring in waste, however, they failed to pay the contractors, resulting in strikes. Now, the county has trucks/excavators but fails to fuel them, which pauses incoming waste from county trucks (sometimes up to 4 weeks).
7. Waste pickers tend to work longer hours as the trucks have no fixed schedule. This means they are forced to wait, sometimes idly, until their assigned private truck/a county truck arrives.
8. In Dandora, waste pickers will often be assigned certain materials on a private truck e.g. one person can pick PET bottles, another metal, another glass. There is, therefore, an informal collaboration between waste pickers assigned to a truck. There is also a gender hierarchy when it comes to waste picking - while county trucks are accessible to all, private trucks are assigned to specific groups (as detailed in point 5). Furthermore, more valuable items like plastic and metal are assigned to men, while organics and soft plastics are left for women.
9. Waste pickers struggle without PPE, which is critical in an environment like the Dandora dumpsite. Some recycling companies have made donations of PPE to waste pickers, which helps them in their work. There are more stories of violence and injury when working on the dumpsite, including cut hands, getting knocked over by the tractors, breathing in polluted air, and getting into fights with other waste pickers. One waste picker narrated how it is difficult to get medical attention, as clinic/hospital staff dismiss them because of their line of work. This waste picker also shared that this behaviour led to the preventable death of his friend who was unattended to. Furthermore, when it is hot, the dump site can light on fire. This leads to air pollution and burns which waste pickers have no money to treat. One waste picker mentioned that she has found dead bodies/aborted babies in the trash which is traumatising. At night, there is also the risk of rape and you need to walk in a group.

10. Young men are now collecting hard plastics directly from the trucks before they reach the dump site. This means it has become difficult to find hard plastic and other valuable recyclables at the dump site. Older waste pickers complain that they mostly find what the youth won't pick - such as soft plastic. There are also many young people on the dumpsite, including those who are educated. This makes competition hard with young people being faster.
11. The continued privatisation of waste companies is a fear, as this will reduce the work available to waste pickers at the dump site (private companies have now started sorting recyclable materials that they receive from households).
12. There is more price dynamism at the Dandora dumpsite. Waste pickers can move freely between aggregators and recyclers based on the price offered, and this has led to increases in the prices of certain types of plastic due to demand across the city.
13. If you're new to the dumpsite, or go to an untrustworthy aggregator, they might use faulty scales. For those who can't read, they get cheated easily.
14. The question of how long a person can survive without any money was hard to perceive for many people. Their lifestyle requires an adaptable mindset, and even if waste pickers might miss out on earnings for a few days, they are constantly looking for other ways to earn an income.
15. Several of the interviewed waste pickers at the Dandora dumpsite started their work as children.
16. Many men shared that it is difficult to start a family when working as a waste picker, as they cannot financially sustain a wife and children.
17. With the hard economic times, hard plastic has become more difficult to come by. People are not buying goods in hard plastic any more, but are instead using other less-recyclable packaging including sachets and soft plastic. There is also an increase in the reuse of hard plastic. This affects earnings for waste pickers.
18. In Mathare and Mukuru, the recycling market is underdeveloped. There is a lack of training on what waste materials are valuable and many aggregators give low prices to waste collectors. One group mentioned that their income is impacted by a lack of time for sorting and a lack of power for their crushing machines, which would fetch a higher price while also saving on space.
19. There were unsafe practices identified at Mukuru dumpsite, as a steel company was dumping toxic slag. As this material has value, waste pickers will collect it, however, they complain that it makes them feel like they are 'breathing sugar into their chest' and that it also corrodes skin (considering that many do not have PPE). The slag has also been seen to have more intense impacts on alcoholic waste pickers, who need a few days to recuperate after they come into contact with it.
20. In Kibera, most of the waste pickers we spoke to were living at the dumpsite. Many of the men were drug or alcohol-dependent and spent a lot of their earnings on their addiction. They also face additional struggles such as getting sick from sleeping in a dumpsite, getting robbed, and crossing a busy road to get to their aggregator which is dangerous. Additionally, the dynamics at smaller dumpsites are different, as waste only comes once or twice a week. That means for the rest of the week, it is difficult to find recyclable materials to sell.
21. Many waste pickers across the different dumpsites found it challenging to articulate the volume of waste they collect. One reason for this is that inconsistency in the availability of materials means that volumes of waste are always changing. Also, several waste pickers lack formal education and are either not told their volumes by the aggregator or do not understand or remember their volumes.

B - Living Income Estimate

B1 – Healthy Diets Survey

The costs of a healthy diet in Nairobi are estimated at KES 24,300 per household per month.

The Living Wage Report in rural Kericho (Kenya) led by the Anker Research Institute in 2022¹ 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”.

Nevertheless, this study is about a rural context and gives little information for the urban context of Nairobi.

In 2014, the Anker Research Institute carried out a similar study in peri-urban areas in Naivasha. This study is too old to be used now and was not considered to describe the urban context of Nairobi.

The minimum dietary diversity was investigated in the Demographic Health Survey conducted in 2022 in Kenya².

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*).

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>

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

The 6 most common food groups consumed in Nairobi 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:

- Bread, eggs, milk tea;
- Rice, lentils;
- Omena (dried fish), Leafy vegetables, Ugali.

Given the local prices, the cost of these meals are on average KES 80, 65 and 115 per person respectively, hence a total of KES 260 per day per person.

On average, the interviewed waste pickers spend KES 219 per day for food for themselves. 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 2 estimates:

- KES 260 per person per day for Nairobi based on our analysis;
- KES 219³ per person per day based on the actual waste picker expenditures which do not represent a healthy diet.

KES 270 per person per day is considered for a healthy diet in Nairobi, which represents KES 24,300 for a family of 3⁴ per month.

B2 - Decent Housing Survey

The costs of decent housing are estimated at KES 7,200 per household per month.

A. Rent

³ It should be noted that several waste pickers mentioned that KES 500 is what they would need to eat well per day.

⁴ The average household size is 2.9 for Nairobi City according to the 2019 Kenya Population and Housing Census (<https://dataspace.princeton.edu/handle/88435/dsp01f1881p79p>)

The rent costs per household per month are estimated at KES 5,000.

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.

20 waste pickers were asked about their rent per month. The average rent per month is KES 2,600. But of course, this also considers non-decent housing. Indeed only 3 waste pickers responded “Yes” to 9 or 10 of the decent housing questions (out of 10).

It is considered that the rent for a decent house/apartment is KES 5,000 for Nairobi.

B. Utilities

The total utility costs (electricity, cooking fuel and water) per household per month are estimated at KES 2,200.

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 350.

19 waste pickers were asked about their electricity expenditures per month. Their average expenditures were KES 283 per month.

We also asked 4 non-waste picker workers (2 construction workers, 1 vegetable vendor, 1 security guard) about their monthly electricity expenditures, the average was KES 375.

KES 350 is considered for the monthly electricity expenditures.

Cooking fuel

The cooking fuel costs per household per month are estimated at KES 1,350.

19 waste pickers were asked about their cooking fuel expenditures per month. Their average expenditures were KES 1,333 per month.

We also asked 4 non-waste picker workers (2 construction workers, 1 vegetable vendor, 1 security guard) about their monthly cooking fuel expenditures, the average was KES 1,313.

KES 1,350 is considered for the monthly cooking fuel expenditures.

Water

The water costs per household per month are estimated at KES 500.

19 waste pickers were asked about their water expenditures per month. Their average expenditures were KES 411 per month.

We also asked 4 non-waste picker workers (2 construction workers, 1 vegetable vendor, 1 security guard) about their monthly cooking fuel expenditures, the average was KES 495.

KES 500 is considered for the monthly water expenditures.

B3 – Healthcare Costs

The health costs per household per month are estimated at KES 1,793.

The 2018 Kenya Household Health Expenditure and Utilization Survey estimated the annual per capita out-of-pocket health expenditure for Nairobi City to be KES 3,800. This represents KES 317 per person per month.

After adjustment 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), it represents a monthly per capita out-of-pocket expenditure of KES 431.

This represents KES 1,293 per household per month (for a family of 3 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 children⁵).

B4 – Education Costs

The education costs per household per month are estimated at KES 3,720.

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.).

⁵ <https://www.nhif.or.ke/members/>

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 Nairobi City has 1 child, we would have an estimate of KES 3,049 per household per month.

To consolidate this, 20 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.

For the primary education fees, the answers had a wide range, from KES 4,500 to KES 25,500. Excluding one outlier (the highest value), the average primary school fees per child per year are KES 9,300.

For the secondary education fees, a very limited number of waste pickers had children in secondary schools, only three answers were collected with a wide range (KES 4,500; 24,000 and 75,000). Hence an average of KES 34,500.

Given the small size of our sample, a conservative estimate of KES 30,000 is considered.

For school items expenditures, the average expenditure per child per year is KES 3,544.

For the exam fees, the average per child per year is KES 1,800.

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

- primary school fees = KES 9,300;
- secondary school fees = KES 30,000;
- school items = KES 3,544;
- exam fees = KES 1800.

Hence a total of KES 44,644 per child per year.

Considering the average family in Nairobi City with 1 child, this represents KES 3,720 per household per month.

This is comparable to what can be estimated for Nairobi City using the figures presented in the Living Wage Report for rural Kericho (i.e. KES 3,049). Considering that cost of living is higher in Nairobi City than in Kericho and to take into consideration the inflation between 2022 and 2023, we chose to follow our estimation of KES 3,720.

B5 – Costs of decent work

The cost of decent work per household per month is KES 5,787.

The vast majority of the interviewed waste pickers walk to reach the places where they collect waste. The others either use public transport or a taxi motorbike.

In Nairobi, a bus ride costs KES 50, (one way), hence a daily cost of KES 100 for safe transport is estimated.

This represents KES 2,000 per month (100 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 hire a vehicle to transport the waste. The most common vehicle is a pushcart. On average, hiring a pushcart costs KES 650 per month.

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

- cloth masks = KES 100;
- safety gloves (as opposed to medical ones) = KES 320;
- overall = KES 1,400;
- gumboots = KES 1,075.

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

- masks = KES 400 per year;
- gloves = KES 3,840 per year;
- overall = KES 2,800 per year;
- gumboots = KES 1,075 per year.

Hence a monthly cost for PPE of 8,115 per year (676 per month).

The total cost of decent work is thus KES 3,326 per month multiplied by the Full time worker equivalent specific to Kenya (1.74), hence KES 5,787.

B6 – Saving

The savings are set at 10% of the total living income, hence KES 4,280 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 Nairobi, Mombasa, Kisumu, Nakuru cities was set at KES 15,201.65 for the general labourer (including cleaner, sweeper, gardener, children's caregiver, house servant, day watchman and messenger).

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.

County waste collectors in Nairobi are paid KES 500 per day⁶. Assuming they work 20 days per month, this represents KES 10,000 per month.

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

- Security guard (4 individuals) = KES 11,000 per month;
- construction worker (3 individuals) = KES 16,500 per month;
- vegetable vendor (3 individuals) = KES 7,100 per month.

⁶ Besides, the Kazi Mtaani programme (a national programme implemented at a county level) paid youth KES 500 per day to collect waste in informal settlements for instance.

Observations & Lessons Learnt

- Private trucks should have schedules for bringing in waste, or at least the means to communicate when they are arriving. This would allow waste pickers to use their time more efficiently.
- There needs to be increased transparency and fairness in assigning incoming trucks to waste pickers - this should not be based on gender or other biased attributes.
- The infrastructure of the Dandora dumpsite can be improved to allow for access during rainy seasons. At the moment, if it is too muddy, trucks will divert to other dumpsites.
- It is important to have more regulation on what is allowed to be dumped by companies, to prevent toxic materials from being irresponsibly disposed of in low-income communities, such as was shared by a waste picker in Mukuru.
- To increase waste picker revenue, many suggested that start-up capital is needed to allow them to buy items such as scales, provide access to land to sort and store materials, and also increase their ability to aggregate/purchase from households or other collectors.
- A big challenge for waste pickers is non-recyclable waste. Plastic packaging (e.g. food sachets, toiletry wrappings), diapers, sanitary items, and textiles make up a majority of waste at the dumpsite, yet they have no value. This can be addressed at a policy/regulatory level.
- Surviving solely on the earnings from selling recyclable materials is difficult, especially considering the growing competition as the number of waste pickers increases. Many waste pickers outside of Dandora are conducting household collections, but getting paid is a challenge. The household collection fee could support a lot of their expenses. One waste picker suggested a government tax for waste disposal, which could support people like him who do the work but do not get paid. There are some existing national initiatives to achieve this, including the newly enacted Extended Producer Responsibility which would subsidise registered waste pickers and recyclers.
- There is an observed lack of trust and cooperation between waste pickers in Nairobi. Unlike Kisumu, welfare programmes (outside those initiated by large recyclers like Mr Green and Taka Taka Solutions) are hard to identify. Waste picker-led welfare associations could support waste pickers with PPE, medical cover, literacy, and emergencies.
- As more households and garbage collectors learn the value of recyclable materials, more of these materials are getting diverted before they reach the dump site. It is therefore critical that waste pickers get formalised or integrated into waste management and recycling, otherwise, it will be impossible to sustain an increasing number of people sorting through mixed waste at the dumpsite attempting to look for decreasing amounts of recyclable materials. While formalising waste pickers, it should also be remembered that most are dependent on daily earnings, and thus transitioning to weekly or monthly income would be difficult at the onset.

- To be able to support alcohol and drug-dependent waste pickers, it is not sufficient to look for ways to increase their income. Rehabilitation programmes are needed.
- Literacy training is important to help waste pickers understand pricing and volumes, and reduce their vulnerability to unscrupulous aggregators.

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, pushcarts, and motorbikes.

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.