

LEGAL FRAMEWORKS FOR SINGLE-USE PLASTIC MANAGEMENT: ENVIRONMENTAL CHALLENGES AND SOLUTIONS

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Abstract

The use of polyethylene bags has been found to have more cons than pros. While it is a suitable choice of packaging for many, it contributes a lot to environmental pollution. Plastic bags contain harmful chemicals that when dumped, poisons the soil, water and everything in them. When incinerated, it is hazardous to the environment. Notwithstanding the hazard of plastic bags, it still remains the favorite choice of many, especially women in markets. This paper reviews the reasons for plastic bags being the women's favorite choice; which is largely connected to the economic living standard and long-term lifestyle of a large section of Nigerian women. The paper adopts the doctrinal methodology to consider the impact of plastic bags on the environment as well as human and animal life. Furthermore, the paper considers the role played by the environmental agencies and the existing laws and policies. It concludes by identifying a lack of awareness and proper education as a leading cause of the continued preference of plastic bags despite its multiple hazards. Finally, the paper recommends that a solution to the menace of plastic bags is to impose a ban on single-use plastic bags among others.

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1.0 Introduction

Polyethylene bag or plastic bag pollution is a pressing global environmental issue, primarily driven by the widespread and extensive use of polyethylene bags. In a study, it was estimated that over 5 trillion plastic bags are consumed worldwide each year, contributing to plastic pollution.¹ Polyethylene bags are among the top items found in beach clean-ups and litter surveys, making up a considerable portion of marine plastic debris.² These single-use bags, due to their non-biodegradable nature, persist in the environment, leading to severe environmental, socio-economic and ecological consequences.³ Of particular significance is the active involvement of women in markets, where plastic bag usage is pervasive. As significant participants in market activities, women play a pivotal role in the generation of plastic waste and, subsequently, its impact on the environment. Understanding their behaviour, awareness, and practices in relation to polyethylene bag use becomes essential in addressing this issue effectively.

Plastic bags are composed of harmful chemicals, and when they decompose in landfills, they contribute to environmental pollution.⁴ The

¹ R Geyer, et al., 'Production, Use, and Fate of all Plastics Ever Made' (2017) 3(7) *Science Advances* 1-5.

² JR Jambeck, et al., 'Plastic Waste Inputs from Land into the Ocean' (2015) 347(6223) *Science* 768-771.

³ Geyer (n 1); Samuel O Iheukwumere, Kelechi F Nkwocha, Nwanneka Tonnie-Okoye, 'Stemming Plastic Bag Pollution in Anambra State: Willingness of the Public to Accept Alternative Bags' (2019) 2(1) *African Journal of Environmental Research* 17-32; VK Koros, JJ Kitetu and SJ Kebenei, 'Influence of Polythene Bag Alternatives on Compliance to Environmental Legislation on Polythene Bag Ban in Rongai Sub-County, Nakuru County, Kenya' (2019) *Open Access Library Journal*, 6: e5848. <<https://doi.org/10.4236/oalib.1105848>> accessed 24 July 2023.

⁴ See J Vince and BD Hardesty, 'Plastic Pollution Challenges in Marine and Coastal Environments: from Local to Global Governance,' (2017) 25(1) *Restoration Ecology* 123-128.

incineration of plastic bag waste releases hazardous pollutants like furans and dioxins,⁵ posing risks to living organisms. Moreover, certain plastic bags contain toxic chemical additives, like persistent organic pollutants (POPs), which have been associated with various health problems, including nervous system impairment, leukaemia, skin diseases, cancer, eye irritation, vision impairment, and developmental and reproductive issues. Improperly discarded plastic bag waste can lead to health problems as microplastics accumulate in food chains via water supplies and agricultural soils. Ingestion of these microplastics by humans has been linked to health issues like oxidative stress, necrosis, and inflammation, which can contribute to cardiovascular disease and cancer.⁶ Given these findings, there is a compelling need to regulate plastic bag usage and disposal to mitigate the associated health risks.

This paper review seeks to shed light on the socio-legal inquiry examining the repercussions of polyethylene bag use by women in selected markets in Lagos and Abuja, Nigeria. By delving into existing research, policy frameworks, and legal provisions, the review aims to unravel the intricate connections between plastic pollution, market practices, and women's roles as key stakeholders. Through a comprehensive analysis, the paper aspires to provide valuable insights into the factors influencing women's choices regarding plastic bag usage, their level of awareness concerning environmental consequences, and the effectiveness of policy interventions. By understanding the socio-economic reasons behind women's preference for polyethylene bags, evaluating the impact of government policies and local governance, and assessing the existing waste management systems, this inquiry seeks to contribute to the development of sustainable solutions aimed at curbing plastic pollution in these vital markets. Ultimately, this research endeavours to drive positive change, raise awareness, and foster environmentally conscious practices that can

⁵ R Barra and SA Leonard, *Plastics and the Circular Economy*, Scientific and Technical Advisory Panel to the Global Environment Facility, Washington, DC, USA, 2018.

⁶ Geyer (n 1).

help mitigate the detrimental effects of plastic pollution on a global scale.

The paper would involve the following key components:

- i. **Environmental Impact:** Investigating the extent of pollution caused by polyethylene bag use, including its contribution to plastic waste and its impact on the local environment, such as water bodies and wildlife.
- ii. **Socio-economic factors:** Analysing the socio-economic reasons behind the prevalence of polyethylene bag use among women in these markets, including affordability, accessibility, and cultural practices.
- iii. **Legal Framework:** Examining existing laws and regulations related to plastic use and waste management in Nigeria, particularly in Lagos and Abuja, and identifying gaps or challenges in their implementation.
- iv. **Legal and Policy recommendations.**

The findings of this socio-legal inquiry would inform the development of effective policies and interventions to reduce plastic pollution in the selected markets, promote sustainable practices, and enhance environmental protection efforts in Nigeria.

2.0 Legal and Policy Frameworks for Plastic Use and Management in some parts of Nigeria

A socio-legal inquiry into the impact of pollution caused by polyethylene bag use by women in Nigeria, particularly in Lagos and Abuja, involves examining the existing legal framework related to plastic use and waste management in these specific regions. Understanding the regulatory landscape is crucial in identifying gaps and potential areas for improvement in addressing plastic pollution in the two major cities.

- i. **National Environmental Standards and Regulations Enforcement Agency (NESREA) Act of 2007:** This Act was established in 2007. NESREA replaced FEPA. NESREA was established as a parastatal of the Federal Ministry of

Environment, Housing and Urban Development. NESREA has been entrusted with the task of safeguarding and fostering the environment, conserving biodiversity, and promoting sustainable development in Nigeria's natural resources.⁷ The Agency's vision aims to provide Nigerians with a cleaner and healthier environment, while its mission seeks to instill a sense of personal and collective responsibility in fostering an environmentally conscious society. Through these efforts, NESREA strives to achieve sustainable development in Nigeria.⁸ NESREA is the federal agency responsible for enforcing environmental regulations in Nigeria. It has implemented various policies and guidelines to regulate plastic waste and promote sustainable waste management practices.

- ii. Lagos State Environmental Protection Agency (LASEPA): In Lagos State, which includes Lagos markets, LASEPA is responsible for environmental protection and enforcement of regulations. LASEPA has instituted measures to address plastic pollution, such as the ban on the use of polyethylene bags with a thickness of less than 0.035mm in Lagos State.⁹ The Lagos State Environmental Protection Agency (LASEPA) plays a crucial role in addressing environmental issues within Lagos State, Nigeria, including the regulation and management of plastic waste, including polyethylene bags. LASEPA has been actively involved in implementing measures to combat the pollution caused by polyethylene bag use in Lagos. One of its significant actions has been to enforce a ban on the use of single-use plastic bags within the state. This ban aims to reduce the proliferation of polyethylene bags and their harmful impact on

⁷ See Section 2, NESREA Act.

⁸ D.A. Ariyoosu, 'An Examination of Legal Regulation and Environmental Impacts of Telecommunication Installations in Nigeria' (2014) *Journal of Law, Policy and Globalisation* 30, 6.

⁹ LASEPA (Lagos State Environmental Protection Agency), 'Implementation of the Ban on the Use of Plastic Bags in Lagos State' 2016 <<http://lasgmoes.com/downloads/lasepa-implementation-of-the-ban-on-the-use-of-plastic-bags-in-lagos-state.pdf>> accessed 23 July 2023.

the environment, particularly on land and water bodies.¹⁰ In addition to enforcing the ban, LASEPA has engaged in public awareness campaigns to educate citizens, market traders, and businesses about the environmental consequences of polyethylene bag usage and the benefits of adopting more sustainable alternatives.¹¹ These campaigns emphasize the importance of responsible waste disposal and recycling practices to minimize plastic pollution. Furthermore, LASEPA collaborates with other relevant government agencies, non-governmental organizations (NGOs), and stakeholders to implement effective waste management and recycling programs.¹² By promoting waste segregation and collection initiatives, LASEPA aims to ensure the proper disposal and recycling of plastic waste, including polyethylene bags, to prevent them from ending up in the environment and causing pollution.

- iii. Environmental Management and Protection Law 2017: Lagos State enacted this law to regulate environmental issues, including plastic pollution. It was enacted to consolidate all environmental laws in Lagos State. The law requires owners and occupiers of any property to be a part of the environmental sanitation of the State. This responsibility includes having owners and occupiers pay a levy for waste collection services.¹³ Property owners and occupiers are also required to ensure that waste emanating from the property are properly kept until the waste management services pick them up for disposal.¹⁴ To do this, there should be a covered receptacle to be used for keeping the waste until it is picked up.¹⁵ There is a N500,000 (five

¹⁰ LASEPA, 'LASEPA Launches Ban on Single Use, Plastic, Pet Bottles, Others' (LASEPA, 12 February 2022) <<https://www.lasepa.gov.ng/ban-on-single-use-plastics/>> accessed 26 July 2023.

¹¹ Ibid.

¹² Ibid.

¹³ S 62(11) Environmental Management and Protection Laws of Lagos State 2017

¹⁴ Ibid. S 79(3)

¹⁵ Ibid. S 83

hundred thousand Naira) penalty payable by anyone who disposes of waste in an unlawful manner.¹⁶

- iv. National Policy on Plastic Waste Management: The most recent and comprehensive effort to promote the sustainable management of plastic waste is the National Policy on Plastic Waste Management. This policy is built upon the foundation of the National Policy on the Environment of 1991 and the 2018 National Policy on Solid Waste Management, which governs the waste sector. Since its inception in 2018, the policy has been under consideration and continues to evolve. The primary objectives of the policy are ambitious and forward-looking.¹⁷ By 2025, it aims to reduce plastic waste generation in the environment by 50 percent compared to the baseline figure of 2020.¹⁸ Additionally, the policy aims to phase out single-use plastic bags and styrofoam by 2028, contributing to a significant reduction in plastic pollution.¹⁹ Furthermore, it envisions that all plastic packaging in the market will be recyclable or biodegradable by 2030, fostering a more sustainable approach to plastic use and disposal. The National Policy on Plastic Waste Management represents a significant step towards addressing the pressing issue of plastic waste in the country and promoting a more environmentally conscious approach to plastic use throughout its life cycle. As it continues to be deliberated and refined, the policy has the potential to drive meaningful change and contribute to a cleaner and more sustainable environment for future generations. The policy aims to promote the sustainable management of plastic waste throughout the country, including Lagos and Abuja. It emphasizes recycling, reuse, and reduction of plastic bag usage.²⁰

¹⁶ Ibid S 81

¹⁷ Heinrich Boll Stiftung, 'Need to Fill the Policy Gap', 18 August 2020, <<https://ng.boell.org/en/2020/08/18/need-fill-policy-gap>> accessed 26 July 2023.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ FME (Federal Ministry of Environment) 'National Policy on Plastic Waste Management' 2016

- v. Extended Producer Responsibility (EPR):²¹ The Extended Producers Responsibility (EPR) program of NESREA has emerged as the primary government policy addressing plastic waste in Nigeria. Originating from Sweden in the 1990s, EPR is a policy strategy aimed at promoting environmentally responsible product manufacturing and disposal. NESREA first introduced its EPR operational guidelines in 2014 and officially launched the program in 2016, initially targeting the food and beverage industry, which is one of the major sources of plastic waste in the country. The EPR program aims to establish collaborative partnerships between the government and the private sector to work towards achieving zero waste. The core idea is to hold manufacturers or brand owners responsible for the entire lifecycle of their products, including take-back, recycling, and final disposal. To facilitate this process, third-party organizations known as Producers Responsibility Organizations (PROs), such as the Food and Beverage Recycling Alliance (FBRA), are collectively managing these responsibilities. Currently, the FBRA has ten registered companies participating in the program. However, some manufacturers responsible for plastic waste generation have been slow to join the alliance. This hesitancy can be attributed to variations in manufacturers' standards and capabilities, impacting their ability to adhere to the EPR guidelines and implement the required practices. Additionally, a lack of clarity in understanding how the policy should be executed due to inadequate information and communication between the government and the industry poses a challenge. The roles and responsibilities of stakeholders involved in the EPR program remain ambiguous, and the economic costs and incentives associated with the program have not been clearly determined. Moreover, limited funds for monitoring and enforcement have

<<http://www.environment.gov.ng/images/docs/plasticpolicy.pdf>> accessed 23 July 2023.

²¹ Heinrich Boll Stiftung (n 17).

weakened the program's efficacy. Despite these challenges, PROs like FBRA continue to collaborate with small community-based vendors to engage in advocacy, collection, and recycling activities. Overall, the EPR program presents a significant step forward in addressing plastic waste in Nigeria, but there are still considerable hurdles to overcome. Efforts to improve communication, provide clear guidelines, and secure adequate funding for monitoring and enforcement are essential to the program's success. EPR encourages producers to take responsibility for the recycling and proper disposal of their products to reduce plastic waste.²²

- vi. **Waste Management Guidelines:** Waste management regulations at the federal and state levels provide guidelines for the proper disposal and management of plastic waste, including polyethylene bags, in Lagos and Abuja.

In 2018, an effort was made to address the escalating issue of plastic waste through the introduction of the Plastic Bags (Prohibition) Bill by a member of the House of Representatives. This proposed legislation aimed to ban the usage, production, and importation of all single-use plastic bags utilized for commercial and household packaging. Additionally, the bill proposed severe penalties, including imprisonment, for those found violating the prohibition. Despite the House of Representatives passing the bill in 2019, it did not receive final approval and was not enacted into law.²³

²² NESREA (National Environmental Standards and Regulations Enforcement Agency), 'National Guidelines on Extended Producer Responsibility (EPR) Programme for Electrical/Electronics Sector in Nigeria' 2020 <[https://nesrea.gov.ng/docs/NEP-NEPLGUEPR-ElecElecVer%202%20\(1\).pdf](https://nesrea.gov.ng/docs/NEP-NEPLGUEPR-ElecElecVer%202%20(1).pdf)> accessed 23 July 2023; FME (Federal Ministry of Environment) 'National Policy on Plastic Waste Management' 2016 <<http://www.environment.gov.ng/images/docs/plasticpolicy.pdf>> accessed 23 July 2023.

²³ Heinrich Boll Stiftung (n 17).

However, despite these legal frameworks, challenges remain in the enforcement and implementation of plastic waste management regulations. The findings from the examination of the legal framework in Lagos and Abuja will inform recommendations for strengthening plastic waste management policies, enhancing enforcement mechanisms, and promoting sustainable alternatives to polyethylene bags in these regions.

A. Environmental Impact of Plastic Use

The extent of pollution caused by polyethylene bag use is significant and has become a major environmental concern worldwide. Polyethylene bags, commonly known as plastic bags, are widely used due to their convenience and low cost. However, their durability and resistance to degradation make them persistent pollutants that can have devastating impacts on the environment.²⁴

Polyethylene bags have become one of the most pervasive and harmful pollutants in marine environments worldwide. These single-use bags, made from non-biodegradable petroleum-based polyethylene, are a significant contributor to marine pollution due to their extensive use, improper disposal, and durability, which allows them to persist in the environment for hundreds of years. The accumulation of plastic bags in marine ecosystems poses a severe threat to marine life, habitats, and coastal communities.

One of the primary reasons for the contribution of polyethylene bags to marine pollution is their widespread use and improper disposal.²⁵ Billions of plastic bags are used globally each year, with many ending up as litter on land and in water bodies. When these bags are discarded improperly, they can be carried by rainwater, rivers, and storm drains,

²⁴ S 37 of the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 19 defines pollution as “man-made or man-aided alteration of chemical, physical, or biological quality of the environment beyond acceptable limits and ‘pollutants’” shall be construed accordingly.

²⁵ M Mishra, et al. ‘Current Patterns and Trends of Microplastic Pollution in the Marine Environment: A Bibliometric Analysis’ (2024) 21(2024) Environmental Science and Pollution Research 22925–22944.

eventually making their way to the ocean.²⁶ Coastal regions, where plastic bag usage is often prevalent due to marketplaces and urban centres, are particularly vulnerable to plastic bag accumulation and marine pollution.

Once in the marine environment, polyethylene bags pose numerous threats to marine life. Marine animals, such as sea turtles, seabirds, and marine mammals, often mistake plastic bags for prey and ingest them. This can lead to internal injuries, blockages, and even death. Plastic bags can also entangle marine organisms, causing injuries, impairing their ability to swim or hunt, and increasing the risk of drowning.²⁷

In addition to their physical impact, polyethylene bags contribute to the issue of microplastics in the ocean. Over time, plastic bags exposed to sunlight and weathering break down into smaller plastic particles known as microplastics. These microplastics can be ingested by marine species, potentially entering the food chain and affecting entire marine ecosystems.²⁸

Furthermore, the presence of polyethylene bags in marine environments disrupts natural habitats and ecosystems. Plastic bags can smother and suffocate marine vegetation, alter sediment compositions, and harm coral reefs, which serve as critical habitats for marine biodiversity.²⁹

Polyethylene bags are also a significant contributor to land pollution due to their extensive use, improper disposal, and resistance to

²⁶ R Yu and S Singh, 'Microplastic Pollution: Threats and Impacts on Global Marine Ecosystems' (2023) 15(17) Sustainability 13252.

²⁷ SC Gall and RC Thompson, 'The Impact of Debris on Marine Life' (2015) 92(1-2) Marine Pollution Bulletin 170-179; DW Laist, 'Impacts of Marine Debris: Entanglement of Marine Life in Marine Debris Including a Comprehensive List of Species with Entanglement and Ingestion Records' in *Marine Debris* (Springer, New York 1997) 99-139.

²⁸ RC Thompson, et al. 'Lost at Sea: Where is all the Plastic?' (2009) 324(5923) Science 1535-1538.

²⁹ DK Barnes, 'Accumulation and Fragmentation of Plastic Debris in Global Environments' (2009) 364(1526) Philosophical Transactions of the Royal Society B: Biological Sciences, 1985-1998.

degradation.³⁰ The widespread use of polyethylene bags in various industries, retail, and households has resulted in their accumulation in landfills, open spaces, and even natural environments, leading to adverse environmental impacts.

One of the main reasons for the contribution of polyethylene bags to land pollution is their durability. These bags are made from petroleum-based polyethylene, which is non-biodegradable and can persist in the environment for hundreds of years.³¹ When plastic bags are discarded or improperly disposed of on land, they do not decompose naturally like organic materials. Instead, they break down into smaller fragments, known as microplastics, which can accumulate in the soil and persist for extended periods.³²

Improper disposal practices, such as littering or inadequate waste management, play a significant role in the land pollution caused by polyethylene bags. Many plastic bags end up as litter on streets, parks, and other public spaces, where they can be carried by wind and rain into natural environments, including rivers and streams.³³ Once in the soil, these plastic bags can be buried or remain on the surface, leading to soil contamination and hindering the growth of plants and vegetation. Polyethylene bags can also clog drainage systems and storm water drains when discarded in urban areas. This can result in flooding during

³⁰ O Kehinde, et al. 'Plastic Wastes: Environmental Hazard and Instrument for Wealth Creation in Nigeria' (2020) 6 Heliyon e05131.

³¹ AL Andraday, 'Microplastics in the Marine Environment' (2011) 62(8) Marine Pollution Bulletin 1596-1605.

³² PG Ryan, et al. Monitoring the Abundance of Plastic Debris in the Marine Environment (2009) 364(1526) Philosophical Transactions of the Royal Society B: Biological Sciences 1999-2012.

³³ M Eriksen et al. 'Plastic Pollution in the World's Oceans: more than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea' (2014) 9(12), PloS one, e111913; see also JW Chitotombe, 'The Plastic Bag 'Ban' Controversy in Zimbabwe: An Analysis of Policy Issues and Local Responses' (2014) 3(5) International Journal of Development and Sustainability 1000-1012.

heavy rains, leading to further environmental and infrastructural damage.³⁴

Landfills, where plastic waste is often disposed of, also contribute to land pollution. Plastic bags, due to their lightweight and non-degradable nature, tend to accumulate at the top of landfills, creating eyesores and posing a threat to wildlife that may ingest or become entangled in the plastic debris.³⁵ Moreover, landfills are not a sustainable solution for plastic waste management, as they occupy valuable land space and can release harmful pollutants into the soil and groundwater when plastic bags degrade under anaerobic conditions.³⁶

Polyethylene bags, commonly known as plastic bags, not only pose a threat to marine and land environments but also contribute to air pollution, thereby exacerbating the overall environmental impact. The production, use, and disposal of polyethylene bags release greenhouse gases and other pollutants into the atmosphere, affecting both human health and the climate.

One significant source of air pollution from polyethylene bags is their production. The manufacturing process involves the extraction of raw materials, such as fossil fuels, and the energy-intensive conversion of these materials into polyethylene. This process releases greenhouse gases, including carbon dioxide (CO₂) and methane (CH₄), which contribute to global warming and climate change.³⁷ Moreover, the production of polyethylene bags also emits volatile organic compounds

³⁴ 'Making Plastic Polluters Pay: How Cities and States Can Recoup the Rising Costs of Plastic Pollution' 14 <https://www.ciel.org/wp-content/uploads/2024/06/make_polluters_pay_cities_states_recoup_costs_plastic_pollution_report.pdf> accessed 23 July 2023.

³⁵ C Wilcox, et al. 'Using Expert Elicitation to Estimate the Impacts of Plastic Pollution on Marine Wildlife' (2016) 65 Marine Policy 107-114.

³⁶ Eriksen (n 33).

³⁷ SJ Royer, et al. 'Production of Methane and Ethylene from Plastic in the Environment' (2018) 13(8) PLoS ONE: e0200574 <<https://doi.org/10.1371/journal.pone.0200574>> accessed 23 July 2023.

(VOCs) and other air pollutants, contributing to local air pollution and smog formation.³⁸

The usage of polyethylene bags also leads to air pollution. When plastic bags are discarded, they can be carried by wind and scattered across landscapes, leading to "plastic bag litter." Plastic bags scattered in the environment can become entangled in trees and vegetation, leading to reduced air circulation and trapping pollutants in the surrounding area. Moreover, plastic bags in landfills can undergo photo-degradation due to exposure to sunlight, releasing micro plastic particles into the air.³⁹

Furthermore, the open burning of plastic waste, including polyethylene bags, is a common practice in some regions, particularly in areas with inadequate waste management systems. The burning of plastic releases harmful chemicals, dioxins, and furans, which are known to be highly toxic and can have serious implications for both human health and the environment.⁴⁰

The air pollution caused by polyethylene bags can have adverse effects on human health. Inhalation of particulate matter and toxic substances released during the production, use, and disposal of plastic bags can lead to respiratory issues, such as asthma, chronic bronchitis, and even lung cancer.⁴¹ Moreover, the release of greenhouse gases from plastic bag production contributes to climate change, which can lead to more frequent and intense heatwaves, storms, and other extreme weather events, impacting human health and well-being.⁴²

³⁸ M Jang, et al. 'Analysis of Volatile Organic Compounds Produced During Incineration of Non-degradable and Biodegradable Plastics' (2022) 303 (1) Chemosphere 134946.

³⁹ Andradý (n 31).

⁴⁰ R Verma, et al. 'Toxic Pollutants from Plastic Waste- A Review' (2016) Procedia Environmental Sciences 35 (2016) 701-708.

⁴¹ FR Cassee et al. 'Exposure, Health and Ecological Effects Review of Engineered Nanoscale Cerium and Cerium Oxide Associated with its Use as a Fuel Additive' (2013) 43(3) *Critical Reviews in Toxicology* 213-231.

⁴² I Byarugaba, 'Climate Resilience and Global Polyethylene Bag Pollution: Exploring Synthesis of Biodegradable Plastic Bags from Cassava (*Manihot esculenta*) as a

The extent of pollution caused by polyethylene bag use is substantial and has severe consequences for the environment and wildlife. The harmful effects of plastic bag pollution highlight the urgent need for sustainable alternatives and effective policy interventions to reduce plastic waste and protect the environment.

3.0 Socio Economic Factors for Increase in Plastic Use and Management

The socio-legal inquiry into the impact of pollution caused by polyethylene bag use by women in markets involves understanding the socio-economic reasons behind the prevalence of this practice. Several factors contribute to the high usage of polyethylene bags among women in markets, including affordability, accessibility, and cultural practices.

- i. **Affordability:** The affordability of polyethylene bags is a significant socio-economic reason for their widespread use. Polyethylene bags are inexpensive to produce, making them a cost-effective packaging option for businesses and retailers.⁴³ The low production costs translate to lower retail prices, making these bags affordable for consumers, especially in developing economies where cost-consciousness is crucial. In many markets, including street markets and small-scale businesses, polyethylene bags are often provided free of charge as a part of the customer service. This further encourages their usage, as consumers find it convenient to receive a free bag for their purchased items. Additionally, reusable and eco-friendly alternatives to plastic bags, such as cloth bags or paper bags, may be comparatively more expensive for consumers to purchase upfront. This cost difference can be a determining factor in women's'/consumers' choice of using polyethylene

Solution. *African Journal of Housing and Sustainable Development* (2023) 4(1) 42-48.

⁴³ JA Gidigbi, et al. 'A problem in Disguise: A Review Paper on Generous Uses of Polyethylene Bags (Nylon bags) in Nigeria and its Environmental Implications' (2020) *Environmental Science* 7(6) 602–610.

bags over sustainable alternatives.⁴⁴ This affordability factor encourages the continued use of polyethylene bags despite their negative environmental impact.⁴⁵

- ii. Accessibility: The accessibility of polyethylene bags is a key socio-economic reason for their prevalent use by women in various markets. Polyethylene bags are widely available and easily accessible in most retail stores, markets, and shops, making them a convenient choice for carrying groceries, goods, and other items.⁴⁶ Their easy availability and low cost make them a practical option for women, especially those from lower-income backgrounds, who may prioritize affordability and convenience in their daily shopping practices. In many marketplaces, polyethylene bags are often provided free of charge, further increasing their accessibility to women customers. As women are often responsible for household shopping and managing daily essentials, the ready availability of these bags simplifies their shopping experience and encourages their frequent use. Moreover, in regions where sustainable alternatives are limited or less accessible, such as reusable cloth bags or paper bags, polyethylene bags become the default choice due to their wide availability and affordability.⁴⁷ Polyethylene bags are widely available and easily accessible in markets. Vendors often provide them as default packaging for goods, making them convenient for women shoppers. The ubiquity of these bags contributes to their high usage rates and consequent pollution.⁴⁸

⁴⁴ J Dikgang, Z Ravat and J Mahabir, 'Influences of Various Pricing Points: an Experimental Study of Plastic Bags in Johannesburg, South Africa' (2022) *Journal of Applied Economics* 25(1) 1200–1218.

⁴⁵ Gidigbi (n 43).

⁴⁶ DS Madara, SS Namango and C Wetaka, 'Consumer-Perception on Polyethylene-Shopping-Bags' (2016) *Journal of Environment and Earth Science* 6(11) 12.

⁴⁷ Ibid.

⁴⁸ Ibid.

- iii. **Cultural Practices:** Cultural practices play a significant role in influencing the use of polyethylene bags by women in certain regions. In some cultures, the use of polyethylene bags has become ingrained in daily life and traditional shopping practices.⁴⁹ For example, in societies where the habit of using plastic bags has been normalized over time, women may continue to use these bags due to cultural norms and expectations. Moreover, in some cultures, there may be a perception that using plastic bags is more modern and convenient, aligning with the fast-paced lifestyle of urban areas. Women, influenced by societal trends and aspirations, may choose to use polyethylene bags to appear fashionable or up-to-date. Furthermore, cultural practices related to gift-giving and hospitality may also contribute to the use of polyethylene bags as a means of wrapping and presenting items, as they are easily accessible and can be readily disposed of after use. In such cultural contexts, the use of polyethylene bags may be deeply embedded in social norms and practices, influencing women's preferences and choices in marketplaces and everyday shopping. Reusing bags or opting for alternatives like cloth bags may not align with prevailing cultural norms, leading women to continue using polyethylene bags.
- iv. **Lack of Awareness:** The lack of awareness of the environmental impact is a significant socio-economic reason for the continued use of polyethylene bags by women in various markets.⁵⁰ Many women may not be fully aware of the detrimental effects of plastic bags on the environment, including their contribution to pollution, particularly in marine and land ecosystems.⁵¹ This lack of awareness can be attributed to various factors, such as limited access to information, inadequate education on environmental issues, and minimal exposure to campaigns

⁴⁹ YA Braun and AS Traore, 'Plastic bags, Pollution, and Identity: Women and the Gendering of Globalization and Environmental Responsibility in Mali' (2015) 29(6) *Gender & Society* 863–887.

⁵⁰ Ibid.

⁵¹ Ibid.

promoting eco-friendly practices. In regions where environmental awareness and education are not prioritized, women may be less likely to consider the long-term consequences of using polyethylene bags. Instead, they may view these bags as a convenient and readily available option for carrying goods, without fully understanding the impact of their choices on the environment. Moreover, advertising and marketing efforts by plastic bag manufacturers often focus on the convenience and affordability of these bags, rather than highlighting their environmental consequences. Such promotional strategies may reinforce the perception that polyethylene bags are the most suitable and acceptable choice for daily use. Addressing the lack of awareness requires targeted educational initiatives and awareness campaigns that specifically reach out to women in marketplaces and communities. By providing information on the environmental impact of plastic bags and promoting sustainable alternatives, women can make more informed choices and adopt eco-friendly practices.⁵² Raising awareness through education campaigns could help shift consumer preferences towards more eco-friendly choices.

- v. Limited Availability of Alternatives: In some markets, there may be limited availability of alternative packaging options, such as reusable bags or biodegradable materials. The absence of accessible alternatives makes it challenging for women to shift away from using polyethylene bags.⁵³ Additionally, the cost of sustainable alternatives may be higher than that of polyethylene bags, making them less affordable for women from lower-income backgrounds. Reusable bags may require an initial investment, and if these alternatives are not readily

⁵² H Chen, 'Factors Influencing Plastic Bag Consumption in Urban China' (2018) 10(12) Sustainability 4761.

⁵³ S Kaza, et al. 'What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050' (Urban Development Series, World Bank, Washington, DC 2018); SS Kamble, et al. 'Plastic Carry Bags: Hazard to the Urban Environment' (2018) 115(1) Current Science 29-34.

available in local stores, women may find it more convenient to rely on the readily available and inexpensive polyethylene bags.

- vi. **Perceived Convenience and Hygiene:** Women may perceive polyethylene bags as a convenient and practical option for carrying groceries, food items, and other goods due to their lightweight and easy-to-carry nature.⁵⁴ Moreover, polyethylene bags are often seen as hygienic, particularly for carrying food items.⁵⁵ Women may believe that using new, clean plastic bags for food purchases reduces the risk of contamination and foodborne illnesses. This perception of hygiene can influence their preference for polyethylene bags over reusable alternatives, which may require regular cleaning.
- vii. **Lack of Waste Management Infrastructure:** Inadequate waste management infrastructure in some markets, especially in developing regions, may lead to improper disposal of plastic bags.⁵⁶ Women may not have access to proper waste collection systems, leading to littering and pollution. The absence of proper waste collection and recycling facilities might reinforce the use-and-throw behaviour associated with plastic bags.⁵⁷
- viii. **Marketing and Advertising Strategies:** Marketing and advertising campaigns promoting polyethylene bags may influence women's choices in markets. Catchy slogans, free distribution, or incentives offered by vendors could reinforce the

⁵⁴ SO Iheukwumere1, et al. 'Stemming Plastic Bag Pollution in Anambra State: Willingness of the Public to Accept Alternative Bags' (2019) 2(1) African Journal of Environmental Research 17-32.

⁵⁵ Ibid.

⁵⁶ AA Shehu 'Stakeholders' Views on Ways to Reduce The Use of Plastic Bags and Its Environmental and Public Health Impacts in Sokoto Metropolis, Sokoto State, Nigeria (2020) 7 (4) International Journal of Research and Scientific Innovation (IJRSI) 2321–2705.

⁵⁷ N Evode, et al. 'Plastic Waste and its Management Strategies for Environmental Sustainability' (2021) 4 Case Studies in Chemical and Environmental Engineering 100142; MG Kibria, et al. 'Plastic Waste: Challenges and Opportunities to Mitigate Pollution and Effective Management' (2023) 17(1) Int J Environ Res 20.

perception that plastic bags are the most convenient and desirable option for carrying goods. Promotional activities that highlight the convenience and ease of carrying goods in polyethylene bags may create a perception of superiority over other alternatives.⁵⁸ Plastic bag manufacturers often use attractive colours, eye-catching designs, and logos to make their bags visually appealing to consumers. Women may be drawn to these aesthetically pleasing bags, associating them with modernity and style.⁵⁹ Many retail stores and market vendors offer polyethylene bags for free to customers. The provision of free bags serves as an incentive for women to use them, as they do not need to incur additional costs for shopping bags. Marketing campaigns emphasize the convenience of single-use plastic bags for everyday use. Women, particularly those juggling multiple responsibilities, may view these bags as a quick and easy solution for carrying goods.⁶⁰ Plastic bag manufacturers invest in building brand loyalty, making their bags synonymous with reliability and familiarity. Women may develop a preference for certain brands, further reinforcing the use of plastic bags in their shopping habits.

- ix. Societal Expectations and Gender Roles: Societal expectations and traditional gender roles may also contribute to the prevalence of polyethylene bag use among women in markets. Women may perceive that carrying reusable bags or alternatives is less socially acceptable or even challenging due to their caregiving roles or economic constraints.⁶¹

⁵⁸ See SK Pradhan and SG Thampi, 'Plastic Carry Bag Waste Generation by Households: A Case Study in Urban Area of Odisha' (2016) 7(2) *International Journal of Environmental Sciences* 141-146.

⁵⁹ A Kollmuss and J Agyeman, 'Mind the Gap: Why Do People Act Environmentally and What are the Barriers to Pro-environmental Behaviour?' (2002) 8(3) *Environmental Education Research*, 8(3), 239-260.

⁶⁰ Ibid.

⁶¹ A Tandon, et al. 'Plastics and Livelihoods in a Changing World: Can it Provide Benefits to the Urban Poor?' (2021) 280 *Journal of Environmental Management* 111718.

- x. **Consumer Behaviour:** Consumer behaviour and habits can be resistant to change, even in the face of mounting environmental concerns. Women may be accustomed to using polyethylene bags for years, making it challenging to switch to reusable or eco-friendly options.⁶²

Addressing these additional socio-economic factors requires comprehensive awareness campaigns, improved access to alternative packaging options, and investment in waste management infrastructure. Empowering women with knowledge about the environmental impacts of plastic bags and providing sustainable alternatives can contribute to reducing pollution caused by polyethylene bag use in markets including fostering behaviour change toward eco-friendly practices.

4.0 Legal and Policy Recommendations

The extensive use of polyethylene bags by women in markets has led to a significant environmental challenge, particularly in cities like Lagos and Abuja. The pollution caused by improper disposal and inadequate waste management of these bags has adverse effects on the local environment and public health. To address this issue effectively, a set of legal and policy recommendations are proposed to mitigate the impact of polyethylene bag use by women in these markets.

- i. **Ban on Single-Use Polyethylene Bags:** One of the most effective measures to tackle plastic pollution is to impose a complete ban on single-use polyethylene bags. Similar to successful approaches taken by other countries, the Nigerian government can introduce legislation to prohibit the production, importation, sale, and use of single-use plastic bags in markets. This ban would encourage the adoption of reusable and eco-friendly alternatives, reducing plastic waste significantly.
- ii. **Promotion of Sustainable Alternatives:** The government should actively promote sustainable alternatives to polyethylene bags, such as reusable cloth bags, jute bags, or biodegradable

⁶² Y Manik, et al. 'Understanding the Use of Plastic Bags in Households: Evidence from a Survey in Bangladesh' (2021) 754 Science of the Total Environment, 142255.

- alternatives made from natural materials. Implementing awareness campaigns in local markets to educate women and consumers about the environmental benefits of these alternatives can drive behaviour change and foster sustainable practices.
- iii. **Strengthening Waste Management Infrastructure:** Improving waste management infrastructure in markets is crucial for effective waste collection and recycling. The government should invest in establishing waste segregation and recycling facilities to manage plastic waste properly. Encouraging public-private partnerships can help create sustainable waste management systems that address the challenges of polyethylene bag disposal.
 - iv. **Extended Producer Responsibility (EPR) Scheme:** Introducing an EPR scheme specific to polyethylene bags can hold manufacturers and brand owners accountable for the entire lifecycle of their products, including their proper disposal. Under this scheme, manufacturers could be responsible for setting up collection and recycling mechanisms for their plastic products, encouraging responsible production and recycling.
 - v. **Public Awareness and Education:** Educating women, traders, and consumers about the environmental consequences of polyethylene bag use is essential for behaviour change. The government, in collaboration with NGOs and community-based organizations, should conduct educational campaigns that raise awareness about plastic pollution, proper waste management, and the benefits of eco-friendly alternatives.
 - vi. **Incentives and Rewards:** To encourage individuals and businesses to adopt sustainable practices, the government can offer incentives or rewards for reducing plastic usage and implementing effective waste management. Tax incentives, discounts, or other benefits can be provided to market vendors and businesses that actively participate in plastic waste reduction initiatives.
 - vii. **Enforcement and Monitoring:** Strict enforcement of plastic bag regulations is crucial for their effectiveness. The government should ensure regular monitoring and inspections to enforce the ban on single-use polyethylene bags and to check compliance

with waste management practices. Effective enforcement would deter illegal plastic bag use and improper disposal.

- viii. Collaborative Stakeholder Engagement: The success of any pollution mitigation effort requires collaboration among stakeholders. Government agencies, market associations, women traders, NGOs, and environmental groups should collaborate to develop and implement sustainable solutions. Engaging women in decision-making processes is critical, as they are key stakeholders in the issue.

5.0 Conclusion

To combat plastic pollution, education and awareness campaigns play a crucial role. Public outreach programs can inform individuals about the environmental impacts of plastic bags and encourage the adoption of more sustainable alternatives, such as reusable bags. Government-led initiatives can be complemented by collaborations with non-governmental organizations, businesses, and local communities to foster a culture of responsible waste management and reduce plastic bag usage. Furthermore, advancements in waste management infrastructure and recycling facilities are vital in minimizing the amount of plastic waste that enters marine environments. Proper waste collection, segregation, and recycling can prevent plastic bags from reaching water bodies and help address the global plastic pollution crisis.

Lastly, polyethylene bags contribute significantly to marine pollution due to their extensive use, improper disposal, and non-biodegradable nature. Their presence in marine ecosystems poses a grave threat to marine life, habitats, and coastal communities. Addressing this issue requires collective efforts from governments, industries, and individuals to reduce plastic bag usage, improve waste management practices, and promote sustainable alternatives to protect the health of our oceans and marine biodiversity.