



CENTRE FOR EARTH  
WORKS (CFEW)

# *Plastic* BRAND AUDIT REPORT



2023



# PLASTIC BRAND AUDIT REPORT

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# EXECUTIVE SUMMARY

The past six decades witnessed the introduction of different nascent plastic materials which were highly appreciated globally due to their water-resistance nature, durability, and affordability. These qualities of plastics supported the convenient packaging of most household items and other industrial products that support human consumption thus, promoting the production of large quantities of plastics including single-use plastics. However, since plastics are made of non-biodegradable substances, it poses serious threats to the world's ecosystem with grave health effects on both human and marine lives. A local study of children and adolescents living and going to school near major dumpsites across African urban centers reported respiratory, gastrointestinal, and dermatological illnesses. But to date, there is no international data on the health impacts of burning plastic waste, especially single-used plastics.<sup>1</sup>

Nigeria is a major producer of plastics in Africa with its petrochemical industry growing annually because of the growing population and increasing product demand, especially for packaging plastics materials, plastics bottles, and construction materials as good as this might be for the economy of the country, Nigerian government and/or industries has put in place an effective waste management system that will address the increasing plastics waste pollution in Nigeria. According to data from Statista, the production volume of plastics in Nigeria reached 513,000 tons in 2020, and it is speculated to keep increasing with demand<sup>2</sup>.

Thus, this report aims to serve as an advocacy tool to enable Nigeria Break Free from plastic pollution and drive the advancement of a cleaner, healthier, and sustainable environment that promotes biodiversity by providing valuable insight into the Nigerian plastics 'tsunami'(pollution) situation, the gravity of plastic waste generated by corporate brands (Brand audit), and the necessity of having effective recycling and disposal mechanisms. It also aims to proffer suitable recommendations for addressing the plastics pollution crisis in Nigeria while exposing the major polluters in order to hold corporate polluters accountable for their actions and to draw the attention of the government towards seeking sustainable solutions and implementation of policies that will address plastics pollution in the country.



<sup>1</sup> UNEP 2016.

<sup>2</sup> <https://www.statista.com/statistics/994632/plastic-consumption-nigeria/>

# Introduction

**Plastics, the once-hailed “miracle material” that has revolutionized manufacturing, is increasingly shedding, spreading, and leaching into the water bodies, soil, and air, threatening both life on land and underwater. Its non-biodegradable nature - which means it doesn’t decompose or takes a long time to degrade into the earth, makes it a key component of pollution. Plastics are a group of synthetic materials made from hydrocarbons formed by polymerization: a series of chemical reactions on organic (carbon-containing) raw materials, mainly natural gas and crude oil. Plastic takes several years of about 20 to 450 years to decompose depending on the type of plastic.**

Plastics are everywhere and are highly appreciated globally because they are water-resistant, durable, relatively affordable, and easily disposable, which makes life incredibly convenient. This “lifestyle of convenience” was largely wrapped in single-use plastics like plastic straws, single-use plastic bags, polystyrene plates, and polypropylene utensils for takeaway food, forming the material basis of daily life. Also, the positive image of plastics and their affordability contributed to the boom in their use. Plastics are seen as trendy, clean, and modern. Eventually, they pushed out existing products and muscled their way into almost all areas of life. Plastics freed us from the confines of **the** material constraints and limited supplies that had long-bounded human activity. That new elasticity unfixed social boundaries as well. The arrival of these malleable and versatile materials gave their manufacturers the ability to create a treasure trove of new products while expanding opportunities for people of modest means to become consumers. Plastics held out the promise of a new material and cultural democracy.<sup>3</sup>

Plastics were first popularised in the 1960s, with the introduction of the plastic grocery bag in America by Gustaf Thulin Sten, an employee of Celloplast, a company that originally sold cellulose film. In 1965, Celloplast obtained a U.S. patent for the idea that was later called “the T-shirt plastic bag,” which is still being used today. World War



Plastic-induced waste pollution ©CFEW/Bukumi

II necessitated a great expansion of the plastics industry in the United States, as industrial expansion proved vital to the war effort. The need to preserve scarce natural resources made the production of synthetic alternatives a priority. Plastics provided those substitutes. Nylon, invented by Wallace Carothers in 1935 as a synthetic silk, was used during the war for parachutes, ropes, body armour, helmet liners, and more. Plexiglas provided an alternative to glass for aircraft windows. A Time magazine article noted that because of the war, plastics proved to be even more adaptable than previously known. The adaptability of plastics is demonstrated all over again. During World War II, plastic production in the United States increased by 300%. This also extended to other parts of the world.<sup>4</sup>



<sup>3</sup> Susan Freinkel 2011

<sup>4</sup> <https://sciencehistory.org/education/classroom-activities/role-playing-games/case-of-plastics/history-and-future-of-plastics/>



# Plastic in Africa

It is on record that Egypt, Nigeria, South Africa, **Algeria and** Morocco are the largest contributors to plastic pollution on the African continent. These countries are among the top 20 coastal countries in the world contributing to marine plastic pollution. Africa generated a total of 19 million tonnes of plastic waste in 2015, the average amount of mismanaged plastic waste in coastal African countries was estimated at 4.4 million tonnes.<sup>5</sup> A more recent study estimates a much larger number, which also included contributions from land-locked countries, of which 17 million tonnes were mismanaged and projected to triple by 2060 in the business-as-usual scenario.<sup>6</sup>

According to a report from the World Health Organization (WHO), Africa produces 5% and consumes 4% of global plastic volumes. Total global plastic production in 2020 was over 400 million tonnes.<sup>7</sup>



<sup>5</sup> Jambeck et al., 2018.

<sup>6</sup> Lebreton and Andrady, 2019

<sup>7</sup> UNEP, 2021a

# Plastics in Nigeria:

The Plastic Tsunami that no one saw coming

## Plastic History in Nigeria

As young boys, growing up in Nigeria in the 1990s, Dotun and Yoila witnessed the introduction of an intriguing **trade by barter** system, in their childhood neighbourhoods. Men known as “Yan Kwalabe” (scavengers) moved from house to house collecting glass, enamel, aluminium containers **and related** items in exchange for **bright coloured** basins, cups and drums made of plastics. Never before had they seen this thing called “plastic”. It was colourful, bright, lightweight, and the best part, it didn’t shatter into pieces when it fell, unlike the shattered pieces of glass that had earned them several strokes in the past. **Overtime**, plastics became more popular, they now have plastic cutlery to use (instead of the heavy ones made of steel), colourful plastic lunch boxes soon became a trend; water was stored in plastic bottles and eventually in sachets.

Within the space of two years, Plastics were everywhere and it made such perfect sense to them, because with every new plastic item they used, the easier life got, some of them were even disposable; eliminating the stress of doing the dishes! Plastics brought so many new opportunities for traders, food vendors, parents, **children and** all Nigerians, opportunities for an easier and more convenient life gradually luring them into the trap of a plastic tsunami that would someday be the cause of their troubles. The proliferation of single-use plastics occasioned by indiscriminate



throwing away in large numbers, poor waste disposal and management systems, coupled **with absence** of policies at local and national levels have birthed this tsunami.

## Plastic Production

Nigeria is a major producer of plastics in Africa. Nigeria's plastic industry is driven by the country's petrochemical industry and large growing population. The country has a population of over 200 million people, and this number is expected to continue to grow in the **coming years**. While the growing population is creating a huge demand for plastic products, such as packaging, bottles, and construction materials. Plastic production is set to increase along with the importation of virgin **plastics pallets**.

Leoplast Nigeria Limited is the oldest and largest plastics-producing company in Nigeria. Their products range from household items, furniture, coolers, casseroles, paint buckets, and packaging. According to data from Statista, the production volume of plastics in Nigeria reached 513,000 tons in 2020, and it is speculated to keep increasing with demand.<sup>8</sup>

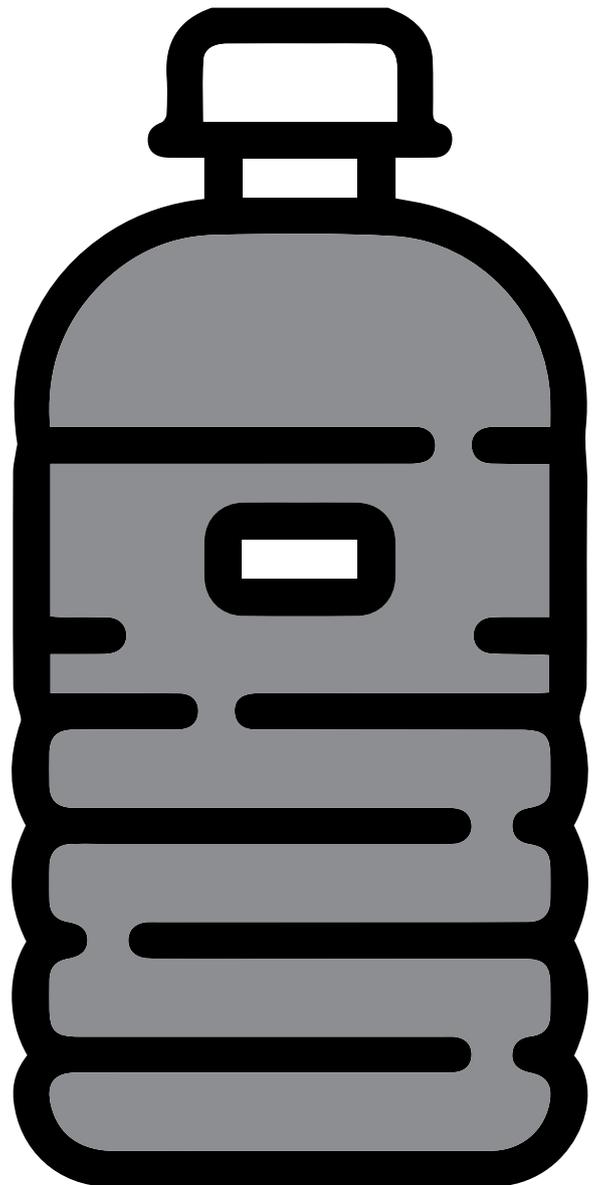
<sup>8</sup> Statista,



# Plastic Usage

A report published by McKinsey & Company showed that the plastic sub-sector had grown by 5% over the past 5 years and 7.5% over the past 10 years with major plastic production companies like Holborn Plastic Company, Deltaplast Limited, Black Horse Plastic Products to mention a few.<sup>9</sup> In other words, tons of plastic products **are** consumed by Nigerians every year **which are being** produced by these companies; for disposable, domestic, or public use. Domestic use of plastics in Nigeria includes plastic chairs, plastic tables, plastic buckets, plastic plates, spoons and cups, plumbing materials for buildings, and lots more.

**The major types of plastics produced in Nigeria are thermoplastics comprised mainly** of polypropylene (PP), polyamide (PA; PA6 + PA66), polyethylene terephthalate resin (PET), polyethylene (PE; high density-PE, low density-PE, Linear low-density-PE), polyvinyl chloride (PVC), polystyrene (PS), acrylonitrile butadiene styrene (ABS), styrene-acrylonitrile resin (SAN) and polycarbonate (PC). The wide variety of plastic products available within Nigeria alone and the resulting high demand for them has made it impossible to depend solely on the importation of plastics, which has led to the drastic rise in the number of **plastics producing** industries in Nigeria. The evidence of Nigeria's plastic consumption rate can be seen in almost all dumping sites within the country which are littered with disposable plastic bottles and the popular black polythene packaging bags as well. These bags and other plastic products make up 80% of the total waste in every dump site in Nigeria.



<sup>9</sup> McKinsey & Company 2023

Table 1; Shows some plastics their uses.

S/N	Short Name	Symbols	Scientific Name	Uses
1	PET		Polyethylene terephthalate	Soft drink bottle, food packaging, carpet 
2	HDPE		High-density polyethylene	Milk jugs, hard bottles, agricultural pipes 
3	LDPE		Low-density polyethylene	Plastic bags, tubes, trays 
4	PVC		Polyvinyl chloride	Boots, Pipes, Shower curtain, Lawn chairs 
5	PP		Polypropylene	Pill bottles, Auto parts, bottle caps, food tubes 
6	PS		Polystyrene	Foam, hinged lids, yoghurt cups 
7			Others	Unknown and unidentifiable plastics 

# Pollution Impact

As we mentioned previously, plastics are easy to access, they are everywhere and easy to use, so it's easy or almost 'natural' for every Nigerian to resort to using plastic products for one thing or another daily. However, most people rarely think about the effects it has on the environment. Unlike other materials, it never really goes away. Plastic takes more than 400 years to degrade, so most of it still exists in some other forms. Only 12 per cent have been incinerated, others break down into microscopic pieces of plastic that are still non-biodegradable hence, cannot decompose. The problem goes beyond this as plastic fragments most often find their way into the oceans and water bodies.

This is the current situation of plastic pollution in Nigeria where the daily production of plastics is skyrocketing to meet the ever-increasing demand of consumers.

While a lot of effort is put into production and distribution, very little effort is channelled toward the disposal and recycling of these products. Nigeria is the ninth-highest global contributor to plastic pollution, producing about 2.5 million tonnes of plastic waste annually.<sup>10</sup> This is why Brand Audits are essential in order to hold the producers, distributors, consumers, and the government accountable for the effective disposal and recycling of plastic waste.



©CFEW/Benson

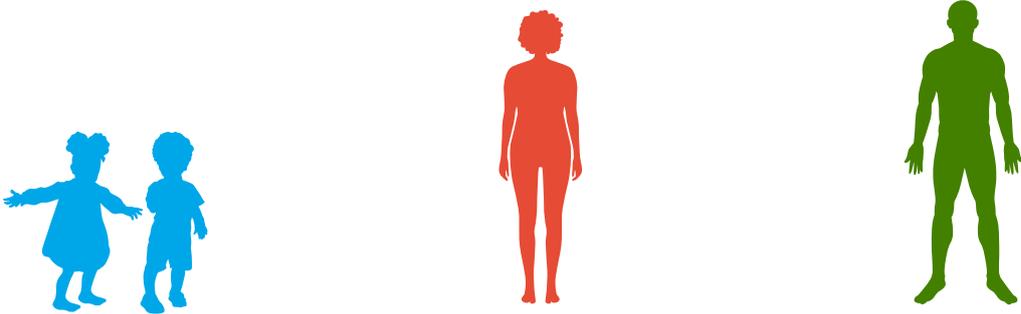
# Effects of Plastics on Health

The effects of plastics are very diverse as they affect health and food systems. These plastics get into the body as microplastics through inhalation, ingestion or skin contact. A local study of children and adolescents living and going to school near major dumpsites across African urban centres reported respiratory, gastrointestinal, and dermatological illnesses. But to date there is no international data on the health impacts of burning waste.<sup>11</sup> The Nigerian plastic tsunami has dangerous impacts on the health of Nigerians especially women who suffer the most impacts. Women are more affected by plastics than men. This is because biologically, their bodies react in different ways to toxins, and the hygiene products that women use such as sanitary pads which may comprise up to six per cent plastic, and sanitary pads consist of up to 90 per cent petroleum-based plastic. This puts them at greater risk of diseases like breast cancer and affects their unborn babies in the case of pregnant women.

<sup>10</sup> (The Conversation.)

<sup>11</sup> UNEP 2016

Table 2; Shows the Invisible health dangers associated with hormonally active substances in plastics.



Children	Women/Preg. Women	Men
Low I.Q	Low birth weight	Low sperm count
Cancer	Breast Cancer	Prostate Cancer
	Developmental disorders in Embryo	Neurological disorders
Attention Deficit disorder (hyper activity)	Thyroid disorder	
	Infertility	
Early puberty	Diabetes	
	Obesity	
	Kidney failure	
	Cardiovascular disorders	
	Gastrointestinal disorders	

“Dioxins are highly toxic and can cause reproductive and developmental problems, damage the immune system, interfere with hormones and also cause cancer,” WHO says in a report titled Dioxins and Their Effects on Human Health. There is an urgent need to address the health impacts linked to plastic production, usage and disposal in Nigeria, this requires urgent action to be taken along the plastic value chain.<sup>12</sup>

<sup>12</sup> <https://www.who.int/news-room/fact-sheets/detail/dioxins-and-their-effects-on-human-health>

# Water Sachet/ Styrofoam/ Leather Bags

## Water Sachets

The origin of sachet water production in Nigeria dates back to the 1990s. The emergence and proliferation of sachet water production is connected to poor funding and failure of the urban and rural water supply schemes of the Nigerian government. This failure empowered entrepreneurs to take advantage of the situation by mass producing portable sachet water in order to meet the demand of the growing population.

Sachet water, referred to locally as “pure water,” is a major source of drinking water for many middle and **low income** Nigerians. It is affordable costing about N250.00 (\$0.32) per bag and N20 (\$0.025) each, ‘pure water’ is sold everywhere in Nigeria, street hawkers cry “Aunty/Uncle buy pure water!!” to parched citizens stuck in traffic, shop owners put up signs that read ‘Pure water here’ and water factories can be found on nearly every street, producing water sachets for distribution in these medium and **low income** communities. This gradually became a norm even in rich neighbourhoods. The problem is, these sachets are essentially a small sealed polypropylene plastic **sleeve**, a multilayer plastic that is dangerous to these consumers as well as the environment. The littered plastic sachets contribute to blocking drainages and pipes and emitting greenhouse gases (GHG). Sachet water has grown to become a primary source of drinking water for many urban households and a multibillion-dollar industry—and a veritable consumer phenomenon—throughout West Africa.



## Styrofoam

Styrofoam, another common plastic product in Nigeria, is made out of styrene which is a petroleum-based product. It is used in many ways, from packaging and insulation to crafting and food **storage and** has grown to be one of the easiest ways of sharing the famous “Nigerian Jollof” and “**Small Chops**” in parties. Like other plastics, styrofoam is non-biodegradable, it takes hundreds of years to decompose. Styrofoam products are usually rejected by environmentalists because they argue it causes environmental catastrophe. Over 260 species, including invertebrates, have been reported to have either ingested plastic or become entangled in the plastic.<sup>13</sup> Styrofoam is susceptible to sunlight in a process referred to as photodegradation or light disintegration. Constant sunlight exposure affects and discolours styrofoam changing it into a powdery material, over several months. These are usually discarded on the streets and drains leading to increased levels of pollution and clogging of drainage systems leading to floods costing millions in damages to lives and properties.<sup>14</sup>

<sup>13</sup> Barroso 2020

<sup>14</sup> Kehinde, et. al., 2020

## Plastic Bags

Plastic bags are commonly used to carry items like food and clothes, from the shops and markets. They constitute a major item of urban solid waste, this has resulted in many detrimental environmental effects including animal choking, pollution, blockage of channels, rivers and streams, and landscape disfigurement. There are several root causes of plastic bag pollution notably the convenience it offers. However, this convenience has eventually become a problem because of the dangers plastic bags have on our environment and human and animal health. The major impact of plastic bags on the environment is that it takes many years for them to decompose. In addition, toxic substances are released into the soil when plastic bags perish under sunlight and, if plastic bags are burned, they release a toxic substance into the air causing ambient air pollution. Simons (2005)<sup>15</sup> suggests that, owing to the unregulated accumulation of carcinogenic compounds, the use of plastic bags may allow inroads into cancerous diseases. Plastic bags are dumped indiscriminately into landfills worldwide that occupy tons of hectares of land and emit dangerous methane and carbon dioxide gases as well as highly toxic leachates from these landfills during their decomposition stage.

Waste from plastic bags **poses** serious environmental danger to human and animal health. If plastic bags are not properly disposed of, they can impact the environment by causing littering and **storm water** drain blockages.

Animals may also get tangled and drown in plastic bags. Animals often confuse the bags for food and consume them, therefore blocking their digestive processes. Animals becoming entangled in marine debris, including plastic bags, may cause starvation, choking, laceration, infection, reduced reproductive success, and mortality.<sup>16</sup> There were instances where large endangered tortoises were found to have suffocated because of the mistaken swallowing of plastic bags combined with seaweed.<sup>17</sup>

Water sachets, **styrofoams and** nylon (plastic) bags constitute a major portion of solid waste in landfills, styrofoam in particular which has a very low recycling rate. According to a 2004 study by the California Integrated Waste Management Board, of the 377,580 tons of polystyrene produced in the state, only 0.8% is **recycled** of that, only 0.2% (310 tons) of polystyrene food service

packaging is recycled.<sup>18</sup> Incineration of these materials releases toxic gases and chemicals to the environment and consequently challenges the health of people in such environments. This calls for urgency in providing sustainable alternatives to these materials.

Eventually, it is safe to say that one of the human activities that precipitated the devastating flood disaster of 2022 in Nigeria is blockage of water channels and drainages by refuse which water sachets, styrofoam and leather bags were the major culprits.



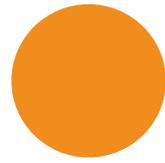
<sup>15</sup> Simons (2005)

<sup>16</sup> Katsanevakis, 2008.

<sup>17</sup> Thiel et al, 2003.

<sup>18</sup> California Integrated Waste Management Board, 2004.

# Plastics & its Relations with Climate Change



Transport, **energy and** agriculture are the sectors most often blamed for climate change. However, the huge emissions released into the atmosphere by plastic production, **usage and** disposal are often relegated to the background. The rapid increase in plastic usage has extensive effects on climate change as well, while their impact on the climate is less well-known, it is just as significant. Plastic production is one of the largest and fastest-growing contributors to these emissions. Plastics, when **disposed** improperly, produce two greenhouse gases, **methane and** ethylene, when exposed to ambient solar radiation. Polyethylene, which is the most produced and discarded synthetic polymer globally, is the most prolific emitter of both gases. Much of the plastic that does not make it to the recycling plant ends up in our rivers and **ocean** posing a great danger to the animals and plants whose habitats have become aquatic garbage patches.

Plastics break down into microplastics which worsen climate change both through direct GHG emissions and indirectly by negatively affecting ocean organisms that have the capacity for carbon sequestering. The Center for International Environmental Law (CIEL) estimates that at current and projected rates of growth, the production of plastics alone could generate 53.5 billion tonnes of carbon dioxide emissions by 2050. Adding the incineration of waste plastics pushes this total up to nearly 56 billion tonnes. In other words, plastics alone could consume between 10 and 13 percent of the earth's remaining carbon budget **for staying** below 1.5 degrees. Incineration is not a better solution either because burning plastic waste leads to the production of black carbon which has a global warming potential that is up to 5,000 times greater than that of carbon dioxide (CO<sub>2</sub>). The extraction and transport of fossil fuels for plastic production produces significant greenhouse gases. Sources include direct emissions, like methane leakage and flaring, emissions from fuel

combustion and energy consumption in the process of drilling for oil or gas, and emissions caused by land disturbance when forests and fields are cleared for well pads and pipelines.<sup>19</sup>

In Nigeria, the plastic and petrochemical industries continue to operate based on harmful practices like gas flaring, which increases the Greenhouse Gases released into the environment. Gas flaring and hydrocarbon exploration as well as incineration has been internationally and locally acknowledged as a significant source of greenhouse gases and a major contributor to climate change.<sup>20</sup>

Less than 50 **per cent** of waste is collected nationally in lower- and middle-income countries. Current estimates suggest 41 **per cent** of the world's municipal solid waste goes to open dumpsites, and much of it will then be burnt. According to the UN **High Level** Climate Champions Lead on waste Professor Desta Mebratu, of Stellenbosch University, "Emissions from open waste burning are hard to characterise and are therefore not widely included in Nationally Determined Contributions (NDCs). Despite the fact that this problem is so widespread and has disastrous impacts on our climate and the health of millions of people, there is not enough action on it."<sup>21</sup>



<sup>19</sup> CIEL - Plastic and Climate

<sup>20</sup> Anthony 2014.

<sup>21</sup> The Guardian.



## About Centre for Earth Works (CFEW)

Centre for Earth Works is a **research driven** youth-led Non-Governmental Organisation in Plateau State, Nigeria, working to empower communities **about** sustainable strategies **of** solving environmental challenges. CFEW is dedicated to building capacities and providing solutions to pressing environmental issues through youth and women empowerment and public education.

Our work is guided by these core values; Cohesiveness, Innovation, Sustainability, **Integrity and** Accountability.

Our vision is "To develop the skill and expertise of communities and the general public through training, awareness, research, **outreach programs and advocacy.**"

Our **mission** "to develop, initiate and foster platforms through competent environmental programmes, environmental education, conducting related scientific research and continually advocate and implement

projects that promote and mainstream sustainable development to mitigate challenges that confront us today."

Some of our projects and programmes include:

- Public research and documentation
- Tree for Life projects (Tree planting campaign)
- Green School Programmes (Environmental education in Schools)
- Engagement of waste pickers towards zero waste communities.
- Toxic chemical awareness campaign sensitising communities on the dangers of toxic chemicals like Persistent Organic Pollutants, Mercury, Lead e.t.c.
- Water, Sanitation and Hygiene to increase communities access to WASH facilities.



# Effective Waste Management and its Impact On Local Community Development.

A report by Tearfund estimated that between 400,000 and 1 million people die each year in low- and middle-income countries because of diseases related to mismanaged waste.<sup>22</sup>

The environmental and health effects of plastic production and pollution disproportionately impact the world's poorest communities. Poverty is also often used as a justification for some of the worst forms of plastic packaging such as single serve multi layered sachets. In Nigeria, daily household products and supplies are sold in sachets and other multilayered plastics. The worst forms are seen in the 'pure water' sachets and styrofoam food packaging which are littered all around impacting the slums populace.

This has increased the likelihood of flooding, and making them susceptible to mosquito-borne diseases such as malaria and dengue fever. Plastic waste builds up in the streets, vacant lots, drainage channels and waterways. Waste pickers sort through rubbish dumps looking for recyclable plastic such as PET bottles that they can sell. This job is dangerous and informal, and often done by women. Waste pickers often have few rights, but play an important role in waste sorting and recycling. Plastic production, use and disposal; is a social justice and climate problem in Nigeria therefore, all hands must be on deck to address this through reduced use of single used plastics through effective waste management systems.

Waste management is an effective process of collecting, transporting, treating, recycling of waste materials, combining a range of collection and treatment methods to manage all materials in the waste stream in an environmentally sustainable, economically affordable and socially

responsible way.

The first goal of waste management is to protect the health of the urban population, particularly those of low-income groups who suffer disproportionately from poor waste management. Secondly, it aims to promote healthy environmental conditions by controlling pollution including water, air, soil and cross-media pollution and ensuring sustainability of the ecosystem in the urban region. Thirdly, it supports urban economic development by providing waste management services and ensuring the efficient use and conservation of valuable materials and resources. Finally, waste management aims to generate employment and income in the sector itself.

- A fully functional waste management system in a community leads to zero-waste cities and sustainable development which includes;
- Saving valuable earth resources and promoting a circular economy.
- Allowing a more efficient and effective, just community system that addresses poverty, pollution etc.
- Encouraging stakeholders (e.g., state, local, tribal, and territorial governments; owners of the private business) to work together.
- Boosting the community's resiliency, resulting in a quicker and less costly recovery to its pre-incident state
- Enhancing communities' adaptation to the waste-related impacts of climate change<sup>23</sup>

<sup>22</sup> Tearfund, 2019.

<sup>23</sup> <https://www.epa.gov/homeland-security-waste/waste-management-planning-mitigate-impact-climate-change>

CFEW has provided brief and practical solutions to combat plastic pollution that can be implemented by both rural and urban communities alike including the empowerment of waste pickers. However, the best waste management method is waste **prevention especially single used** plastics. Unfortunately, **wastes** cannot be completely prevented therefore **there are** other methods that can be put in place to manage waste effectively such as:

1

**Reduction at source:** Waste Reduction refers to the collective strategies of design and fabrication of products that minimise the amount of generated waste and reduces the toxicity of the resultant waste. **E.g** Source Reduction **which** reduces or eliminates the generation of chemical waste throughout the life cycle of the product.

2

**Reuse: Waste Reuse:** Reuse means using an item more than once. This includes conventional reuse where the item is used again for the same function and new-life reuse where it is used for a new function. **Eg:** Reusing food jars for food storage or using them as flower vases or juice jars.

3

**Waste Recycle:** Recycling of waste involves reprocessing the particular waste materials, so that **it** can be used as raw materials in another process. **Eg:** Plastic bottles into clothing materials or roof and floor tiles.

4

**Community Resource Recovery Facility:** This is a facility where waste materials collected, sorted and where possible processed into useful end products. A resource recovery facility is important because it provides a safe haven for informal waste pickers to earn a decent livelihood.

5

**Biological treatment:** Treating waste so that the biodegradable materials are degraded. Biodegradation of waste can be accomplished by using aerobic composting, anaerobic **digestion or** mechanical biological treatment methods. Waste degradation not only produces useful solid end-products (such as **compost**), **but** degradation by-products can also be used as a beneficial energy source.



# BRAND AUDIT



Brand Audit ©CFEW/PiusBwemena

Scientists and environmental activists across the world began searching for a solution to the plastic crisis problem when it became obvious to all. All the solutions of recycling, repurposing, reusing, **etc** were good but only addressed the end products in the hands of the consumers, until the Break Free from Plastics Movement, came up with a solution to nip the problem from its roots. This solution widely known as “Plastic Brand Audit”, is a citizen science initiative that involves recording **of** data on plastic waste to help identify the companies responsible for plastic pollution and hold them accountable.

This initiative is a brainchild of the Break Free from Plastic (BFFP) Movement which is a global movement envisioning a future free of plastic pollution, it was launched in 2016 and has grown to include nearly 1800 partners and allies organisations globally.

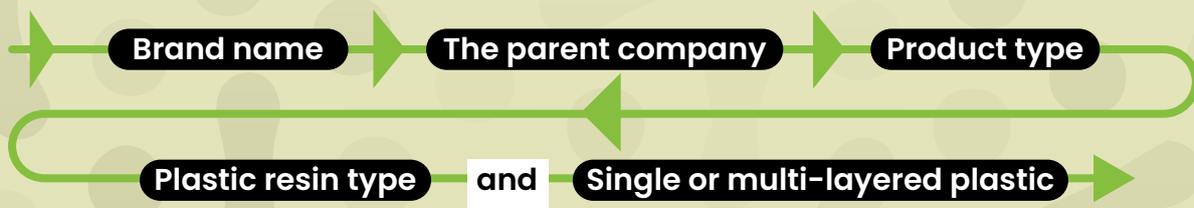
The aim of conducting Brand Audits is to identify the world’s top polluting corporations as a means to ending plastic pollution. By gathering data on plastic waste collected at community clean-ups around the world, brand audits give the necessary facts to challenge the plastic industry and demand real solutions. The main objectives of Plastic Brand Audits are to;

- . **REVEAL** the total plastic footprint of manufacturing companies and encourage them to:
- . **REDUCE** the amount of plastic they produce.
- . **REDESIGN** packaging with biodegradable materials instead of plastic.

This citizen science takes a two-pronged approach in its methodology:

1. Home audits - the composition of household plastic waste generation and
2. Clean-up of Public Spaces.

Once the plastic waste is collected, data on each piece of plastic is recorded based on the following categories:





## Limitation:

This report is based on data gathered from the Centre for Earth Work's (CFEW) Clean up exercises carried out in Plateau State Nigeria. Furthermore, the locations of data collection were carried out in both Jos North and Jos South Local Government Areas. The brand audit data collected across these locations is only a sample data from the overall clean-up exercises. This report cannot claim to be fully representative of all plastic polluters and company brands in Nigeria, as there are more brands that are not captured in this report. It is possible, therefore, that some of those brands produce even more plastic pollution in other densely populated cities in Nigeria than those listed in this report. Nevertheless, taking into account the magnitude of the problem, this brand audit is representing the Nigerian National brand audit report 2022. The report is aimed at giving readers a general overview of the magnitude of the problem called Plastic Tsunami. This report is based on the Break Free from Plastic's (BFFP) standard methodology and practice.

From 2019 - 2022, Centre for Earth Works has conducted four (4) Brand Audits within Jos Plateau State Nigeria.

In 2019, CFEW organised her first Brand Audit in commemoration of the World Clean-up Day, at the Wildlife Park in Jos Plateau State, a recreational park and wildlife conservation centre in the state. The objectives of this exercise were to: celebrate the 2019 World Clean-up day, create and engage young people on the issue of waste and plastic pollution, highlight solutions to problems as well as task participants to commit to action, carry out Brand Audit to identify key corporate polluters and obtain background data for further advocacy. The volunteers were given prior training to equip them with the knowledge of how to conduct Brand Audits. The result of the Brand audit revealed that there is an urgent need to take action to protect our public spaces and biodiversity from the huge impact of plastics pollution. A total sum of 4965 plastic waste items were picked during the clean-up exercise and from the total plastics collected, CFEW classified the plastics into seven categories and these include; PET, HDPE, PVC, LDPE, PP, PS, O, composite material etc.

The results of the audited wastes are as follows:

PET bottles recorded the highest amount with 24.97% followed by Sachet water pack at 19.54% unknown polythene bags was 12.42% Disposable plastic cups at 11.85% bottle Lid covers 8% Plastic Spoons at 6.54% Wraps 9.27% and Straws 7.45%. (Fig 1A &B)

STATISTICS FOR EACH BRAND

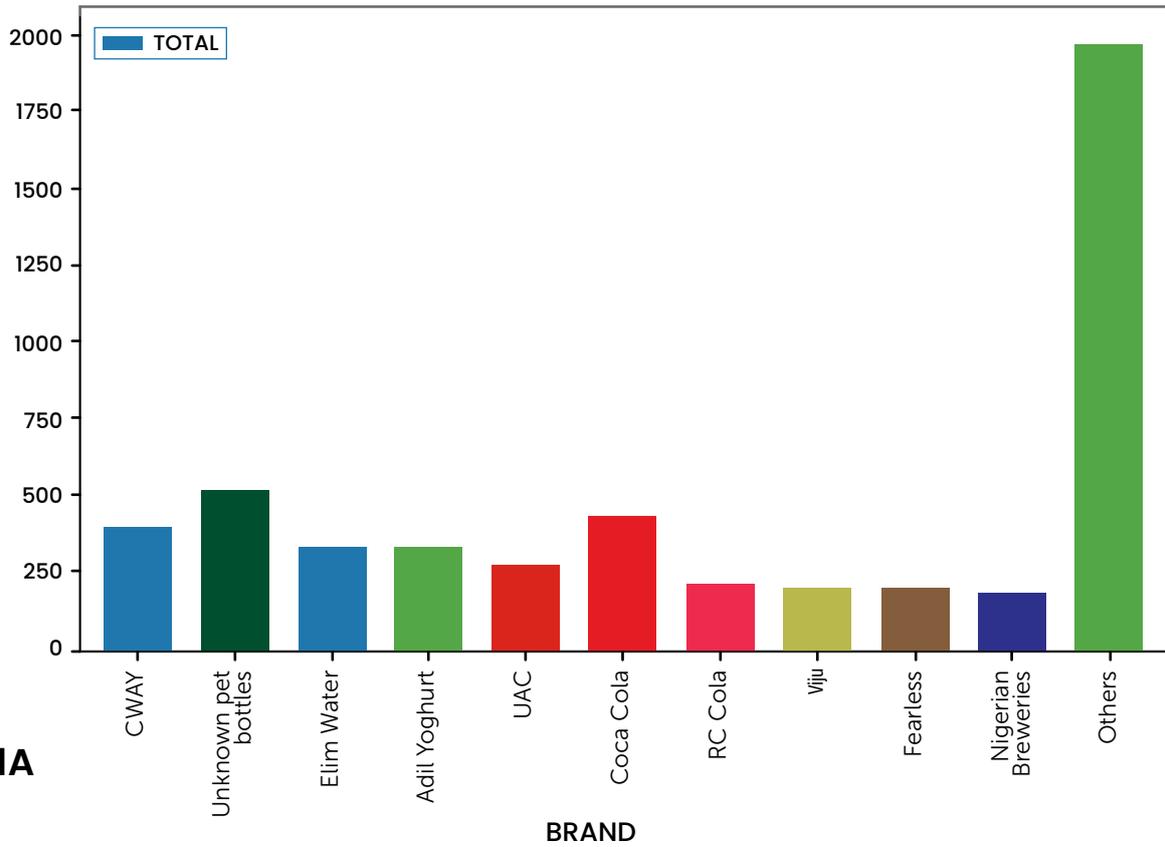


Fig. 1A

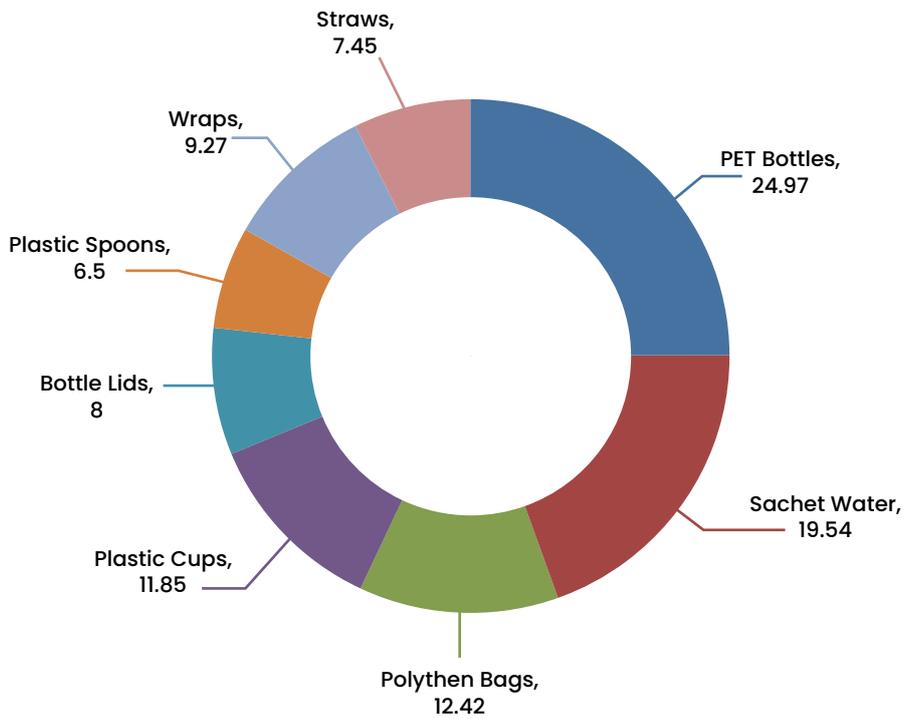


Fig. 1B

## PLASTIC BRAND AUDIT REPORT

In 2020, CFEW conducted its second Brand Audit in commemoration of the World Clean-up Day, at the National Museum Jos. The objective was to further emphasise the need for the world to break free from plastic pollution at the height of the global pandemic of COVID-19. The clean-up and brand Audit was carried out to celebrate world clean-up day, 2020. The result of the Brand audit revealed that there is an urgent need to take action to protect our public spaces and biodiversity from the huge impact of pollution. A total sum of 7185 plastic waste items was picked during the clean-up and the data collected is presented as follows;

### BRAND STATISTICS

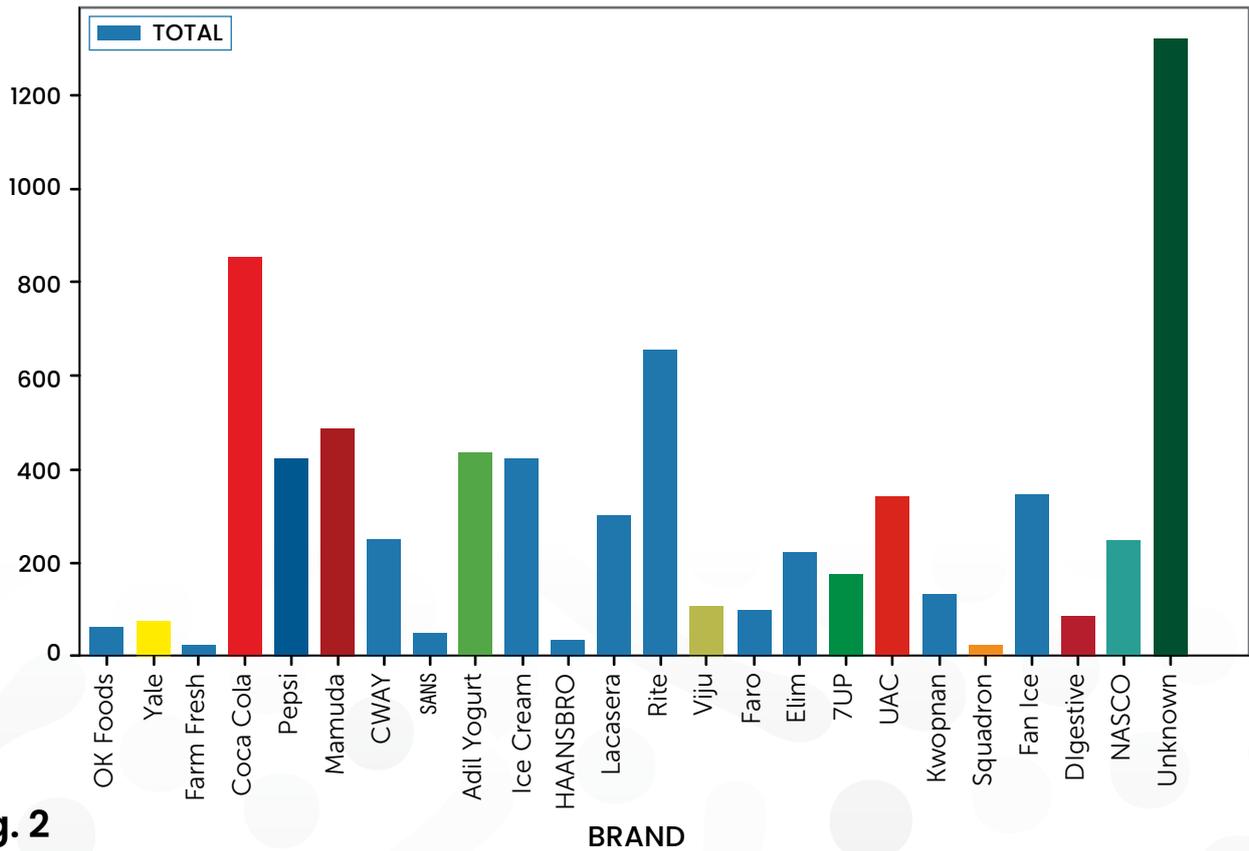


Fig. 2

In the year 2021, CFEW in collaboration with AIBETH centre, went on a hike against drug abuse in Lamin-go, Jos East LGA of plateau state, during which a mini brand audit was held. A total of 3430 plastic waste was audited and the result is as follows:

### STATISTICS FOR EACH BRAND

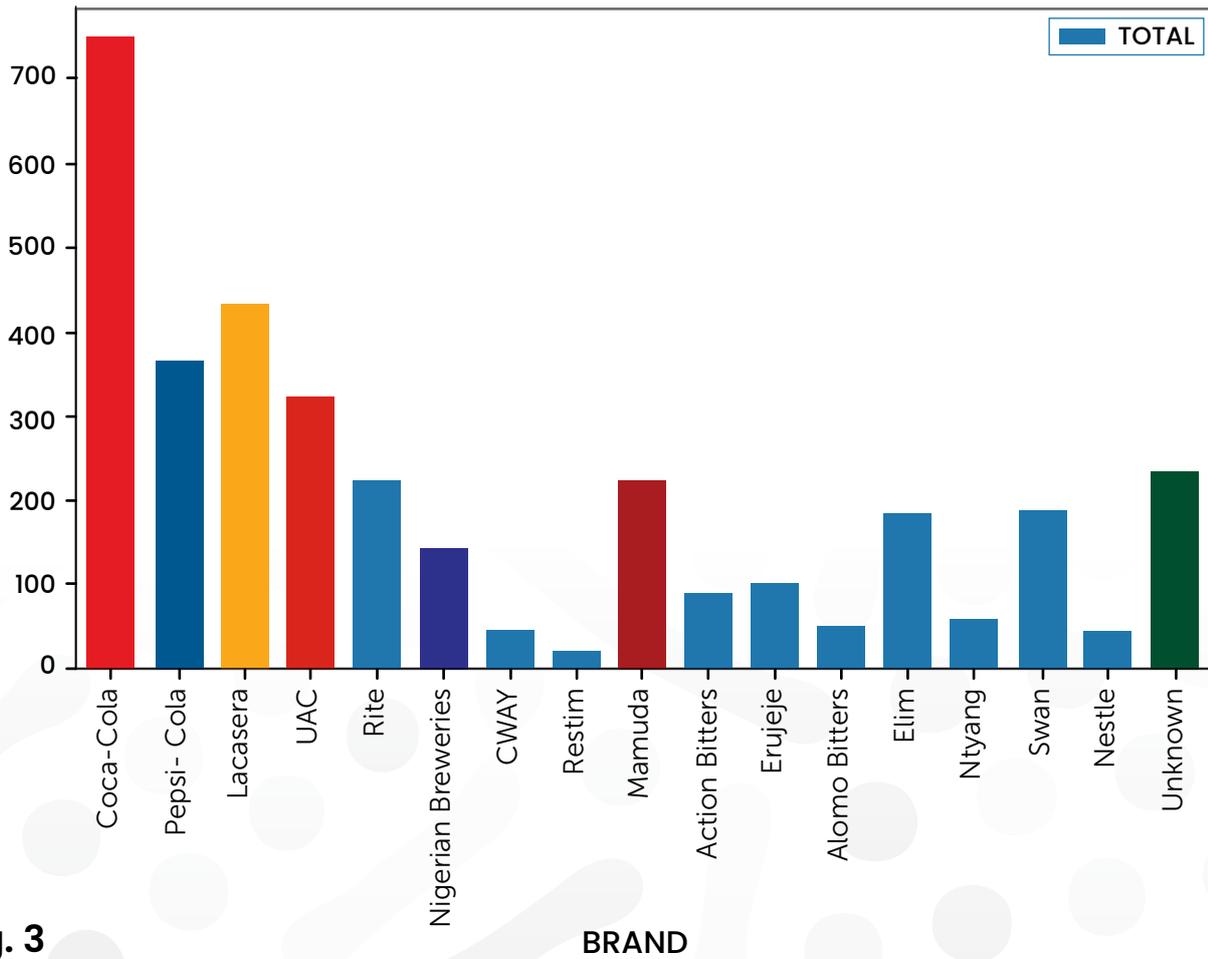


Fig. 3

## PLASTIC BRAND AUDIT REPORT

In 2022, Centre for Earth Works conducted three Brand Audits on September 5th and 23th respectively. The Audits revealed the extent of plastic pollution in these communities and the Big Polluters responsible. The first Brand Audit was a huge success that enlightened the community on the dangers of plastics, particularly the indiscriminate disposal of plastic waste and the safer and healthier alternatives to plastics as well as better methods of plastic waste management. This was a clean-up exercise and Brand Audit held on 5th September 2022, within the Old Nitel Building community, an official area that houses several businesses and organisations like CFEW. There were five (5) volunteers present at this exercise and a total of five hundred and twenty-two (522) plastic wastes were gathered and audited. This particular audit had the following results:

### STATISTICS FOR EACH BRAND

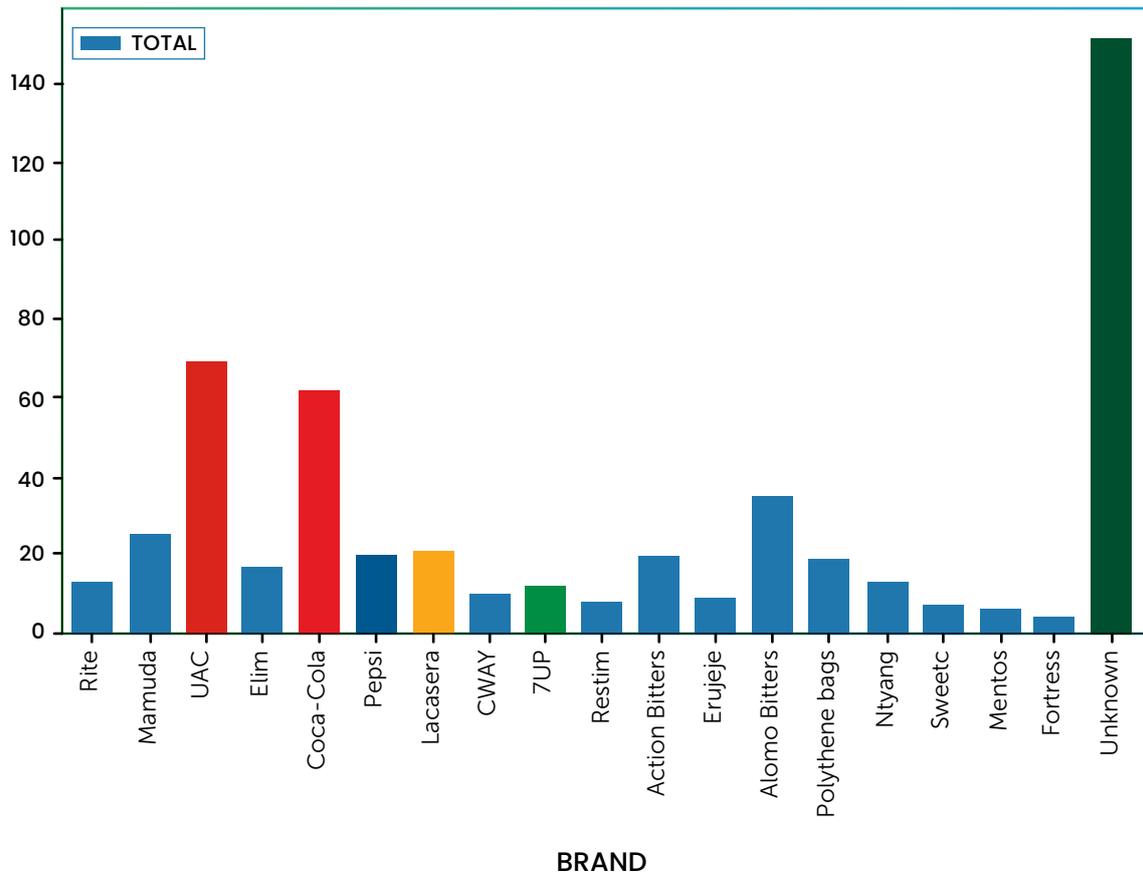
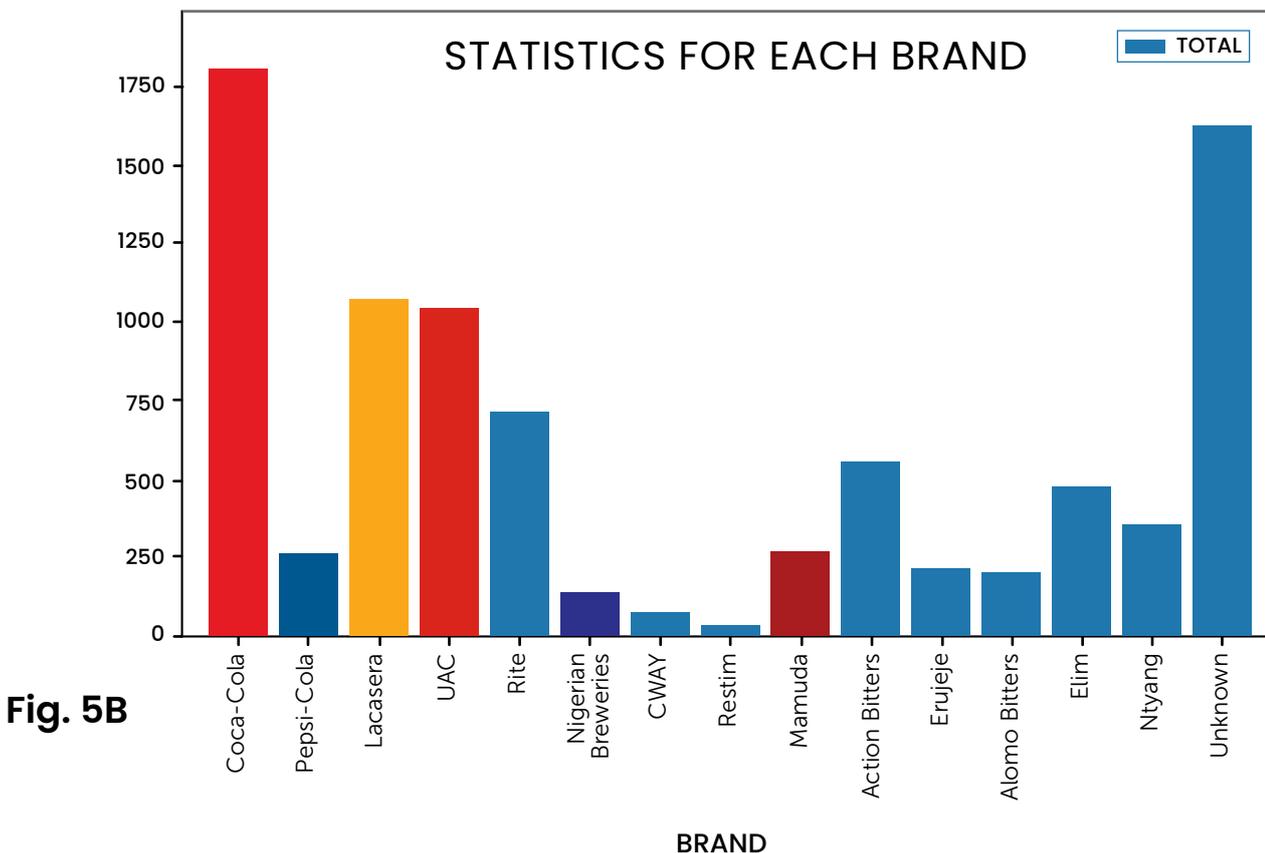
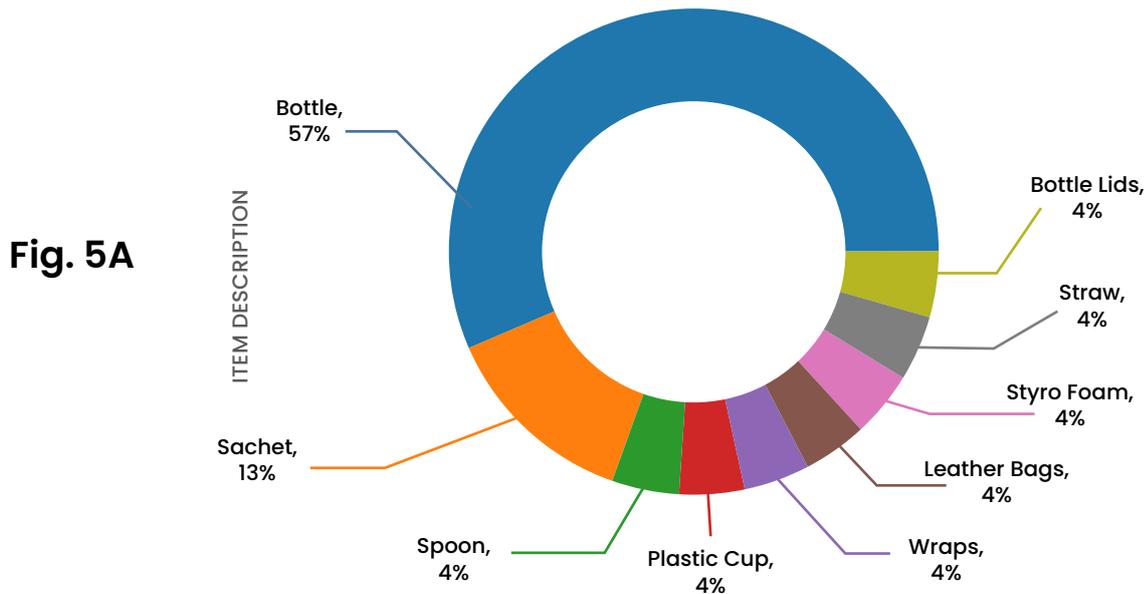


Fig. 4



On the 29th of September, 2022, the third Clean Up Exercise and Brand Audit **was** conducted at Mazzah Village, a community densely polluted by plastics that are disposed of indiscriminately in landfills, **rivers** and within the general community. Thirty-three (33) youth volunteers from CFEW, Better Earth Foundation, Yan Kwalabe Association, the Mazah **community and** other individuals picked up and audited 8,949 plastic wastes. The Brand Audit revealed that the major polluters in the community were: Coca-Cola, **LaCasera and** UAC. The plastic waste collected from the Mazah mini waterfall environment was sorted into individual brands (Coca-Cola, Lacasera, Mamuda, etc.). The waste was also sorted into various categories (bottles, sachet, plastic cups, etc.). PET bottles accounted for the majority of the waste - 57%, Water sachets - 13%, spoons - 4%, polythene bags - 4%, spoons - 4%, straws - 4%, bottle lids - 4% etc.

Below is a concise analysis of the data **of** plastic waste collected



## PLASTIC BRAND AUDIT REPORT

Summarily, a total of 9,471 plastics were collected and audited in 2022 during the two brand audits. Consequently, Coca-Cola, UAC and Lacasera were found to be the biggest polluters. The result is presented as follows:

### BRAND STATISTICS

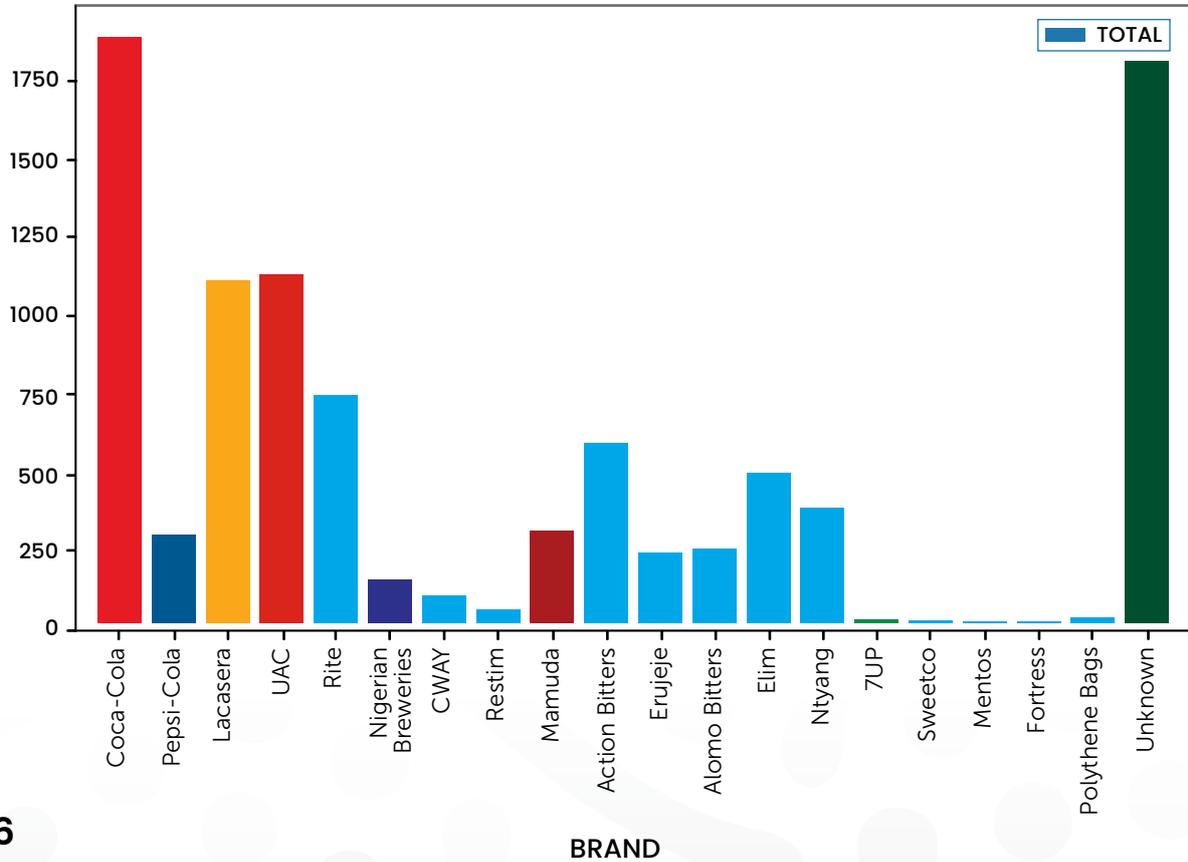


Fig. 6

Over the period of four years, it is quite notable that Coca-Cola has been topping the chart in terms of plastic pollution, hence the need to engage them thoroughly and make them take responsibility for the waste they produce. Other corporate brands like Lacasera, UAC, Rite and Mamuda should be engaged as well, as they also contribute significantly to this challenge of plastic pollution.

# Recommendations

Having seen the extent of plastic pollution in these communities, what then is the solution and the way forward to stopping this raging Tsunami? For **the purpose of** sustainability and effectiveness in plastic waste management, the following recommendations are made;

■ **Policy:** The deliberate need to introduce and implement new policies to address this menace of plastic waste pollution to promote a clean and healthy environment for sustainable socio-economic development. Policies that ban the production, **importation and** use of non-biodegradable plastics. For instance, in 2017, the Kenyan government placed a ban on the use of single-use **plastics and** in 2019, the Nigerian lawmakers passed a Plastic Bags Prohibition Bill (Knoblauch and Mederake 2021). However, it is not enough to just make policies; these policies must be strictly enforced at the national and state levels. As individuals, we can also begin to take responsibility for ensuring the success of these policies by introducing some simple habits into our lifestyle. Habits like the “bring your **own bag**” policy whenever you go shopping. This serves to limit the number of plastic bags we end up with after a day’s shopping. Instead of collecting a plastic bag for every item we purchase,

■ **Waste pickers:** **The** informal waste pickers play a major role in waste management. In many poor countries, waste pickers take over the tasks of the municipal garbage truck and waste processing plants. They divert a significant amount of waste back into productive uses. This calls for a need to properly engage them in capacity building, provision of **effectively materials** and integration while formulating policies.

■ **Civil Society Movement:** Civil society organisations and Non-governmental organisations play a crucial role in addressing waste management and plastic pollution crisis by raising public awareness, providing ecological education, advocating for better **policies and implementation of** community-based initiatives, all of which contribute to creating a cleaner, safer, healthier and more sustainable environment for biodiversity. The role of the CSOs and NGOs in combating plastic waste pollution cannot be overemphasised as they also **have the capacity to** hold corporations accountable for the waste they produce. The global Break Free From Plastic Movement is one **of** such **efforts** to stop plastic pollution for good. It is using public exposure and transparency to put corporations under pressure.

■ **Refill system:** More campaigns should promote the refill system at all levels towards zero waste communities.

■ **Waste management system:** Building systemic waste management structures has also proved to be one of the most efficient ways of management, as government institutions are to establish waste management agencies at all levels of government to oversee the implementation of established policies on **management** of waste in every community. As individuals, we can also **practise** waste management by implementing the Seven Rs of Waste Management. Beginning by Rethinking our choices of products, Refusing single-used plastics, Reducing our purchase of plastics, Reusing plastic items rather than **single use** plastics, Repurposing **the plastic items and** remodifying them into beautiful and innovative products. Repairing the broken things around us, don’t be so quick to toss things away. And finally, Recycle to take out **the** tons of plastic waste and make them useful for other items.

■ **Extended Producer Responsibility (EPR):** We also call for the implementation of **the The** Extended Producer Responsibility (EPR) policy. In 2014, the Federal Government, through the National Environmental Standards and Regulations Enforcement Agency (NESREA), adopted and released guidelines for the implementation of **EPR** policy in Nigeria. However, being a relatively new concept in the Nigerian space, limited scientific literature exists on the framework and implementation of the policy in Nigeria.

The EPR scheme is an essential part of reducing the single-use plastic problem that plagues and will continue plaguing our country. It is right for the producers and manufacturers of single-use plastic items to be held responsible for their contribution to the plastic waste in the country, **otherwise** tens of millions of tons of packaging will continue piling up in our dumpsites without a solution for their afterlife.

# Conclusion

Nigeria is currently drowning in a plastic tsunami which is destroying our health, livelihoods and the environment at an alarming rate and only a handful of the population seems to care that we are going under. From our leaders and **policy makers** to the average Nigerian, everyone could care less about the plastic crisis. However, the handful of Nigerians who are committed to seeing an end to this tsunami, like the Centre for Earth Works (CFEW), put their efforts and resources **to** combating this crisis from its roots/source - the manufacturers. Through the Brand Audits CFEW has conducted over **the span of** four years, we have been able to identify the major brands like **Coca-cola**, UAC, Pepsi-Cola, Mamuda, Rite **foods and** La-Casera that are responsible for plastic pollution in Nigeria particularly in Plateau State.

Corporations who benefit financially from the extraction, **manufacture and sales** of single-use plastic items must be held accountable. It is simply unfair that a small portion of the world benefits while the voiceless **of** community members who have had no relation in the production of these items bear the brunt of the climate crisis the most, hence, the need for **an** urgent action to be taken **in order** to suppress this menace of plastic pollution and build a plastic-free and climate-safe future.

## CALLING OUT NIGERIA'S TOP FIVE CORPORATE POLLUTERS:



## REFERENCES

1. (World Wildlife Fund 2021).
2. Joseph L. Nicholson and George R. Leighton, "Plastics Come of Age," Harper's Magazine, August 1942, p. 306.
3. <https://www.scientificamerican.com/article/a-brief-history-of-plastic-world-conquest/>
4. <https://www.wwf.org.au/news/blogs/the-lifecycle-of-plastics>
5. [https://ng.boell.org/sites/default/files/2021-06/Plastic%20Atlas%202020\\_Nigeria%20Articles\\_compressed.pdf](https://ng.boell.org/sites/default/files/2021-06/Plastic%20Atlas%202020_Nigeria%20Articles_compressed.pdf)
6. Barroso, Kristina. (2020). "Pros & Cons of Styrofoam" sciencing.com, <https://sciencing.com/-pros-cons-ofstyrofoam-12079533.html>.
7. <https://www.afro.who.int/news/tackling-health-impacts-plastic-pollution-africa>
8. Kehinde, O., Babaremu, K. O., Akpanyung, K.V., Remilekun, E., Oyedele, S.T., & Oluwafemi, J. (2018): Renewable Energy in Nigeria - A Review, International Journal of Mechanical Engineering and Technology 9(10), 1085-1094.
9. Kehinde, O., Omotosho, O. A., & Ohijeagbon, I. O. (2019): Impact of Varying Laterite and Cowhorn Additives on The Mechanical Properties of Cement Matrix Plastic Tiles. International Conference on Engineering for Sustainable World (ICESW-2019) IOP Conference Series
10. Kehinde, O., Omotosho, O. A., & Ohijeagbon, I. O. (2019): The Effect of Varying Sand and Plastic Additives on The Mechanical Properties of Cement Matrix Tiles. International Conference on Engineering for a Sustainable World (ICESW-2019) IOP Conference Series.
11. Kehinde, O., Ramonu, O.J., Babaremu, K.O., Justin, L.D. (2020): Plastic wastes: environmental hazard and instrument for wealth creation in Nigeria, Heliyon, 6(10) e05131.
12. <https://www.propakwestafrica.com/news/nigerias-plastics-sub-sector-to-grow-by-7-plastic-collection-centres-to-be-established-in-lagos>
13. <https://blogs.worldbank.org/endpovertyinsouthasia/6-reasons-blame-plastic-pollution-climate-change>
14. <https://www.nationalgeographic.com/science/article/plastic-produced-recycling-waste-ocean-trash-debris-environment>
15. <https://brandaudit.breakfreefromplastic.org/brand-audit-2022/>
16. <https://onepetro.org/SPENAIC/proceedings-abstract/14NAIC/AII-14NAIC/SPE-172397-MS/212605> (Anthony Bisong Oso)
17. Lewis, J. (2019). Why Styrofoam (Expanded Polystyrene) Should Be Banned Everywhere In The World Retrieved from <https://medium.com/age-of-awareness/why-styrofoam-expanded-polystyrene-should-bebanned-everywhere-in-the-world4101552f5e2b#:~:text=Polystyrene%20foam%20is%20a%20light,who%20mistakenly%20eat%20the%20material.>
18. Doris Knoblauch, Linda Mederake, "Government policies combating plastic pollution" Current Opinion in Toxicology, Volume 28, 2021, Pages 87-96.
19. <https://guardian.ng/apo-press-releases/open-burning-of-waste-time-for-urgent-action/>

20. <https://www.ciel.org/wp-content/uploads/2019/05/Plastic-and-Climate-FINAL-2019.pdf>
21. UNEP (2016) Africa Waste Management Outlook (<https://bit.ly/3c5YiZD>)

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