Nigeria Climate Innovation Centre

RETHINKING GREEN TAX PROPOSITIONS BY ADOPTING THE CIRCULAR ECONOMY APPROACH.

Positioning Plastic Waste Recycling as an Inclusive Catalyst for Unlocking a Sustainable Circular Economy in Nigeria

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FOREWORD

As the CEO of the Nigeria Climate Innovation Center (NCIC), it is my privilege to introduce this pivotal research document on the critical subject of plastic waste recycling and the adoption of a circular economy in Nigeria. In the face of escalating environmental challenges, our approach to managing plastic waste must evolve beyond punitive measures such as green taxation on single-use plastics. Instead, we must embrace innovative, sustainable practices that not only mitigate the environmental impact but also promote economic growth and societal well-being.

The global concern of plastic waste is an urgent environmental issue that demands a deliberate and intentional response. Traditional strategies, including green taxation, have aimed to reduce consumption through financial deterrence. However, these measures often fall short of addressing the root cause of plastic waste accumulation and fail to provide a long-term solution. This research underscores the necessity of shifting from a linear to a circular economy—a model that prioritizes recycling, reusing, and repurposing materials to create a closed-loop system.

A circular economy for plastics presents numerous advantages. It drives innovation in product design, encourages the development of new recycling technologies, and opens markets for recycled materials. By integrating these practices, we can significantly reduce the environmental footprint of plastic products, conserve natural resources, and generate economic opportunities. Furthermore, this approach aligns with global sustainability goals and positions us as leaders in environmental stewardship.

The NCIC is committed to advocating for policies that support the circular economy. We believe that by incentivizing recycling and the use of recycled materials, we can drive systemic change. Our role is to facilitate collaboration between industry stakeholders, government agencies, and the community to develop and implement effective strategies, programs and projects that encourage circularity.

This includes investing in research and development, supporting public education campaigns, and promoting regulatory frameworks that encourage sustainable practices.

This document provides a comprehensive analysis of the current state of plastic waste management, highlights the need for behaviourial change and actionable recommendations for stakeholders at all levels.

In closing, I would like to extend my gratitude to the researchers, policymakers, industry leaders, and environmental advocates who have contributed to this document. Your dedication and expertise are invaluable as we work towards a more sustainable future. Together, we can transform the way we handle plastic waste and pave the way for a resilient, circular economy.

Sincerely

BANKOLE OLORUNTOBA

CEO, Nigeria Climate Innovation Center

Executive Summary

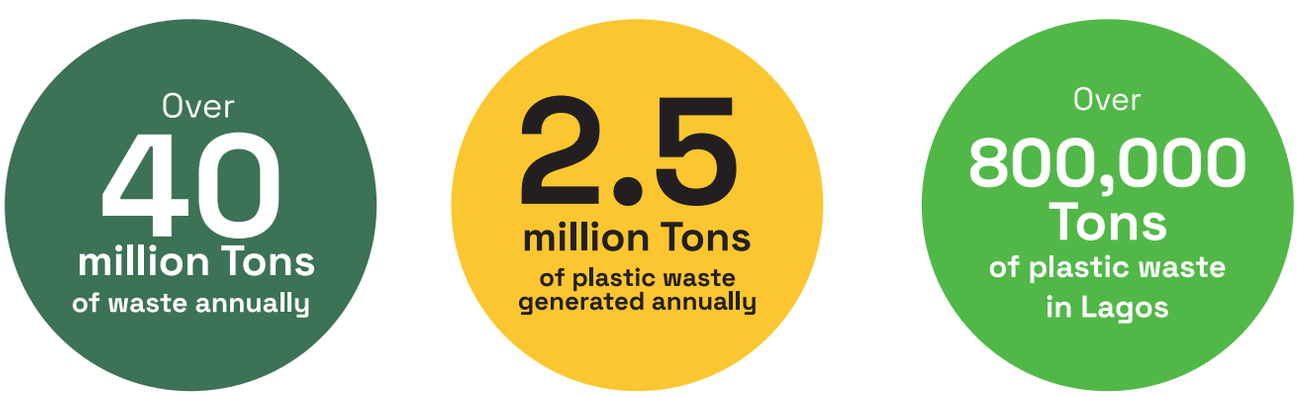
The proposition by the Government of Nigeria towards plastic taxation as a tool to mitigate plastic waste management could constitute a lasting negative effect on an entire ecosystem of players within the plastic waste recycling value chain, but this paper carefully projects the need to embrace the adoption of a circular economy as a more viable option.

A Nigerian Circular Economy will encapsulate the need to manage waste more efficiently and effectively through sustainable and innovative channels.

The primary objective of a circular economy is to responsibly manage waste by changing the narrative of "waste products" as menacing agents to the environment, to accepting "waste products" as a key resource for recycling, hence creating a value chain that generates jobs, creates wealth, sustains the environment, while contributing immensely to the economic growth and development of the country. This has proven to be achievable over time through intervention support mechanisms provided by both private and public sector initiatives across the country.

This research paper will focus mainly on plastic waste as a case study element to drive the thematic area of engagement.

Plastic as a commodity in its various forms is widely used across Africa's most populous country of over **250 million inhabitants.** This population size has the capacity to disrupt any ecosystem by creating value where difficulties emerge. Nigeria still struggles with an effective waste management system and often referred to by experts as the waste capital of Africa, generating:



The Government of Nigeria has proposed plastic tax policy as an intervention measure for the management of plastic waste which could result to huge macro -economic challenges like job losses and a complete shut-down of existing value chains that serve the plastic waste recycling sector, while also affecting livelihoods negatively.

This paper intends to position the creation of a sustainable circular economy through plastic waste recycling as a more viable channel with social, economic and environment benefits to the country by reducing unemployment, creating new value chains and unentrepreneurial ecosystems with sustainable wealth creation channels especially in low-income communities who depend on collecting plastic waste as a source of their livelihood.

CHAPTER ONE

INTRODUCTION AND PROBLEM STATEMENT

INTRODUCTION AND PROBLEM STATEMENT

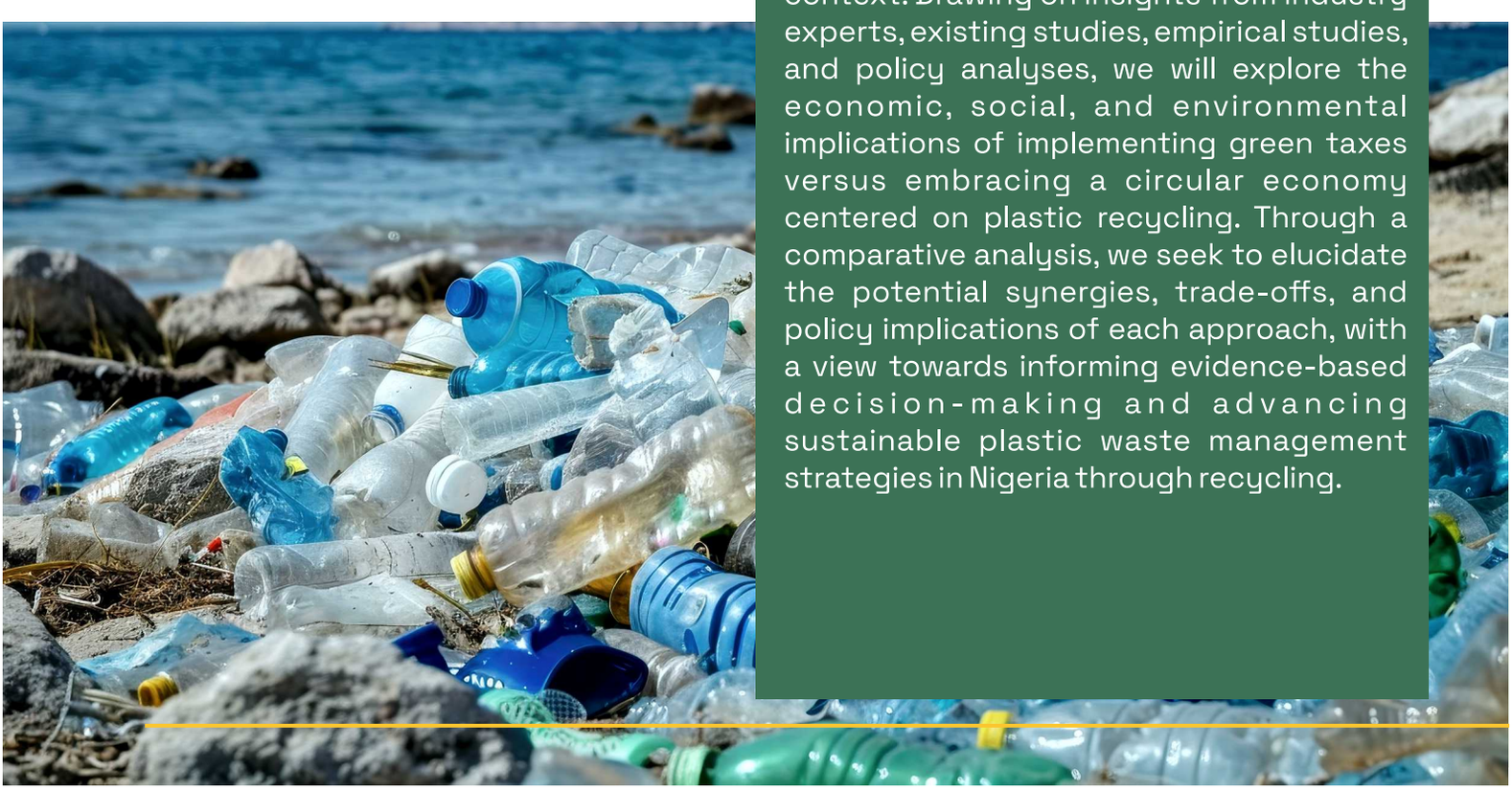
Plastic waste has become an increasingly pressing environmental concern globally, and Nigeria is no exception. With its rapid population and urbanization growth, the country faces significant challenges in managing plastic waste, which poses grave threats to public health, ecosystems, and the overall well-being of Nigerians. In response to this crisis, there has been growing interest by the Government of Nigeria in employing green taxes to mitigate the adverse impacts of plastic pollution.

In recent times, green taxes, which are characterized by fiscal incentives and penalties aimed at discouraging environmentally harmful practices, have gained traction as a policy instrument for curbing plastic waste. By levying taxes on the production, importation, and consumption of plastic goods, green taxes seek to internalize the external costs of plastic pollution and incentivize eco-friendly alternatives.

On the other hand, drivers of a circular economy like Nigeria Climate Innovation Center (NCIC) advocate for a paradigm shift in waste management, emphasizing the importance of resource efficiency, reuse, and recycling. In the context of plastic waste, a circular economy approach entails designing products for recyclability, establishing efficient collection, and recycling infrastructure, and driving markets for recycled materials.

Furthermore, Nigeria is faced with the challenge of charting a sustainable path forward in addressing plastic waste. While green taxes offer a regulatory mechanism for internalizing environmental costs and incentivizing behaviour change, adopting a circular economy approach presents a holistic framework for transforming the plastic waste management landscape. The latter not only addresses the symptoms of plastic pollution but also tackles its root causes by promoting a shift towards a more resource-efficient and environmentally conscious society.

In this paper, we aim to examine the merits and limitations of both approaches critically and holistically in the Nigerian context. Drawing on insights from industry experts, existing studies, empirical studies, and policy analyses, we will explore the economic, social, and environmental implications of implementing green taxes versus embracing a circular economy centered on plastic recycling. Through a comparative analysis, we seek to elucidate the potential synergies, trade-offs, and policy implications of each approach, with a view towards informing evidence-based decision-making and advancing sustainable plastic waste management strategies in Nigeria through recycling.



THE STUDY

Objective of the Study and Methodology

The overall objective of this study is to demonstrate the need for Nigeria to embrace a circular economy model through plastic waste recycling as against Green Taxation as proposed by the Government of Nigeria.

The Study will also show the challenges of plastic waste in the country and the opportunities that can emanate from these challenges if properly harnessed.

In addition, the objective of this study will leverage heavily on collection of data on plastic recycling from relevant stakeholders and value chain players. This will be possible through:

In-depth interviews with industry players on research subject matter

Field interviews with majorly informal sector players

Informed decisions from circular programs and projects facilitated by NCIC.

Extensive literature review from existing works around Nigerian circular economy

Study Area

The research takes a holistic approach on Nigeria in evaluating the circular economy potential of the country and how that translates into a more economically viable and sustainable approach in managing the country's plastic waste management challenge.

CHAPTER TWO

DEVELOPING BEHAVIOURAL MODELS

Developing Behavioural Models

Developing behavioural models to support the environment and reduce hazards from plastics in Nigeria requires a tailored approach that considers the country's socio-economic context, cultural norms, and environmental challenges. Here's a framework specifically for Nigeria:

1 Cultural Sensitivity and Understanding:

Begin by understanding cultural attitudes and behaviours towards plastics and waste management in Nigeria. Recognize cultural practices, perceptions, and beliefs that influence consumption patterns and waste disposal habits.

2 Education and Awareness:

Launch comprehensive education and awareness campaigns to inform Nigerians about the environmental impact of plastic pollution and the importance of sustainable practices. Utilize various channels, including mass media, community outreach programs, and school curricula, to disseminate information and engage diverse audiences.

3 Education and Awareness:

Encourage the adoption of alternatives to single-use plastics, such as reusable bags, containers, and water bottles. Partner with local businesses, markets, and retailers to promote the availability and affordability of eco-friendly alternatives.

4 Supporting Plastic Recycling and Waste Management:

Develop initiatives to promote plastic recycling and proper waste management practices at the community level. Establish recycling centers, collection points, and buy-back schemes to insentivize individuals and businesses to recycle their plastic waste.

5 Empowering Communities:

Empower local communities to take ownership of their waste management through community-led initiatives and partnerships. Provide training, resources, and support for community-based organizations and waste pickers to collect, sort, and recycle plastic waste effectively.

Developing Behavioural Models

6 Regulatory Measures and Enforcement:

Advocate for the implementation of policies and regulations that promote sustainable plastic management practices and hold polluters accountable. Strengthen enforcement mechanisms to deter illegal dumping, littering, and the production of non-recyclable plastics.

7 Incentives and Rewards

Introduce incentives and rewards programs to incentivize individuals and businesses to adopt eco-friendly behaviors and practices. Offer tax incentives, subsidies, or discounts for using reusable products or participating in recycling programs.

8 Public-Private Partnerships:

Foster collaboration between government agencies, private sector companies, civil society organizations, and local communities to develop and implement holistic solutions for plastic waste reduction. Pool resources, expertise, and networks to maximize impact and sustainability.

9 Monitoring and Evaluation:

Establish monitoring and evaluation systems to track progress towards plastic waste reduction goals and assess the effectiveness of behavioural models and interventions. Collect data on recycling rates, littering incidents, public awareness levels, and environmental outcomes to inform decision-making and adaptation.

10 Incentives and Rewards

Invest in capacity building and innovation to enhance local capabilities in plastic recycling, waste management, and sustainable development. Support research and development initiatives to identify innovative solutions and technologies for tackling plastic pollution in Nigeria.

Developing Behavioural Models

A recommended guide to behaviourial change model

AWARENESS	▪ Launch national and local awareness campaigns using TV, radio, and social media. ▪ Distribute educational materials in schools, markets, and community centers. ▪ Engage influencers and community leaders to spread the message
INTEREST	▪ Provide information on the environmental and economic benefits of recycling. ▪ Organize community meetings and discussions to address common concerns and misconceptions. ▪ Showcase success stories from other communities or regions in Nigeria. ▪ Target women and the youth as key beneficiaries of recycling programs and activities as an outcome.
INTENTION	▪ Offer training sessions on how to separate and recycle waste. ▪ Distribute recycling bins and bags to households and businesses. ▪ Develop a plan for regular waste collection and recycling.
ACTION	▪ Implement a reliable and convenient waste collection service. ▪ Introduce incentives, such as cash for recyclables or discounts on goods and services. ▪ Provide continuous feedback on the impact of recycling efforts, such as reduced waste in the community.
MAINTANANCE	▪ Conduct regular follow-up sessions and refresher training. ▪ Keep the community engaged with recycling challenges, competitions, and rewards. ▪ Maintain a visible presence of recycling efforts through community clean-up events and ongoing education
INSTITUTIONALIZE	▪ Embed recycling practices into local policies and regulations. ▪ Ensure that recycling infrastructure is maintained and improved. ▪ Celebrate milestones and success stories to reinforce the importance and impact of recycling.

CHAPTER THREE

SETTING THE CONTEXT: UNDERSTANDING THE ECONOMIC VALUE OF RECYCLING

Setting the Context: Understanding the Economic Value of Recycling

Nigeria faces significant environmental challenges, including plastic pollution and inadequate waste management infrastructure. This paper explores the economic value of recycling in Nigeria, highlighting its potential to drive resource conservation, create jobs, reduce waste management costs, drive economic growth, and promote sustainable development.

By understanding the economic incentives and opportunities associated with recycling, policymakers, businesses, and communities can harness its transformative potential to build a more resilient and circular society while addressing pressing environmental concerns.

Furthermore,

Nigeria ranks 9th globally on the amount of plastic waste generated by country with an estimated total of	**2.5 million tons**
Research has shown that less than of the generated waste are recycled	**15%**
the remaining are littered around the environment on land, water ways and water bodies	**18%**

In 2019 alone, Nigerians bought an estimated 45 billion litres of water in bottles and	**45 billion litres**
Another 2 billion litres of carbonated soft drinks	**2 billion litres**

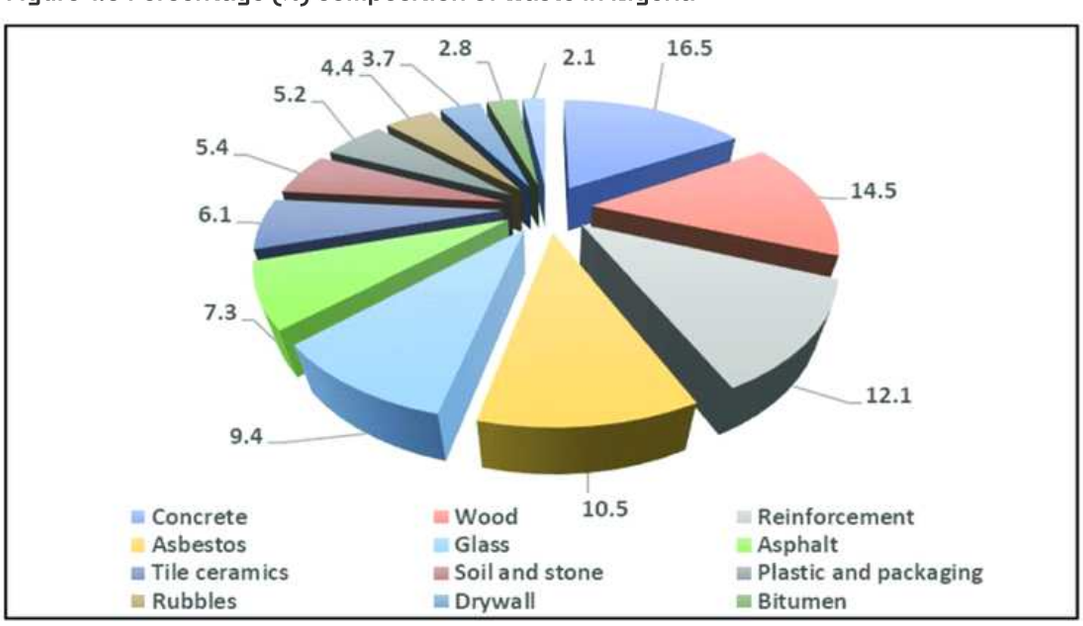
According to research figures by Nigerian bottling companies.

Annual plastics production is projected to grow by 523,000 tons by 2022, according to the World Economic Forum (WEF).

In 2018, Nigeria was estimated to have discharged around 200,000 tons of plastic waste into the ocean, which according to the World Economic Forum (WEF) programme, should have been converted into wealth.

While these indicators can be seen as a challenge, there is an enormous opportunity to be tapped especially through recycling the plastics when collected and aggregated in large quantities by the responsible parties playing their part within the plastic waste recycling value chain.

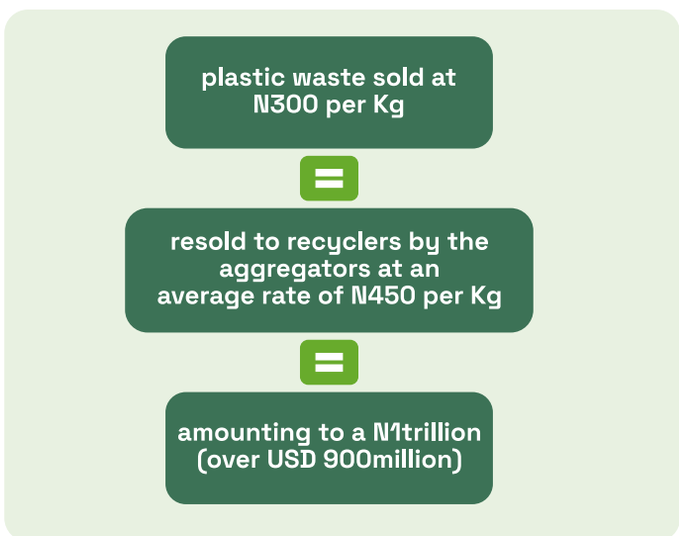
Figure 1.0 Percentage (%) composition of waste in Nigeria



Source Research gate publication 2021

Contextualizing the Potential Investment Value of Recycling Plastic in Nigeria

The economics of the plastic recycling market showcases a thriving investment portfolio value if we carefully evaluate the amount of plastic waste generated and at each processing stage within the recycling value chain.



A simple analysis will be – If we generate an estimated 2.5 million tons of plastic waste, that makes up 2.5 billion Kg of plastic waste which is sold per kg by waste pickers to aggregators at an average price of N300, this translates to a potential collection purchase value of N750 billion spread across the waste picking community.

The same plastic waste sold at N300 per Kg is resold to recyclers by the aggregators at an average rate of N450 per Kg, amounting to a N1trillion (over USD 900million).

There are several other processing stages which increase value of the plastic as moves from one recycling stage to the other. This clearly suggests that the plastic waste recycling market in Nigeria is estimated to be worth over $1 billion.

It is modest to say that if 50% of our plastic waste is recycled, considering all logistical costs, the industry will be worth over $250 million.

The Lagos State Waste Management Authority (LAWMA) reported that the recycling economy in Lagos State alone generated approximately N18 billion in value as of 2021.

This significant figure highlights the economic viability of the recycling industry and underscores its potential for further growth.

Other key economic benefits of plastic recycling include the following:

Resource Conservation and Energy Savings:

Recycling in Nigeria offers significant opportunities for resource conservation and energy savings. By diverting recyclable materials from landfills and incinerators, recycling reduces the demand for virgin resources and minimizes energy consumption associated with raw material extraction, processing, and manufacturing. For example, recycling paper conserves trees, recycling metals reduces energy consumption, and recycling plastics reduces petroleum consumption, all of which contribute to environmental sustainability and energy security.

Market Demand and Revenue Generation:

Recycled materials have market value and can be sold to manufacturers to produce new products. Recycling markets for paper, plastics, metals, and glass create revenue streams for recyclers and incentivize waste diversion efforts. Furthermore, the growing demand for sustainable products and materials in Nigeria and globally presents market opportunities for recycled content, stimulating investment, innovation, and market development in the recycling sector.

Job Creation and Economic Growth:

The recycling industry has the potential to create jobs and stimulate economic growth in Nigeria. Investing in recycling infrastructure and capacity-building initiatives can generate employment opportunities in collection, sorting, processing, and manufacturing sectors. Additionally, supporting small-scale entrepreneurs and green businesses in the recycling value chain can diversify local economies, foster innovation, and promote economic resilience, particularly in underserved communities.

Circular Economy Development:

Recycling plays a pivotal role in advancing the transition to a circular economy model in Nigeria. By closing the loop on material flows through reuse, recycling, and regeneration, recycling promotes resource efficiency, waste reduction, and value retention throughout the product lifecycle. Embracing circular economy principles can enhance economic resilience, reduce dependency on finite resources, and foster sustainable consumption and production patterns in Nigeria.

Waste Management Cost Reduction:

Effective recycling programs can help reduce waste management costs in Nigeria. By diverting recyclable materials from landfills, recycling minimizes disposal fees, extends landfill lifespans, and mitigates environmental pollution. Moreover, investing in recycling infrastructure and technology can optimize waste collection, sorting, and processing operations, leading to greater efficiency and cost savings for municipalities and waste management authorities.

Environmental Protection and Public Health:

In addition to its economic benefits, recycling contributes to environmental protection and public health in Nigeria. By diverting waste from landfills and incinerators, recycling reduces pollution, conserves natural resources, and minimizes environmental degradation. Furthermore, recycling reduces the risk of contamination and exposure to hazardous substances, promoting safer and healthier living environments for Nigerian communities.

The economic value of recycling in Nigeria extends beyond cost savings and revenue generation, encompassing resource conservation, job creation, waste management cost reduction, market demand, circular economy development, environmental protection, and public health benefits. By understanding and leveraging the economic incentives and opportunities associated with recycling, Nigeria can unlock the transformative potential of recycling to build a more resilient, prosperous, and sustainable society. Policymakers, businesses, and communities must work together to develop and implement effective recycling strategies that promote economic growth, environmental sustainability, and social equity for all Nigerians.

CHAPTER FOUR

THE NIGERIAN CIRCULAR ECONOMY - KEY ACTIVITIES AND ECONOMIC BENEFITS

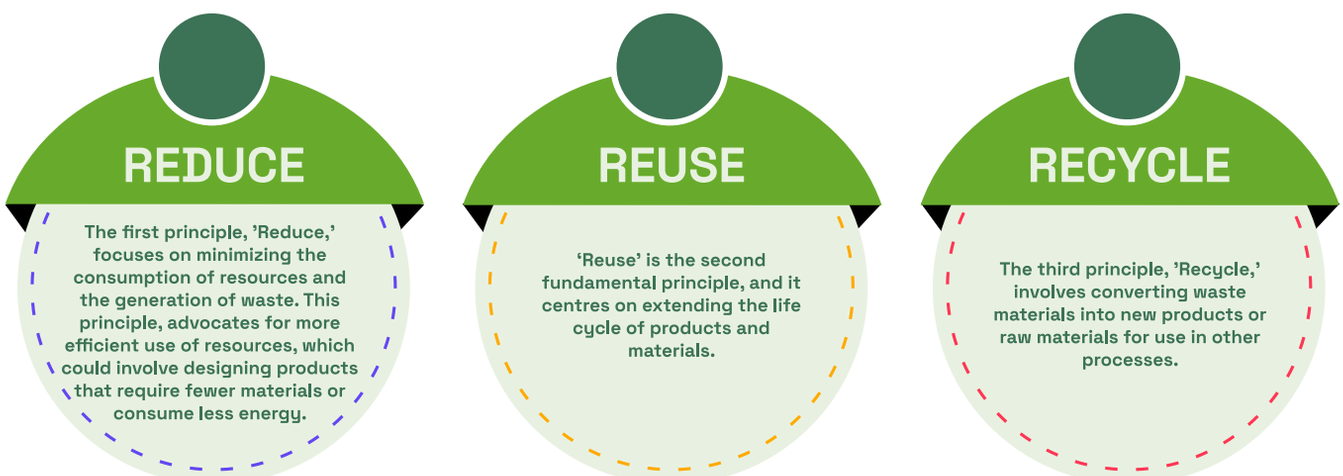
The Nigerian Circular Economy - Key Activities and Economic Benefits

The World's Economic Forum defines circular economy as "an industrial system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse and return to the biosphere, and aims for the elimination of waste through the superior design of materials, products, systems, and business models." The circular economy is defined by three core principles, usually referred the three R's: - Reduce, Reuse, and Recycle.

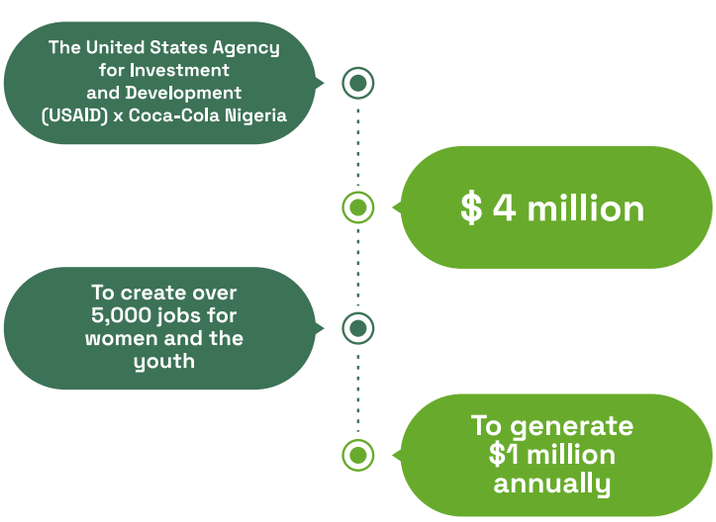
These principles serve as the basis for transforming the traditional linear economy, where goods are made, used, and disposed of, into a circular one that is restorative and regenerative by design.

By integrating these principles into production and consumption processes, it becomes possible to significantly reduce waste, lower greenhouse gas emissions, and conserve natural resources.

Each of these principles plays a unique but complementary role in achieving the goal of a sustainable, circular economy.



Critical Investments Made



The level of waste generation in Nigeria can only be overemphasized and calls for the need to adopt a circular economy strategy thereby transforming a waste management problem into an economically viable opportunity, especially in plastic waste recycling.

Recently, the United States Agency for Investment and Development (USAID) has partnered with Coca-Cola Nigeria with an investment portfolio of about $ 4 million for the purpose of empowering and supporting existing plastic waste recyclers in Lagos and some Eastern states across Nigeria. This project will be implemented by Techno Serve. This project is to commence in 3rd quarter in 2024 and projects to create over 5,000 jobs for women and the youth, with a total income generation level of over $ 1 million annually.

Norwegian Development Finance Institution financing Wecyclers

€2 million

To finance a 12,000 tons plant in Ogun State

Lexsz Plastics Limited

$8 million

Used for creation of plastic waste recycling company – empowering over 10,000 local workers

In addition, a 2 million EUR investment was committed by the Norwegian Development Finance Institution on a Nigerian plastic waste recycling firm called Wecyclers as a convertible loan. The investment will finance a new plant for the recycling of PET bottles for use in new bottles locally and in Europe. The 12 000 tons per year plant will be in Ogun state in South-West Nigeria.

Local investments like that of Lexsz Plastics Limited also invested $8million to create a plastic waste recycling company along Lagos/Ibadan Expressway. The company serves the surrounding states covering a broad range of features, numerous recycling sites in the surrounding areas with over 10,000 local workers.

Modelling Data on Employment and Other Economic Activities

The recycling value chain creates a substantial number of net direct jobs worldwide, largely due to its high processing capacity. It generates employment opportunities at various stages, including collection, sorting, transportation, and recycling of waste. In the European Union, estimates indicate that nearly 50,000 new direct jobs could be created by 2020, with an additional 75,000 indirect jobs supporting the sector.

By 2025, employment in the recycling value chain could grow to 80,000 direct jobs and 120,000 indirect jobs. Indirect jobs, such as those in facility construction, equipment manufacturing, maintenance, and administrative roles, also contribute significantly to job creation. A case study of Lagos State highlights the impact of recycling on the Nigerian economy. Industry associations such as the Food and Beverage Recycling Alliance (FBRA) have significantly empowered individuals, with over 5,000 people benefiting directly and indirectly from their initiatives between 2011 and 2023.

Additionally, the Association of Waste Pickers of Lagos, supported by FBRA and other stakeholders, is working to formalize the informal waste picker segment of the value chain.

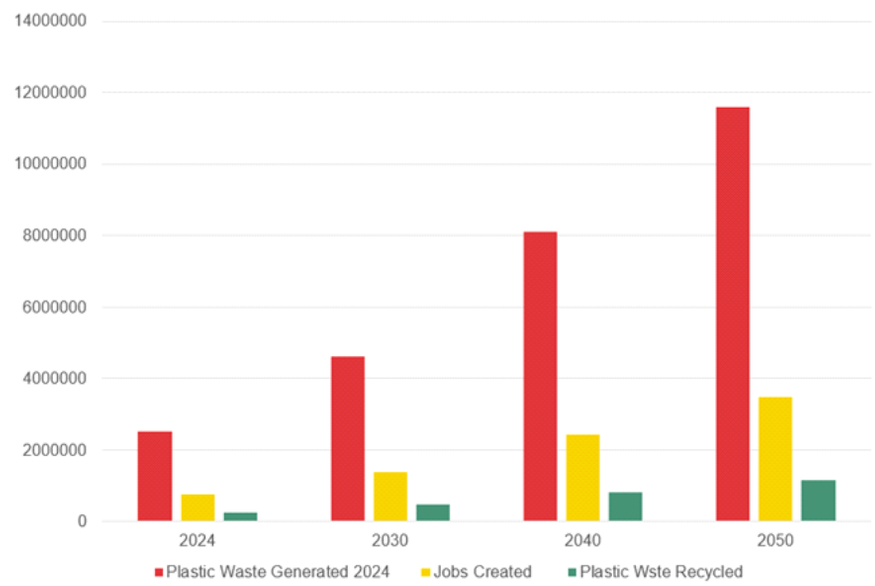
The registration of over 3,000 waste pickers in Lagos State underscores the commitment to improving the livelihoods of waste pickers, who are estimated to number over 5,000.

Furthermore, according to the Nigerian Bottling Company, Nigeria can create about 750,000 jobs within a short time frame to improve the lives of millions of workers in the informal sector by fully harnessing the potentials in the plastics value chain.

If we continue to recycle about 10% of the plastic waste we generate, a statistical model to show the level jobs that can be created by recycling plastic waste in Nigeria can be estimated through the current data of plastic waste generated annually (2.5) million tons) in the country and the estimated number of jobs (750,000) researched especially in the informal sector.

Some considerations include a 14% annual growth on plastic waste generation and population growth reaching 377 million by 2050, hence more plastic waste generation with low recycling volumes at just 10%. If 750,000 jobs can be created by just recycling 10% of plastic waste generated, in the country it is possible to create 3,750,000 jobs if we just recycled 50% of the plastic waste generated.

Figure 2.0 An Analysis of estimated jobs created through plastic waste recycling by 2050.



Source NCIC, 2022

In addition, the Nigerian circular economy involves a range of activities from recycling and renewable energy to sustainable agriculture and circular business models. These initiatives yield significant economic benefits, including job creation, cost savings, economic diversification, environmental improvements, investment attraction, and enhanced competitiveness. By embracing a circular economy, Nigeria can achieve sustainable development and long-term economic resilience.

Impact of the Circular Economy in Combating Plastic Pollution

The circular economy offers a viable solution to combat plastic pollution in Nigeria, providing substantial environmental and economic benefits. Through effective waste management, innovative product design, public education, and supportive policies, Nigeria can significantly reduce its plastic footprint and transition towards a more sustainable future. Addressing the challenges of infrastructure, policy enforcement, and public participation will be crucial in realizing the full potential of the circular economy in mitigating plastic pollution.

The impact of the proposed circular economy cannot be overemphasised as follows:

- **Collection and Sorting: Effective plastic waste management begins with the systematic collection and sorting of plastic materials. Initiatives like community-based waste collection schemes and formal waste management systems are crucial. Organizations such as the Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA) are actively involved in promoting recycling practices.**

- **School Programs: Integrating environmental education into school curriculums helps inculcate sustainable practices from a young age.**

- **EPR policies hold producers accountable for the entire lifecycle of their plastic products, incentivizing them to design more sustainable products and invest in recycling infrastructure.**

Comparison between Circular Economy Approach and Green Taxation

This research has dwelled on the concept of adopting a circular economy model to achieving sustainable development because it offers a comprehensive approach to environmental, social and economic challenges. Unlike green taxation, which primarily penalizes environmentally harmful activities and may impose economic burdens on businesses and consumers, circular economy models focus on redesigning systems to eliminate waste and optimize resource use. This approach does not only address the root cause of environmental degradation by promoting sustainable production and consumption patterns but also drives innovation and economic growth through the creation of new industries, value chains and job opportunities. These are some key differences between the two concepts:

FOCUS AREAS	CIRCULAR ECONOMY APPROACH	GREEN TAXATION
Concept	An economic model which perceives waste as a resource towards applying the principles of reducing, reusing and recycling waste to ensure the continuous use of resources.	Taxes levied on products or activities that are seen as being environmentally harmful.
Environmental Impact	Encourages innovation, creates jobs in new sectors and new value chains, towards ensuring long-term sustainability.	Reduces specific harmful activities but doesn't address the root causes of environmental degradation.
Scope of Impact	Applies across all sectors, promoting a holistic approach to sustainability.	Limited to areas where taxes are imposed, often sector specific.
Economic Flexibility	Encourages innovation and new business opportunities, potentially leading to economic growth.	Can increase costs for businesses and consumers, potentially leading to job cuts and job losses which is not economically viable.
Administrative Complexity	Integrates seamlessly into existing business processes and models, potentially reducing long-term administrative burdens.	Requires careful operational adjustments to be effective in the long-term.
Innovation Stimulation	Directly drives innovation in product design, material usage, and business models.	Indirectly encourages innovation by making traditional practices more expensive.
Behavioural Change	Encourages a shift towards sustainable practices through systemic change.	Influences behaviour through economic disincentives.
Waste Management	Emphasizes waste reduction through design and process innovations.	Penalizes waste generation but doesn't prevent it.
Resource Utilization	Maximizes resource value by keeping them in use longer, promoting reuse and recycling.	Taxation discourages or limits recycling models in the long run, with little or no optimization of resources.
Economic Impact	Creates economic opportunities in new sectors (recycling, sustainable manufacturing) and fosters resilience.	Generates government revenue for environmental projects but may burden consumers.
Public Perception	Generally perceived as progressive and beneficial for future generations due to its sustainability focus.	Can be seen as punitive and unpopular if it leads to higher costs, and job losses along the circular value chains.

Key Takeaways from Green Taxation Model

A. Limited Scope:
Green taxation primarily targets specific products, often missing broader systemic issues.

B. Economic Burden:
It can increase costs for both businesses and consumers, and these businesses may be forced to lay-off staff due to taxes added to high operational cost of doing business in Nigeria , potentially leading to economic slowdowns , job losses and reduction of purchasing power.

C. Administrative Challenges:
Effective implementation requires ongoing adjustments and monitoring, which can be resource intensive.

D. Reactive Nature:
It addresses the symptoms rather than the root causes of environmental problems.

E. Short-term Focus:
Without continuous updates and calibrations, its effectiveness can diminish over time.

Key Takeaways from Green Taxation Model

A. Comprehensive Approach:
Addresses the entire life cycle of products, ensuring sustainability from design to disposal.

B. Economic Growth:
Encourages innovation and creates new business opportunities in recycling.

C. Long-term Sustainability:
Provides a systemic solution to resource efficiency and waste minimization, promoting long-term environmental social and economic benefits.

D. Preventive Measures:
Focuses on preventing waste and environmental issues through design and process innovations.

E. Positive Public Perception: :
Generally seen as a proactive and progressive approach to sustainability, garnering public support.

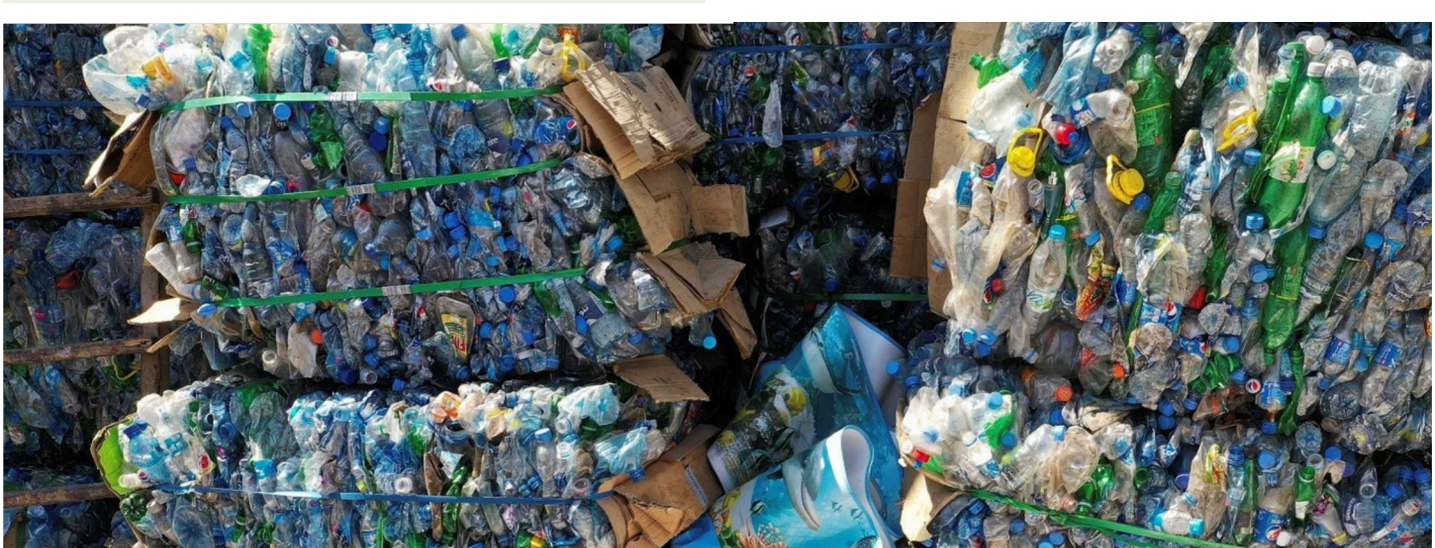


Table 1.0 Data on Plastic Waste Generation and Recycled Plastic Volumes in Nigeria from 2007-2017

	2007-2017			
States	**Total Plastic Waste Generated**	**Population**	**Recycled Plastic**	**Unrecycled Plastic**
Abia	1,782,241.74	3,727,347.00	213,869.01	1,568,372.73
Abuja	764,431.91	3,564,126.00	91,731.83	672,700.08
Adamawa	1,143,054.51	4,248,436.00	137,166.54	1,005,887.97
Akwa-Ibom	1,446,412.30	5,482,177.00	173,569.48	1,272,842.84
Anambra	1,492,179.68	5,527,809.00	179,061.56	1,313,118.12
Bauchi	1,724,280.16	6,537,314.00	206,913.62	1,517,366.54
Bayelsa	5,647,247.79	2,277,961.00	677,669.73	4,969,578.06
Benue	1,538,017.20	5,741,815.00	184,562.06	1,353,455.14
Borno	1,545,959.60	5,860,183.00	185,515.15	1,360,444.45
Cross-river	1,040,475.90	3,866,269.00	124,857.11	915,618.79
Delta	1,505,514.25	5,663,362.00	180,661.71	1,324,852.54
Katsina	3,658,644.59	7,831,319.00	439,037.35	3,219,607.24
Kebbi	1,185,394.71	4,440,050.00	142,247.37	1,043,147.34
Kogi	1,275,650.87	4,473,490.00	153,078.10	1,122,572.77
Kwara	775,368.00	3,192,893.00	93,044.16	682,323.84
Lagos	3,333,110.27	12,550,589.00	399,973.23	2,933,137.04
Nasarawa	677,425.86	2,523,395.00	81,292.10	596,134.76
Niger	1,465,914.80	5,556,247.00	175,909.78	1,290,005.02
Ogun	1,381,993.55	5,217,716.00	165,839.23	1,216,154.32
Ondo	1,251,871.26	4,671,695.00	150,224.55	1,101,646.71
Osun	1,208,419.25	4,705,589.00	145,010.31	1,063,408.94
Oyo	1,996,254.36	7,840,864.00	239,550.52	1,756,703.84
Plateau	1,308,794.80	4,200,442.00	157,055.38	1,151,739.42
Rivers	1,854,861.17	7,303,924.00	222,583.34	1,632,277.83
Sokoto	1,339,147.97	4,998,090.00	160,697.76	1,178,450.21
Taraba	1,665,614.90	3,066,834.00	199,873.79	1,465,741.11
Yobe	866,681.25	3,294,137.00	104,001.75	762,679.50
Zamfara	1,150,464.22	4,515,427.00	138,055.71	1,012,408.51
Total	**46,025,426.87**	**142,879,500.00**	**5,523,052.23**	**40,502,375.66**

Source: Federal Ministry of Environment, Abuja, Nigeria.

The data above shows that between 2007 and 2017 (10years), 88% of the plastic waste generated in 28 states of the country were not recycled, with an estimate of only about 12% recycled into other applications for use. This shows potential recycling opportunities to be tapped across the country and if unlocked will enhance economic viability of these states through the adoption of circular activity models and the right interventions and support mechanisms from stakeholders in both public and private sector. These numbers must have grown beyond the data represented above as a result of population growth standing at 250 million (almost double the population size) when the data was derived.

Testimonials of Investors and Operators in Nigeria's Circular Economy

The benefits and feedback of the circular economy model from stakeholders and players can be better amplified through the intervention projects and programs financed by circular investors. As shown below

Muyiwa Gbadegesin, Managing Director of the Lagos Waste Management Authority (LAWMA), emphasized the potential for waste to be transformed into resources, creating new economic opportunities, and reducing environmental impact. LAWMA aims to develop frameworks to support informal waste collectors and promote organic waste diversion to create compost and biogas.

Rachael Oluwalana, a former worker at the Saje dumpsite in Abeokuta, now operates her own plastic waste supply business. She collects and supplies 5,000 kilograms of plastic waste monthly to a recycling plant, earning between N200,000 and N250,000. This venture has significantly improved her financial situation and showcases the potential for economic empowerment through plastic recycling.

Kaltani, a Nigerian clean-tech startup, has received $4 million in seed funding to expand its plastic recycling operations. The company collects, processes, and converts plastic waste into PET flakes and pellets, which are sold to various industries. Founder Obi Charles Nnanna emphasized that their comprehensive approach to the plastic waste problem is both effective and scalable, with plans to open 20 new collection centers and increase their workforce significantly.

Coca-Cola's initiatives in Nigeria, such as the "**Waste to Wealth**" program, have also made a substantial impact. With a $3 million investment, Coca-Cola has helped create 300 jobs and facilitated the recycling of over 18,000 tons of plastic. This effort not only supports environmental sustainability but also provides economic opportunities for local communities.

Dow's collaboration with local partners like **RecyclePoints** and **Omnik** is another notable example. Their pilot project aims to recycle water sachets, diverting significant amounts of plastic from landfills and creating a viable market for recyclers in non-food packaging. This project also supports waste pickers, providing them with better income opportunities and fostering a more sustainable waste management ecosystem.

Cajetan Okeke, the founder of Alamonk Recyclers is a beneficiary of **Cycle Plast**- A plastic waste recycling project financed by The Coca-Cola Foundation and implemented by the Nigeria Climate Innovation Center. Through the project, Cajetan has employed over 160 people for sourcing plastic waste who he pays upon delivery at his collection hub. He was also provided equipment for bailing and a grant to enhance their operational working capital to sustain the business. Today, Alamonk is more productive and profitable because of these interventions with a monthly collection capacity of 70 tons.

In addition to the above, a good example of a typical circular economy project is Cycle Plast which is to run for 24 months as explained below:

cycleplast

Project Definition:

The project is required to engage in the collection and recycling of at least 9,000 tons of plastic waste in 24 months across the 6 project locations in Nigeria. Each project location is manned by a selected aggregator called a Regional Champion who will work with at least 165 waste pickers per region, giving us a total of 990 waste pickers across the 6 project regions.

Project Support and Interventions:

The waste pickers were provided with protective gears to enable them work in a more dignified manner. These included PPEs, nose masks, Branded Coca-Cola T-shirts, gloves and boots.

These were re-distributed each year to maintain the dignity of labour among the waste pickers who are diredct beneficiaries of the project.

The 6 aggregators were provided working capital as financial support to enhance their cash flow and boost their purchasing power to buy plastics off the waste pickers upon supply at their designated collection centres.

Each aggregator was also supported with a vertical baling machine of 400kg capacity per bale to enable them bale more plastics at a shorter period for onward supply to their respective off takers.

Media Advocacy/Campaigns :

The NCIC embarked on a 13- week behavioural change campaign through weekly radio engagements where the regional champions were featured to talk about the CyclePlast project as well as importance of creating a circular economy through plastic waste recycling, while having live conversations with listeners. There was also a radio drama series titled Trash Na Moni that bodered around unlocking recycling opportunities in our daily lives which transcends into building a circular economy at large.

Impact Numbers for Cycle Plast:

Direct Jobs Created
1,120

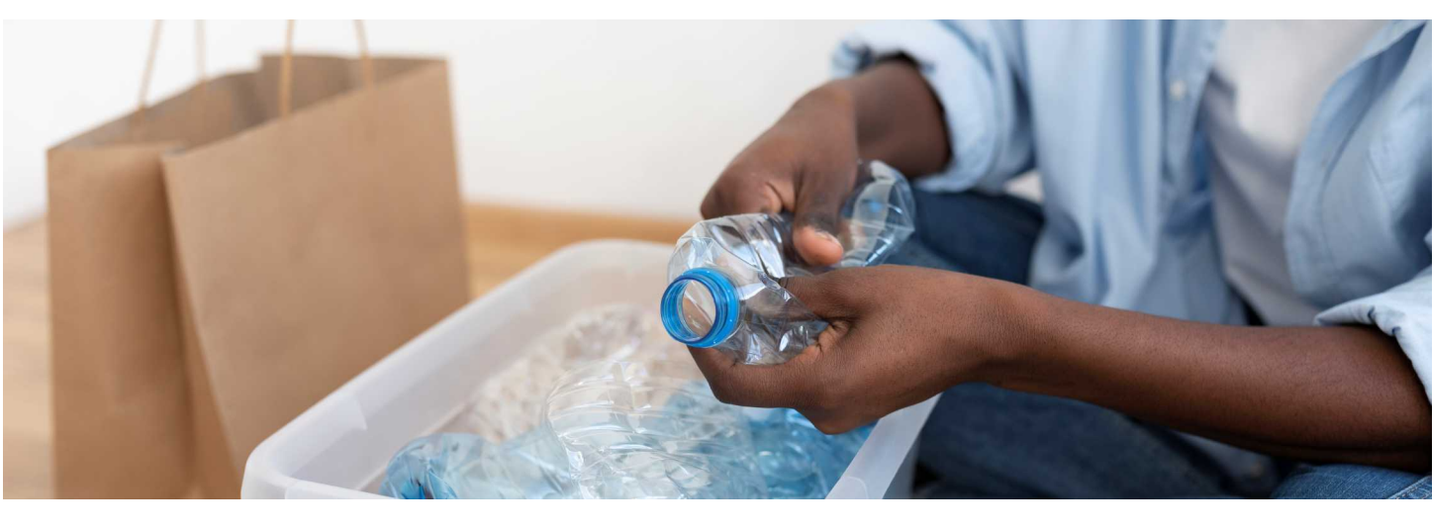
Collection Volume as at April 2024:
7,400 Tons

Transaction Volume on Collections:
N973 Million +

Working Gears Provided:
4,519 (905 PPE's, 904 Gloves, 902 Boots, 903 T-Shirts, 905 Face Masks)

Registered Waste Pickers:
957

Feedback by the investors and players have been very promising and inspiring with the need to drive more plastic intervention projects in terms of coverage and reach.



CHAPTER FIVE

INCREASING THE SCALE OF CIRCULAR ECONOMY

A Counter Proposal More Beneficial than Increased Green Taxation.

Increasing the Scale of Circular Economy

A Counter Proposal More Beneficial than Increased Green Taxation.

Nigeria is grappling with escalating environmental challenges, exacerbated by rapid population growth, urbanization, and industrialization. Inefficient waste management practices, including improper disposal and inadequate recycling infrastructure, contribute to environmental pollution, public health risks, and resource depletion.

While green taxation has been proposed as a tool to internalize environmental costs and incentivize eco-friendly behaviour, this paper posits that increasing the scale of the circular economy presents a more holistic and transformative solution.

By embracing circularity principles and fostering a closed-loop system of production and consumption, Nigeria can address pressing environmental concerns while unlocking economic opportunities and promoting sustainable development.

Understanding the Circular Economy

The circular economy is a regenerative system that seeks to keep products, materials, and resources in use for as long as possible, thereby minimizing waste generation and maximizing value creation throughout the product lifecycle.

Key principles of the circular economy include designing out waste and pollution, keeping products and materials in use, and regenerating natural systems.

By transitioning from a linear **"take-make-dispose" model** to a circular system that prioritizes resource efficiency, waste reduction, and value retention, Nigeria can achieve significant environmental, economic, and social benefits

Advantages of Circular Economy over Green Taxation:

While the Government sees green taxation as a waste management model, the circular economy offers several distinct advantages

Systemic Change:

The circular economy represents a fundamental shift in the way we produce, consume, and dispose of goods and services, addressing underlying systemic issues rather than targeting specific behaviours or sectors.

Economic Opportunities:

Embracing circularity principles can unlock new economic opportunities, such as job creation, innovation, and market development in sectors such as manufacturing, recycling, and resource recovery.

Innovation and Collaboration:

Transitioning to a circular economy requires collaboration and innovation across sectors, fostering synergies between businesses, governments, and civil society to co-create solutions that benefit society and the environment.

Long-Term Sustainability:

By promoting resource efficiency and waste reduction, the circular economy offers a more sustainable and resilient model of development compared to green taxation, which may yield short-term results but fail to address broader sustainability challenges.

Social Equity:

The circular economy has the potential to foster social equity by promoting inclusive growth, reducing resource disparities, and enhancing access to essential goods and services, whereas green taxation measures may disproportionately impact vulnerable populations.

Recommendations for Accelerating the Transition to a Circular Economy

To increase the scale of the circular economy and realize its full potential in Nigeria, policymakers, businesses, and society should:

1. Implement comprehensive policy frameworks that incentivize circularity across sectors, including product design, manufacturing, consumption, and waste management.
2. Encourage collaboration and knowledge sharing among stakeholders to co-create circular solutions, leverage economies of scale, and address common challenges.
3. Support research, development, and innovation in circular technologies, business models, and materials to drive technological advancements and overcome barriers to circularity.
4. Raise awareness about the benefits of the circular economy and empower consumers to make informed choices that support sustainable consumption and production practices.
5. Invest in infrastructure for collection, sorting, and recycling of materials, as well as digital platforms and systems that facilitate resource sharing, circular supply chains, and product-as-a-service models.
6. Encourage public and private sector organizations to adopt circular procurement practices that prioritize products and services with minimal environmental impact and maximum life cycle value.

Conclusion

In conclusion, adopting a circular economy model in Nigeria through plastic waste recycling presents a more sustainable and economically beneficial approach compared to the government's proposal for green taxation. By focusing on recycling and reusing materials, Nigeria can reduce environmental pollution, create job opportunities, and drive economic growth.

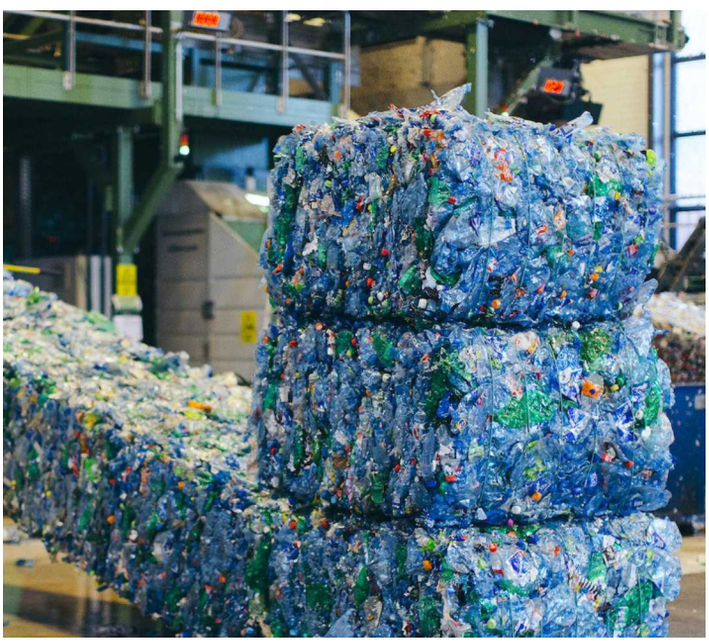
This approach not only addresses the pressing issue of waste management but also aligns with global sustainability goals. Furthermore, it leverages the informal sector's existing capabilities and integrates international best practices, positioning Nigeria as a leader in circular economy initiatives in Africa.

The collaboration between governmental bodies, international partners, and local communities is crucial to realizing the full potential of this model through strategic and deliberate Advocacy models, ensuring a comprehensive understanding and inclusive transition that is informational and knowledge-driven towards a sustainable future.

CHAPTER SIX

APPENDIXES

- PICTURES
- INTERVIEWS WITH CIRCULAR ECONOMY OPERATORS
- OTHER RESOURCES



INTERVIEWS

Rita Idehai	President, Recyclers Association of Nigeria
Eng. Obi Charles Nnanna	President, Recyclers Association of Nigeria
Victor Boyle-Komolafe	Founder GIVO (Garbage in, Value Out)
Hamidu Mohammed	Founder Eco Build
Cajetan Okeke	CEO Alamonk Recyclers
Chiroma Mohammed	Co-Founder, Etrash2Cash
Oreva Atanya	Head, Lagos Business School Sustainability Center

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