

Plastic Pollution and our Moral Responsibility: Lessons from the African Eco-Communitarian Responsibility Approach

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Abstract

Recently, one typically bears a weighty emphasis on managing plastic waste globally. This is due to its detrimental effect on the environment, human health, and the ecosystem. It has been noted that the African continent produces less plastic waste than the global waste landscape. Yet, Africa stands among the most vulnerable continents regarding the harmful effects of plastic pollution. Recent discussions on plastic pollution and its management have often overlooked the African pollution management voice.

This paper argues that the Eco-Communitarian Responsibility approach suggests a plausible insight for redefining our moral responsibilities towards plastic pollution in Africa. By exploring the principles of this approach, we can contribute a perspective beyond formal law to the global discourse on sustainable environmental practices. The Eco-Communitarian Responsibility approach emphasizes unique values such as interconnectedness and collective responsibility, highlighting the need for diverse perspectives to effectively address plastic pollution in the African context. Using a qualitative research methodology, the article comprehensively reviewed existing literature on plastic pollution in Africa and the principles of the Eco-Communitarian Responsibility approach.

The article is structured in five sections: first, the introduction, sets the article's tone. Next is a discussion of the impact of plastic pollution, highlighting its effects on humans and the ecosystem. The third section examines the current management strategies, exposing the challenges and benefits of each strategy. The fourth section introduces the Eco-Communitarian Responsibility approach and discusses how its principles can inform African plastic waste management. This is followed by a conclusion highlighting the implications of the findings and the lessons for future research and policy development.

Keywords: Environment, Eco-communitarian Responsibility, Moral Responsibility, Plastic, Pollution

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I. Introduction

The current global crisis results from the increased mismanagement of the environment and the growing presence of pollution. For example, plastic waste has recently become a significant worldwide land and sea pollution issue. Plastic was once perceived as one of the most outstanding scientific achievements worldwide and is now seen as a major contributing factor to the ecological menace. It is common knowledge that its non-degradable nature has been found to significantly contribute to the decline of ecosystems, affecting livelihoods and threatening human and non-human health.¹ Not only does its debris persist in the environment for years, but it also can be transported far from its main source on land.² Most of the time, it is transported into the sea, and a recent estimation is that about 8 metric tonnes enters the sea yearly.³ Since this estimation was done in 2019, the number may have increased.

Despite the above observation, the benefits of plastics to society cannot be over-emphasized. It is common knowledge that they are used worldwide, domestically, in the transport sector, and in the health sector, among others. However, in recent times, environmentalists, such as Webb et al, have highlighted through the media and many other platforms, the damage plastics and plastic waste do to our land and the aquatic life in our rivers and oceans.⁴ As noted, with its non-degradable characteristics, it can stay in the soil for more extended period; it chokes and blocks sewerage, causing floods, etc. Marine life is affected by plastic waste. Also, apart from the ugly aesthetic sight of plastics on our coastal shores, aquatic life such as fish, macro-invertebrates, plants, and animals living

¹ Shomuyiwa D, Onukansi F, Ivanova M, Lucero-Priso D, 'The Plastic treaty: What is in it for Africa?' *Public Health Chll*, 2023, < <https://doi.org/10.1002/puh2.83>> on 22nd October 2024.

² Babayemi J, Nnorom I, Osibanjo O, and Weber R, 'Ensuring sustainability in plastics use in Africa: consumption, waste generation, and projections' *Environ Science Europe*, 2019, <<https://doi.org/10.1186/s12302-019-0254-5>> on 22nd October 2024.

Webb H, Arnott J, Crawford R, Ivanova E, 'Plastic degradation and its environmental implications with special reference to poly(ethylene terephthalate)' *Polymers*, 2013, < <https://doi.org/10.3390/polym5010001>> on 22nd October 2024.

Shah A, Hasan F, Hameed A, Ahmed S, 'Biological degradation of plastics: a comprehensive review' *Biotechnol Adv*, 2008, <<https://doi.org/10.1016/j.biotechadv.2007.12.005>> on 22nd October 2024.

Li W, Tse H, Fok L, 'Plastic waste in the marine environment: a review of sources, occurrence and effects' 1(1) *Sci Total Environ* , 2016,333–349.

³ Jensen N, 'Eight steps to solve the ocean's plastic problem' *World Economic Forum* ,2019, <<https://www.weforum.org/agenda/2018/03/8-steps-to-solve-the-oceans-plastic-problem>> on 8 Feb 2024.

⁴ Webb H, Arnott J, Crawford R, Ivanova E, 'Plastic degradation and its environmental implications with special reference to poly(ethylene terephthalate)' *Polymers*, 2013, < <https://doi.org/10.3390/polym5010001>> on 22nd October 2024.

in the water is lost. Some of them are due to plastic in their system, threatening their extinction.⁵

Even though media coverage has encouraged coastal beach cleaning in most countries, it has had little effect. Furthermore, there have been attempts to manage the waste, but less than 20% worldwide is being recycled. However, the demand for plastics is growing because it has revolutionized the world since its first production in the 1950s.⁶

A UNEP document confirmed that in 2020, the total production of plastic globally was more than 400 million tonnes.⁷ with the increased demand for production, it is estimated that global plastic produced yearly may reach over 1.1 billion tonnes in the year 2050.⁸ It must be noted that with the demand for more plastic, there will be an increase in waste. The irony is that most countries struggle to manage waste effectively. The generation of plastic waste is a result of the amount of plastic consumption. Letcher quoted a document by UNEP that “out of the over 300 million tonnes of plastic produced yearly, about 8 million pollute our oceans”.⁹ It has been estimated that by 2050, “the mass of plastic in the oceans will exceed the mass of fish.”¹⁰ Africa stands among the most vulnerable due to the negative effects of plastic pollution, and the current situation is dire because, in most African countries, there is a “high proportion of mismanaged waste plastics and lack of state-of-the-art recycling facilities”.¹¹

Blight L and Burger A, ‘Occurrence of plastic particles in sea-birds from the eastern north pacific’ Department of Biology University of Victoria, 1997, <<http://www.aburger.ca/files/2022/01/Blight-Burger-1997-plastic-MPB.pdf>> on 22nd October 2024.

⁵ Webb H, Arnott J, Crawford R, Ivanova E, ‘Plastic degradation and its environmental implications with special reference to poly (ethylene terephthalate)’ *Polymers*, 2013, <<https://doi.org/10.3390/polym5010001>> on 22nd October 2024.

⁶ Letcher T, ‘Plastic Waste and Recycling. In Introduction to plastic waste and recycling: Environmental Impact, Societal Issues, Prevention, and Solutions’ *Academic Press: London*, 2020, 3-12.

⁷ United Nations Environment Programme ‘*Drowning in Plastics –Marine Litter and Plastic Waste Vital Graphics*’ 21st October 2021, 6.

⁸ Geyer R, ‘Production, use, and fate of synthetic polymers. In Introduction to plastic waste and recycling: Environmental Impact, Societal Issues, Prevention, and Solutions’ *Academic Press: London*, 2020, 13-32.

⁹ Letcher T, ‘Plastic Waste and Recycling. In Introduction to plastic waste and recycling: Environmental Impact, Societal Issues, Prevention, and Solutions’ 3-12.

¹⁰ Walker L, ‘Weight of plastics in seas could exceed that of all fish by 2040’ *The Brussels Times*, 21 January 2022 <<https://www.brusselstimes.com/202522/weight-of-plastics-in-seas-could-exceed-that-of-all-fish-by-2040>> on 22nd October 2024.

¹¹ Jambeck J, Hardesty B, Brooks A, Friend T, Teleki K, Fabres J, Beaudoin Y, Bamba A, Francis J, Ribbink AJ, Baleta T, Bouwman H, Knox J, Wilcox C, ‘Challenges and emerging solutions to the land-based plastic waste issue in Africa’ 1(1) *Marine Policy*, 2018, 256–263.

An example is my personal experience in one of the African countries. The visit was during the rainy season, and I noticed there was litter everywhere after the rains, mainly plastic and non-biodegradable snack packaging. In addition, there were blocked gutters and floods in the capital city. A more distressing scenario was a day when a strong wind blew, followed by a big storm. During the wind's course, all that one could see in the sky was a plastic waste of different types and colours flying amidst dust and dirt in the sky. The sight of plastics in the sky was a cause for concern, yet to my surprise, people went about their 'business as usual' unconcerned. I could not understand why the people were not bothered when I believed the situation warranted an immediate response. As I began pondering it, the following questions came to mind; How do people dispose of empty plastics, particularly after drinking from the water sold in sachets, bottles, and other single-use plastics? Where does all this plastic waste go? What are the short and long-term effects of the mismanagement of plastic waste? Why are people unconcerned about this waste? What are individuals, companies, and the government's responsibilities in managing plastic waste? Are they even aware of their responsibility? What needs to be done?

My inclination was that this experience of mismanagement of plastic waste is not unique to the city in question, but more African towns and cities may face the same predicament. Though much has been done to respond to the plastic waste challenges such as pollution, marine litter biodiversity, and human health, the problem is escalating, making its way onto the agenda of international conferences such as the "United Nations Environmental Assembly meetings, the Basel and Stockholm Conventions, among others".¹² A report commissioned by World Wide Fund for Nature (WWF) affirmed that "without plausible global rules, regulations, and coordinated action, the transboundary plastic pollution crisis is worsening".¹³ Writing on the South African experience, Sadan et al, say; "the existing policy and legal frameworks are fragmented and ineffective due to policy gaps at the global, regional, and national levels. There is an urgent need to address these gaps".¹⁴

¹² Babayemi J, Nnorom I, Osibanjo O, and Weber R, 'Ensuring sustainability in plastics use in Africa: consumption, waste generation, and projections' *Environ Science Europe*, 2019, <<https://doi.org/10.1186/s12302-019-0254-5>> on 22nd October 2024.

¹³ World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 7 <https://files.worldwildlife.org/wwfmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

¹⁴ Sadan Z and De Kock L, 'Plastic Pollution in Africa: Identifying policy gaps and opportunities' *WWF*, 2022, 3 <https://wwf.africa.awsassets.panda.org/downloads/wwf_plastic_pollution.pdf> on 22nd October 2024.

If this statement is true for South Africa, then the assumption is that gaps in policy are also actual for most African countries. This chapter, therefore, argues that without broader possible participation in the exchange of ideas from research and indigenous conservation practices with the view to formulate new strategies and all-rounded efforts to mitigate this menace, the deadly effect of plastic pollution will continue to worsen.

With this backdrop, the current chapter proposes what Africa can bring to the global discussion table. The intention here is not to give a solution but to suggest plausible principles as lessons from an African Indigenous Approach to environmental management. The idea is that the principles from the Eco-Communitarian Approach, which has guided most indigenous communities for many years, can redefine our moral duty toward plastic pollution in Africa. The chapter is presented in six sections. First, it briefly highlights the nature and benefits of plastics. Second, it explores the impact of plastic waste. The third section examines the current management strategies in most African countries, and the fourth section highlights the need for a holistic ethical approach to respond to Africa's current state of affairs. The fifth section introduces the Eco-communitarian approach, highlighting its principles that can inform plastic waste management. A conclusion will follow this.

II. The nature of plastics

Plastics are seen and used everywhere around the globe. A conscious look in my house recently for items made of plastics resulted in a shocking revelation. Plastic items are everywhere, from the main compound to the kitchen, through the sitting room, bathrooms, and bedroom, which suggests that plastic has become essential and indispensable to our modern way of life. It was clear to me that there were traces of plastics in almost all the equipment in the house. For example, hose pipes, fridges, suitcases, clothes, chairs, and various single-use plastic items such as water, food, storage, and bags. This suggests that plastic has been and continues to be part of our daily lives.

It must be noted that the use of plastics began around the early 1900s, during Bakelite production, a synthetic material obtained from chemicals from fossil fuels. Plastic comes from *Plastikos*, a Greek word that means capable of being shaped or moulded. It is commonly used in the textile, automotive, manufacturing, and packaging industries.¹⁵ Geyer says that it “is a summary

¹⁵ Chen L, Nath T, Chong V, Gibbins C and Lechner A, ‘The Plastic Waste Problem in Malaysia: Management, Recycling and Disposal of Local and Global Plastic Waste’ 3(1) *SN Applied Sciences*, 2021, 1-15.

term typically used for man-made, i.e., synthetic, polymers. A polymer is a large molecule consisting of many equal or similar subunits bonded together”.¹⁶ Because plastics are relatively cheap and versatile, “they are used in packaging, building and construction, transportation, electrical and electronic equipment, health implants, and agriculture”.¹⁷ The annual global use amounted to 460 million tonnes, of which plastic packaging, construction, and transportation represent more than 60% of the weight.¹⁸

III. Plastic waste pollution

As noted in the introduction, plastic waste pollution currently poses human and environmental issues globally. This is mainly because plastic has resilience characteristics of not being degradable, and Webb et al, have noted that plastic pollution is maintained purposefully and inadvertently. The former is “through illegal or inappropriate dumping of domestic and industrial refuse” and the latter is “through poorly contained static and transported waste”.¹⁹ These land-based plastic wastes are carried along by flowing rivers, “where it is further added to by the disposal or loss borne from marine vessels and offshore petroleum platforms”.²⁰ Thus, these pollutants may remain both on land and eventually in the waterways for a very long time. For these reasons, the WWF document has argued that “plastic is not cheap. its production and disposal - and the pollution it causes come with high social, environmental, and economic costs, borne primarily by communities and governments”.²¹ First, local communities are affected negatively during the pre-production and production process. It has been noted that a pre-production plastic pellet called ‘nurdles’ is transported,

¹⁶ Geyer R, ‘Production, use, and fate of synthetic polymers. In Introduction to plastic waste and recycling: Environmental Impact, Societal Issues, Prevention, and Solutions’, 13-32.

¹⁷ Letcher T, ‘Plastic Waste and Recycling. In Introduction to plastic waste and recycling: Environmental Impact, Societal Issues, Prevention, and Solutions’ 3-12.

¹⁸ OECD, ‘Global Plastic Outlook: Economic Drivers, Environmental Impact and Policy Options, *OECD Publishing*, 2022 < <http://doi.org/10.1787/de747aef-en>> on 14th January 2024. 33.

¹⁹ Webb H, Arnott J, Crawford R, Ivanova E, ‘Plastic degradation and its environmental implications with special reference to poly(ethylene terephthalate)’ *Polymers*, 2013, < <https://doi.org/10.3390/polym5010001>> on 22nd October 2024.

²⁰ Webb H, Arnott J, Crawford R, Ivanova E, ‘Plastic degradation and its environmental implications with special reference to poly(ethylene terephthalate)’ *Polymers*, 2013, < <https://doi.org/10.3390/polym5010001>> on 22nd October 2024.

²¹ World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 11 <https://files.worldwildlife.org/wwfmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_EN-ABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

regionally or globally, to manufacturers that are unlikely to recover. The WWF document reiterated Eunima 2016, who argued that, during the transportation of waste from land to the waterways, there is a possibility of spillage and nurdles, and it is estimated that 230,000 tonnes leak into the ocean annually.²² Nurdles “leach into terrestrial and marine ecosystems through ingestion and bioaccumulation in the food chain”.²³

Plastic elements that end up in the ocean have been shown to contain poisonous chemicals. Webb et al, quoted Hirai et al who highlighted chemicals, such as “polychlorinated biphenyls (PCBs), nonylphenol (NP), organic pesticides, such as dichlorodiphenyltrichloroethane (DDT), polycyclic aromatic hydrocarbons (PAHs), polybrominated diphenyl ethers (PBDEs) and bisphenol A (BPA) in the plastic debris found consistently in the sea”.²⁴ This confirms the media's exposure to the dangers posed by plastic to life in the sea. Most species, such as marine birds, sea turtles, and sharks, have been seen entangled or have ingestion of plastics made out of toxic compounds.²⁵ Webb et al, reiterated Schecter et al, that most of these toxic chemicals have been linked to many human health problems, such as “developmental impairment (neurological impairment, growth abnormalities, and hormonal imbalances), cancer, endocrine disruption, neurobehavioral changes, arthritis, breast cancer, diabetes, and DNA hypomethylation”.²⁶

The above discussion highlights that the global threat posed by plastic waste pollution is multifaceted, impacting both the environment and human health. From its persistence in terrestrial and marine ecosystems to its contribution to toxic chemical accumulation, the adverse effects of plastic pollution are undeniable. The pre-production, transportation, and improper disposal of

²² World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 11 <https://files.worldwildlife.org/wwfmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

²³ World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 11 <https://files.worldwildlife.org/wwfmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

²⁴ Webb H, Arnott J, Crawford R, Ivanova E, ‘Plastic degradation and its environmental implications with special reference to poly(ethylene terephthalate)’ *Polymers*, 2013, 2 < <https://doi.org/10.3390/polym5010001>> on 22nd October 2024.

²⁵ Sazima I, Gadig O, Namora R, Motta F, ‘Plastic debris collars on juvenile carcharhinid sharks (*Rhizoprionodon lalandii*) in southwest Atlantic’ *Marine Pollution Bulletin*, 2002, 44, 1147–1149.

²⁶ Webb H, Arnott J, Crawford R, Ivanova E, ‘Plastic degradation and its environmental implications with special reference to poly(ethylene terephthalate)’ *Polymers*, 2013, 2 < <https://doi.org/10.3390/polym5010001>> on 22nd October 2024.

plastics, particularly nurdles, continue exacerbating this issue. As highlighted, hazardous chemicals in plastic waste significantly threaten marine life and human health and ecosystems worldwide. The next section looks specifically at pollution in Africa.

IV. Plastic pollution in Africa

Africa has been noted to produce 5% and uses 4% of the global plastic.²⁷ A study conducted by Babayemi et al, on the consumption of polymers and plastic in Africa revealed that six countries in Africa, specifically “Egypt, Nigeria, South Africa, Algeria, Morocco, and Tunisia, accounted for about 74.6% (approximately 87.7 Mt) compared to the estimated consumption (172 Mt) for the entire continent. Suggesting that the six countries consumed 51% of the total African plastics”.²⁸

Though it has been noted that Africa lacks comprehensive data on plastic production, in various countries, Massa et al, managed to compile data on some countries as follows:

In 2020, Egypt (2329 kt), South Africa (1410 kt), and Nigeria (513 kt) were among the biggest African plastic producers. Ethiopia’s estimated production in 2022 was 386 kt, Ghana’s was 205 kt in 2019, and Kenya’s was 130 kt in 2018. In 2018, Kenya produced around 30% of the country’s 433 kt of primary plastic material.²⁹

In addition, Massa et al, study revealed the following figures:

Egypt, Nigeria, South Africa, Algeria, the Democratic Republic of Congo (DR Congo), and Tanzania are the largest producers of plastic waste in Africa, with an average of more than 1000 kt. Ghana, Kenya, Angola, Cameroon, Côte d’Ivoire, Morocco, and Uganda generate over 500 kt on average, while Mozambique, Ethiopia, and Zambia over 300 kt.³⁰

These figures confirm the plastic menace and the need for drastic measures to respond to it. Looking at the high figures in Africa, the WWF report adds that

²⁷ Shomuyiwa O, Onukansi O, Ivanova M, Lucero-Prisno D, ‘The Plastic Treaty: What is in it for Africa?’ 3(83) *Public Health Chall*, 2023, 2.

²⁸ Babayemi J, Nnorom I, Osibanjo O, and Weber R, ‘Ensuring sustainability in plastics use in Africa: consumption, waste generation, and projections’ *Environ Science Europe*, 2019, <<https://doi.org/10.1186/s12302-019-0254-5>> on 22nd October 2024.

²⁹ Massa G and Archodoulaki M, ‘An Imported Environmental Crisis: Plastic Mismanagement in Africa’ *Sustainability* 2024, 16, 672, 2 <<https://doi.org/10.3390/su16020672>> on 22nd October 2024.

³⁰ Massa G and Archodoulaki M, ‘An Imported Environmental Crisis: Plastic Mismanagement in Africa’ *Sustainability* 2024, 16, 672, 2 <<https://doi.org/10.3390/su16020672>> on 22nd October 2024.

the COVID-19 pandemic also contributed to the spread of plastic waste: “It led to a rising consumption of plastic packaging, which is higher than the packaging consumed in physical stores”.³¹ Babayemi quoted Janbech et al, who revealed a disturbing estimate that “250 million tonnes of plastic are likely to enter the oceans by the year 2050, and 1 metric tonnes of plastic waste will enter the ocean from Africa”.³² This is if nothing is done to remedy the current situation.

So far, we have seen that while Africa contributes a smaller percentage of global plastic production and usage, certain countries are significant producers of plastic waste, with alarming figures from Egypt, Nigeria, and South Africa. The lack of comprehensive data across the continent further complicates the challenge, though the available statistics paint a clear picture of the severity of the problem. The COVID-19 pandemic exacerbated this crisis by increasing plastic consumption particularly through packaging.

V. Current management strategies

There are several strategies for managing plastic pollution. First, single-use plastic products are among Africa's significant plastic waste sources, mainly because they can be disposed of quickly and easily everywhere. They are often lighter or more durable and affordable plastic. They come in different forms, like sweets and food wrappers, straws, swaps, earbuds, snack food packaging, beverage bottles and lids, plastic cups and plates, plastic grocery bags, and takeaway containers. A WWF report says, “Many of these products are designed with mixed materials, which make them difficult to sort and reuse or recycle”.³³ Since no rules and regulations hinder the dumping, most people have opted to dump them openly. Most of these dumps have grown into hazardous cliffs of garbage, occupying large stretches of land that could have been used productively – Koshe in Ethiopia is a good example. In 2017, Koshe (dirt) was an open landfill

³¹ World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 11 <https://files.worldwildlife.org/wwfmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

³² Babayemi J, Nnorom I, Osibanjo O, and Weber R, ‘Ensuring sustainability in plastics use in Africa: consumption, waste generation, and projections’ *Environ Science Europe*, 2019, <<https://doi.org/10.1186/s12302-019-0254-5>> on 22nd October 2024.

³³ World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 13 <https://files.worldwildlife.org/wwfmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

with a surface area of 25 hectares, which receives 300,000 tons of solid waste from Addis Ababa, the capital of Ethiopia, annually”.³⁴ “The garbage landslide killed about 113 people living around the landfill, it also displaced and injured several others. The rubble extended 20 meters beyond the landfill’s designated boundary, damaging at least 50 houses”.³⁵ Since this incident, many attempts have been made to tackle further disasters through the combined efforts of “United Nations Habitat and the government of Japan; however, the dumpsite continues to grow because there are over 3,600 tonnes of mixed waste added to it on a daily basis”.³⁶ There seems to be no proper waste segregation system, making it difficult to separate other solid wastes from plastic waste. This has resulted in many poor and vulnerable individuals searching on the waste dump for recyclable materials.

The second strategy common in most parts of Africa is the open burning of plastics. The danger attached to this is that these fires often continue for weeks unless heavy rainfall extinguishes them. In addition to burning plastics at dump sites, most people burn plastic cables to retrieve copper wires and other valuable metals to sell as a source of their livelihoods. In addition, most rural communities burn plastics to make fires for food and as a heating source.³⁷ Burning produces dangerous fumes that affect humans and non-humans alike. There is also the strategy of incineration. This strategy also produces poisonous air pollution.

Another method of plastic waste management is recycling. It must be noted that the first African country to recycle synthetic plastic waste into oil was Kenya in 2017. Ethiopia was also the first country to convert waste into an energy plant through the combined effort of a consortium of some international companies and the Government of Ethiopia. The companies are “Cambridge Industries

³⁴ Asnakew S, Shumet S, Ginbare W, et al, ‘Prevalence of post-traumatic stress disorder and associated factors among Koshe landslide survivors, Addis Ababa, Ethiopia: a community-based, cross sectional study’ 1(1) *BMJ Open*, 2019, 9.

³⁵ Asnakew S, Shumet S, Ginbare W, et al, ‘Prevalence of post-traumatic stress disorder and associated factors among Koshe landslide survivors, Addis Ababa, Ethiopia: a community-based, cross sectional study’, 9.

³⁶ World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 13 <https://files.worldwildlife.org/wwfmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

³⁷ World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 13 <https://files.worldwildlife.org/wwfmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_ENABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

Limited (Singapore), China National Electric Engineering, and Ramboll, a Danish engineering firm”.³⁸ In 2019, the “African Plastic Recycling Alliance was launched by Coca-Cola Company, Diageo, Nestlé, and Unilever by the CEO’s African forum. The aim was to transform the plastic recycling landscape across sub-Saharan Africa”.³⁹ Since then, some African countries have started recycling plastic waste to respond to the ‘throw-away’ culture. Even though this has been embraced as an important waste management strategy, Zing et al have drawn attention to its shortfalls. They argue that recycling ‘delays, rather than avoids, final disposal’. This is because even the recycled product may ultimately be disposed of because it degrades in quality and diminishes in quantity over time. This suggests that plastic cannot be recycled indefinitely and may eventually be discarded. Again, the authors believe that recycled items compete with the primary production on the market.⁴⁰ Not all countries have the means and infrastructure to embark on massive recycling to match the amount of waste produced. For instance, Boateng et al. quoted Chasant 2020, who believes that “Only up to 5% of the one million tonnes of plastic generated in Ghana every year are recycled”.⁴¹

Moreover, single-use plastics have been banned in many African countries as part of managing plastic waste. Rwanda has been a success story in banning plastic bags and using single-use plastics. The government has encouraged locally produced materials as substitutes for imported plastic insulation.⁴² In the same way, in 2017, Kenya also banned single-use plastic bags and imposed stringent penalties such as heavy fines and even imprisonment on offenders. The ban was effective for a while; however, since neighbouring countries such as Uganda and Tanzania still allow plastics, there has been transboundary illegal waste movement.⁴³ Plastic is a lucrative business, so it is not easy to ban it. As a result,

³⁸ UN Environment, Ethiopia’s waste-to-energy plant is a first in Africa, UN Environment news and stories, 24th November 2017 <<https://www.unenvironment.org/news-and-stories/story/ethiopia-waste-energy-plant-first-africa>> on 16 January 2024.

³⁹ Benson W, ‘Companies Launch African Plastics Recycling Alliance’ *SDG Knowledge Hub, Institute for Sustainable Development*, 2019, <<https://sdg.iisd.org/news/companies-launch-african-plastics-recycling-alliance>> on 3rd February 2024.

⁴⁰ Zink, Trevor & Geyer, Roland, ‘Material Recycling and the Myth of Landfill Diversion’, *Journal of Industrial Ecology*, 2019, 23. <<https://doi.org/10.1111/jiec.12808>> on 16th January 2024.

⁴¹ Boateng J, Attiogbe E, Stahl A, Apoh W, Boadi C & Frimpong W, ‘Using Africa’s past to promote change toward safer alternatives for food packaging in Accra’ 1(8) *Cogent Social Sciences*, 2022, 9.

⁴² Babayemi J, Nnorom I, Osibanjo O, and Weber R, ‘Ensuring sustainability in plastics use in Africa: consumption, waste generation, and projections’ *Environ Science Europe*, 2019, 17 <<https://doi.org/10.1186/s12302-019-0254-5>> on 22nd October 2024.

⁴³ World Wildlife Fund, Who Pays For Plastic Pollution?, 12th December 2023, 13 <https://files.worldwildlife.org/wwfmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_EN-

a few years after the ban, single-use plastics have piled up at Dadach Boshe's dump. The adverse effect is that strong winds have been blowing these bags into ecosystems and the nearby farms, causing animal loss and destroying farmers' businesses. Animals, such as goats, have been suffering from the ingestion of plastic bags, which makes their stomach swell and eventually causes their death.⁴⁴

VI. The need for a holistic perspective of responding to the crisis

Most African countries are ill-prepared for the explosion of plastic waste. Not only because of the financial implications accompanying it but also because the waste management system in most countries is not coping with the current plastic produced and the need to consume it. Several reasons have been attributed to this. For instance, it has been noted that:

Despite consuming almost 3x less plastic than in high-income countries, the cost of plastic across its lifecycle is 8x higher in low and middle-income countries. Further, 93% of deaths linked to global plastic production occur in low and middle-income countries with limited environmental regulation and access to healthcare.⁴⁵

This quotation suggests that until now, there have been no clear and specific rules and regulations to guide countries in eliminating plastic. This is a cause for concern, particularly looking at the harm that plastic is causing worldwide. A Norden report by Siran et al stated that:

Without global action, the annual levels of mismanaged plastics would continue to rise and could almost double from 110 million tonnes (Mt onwards) in 2019 to 205 Mt by 2040, an 86% increase. Annual production of virgin plastics would increase from 430 Mt in 2019 to 712 Mt by 2040, a 66% increase. GHG emissions from the plastic system could further increase from 1.9 Giga tonnes of carbon dioxide equivalent (GtCO₂e) per year in 2019 to 3.1 GtCO₂e by 2040, an increase of 63%. This trajectory is incompatible with the goals of the Paris Climate Agreement. (2023: 9).

Given the foregoing, therefore, there is a need for policy intervention to reduce plastic and its waste and for management to align with the Paris

ABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

⁴⁴ Scovian L, 'The toughest plastic bag ban is failing: A tale of smugglers, dumps and dying goats' NPR, 2023, <<https://www.npr.org/sections/goatsandsoda/2023/08/09/1190211814/the-toughest-plastic-bag-ban-is-failing-a-tale-of-smugglers-dumps-and-dying-goat>> on 22nd October 2024.

⁴⁵ World Wildlife Fund, Who Pays For Plastic Pollution, 12th December 2023, 7 <https://files.worldwildlife.org/wwfmsprod/files/Publication/file/6lohrny0o2_ENGLISH_WWF_EN-ABLING_GLOBAL_EQUITY_WEBV.pdf?_ga=2.24052538.1808598019.1709606493-659187895.1709606493> on 22nd October 2024.

Agreement. Since the African reality seems to be slightly different from that of some Western countries, I will suggest that importing policies to be implemented in Africa will not be able to respond to the African story effectively, and there is a need for a response brewed in Africa that goes beyond formal law that has been imposed on Africa.

The Norden report has drawn our attention to the fact that:

The plastic industry has not borne the cost of plastic externalities; on the contrary, it has benefited from public subsidies, for example, regarding oil exploration. In addition, adequate controls on how plastics are produced, used, and managed have been lacking, generating hazards to human health and biodiversity across the plastic lifecycle, contributing to climate change; impacting the informal sector and local communities, and resulting in the release of large volumes of mismanaged plastics into the environment (2023: 8).

Therefore, in global discussion, the dilemma of the abundance of plastic, its use, and its waste impact on the environment requires several stakeholders' voices, including that of Africans. This is because the hazardous effect affects everyone, not only those in the West. For this reason, the next section of this chapter proposes some lessons we can learn from the African indigenous approach to environmental management justice.

VII. Lessons from eco-communitarian responsibility

The menace of plastics has brought to light significant dimensions of our moral consciousness. Key among these is human greed manifested in the multinational plastic industries. The plastics producers know their products' environmental and human health risks but do not share them with the public in the name of commercially confidential information.⁴⁶ It is believed that "there is still a wide range of toxic chemicals used as plastic or polymer additives – for example, chemicals that have not yet been subject to international controls (such as many endocrine-disrupting chemicals) or recognized Persistent Organic Pollutants (POPs) which are allowed under exemptions".⁴⁷ However, because we are largely a capitalist society with the availability of market and profit, industries continue to produce them despite their harmful effects. The second is the moral challenge of ignorance. Society has overlooked the long-term health implications of plastics for both users and the environment. As an example of the ignorance of the effects, the same UNEP document says that:

⁴⁶ UNEP, Plastic and toxic additives, and the circular economy: the role of the Basel and Stockholm Conventions on 16th January 2024, 27.

⁴⁷ NEP, Plastic and toxic additives, and the circular economy: the role of the Basel and Stockholm Conventions on 16th January 2024, 27.

Scientific studies have reviewed the migration of various chemical substances from plastic packaging materials during microwave and conventional heating, under various storage conditions. They found that there is unwanted migration and release of additives such as plasticisers (e.g. short-chained chlorinated paraffins (SCCPs) from PVC toys or shower curtains) or of flame retardants (e.g. from plastic casings of televisions or computers). Some of the migrating substances may be toxic.⁴⁸

This confirms the hazardous toxicity of some plastics, which ordinary users may not be aware of. The third is disregarding the rules and regulations concerning plastic waste management in most African communities. It is common knowledge that the disregard results from a lack of awareness regarding human responsibilities towards current and future generations of the effects of plastic waste pollution. These ethical dilemmas make addressing the challenges that plastic waste poses almost impossible. Yet the visible and invisible impacts of plastic waste and the tragic loss of lives have forced these issues into the public spotlight. Despite this exposure, governments, policymakers, municipalities, and environmentalists struggle to navigate these moral intricacies effectively. As noted above, with the rate at which both plastic production and consumption are increasing the need for sustainable plastic waste management is compelling and arises from various critical factors and challenges the continent faces.

As noted above, the complexity of plastic waste requires a holistic global approach consisting of ideas and strategies not only from developed countries but developing countries as well. This chapter posits that looking at the current situation, Africa seems to have the following options:

- To refuse to respond to the menace and be consumed by the negative effect of plastic waste;
- Rely on strategies that have not responded effectively to the crisis sustainably; or
- Looking back into the past to find ideals and principles to inform our responses and create a sustainable holistic framework that could be included in any discussion on plastic waste.

Looking at the current situation, the last point is the plausible option because it is common knowledge for most Africans that whenever faced with issues that touch on morals, there have always been indigenous knowledge systems or experiences to fall on.

⁴⁸ UNEP, Plastic and toxic additives, and the circular economy: the role of the Basel and Stockholm Conventions on 16th January 2024, 18.

So, for the current crisis that we are in, it may be prudent to look back to how the African indigenous societies managed nature for some ideals and principles—not forgetting that the indigenous African communities never had to deal with plastic waste and pollution. Though the indigenous people did not have to deal with plastic waste, some ideals and principles from how they managed nature can inform the current situation. This is where the African environmental justice theory, Eco-Communitarian Responsibility theory, becomes essential.

The proponents of this approach were Margaret Ssebunya, Stephen Nkansah Morgan, and Beatrice Okyere Manu (2019)⁴⁹ through a careful study of the African indigenous response to nature. Most indigenous communities believed that there is a mutual interdependence between human beings and nature and, as such, did not harm the environment. They instead revered and respected it, and as Tangwa puts it so well when writing on the African worldview and nature, he said, “since a human can conceivably transform or be transformed (with or without knowledge and consent) into any of the other ontological entities, in this life or in the life after death, no human being can confidently claim to know that he/she is not the ‘brother/ sister’ of any other things in existence”.⁵⁰ The approach emphasizes the interconnectedness of humans and ecosystems and promotes shared responsibility for environmental well-being. The approach acknowledges that human communities are an integral part of the natural world, and therefore, we have a collective responsibility to protect and sustain the environment in which we live. It further asserts that “the environment is a public good whose resources should be enjoyed by everyone in the community regardless of gender, race, economic status, or even political affiliation. However, the consumption of these environmental resources should come with a collective duty of care”.⁵¹ The theory posits that collective responsibility towards the environment should start from the local community level with traditional leadership as gatekeepers. Being a communitarian society, the basis of their use and care for nature was their communal values such as “compassion, reciprocity, dignity, humanity, cooperation, harmony, relationality and communion in the interests of building and maintaining communities

⁴⁹ Ssebunya M, Morgan S, Okyere-Manu D, ‘Environmental Justice: Towards an African Perspective’ *The International Library of Environmental, Agricultural and Food Ethics*, 2019,2 <https://doi.org/10.1007/978-3-030-18807-8_12> accessed on 22nd October 2024.

⁵⁰ Tangwa B, ‘Some African Reflections on Biomedical and Environmental Ethics’ In K. Wiredu (Ed.) *A Companion to African philosophy* Oxford: Blackwell publishers, 2004, 387-395.

⁵¹ Ssebunya M, Morgan S, Okyere-Manu D, ‘Environmental Justice: Towards an African Perspective’ *The International Library of Environmental, Agricultural and Food Ethics*, 2019,2 <https://doi.org/10.1007/978-3-030-18807-8_12> accessed on 22nd October 2024.

with justice and mutual care”⁵² embedded in *Ubuntu*, which is articulated in the aphorism, “*Umuntu Ngumuntu Ngabantu*, and translated as a person is a person because of or through others”.⁵³ In these societies, “communalism, collectivism and working with others as a team were essential components of the African communitarian society through which Africans ensured proper management of the environmental resources. For instance, every community member was responsible for ensuring that water sources, roads, and other public facilities were kept clean and unpolluted”.⁵⁴ Therefore, “under no circumstances would one deliberately pollute the environment because this would be contrary to the African communitarian society’s values. Such negative actions towards the environment would show a lack of care and concern for others”.⁵⁵ In most instances, offenders were severely punished; sometimes, serious and deliberate offenses towards nature resulted in ostracism.

The search for sustainable plastic management, therefore, must encompass these key elements: First, our interconnectedness with nature. Contemporary African communities recognize this key ideal and do all that they can to maintain the relationship. For instance, Segun Ogungbemi says that:

In our traditional relationship with nature, men and women recognize the importance of water, land, and air management. To our traditional communities, the ethics of not taking more than you need from nature is a moral code. Perhaps this explains why the earth, forests, rivers, wind, and other natural objects are traditionally believed to be both natural and divine. The philosophy behind this belief may not necessarily be religious but a natural means by which the human environment can be preserved. The ethics of care is essential to the traditional understanding of environmental protection and conservation (1997: 266).

Contemporary African societies must appreciate the interconnectedness with nature, knowing that misuse or abuse harms humanity.

Another critical principle that can inform our current situation is shared responsibility. This is where local communities can come together to actively address plastic waste.

⁵² Khoza R, ‘Managing the Ubuntu way’ 1(1) *Enterprise Magazine*, 1994, 4-9.

⁵³ Shutte A, ‘Philosophy for Africa’ 1(1) *University of Cape Town Press*, 1993, 46.

⁵⁴ Ssebunya M, Morgan S, Okyere-Manu D, ‘Environmental Justice: Towards an African Perspective’ *The International Library of Environmental, Agricultural and Food Ethics*, 2019, 186 <https://doi.org/10.1007/978-3-030-18807-8_12> accessed on 22nd October 2024.

⁵⁵ Ssebunya M, Morgan S, Okyere-Manu D, ‘Environmental Justice: Towards an African Perspective’ *The International Library of Environmental, Agricultural and Food Ethics*, 2019, 185 <https://doi.org/10.1007/978-3-030-18807-8_12> accessed on 22nd October 2024.

The third principle is Community-Based Decision-Making; communities must meet regularly, educate, and decide how to respond to the current crisis. Such meetings must be led by community leadership. They must ensure their decision processes harmonize with their cultural values and traditions. Once a decision is made, offenders must be held accountable. As has been argued, current and future lives depend on the environment and everything in it; therefore, we are being challenged that our attitudes and actions must be redeemed and appropriated in a new way that will respect the dignity of the environment. Eco-Communitarian Responsibility promotes the idea that individuals are not solely responsible for safeguarding the environment. Instead, it encourages the collective effort of entire communities, fostering a shared responsibility for environmental stewardship. In the case of plastic pollution, our communal and shared responsibility will go a long way to responding effectively to the menace of plastic waste.

VIII. Conclusion

So far in this chapter, it is clear that plastic pollution poses a serious environmental threat in Africa because of its disproportionate effect. Although it produces and even consumes a comparatively small amount of plastic in other regions, the continent faces serious challenges in effectively managing plastic waste. The chapter highlighted that the current management strategies, including landfill, incineration, and recycling, are inadequate to address the growing problem. Therefore, drawing on the core principles of the Eco-communitarian Responsibility approach, which emphasizes interconnectedness, shared responsibility, and community-based decision-making, the chapter challenged Africans to redefine their moral duty toward plastic pollution.

The chapter has argued that by embracing principles from the indigenous knowledge systems, African countries can develop holistic and sustainable strategies for managing plastic waste. It further highlights the need for African governments, policymakers, and communities to work together to address this crisis by implementing stricter rules and regulations, promoting recycling and waste management initiatives, and educating the public about the negative environmental effects of plastic pollution. Finally, the chapter proposes that through collective action, individual and communal commitment to environmental stewardship, Africa can successfully tackle the plastic pollution menace and ensure a cleaner and healthier environment for current and future generations.

