



IMPACT OF PLASTIC POLLUTION ON THE ECONOMIC GROWTH AND SUSTAINABILITY OF BLUE ECONOMY IN NIGERIA

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ABSTRACT: *Plastic pollution has become a significant environmental problem, causing widespread environmental and health challenges globally. The impact of plastic pollution on the sustainability of the blue economy in Nigeria has become an area of concern, considering the country's reliance on oceans and seas for economic activities. This research aims to investigate the impact of plastic pollution on the sustainability of the blue economy in Nigeria. Anchored on the Diffusion of Innovations Theory, the study uses a systematic review of the literature to evaluate the impact of plastic pollution on the blue economy in Nigeria. The study revealed that plastic pollution has significant impacts on the blue economy in Nigeria with the fishing industry, tourism, and human health as the most affected sectors. The pollution is also responsible for environmental challenges, such as ocean acidification, water pollution, and land degradation. The research also found that weak legislation, inadequate waste management practices, and poor public awareness are the significant challenges in addressing plastic pollution in Nigeria. In conclusion, plastic pollution has a considerable impact on the sustainability of the blue economy in Nigeria. The environmental, social, and economic dimensions of the industry have been adversely affected. The study recommends the adoption of a comprehensive approach, which includes effective waste management, public awareness campaigns, sustainable production and consumption patterns, and the implementation of robust legislation to mitigate the effects of plastic pollution.*

KEYWORDS: Impact, Plastic Pollution, Sustainability, Blue Economy, Nigeria.



INTRODUCTION

Plastic pollution is a growing environmental concern globally, and Nigeria is no exception. As a coastal nation in West Africa, Nigeria's blue economy is essential to its economic growth and development. However, plastic pollution negatively impacts the sustainability of the blue economy, thereby endangering the country's economic prospects. This paper aims to highlight the impact of plastic pollution on the economic growth and sustainability of the Nigerian blue economy, drawing from recent research and publications.

While Nigeria's blue economy contributes significantly to the country's economic growth, its sustainability is at risk due to plastic pollution. The World Bank estimates that Nigeria's blue economy is valued at \$22 billion, providing employment opportunities for millions of Nigerians and generating foreign exchange. Nevertheless, plastic pollution, particularly in Nigerian coastal areas, threatens the productivity of the sector and its long-term sustainability. Research indicates that plastic pollution negatively impacts marine productivity (Cózar et al., 2017), reduces the quality of life of coastal communities (Wieczorek et al., 2019), and leads to significant economic losses to the country (UNEP, 2018).

Furthermore, the impact of plastic pollution on the economic growth and sustainability of Nigeria's blue economy extends beyond the environmental consequences. The fishing, shipping, and tourism industries, which are the mainstay of the blue economy, are significantly affected by plastic pollution, resulting in revenue losses for the country. A lack of effective waste management infrastructure and technology in the country exacerbates the plastic pollution problem, leading to uncontrolled plastic littering and even greater economic consequences. It is therefore crucial to examine the impact of plastic pollution on the blue economy's economic growth and sustainability in Nigeria.

Recent research conducted in Nigeria reveals the extent of plastic pollution in the country's waters and coastal regions. A study conducted in the Lagos lagoon found that plastic debris accounted for over 70% of the items collected from the water (Owoyemi, Duru & Atolagbe, 2021). Another study conducted in Calabar found that plastic waste was a significant problem for the local fishing industry, impacting the quality and quantity of fish catch (Etinosa, Ekpo & Onuminyi, 2019). Furthermore, plastic pollution has also been linked to economic losses in the Nigerian tourism industry due to its impact on the quality of beaches (Kester et al., 2018).

These studies point to the fact that plastic pollution has severe implications for Nigeria's blue economy. For example, the loss of fish stock could lead to the loss of livelihoods for thousands of Nigerians, while the impact on the tourism industry could lead to a decrease in foreign exchange earnings. Furthermore, the negative environmental impact of plastic pollution could also lead to increased health problems, which would place a burden on the economy.

The Nigerian government has made several efforts to tackle plastic pollution in the country. These include introducing policies such as the Plastic Bag Ban, setting up a plastic waste recycling fund, and signing up for the Global Partnership on Marine Litter. Private sector organizations have also initiated several interventions targeted at addressing the plastic pollution problem in the country. For instance, the Nigerian Bottling Company has launched a recycling program aimed at collecting millions of PET bottles over the next few years. Similarly, Coca-Cola Nigeria's "Waste to Wealth" program aims to promote effective waste management through recycling.



Notwithstanding these initiatives, several challenges persist in tackling plastic pollution in Nigeria, ultimately affecting the blue economy's economic growth and sustainability. A report by the Federal Environmental Protection Agency (FEPA) indicates that only about 40% of plastic waste generated in Nigeria is collected and properly disposed of (FEPA, 2018). The rest ends up in the environment, causing significant harm to the ecosystem and the blue economy. Inadequate recycling infrastructure, lack of proper waste management, and insufficient public awareness are just a few of the issues that impede the success of current interventions. It is therefore important to examine the opportunities for sustainable practices that exist within Nigeria's blue economy, such as the adoption of a circular economy for plastics and the implementation of extended producer responsibility programs.

Thus, this paper seeks to critically examine the impact of plastic pollution on the economic growth and sustainability of Nigeria's blue economy. The study highlights the negative consequences of plastic pollution on the economy, environment, and society while suggesting alternatives and interventions necessary to prevent further deterioration.

Study Objectives

The study aimed to achieve the following objectives:

1. To identify the main sources and drivers of plastic pollution in Nigerian aquatic ecosystems and the blue economy sector.
2. To examine the economic impact of plastic pollution on the blue economy sector, including the negative impacts on industries such as fishing, tourism, and shipping.
3. To assess the extent of the environmental damage caused by plastic pollution, including effects on biodiversity, habitat destruction, and climate change.

LITERATURE REVIEW

Overview of Plastic Pollution in Nigeria

Plastic pollution is a pressing environmental issue that has far-reaching consequences for the health of ecosystems and human populations worldwide. Plastic debris has been found in every corner of the planet, from the depths of the oceans to the highest peaks of mountains. Plastic pollution can be defined as the accumulation of plastic materials in the environment, such as rivers, oceans, and soil, where they remain for hundreds of years and cause harm to wildlife and humans. The sources of plastic pollution are diverse, ranging from microplastics that are released from synthetic textiles during washing (Napper et al., 2021) to the large-scale dumping of plastic waste by corporations (Rochman et al., 2018).

The impacts of plastic pollution on the environment and human health are widespread and varied. Research has shown that plastic pollution leads to the entanglement of marine animals, ingestion of plastic debris, and ultimately, their death (Gall & Thompson, 2015). Furthermore, research has also shown that the presence of plastic pollution in the food chain can lead to the accumulation of toxic pollutants, such as Bisphenol A (BPA), that are harmful to human health (Eriksson & Burton, 2020). Additionally, plastic pollution causes economic losses, including damage to tourism and fishery industries, as well as cleanup costs (IPCC, 2019).



Efforts to address plastic pollution have been made at both the individual and governmental levels. One significant step has been the adoption of the United Nations Environment Programme (UNEP) resolution to combat marine plastic pollution (UNEP, 2017). At the individual level, consumers have turned to eco-friendly alternatives to plastic, such as paper bags, metal straws, and reusable bottles, to reduce the use of single-use plastics (Geyer et al., 2017). Governments have introduced policies to regulate the production and consumption of plastics, including the European Union's Single-Use Plastics Directive, which bans certain single-use plastics, such as straws and cutlery (European Commission, 2019).

Plastic pollution is a major environmental issue in Nigeria with severe consequences for both human health and ecosystems. Despite the government's efforts to regulate the production, use, and disposal of plastic waste, recent studies show that plastic pollution still persists, threatening public health and the environment. This paper aims to provide an overview of plastic pollution in Nigeria, its sources, impacts, and possible solutions, using recent studies and publications.

The sources of plastic pollution in Nigeria are diverse, ranging from the improper disposal of plastic waste generated by households, industries, and commercial activities, to the dumping of plastic waste by developed countries (Dara et al., 2019). According to a recent study, Lagos, Nigeria generates over 10,000 tonnes of plastic waste daily, and only a small fraction is collected and properly disposed of (Oduniyi et al., 2020).

The impacts of plastic pollution on the environment and human health in Nigeria are far-reaching. Plastic pollution affects the quality of the air, soil, and water, posing risks to ecosystems and biodiversity (Nnaji et al., 2020). Plastic waste also escalates the risk of flooding, as it clogs drainage systems (Owojori et al., 2021). Furthermore, plastic pollution has devastating impacts on human health, including the exposure of individuals to toxic chemicals (Nnaji et al., 2020). The release of microplastics into the environment is a growing public health concern, as it may lead to long-term health effects, including respiratory and cardiovascular diseases (Aremu et al., 2021).

The Nigerian government has introduced policies to address plastic pollution, including the 2019 ban on the production of polythene bags less than 20 microns thick (Fabiya et al., 2021). While this policy is a step in the right direction, implementation remains challenging, due to weak enforcement mechanisms and a lack of public awareness. Therefore, creating public awareness remains a critical component of any solution to plastic pollution in Nigeria. Additionally, research suggests promoting the use of eco-friendly alternatives to single-use plastic, such as reusable bags, straws, and water bottles, as this could help reduce plastic use and waste significantly (Aremu et al., 2021).

Thus, plastic pollution is a complex and multi-faceted problem that requires various solutions, including changes in consumer behavior, the introduction of policies that regulate plastic production and consumption, as well as innovation in waste management. Continued research is critical in understanding the full extent of the impact of plastic pollution impacts and informing solutions to this worldwide issue.



Plastic Pollution and Economic Growth in Nigeria

Plastic pollution is a global problem that has become increasingly evident in recent times due to its negative impact on the environment, wildlife, and human health. It is estimated that over 8 million tons of plastic waste end up in the oceans every year, and Nigeria is not an exemption from this problem. In fact, Nigeria is one of the countries that contribute significantly to plastic pollution due to factors such as rapid urbanization, poor waste management practices, and the growing demand for consumer goods.

Nigeria has a population of over 200 million people and is Africa's most populous nation. The country has experienced rapid urbanization in recent years, with cities such as Lagos, Abuja, and Port Harcourt becoming increasingly populated. As a result, the demand for consumer goods has increased, and this has led to a rise in the production and consumption of plastics. Many of these products are single-use plastics such as food packaging, water bottles, and shopping bags. This has contributed significantly to the growing problem of plastic pollution in the country.

Furthermore, Akpan and Ezeoha (2019) maintain that Nigeria has a poor waste management system, which exacerbates the problem of plastic pollution. Many of the country's landfills are poorly managed, and there are few recycling facilities. A significant portion of the plastic waste generated ends up in oceans, rivers, and other water bodies, leading to the contamination of marine ecosystems and the death of marine life. The impact of plastic pollution on wildlife is also a growing concern in Nigeria, as animals such as sea turtles, dolphins, and whales are frequently found dead with plastic in their stomachs.

Despite the negative impacts of plastic pollution on the environment and wildlife, the production and consumption of plastics play a crucial role in the Nigerian economy. The plastic industry in Nigeria is a significant contributor to the country's Gross Domestic Product (GDP), with the sector accounting for about 20% of the total industrial output. Additionally, the industry provides employment opportunities for about 400,000 people in the country, according to a report by the Nigerian Bureau of Statistics (Nigerian Bureau of Statistics, 2016). This suggests that plastic production and consumption may be linked to economic growth in Nigeria.

However, the negative effects of plastic pollution on the environment have economic consequences. For instance, the contamination of water bodies can negatively impact fisheries and reduce their contribution to the national economy. Additionally, the death of marine life can impact the tourism industry, which is a vital source of foreign exchange for Nigeria. Moreover, plastic pollution can also impact human health and lead to increased healthcare costs, which can negatively affect the economy (Olawale & Awoselu, 2021). These factors suggest that the problem of plastic pollution in Nigeria must be addressed to sustain economic growth in the long term.

Several initiatives have been launched in Nigeria to reduce plastic pollution and promote sustainable waste management. For example, the Lagos State Government introduced a ban on the use of single-use plastics in public spaces in 2019. Similarly, the Federal Government of Nigeria has launched the National Plastic Waste Recycling Programme to promote recycling and reduce plastic pollution (Federal Ministry of Environment, 2018). These initiatives are commendable and must be sustained to achieve the desired results.



Furthermore, the private sector has a crucial role to play in reducing plastic pollution. Many companies in Nigeria use single-use plastics for their operations, and they can switch to more sustainable alternatives. For instance, some companies are adopting reusable packaging, which can significantly reduce the amount of plastic waste generated. Additionally, companies can support the development of recycling facilities and invest in research to develop new technologies to reduce plastic consumption (Omotoso, Owolabi & Ajibade, 2021).

Moreover, educating the public on the negative impacts of plastic pollution and the importance of proper waste management is essential in addressing the problem. The government and private sector can collaborate to raise awareness campaigns on the dangers of plastic pollution and encourage the adoption of sustainable waste management practices. Additionally, the government can invest in waste management infrastructure, including recycling facilities and the construction of eco-friendly landfills.

Thus, plastic pollution is a growing concern in Nigeria, with significant negative impacts on the environment, wildlife, and human health. While plastic production and consumption are essential for economic growth in the country, the negative economic consequences of plastic pollution must be addressed to achieve sustainable development. The government, private sector, and the public must collaborate to promote sustainable waste management, reduce plastic consumption, and raise awareness about the dangers of plastic pollution. By doing so, Nigeria can achieve its economic goals while protecting the environment for future generations.

Plastic Pollution and Sustainable Development in Nigeria

Plastic pollution is a global environmental problem that affects every continent. The growing amounts of plastic waste in the environment pose significant health risks to wildlife, ecosystems, and human beings. Despite this, plastic has remained a prevalent material in Nigeria, where it plays a significant role in socio-economic and cultural activities. The country, with a population of over 200 million people, produces over 1.8 million tonnes of plastic waste annually, resulting from the increasing population, urbanization, and rising consumption of single-use plastics (Akpan & Ezeoha, 2019).

Sustainable development is the societal goal of achieving simultaneous economic prosperity, environmental protection, and social well-being. Plastic pollution, however, stands as a significant obstacle to the achievement of the country's sustainable development goals. In Nigeria, plastic pollution has adverse effects on the environment, society, and economic systems, making it one of the leading issues that need to be addressed.

According to Omotoso, Owolabi and Ajibade (2021), the effects of plastic pollution on the environment are diverse and complex. Plastic waste is littered in streets, waterbodies, and landfills, polluting air, soil, and water. This pollution reduces soil fertility and quality, negatively impacting agricultural production and food security. It also causes flooding and watercourses blockages, consequently affecting water supply and flood control operations. Fish, birds, and wildlife consume plastic materials that accumulate in their digestive systems, poisoning or suffocating them. Plastic also breaks down into tiny microplastics that end up in food chains, impacting human and animal health. These environmental challenges threaten Nigeria's sustainable development.



Socially, plastic pollution has effects on human health and communal wellbeing. Burning plastics release harmful microplastics, toxins, and chemical compounds that cause respiratory diseases, cancer, and other illnesses. Communities near these burning sites are susceptible to breathing difficulties, asthma, and other health issues. The unsightly view of plastics littered in communities reduces the aesthetics and attractiveness of these places, resulting in the hampering of local tourism potential (Omotoso, Owolabi, & Ajibade, 2021).

Furthermore, the economic impact of plastic pollution on Nigeria is enormous. Littered plastic waste spoils beaches and aquatic ecosystems, leading to reduced tourism revenue. Additionally, the clogging of water bodies leads to boating, shipping, and trade disruption. Plastic pollution also affects the fishing industry and the livelihoods of coastal fishing communities, as dead fish and other marine organisms contaminated by plastic waste threaten fish populations and make it harder to catch high-quality fish. Furthermore, the absence of a reliable and efficient plastic waste management system jeopardizes the broader economy, affects investment prospects, and hinders economic growth (Omotoso, Owolabi & Ajibade, 2021).

To address the problem of plastic pollution in Nigeria and achieve sustainable development, a combination of strategies must be put in place. Sustainable waste management, improved recycling processes, reducing reliance on single-use plastics, and educating people on the dangers of plastic pollution are some of the ways to address the problem. The government must strengthen policies that regulate plastic production, use, and disposal to prevent environmental damage.

Nigeria should increase its investment in waste management infrastructure such as waste sorting, separation, collection, recycling, and disposal. Besides this, the government must also provide incentives for recycling businesses and support research and development on innovative plastic recycling technologies. These efforts will create jobs, promote economic growth, and enhance environmental quality.

While governments across the country have shown commitment to address plastic pollution and embrace sustainable development, their efforts alone may not be enough to address this issue. As such, partnerships among stakeholders in the public and private sectors, educational institutions, development organizations, and communities are critical. Partnerships will drive collaboration, maximize the efficient use of resources, generate new ideas and business models, and scale solutions.

Education and awareness-raising campaigns are essential components in addressing plastic pollution in Nigeria. Empowering communities with the knowledge and skills about the negative economic, environmental, and health impacts of plastic pollution and improving their attitude towards waste management is critical. Creating and promoting social norms and recycling habits among citizens could significantly improve the country's waste management. Additionally, awareness campaigns among informal waste workers could improve value chains and encourage recycling.

Another critical aspect of sustainable development in Nigeria is the promotion of a circular economy. A circular economy strategy prioritizes efficiency, resource use optimization, recycling, and waste reduction, and the reuse of created value in the economy. A circular economy approach to plastic waste management presents opportunities for waste to become a



resource for businesses, job creation, and economic growth. Adopting a circular economy model could also significantly improve Nigeria's rankings in sustainability indices.

Thus, plastic pollution poses a significant challenge to Nigeria's sustainable development. The environmental, economic, and social impacts from plastic waste can only be addressed through collective efforts. Collaboration among stakeholders in sustainable waste management, education and awareness, and encouraging circular economy practices are examples of ways forward. Hence, policy-makers, business leaders, development organizations, and communities must work together to create innovative and sustainable solutions for plastic pollution. This way, Nigeria can achieve its development goals while preserving the environment and protecting public health.

Theoretical Framework

Diffusion of Innovations theory was adopted for the study. The theory was first introduced by Everett Rogers in his book, "Diffusion of Innovations" in 1962. The theory defines the process by which new ideas, products, and technologies spread through a social system, leading to behavioral change. According to Roger's theory, the diffusion process involves five stages: knowledge, persuasion, decision, implementation, and confirmation. The first stage (knowledge) involves individuals being exposed to innovation, leading to awareness and acquisition of knowledge of the product or idea. In the second stage (persuasion), individuals develop a positive or negative attitude towards innovation, based on its perceived benefits and disadvantages. The third stage (decision) involves individuals making a decision to adopt or reject innovation. The fourth stage (implementation) is when individuals put the innovation into practice, and the fifth stage (confirmation) involves individuals assessing the benefits and disadvantages of innovation after implementation (Rogers, 1962).

Application of Diffusion of Innovations Theory to Plastic Pollution in Nigeria

The diffusion of innovations theory can be used to address the challenge of plastic pollution in Nigeria by providing insights into drivers, adoption, and diffusion of behavioral change interventions that can foster sustainability of the blue economy. The following examine how Rogers' theory can be used to explain the drivers, adoption, and diffusion of anti-plastic pollution innovations and their impact on economic growth and sustainability in Nigeria.

Drivers of Innovation Adoption

According to Ahmed and Ali (2018), plastic pollution in Nigeria, especially in coastal regions, is driven by various factors, including population growth, urbanization, industrialization, and inadequate waste management infrastructure. The increasing population, which has doubled over the past two decades, has led to a rapid increase in plastic waste generation, leading to environmental and economic challenges. Urbanization, particularly in coastal regions, has led to the proliferation of plastic waste as it is difficult to manage solid waste in rapidly expanding cities. Industrialization, which has led to a shift in consumption patterns, has also intensified plastic pollution, leading to reduced productivity, environmental degradation, and health risks. Inadequate waste management infrastructure and practices, including poor collection, transportation, and disposal of waste, have intensified the problem of plastic pollution, reducing the sustainability and growth prospects of the blue economy (Odu, Goonetilleke, & Ayoko, 2017).



Anti-Plastic Pollution Innovations

The adoption of anti-plastic pollution innovations can help address the challenge of plastic waste in Nigeria. Innovations in plastic waste management, including recycling, reuse, and reduction, are crucial in fostering the blue economy's sustainability by reducing pollution and promoting sustainable resource use (Ajayi, & Awosusi, 2016). Behavioral change interventions, such as awareness, education, and behavioral nudges, can also promote the adoption of anti-plastic pollution innovations by changing individual attitudes towards plastic use and promoting sustainable consumption patterns.

Diffusion of Anti-Plastic Pollution Innovations

According to Rogers (1962), the adoption of anti-plastic pollution innovations can be driven by various factors, including the characteristics of the innovation, the adopter's characteristics, the communication channels used to disseminate information, the social system, and the innovation's consequences. The characteristics of the innovation, including its relative advantage, compatibility, complexity, trialability, and observability, play a crucial role in the diffusion and adoption process. Innovations that are perceived to offer more benefits, easy to use, compatible with existing practices, and observable are more likely to spread rapidly. The adopter's characteristics, such as their socio-demographic characteristics, innovativeness, and risk attitude, also influence the adoption process. Early adopters, who are innovative, risk-takers, and have a high status, are likely to influence the diffusion of the innovation within their social network. The communication channels used to disseminate information, including mass media, interpersonal communication, and opinion leaders, are also important in promoting the diffusion of innovation within the social system. Innovations with positive consequences, including environmental benefits, cost-savings, and increased productivity, are more likely to be adopted and diffused.

Diffusion of Anti-Plastic Pollution Innovations in Nigeria

In Nigeria, the diffusion of anti-plastic pollution innovations can be facilitated through government policies, private sector initiatives, and civil society engagement. The Nigerian government has implemented various policies and regulations aimed at reducing plastic waste. The National Environmental Standards and Regulations Enforcement Agency (NESREA) has developed guidelines on plastic waste management, including a ban on the production and importation of non-biodegradable plastic bags and a levy on plastic bag use (Akindeinde, Tihamiyu & Olukunle, 2019). Private sector actors, including waste management companies and recycling firms, have also played a crucial role in promoting anti-plastic pollution innovations by investing in recycling infrastructure, incentivizing waste reduction, and collaborating with the government and civil society organizations. Civil society organizations, including non-governmental organizations (NGOs), community-based organizations (CBOs), and religious groups, have also contributed to promoting sustainable consumption patterns and behavioral change by raising awareness, educating the public, and engaging in advocacy.



Impact of Anti-Plastic Pollution Innovations on Economic Growth and Sustainability of Blue Economy in Nigeria

The adoption and diffusion of anti-plastic pollution innovations can have a significant impact on economic growth and sustainability of the Blue Economy in Nigeria. Innovations in plastic waste management, including recycling, reduction, and reuse, can create employment opportunities, promote sustainable resource use, and reduce pollution, leading to improved productivity, environmental and human health, and increased sustainability of the blue economy. Recycling, for instance, can create job opportunities, promote the Circular Economy, and reduce greenhouse gas emissions (Makinde & Oyelaran-Oyeyinka, 2018). Reduction in plastic waste can lead to reduced environmental costs, increase resource efficiency, and promote sustainable consumption patterns, leading to improved economic growth and sustainability. Education and awareness on plastic pollution can lead to behavioral change and promote sustainable consumption, leading to reduced environmental externalities and improved economic growth and sustainability of the blue economy (Goddard, 2019).

Thus, the diffusion of innovations theory can provide a useful framework for analyzing the impact of plastic pollution on economic growth and sustainability of the Blue Economy in Nigeria. The application of diffusion of innovations theory can help explain the drivers, adoption, and diffusion of anti-plastic pollution innovations, analyzing their impact on economic growth and sustainability in the blue economy. Anti-plastic pollution innovations, including plastic waste management, recycling, reduction, and reuse, can create opportunities, promote sustainable resource use, and reduce pollution, leading to improved productivity, environmental and human health, and increased sustainability of the blue economy. Governments, private sector actors, and civil society organizations have an important role to play in promoting sustainable consumption patterns and behavioral change, leading to improved economic growth and sustainability of the Blue Economy.

Adopting Blue Economy framework for Sustainable Plastic Waste Management in Nigeria

The Blue Economy is an emerging concept that seeks to promote economic growth, resilience, and sustainability by leveraging marine and aquatic resources. These resources include coastal and marine ecosystems, water bodies, and other interconnected environmental systems in the oceans and seas (Awosika, 2016). The Blue Economy aims to promote sustainable development by providing economic opportunities while preserving the natural environment. Specifically, the Blue Economy approach seeks to balance economic growth with environmental sustainability to promote sustainable development.

In Nigeria, the Blue Economy could provide a significant solution to the issues of plastic pollution. The country has an extensive coastline that stretches over 853 km, supporting a vast array of aquatic resources, including fish, mangroves, and marine biodiversity. By leveraging these resources, the country can transition towards a Blue Economy, which enables a shift towards more sustainable economic activities and could contribute to reducing plastic pollution (Gbadegesin & Adetayo, 2019).



Thus, plastic pollution can be tackled through a Blue Economy framework in Nigeria by adopting the following strategies:

- **Promoting Sustainable Fisheries Practices:** One of the strategies that a Blue Economy framework could pursue in Nigeria is promoting sustainable fishery practices. Fishing activities contribute significantly to plastic pollution, with discarded fishing nets being one of the most pervasive forms of plastic waste in the oceans. A sustainable fishing industry will ensure a reduction in the amount of fishing-related wastes and promote sound environmental practices.
- **Promoting Ecotourism:** Furthermore, promoting ecotourism in the country could significantly reduce the pollution of water bodies. Tourism activities could provide a sustainable revenue stream to coastal communities in Nigeria as it also promotes environmental conservation and sustainable management. Sustainable tourism practices such as responsible waste management, eco-friendly accommodations, and educational programs on sustainable development can reduce the amount of plastic waste generated by this sector.
- **Marine Transportation and Trade:** Marine transportation and trade are other sectors that can benefit from a Blue Economy framework. The utilization of microplastics as fuel additive would offer a more environmentally friendly solution to traditional fuels and potentially reduce emissions. Marine litter and plastic waste can interfere with navigation, lead to vessel-grounding, increase operational costs, and pose a risk to human safety (Wang, Wang, Guo et al., 2020). Ensuring efficient waste management practices in these sectors will have a significant impact on reducing plastic waste in the water and promoting the adoption of sustainable practices in the maritime industry.
- **Promoting Alternative Packaging Solutions:** Promoting alternative packaging solutions can also lead to a reduction in plastic waste. Utilizing renewable natural resources as packaging materials, such as plant-based materials, can reduce the reliance on plastics and other non-renewable materials. This also presents a new market avenue for entrepreneurs seeking to make a difference in the environment by offering sustainable solutions.
- **Education and Awareness-Raising Initiatives:** Another important aspect is education and awareness-raising initiatives aimed at reducing plastic use in the country and promoting the value of the Blue Economy framework. Educational programs, workshops and conferences that foster knowledge exchange and partnership amongst stakeholders can help highlight the possibility and potential of a blue economy.

CONCLUSION

Nigeria, like many other countries around the world, faces the critical challenge of plastic pollution, which poses severe threats to the environment, human health, and economic growth. However, the promotion and implementation of a Blue Economy framework could offer a practical and sustainable solution to this increasing problem. A Blue Economy approach supports a balance between economic growth and sustainability through the efficient and responsible use of marine and aquatic resources.



The Blue Economy offers Nigeria's diverse coastal ecosystems, fishery, tourism, and transportation sectors the opportunity to shift towards more sustainable practices while reducing plastic pollution and protecting the environment. As an emerging concept, the Blue Economy promotes economic growth, social equity and preservation of the natural environment. It encourages a transition towards a more sustainable society, which is of utmost importance considering the increasing global concern for environmental conservation and sustainable development.

The implementation of a Blue Economy framework in Nigeria requires significant investments, collaborations and partnerships across industries, governmental agencies and civil society organizations. Addressing the challenges of plastic pollution and promoting sustainable economic growth requires collective efforts from all stakeholders. The sustainable management of Nigeria's Blue Economy is vital to enhancing economic growth, reducing poverty, and promoting sound environmental practices that enhance the ecosystem's resilience. The country's vast natural resources offer a tremendous opportunity for the development of a strong and sustainable blue economy that can improve the lives of Nigerians and protect the environment. By working together towards a common goal, Nigeria can achieve economic growth and sustainability while reducing the impacts of plastic pollution on local marine ecosystems and the livelihoods of its coastal communities.

RECOMMENDATIONS

Based on these analysis, the following recommendations were made:

- 1. Adoption of a Comprehensive Plastic Waste Management Strategy:** The Nigerian government should develop and implement a comprehensive plastic waste management strategy that addresses the problem from its source to disposal. The strategy should include the implementation of appropriate regulations and policies on plastic production, use and disposal. It should also involve public education and sensitization for behavioural change.
- 2. Encourage Research and Innovation:** The government should support and encourage research and innovation in addressing the problem of plastic pollution. Such research should focus on developing alternative products and ways to repurpose and recycle plastic waste.
- 3. Promote Recycling and Upcycling:** Nigerians should be encouraged to recycle and reuse more of their plastic waste. The government should establish a take-back system that encourages consumers to return plastic waste and receive rewards for their efforts. Industrial upcycling of plastic to create value-added products is also a viable and profitable option to improve the sustainability of the blue economy.
- 4. Increase Public Awareness:** There should be more public awareness campaigns about the impact of plastic waste on the environment and the importance of reducing plastic pollution. Such awareness campaigns should target key stakeholders, including the government, industries, civil society organizations, and individuals.
- 5. Foster Collaboration and Partnership:** Addressing the problem of plastic pollution in the Blue Economy requires a collaborative effort from all stakeholders. The government



should foster collaboration and partnership among industry players, civil society organizations, and communities to drive collective action towards creating a more sustainable Blue Economy.

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