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Implementation of the Extended Producer Responsibility (EPR) Policy in Nigeria: Towards Sustainable Business Practice

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Abstract

Nigeria is Africa's most populous country and biggest waste producer. By 2025, it is estimated that waste generation in Nigeria would make up 25% of Africa's total wastes generation. To meet the needs of the growing population, extraction of virgin and raw materials has been on the rise to achieve higher production quotas – this raises the risk of the rapid depletion of such resources should unsustainable exploitation persist. On the other hand, waste management has remained a critical challenge in Nigeria; thus, daily, significant amounts of waste produced in Nigeria end up indiscriminately in the environment. This unsustainable, vicious twin cycle of indiscriminate exploitation of natural resources and poor waste management holds dire consequences for the environment and human health. However, with environmental awareness on the rise globally, there have been various policy attempts at entrenching sustainable use of natural resources, effective waste management, sustainable materials management and circular economy. One such is the Extended Producer Responsibility, EPR, also called the Buy-Back Scheme, BBS, which makes manufacturers responsible for the management of their post-consumer products. In 2014, the Federal Government, through the National Environmental Standards and Regulations Enforcement Agency (NESREA), adopted and released guidelines for the implementation of EPR policy in Nigeria. However, being a relatively new concept in the Nigerian space, limited scientific literature exists on the framework and implementation of the policy in Nigeria. This paper examines the goals and benefits of EPR policy in Nigeria, the current framework for the implementation of the policy, scope, critical stakeholders and their roles, requirements for the EPR/Products Stewardship Plan, and limitations of the implementation of the policy in Nigeria. This is one of the first comprehensive studies on the EPR in Nigeria.

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Keywords: EPR, Buy-Back Scheme, Waste management, Sustainable development, NESREA.

1. Introduction

Since the industrial revolution, man has mastered to exploit earth's natural resources at a scale never seen before on earth. The increase in man's exploitation of natural resources is a direct response to factors such as increasingly sophisticated consumer taste and higher demands for raw materials to meet higher production quotas necessitated by the rapid pace of the trio of human population growth, urbanization and industrialization. The increase in exploitation of natural resources also comes at a cost as raw materials used in production processes. However, a significant fraction of natural resources such as crude oil and iron ores are non-renewable natural resources, meaning they are finite in

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terms of available quantity. In conventional waste management models before the advent of EPR model, no incentives was given to producers to be innovative in their product design such that their products use less ("toxic") materials or that their materials are more recyclable. Producers use excess materials for production even in situations where they could have used less while waste generation associated with the production and consumption of their products is also excessively high (Figure 1).



Figure 1: Conventional waste management models with EPR (Image credit: Google image).

Such a system is also problematic because it places all the financial burden of waste management on the government (Ossai, 2000; Achankeng, 2003). This is unsustainable in the long term as it overstretches government, public finances, existing public facilities and waste management utilities, resulting, among others, in excessive exploitation of natural resources, ineffective waste management, and indiscriminate dumping of wastes in the environment (Ossai, 2000; Achankeng, 2003; Sanusi, 2018) (Figure 2). The linear model of production of goods and services is characterized by excessively high material and energy consumption and waste generation. Should this continue unchecked and unabated at current, fast rates, the volume of non-renewable natural resources will steadily reduce and a time would come when global natural resources would be exhausted. In the same vein, if the exploitation of renewable natural resources (e.g. freshwater) continues to proceed at rates faster than nature's ability to replenish them, deterioration and depletion of these resources would become inevitable, leading to disruptions in quantity and quality needed to support growing populations. When raw materials (renewable or non-renewable) steadily become scarce to get, production cycles are disrupted, prices go up, production costs skyrocket – all of these will consequently create serious repercussions for national and global economies.



Figure 2: Some consequences of current ineffective waste management system (Image credit: Google image).

Secondly, as the exploitation of raw materials increases *vis-à-vis* higher production of goods and services, higher consumption patterns, and more sophisticated consumer taste, one of the unintended consequences is the steady

increase in volume of wastes produced and in the amount of waste that eventually end up discarded into the environment (Figure 3). While this is a global problem, the situation is even direr in developing countries with weak public utilities and regulatory structures. For example, with global production of plastics in the past few decades now greater than all the plastics ever produced in human history, plastic waste has become one of the biggest environmental scourges of the time. The scale of the challenge is daunting. Only 9% of the nine billion tonnes of plastic in the world ever produced has been recycled; a situation which means most plastic wastes end up in landfills, dumps or in the environment (Geyer *et al*., 2017).

By 2050, should nothing be done about and to current enormous material consumption and waste generation rates, global waste generation would rise by a whopping 70%, rising from the current 2.1 billion tonnes to 3.4 billion tonnes (Silpa *et al.*, 2018). Over 300 million tonnes of plastic waste is produced annually (UNEP, 2018). However, only 4% of wastes produced in low-income countries is recycled (Silpa *et al.*, 2018). By 2050, waste generation in Sub-Saharan Africa is expected to triple (Silpa *et al.*, 2018). According to the World Bank, plastic waste made up 12% (or 242 million tonnes) of the total volume of waste produced globally in 2016 (Silpa *et al.*, 2018) (Figures 4 and 5).

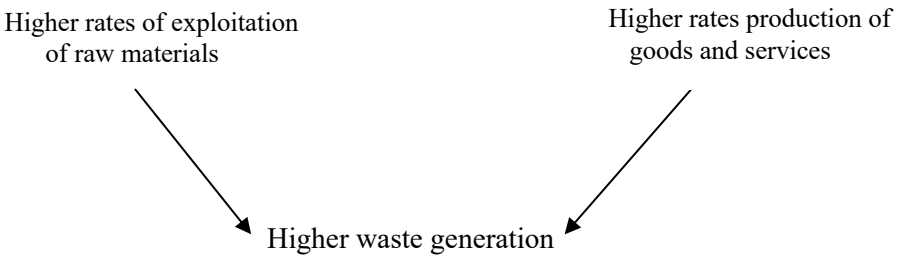


Figure 3: Effect of unsustainable exploitation/production.

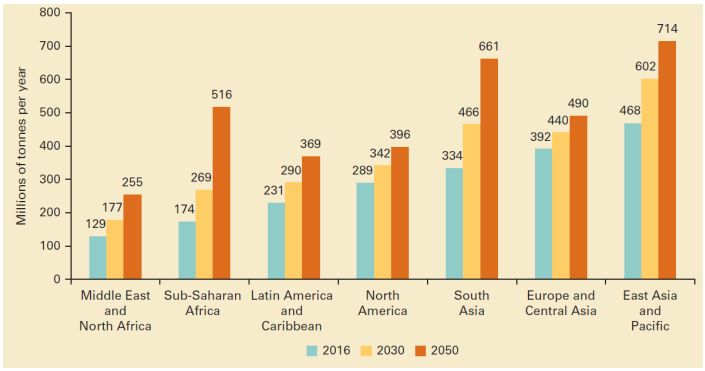


Figure 4: Projected waste generation, by region (millions of tonnes/year) (Silpa *et al.*, 2018).

If global plastic production rates continue to grow at current pace, it is predicted that by 2050, the plastic industry may account for 20% of the world's total oil consumption. It is also predicted that if the current consumption patterns and waste management practices continue, by 2050, there would be around 12 billion tonnes of plastic litter in landfills and the environment (WEF, 2016). Asides the unhealthy environmental and public health implications associated with this unsavoury situation, another negative implication is the avoidable significant loss of essential resources.

In the light of above stated facts, this situation holds serious global economic implications, particularly in terms of ensuring undisrupted supply of raw materials for industrial production. Thus, while the development of modern society depends on the availability and large-scale exploitation of natural resources, depletion of non-renewable natural resources arising from unsustainable exploitation, production, consumption and waste management patterns portends grave danger for the global economy. For example, Lagos which is Nigeria's commercial capital and the most developed and most populous of Nigeria's 36 States, produces a whopping 13,000 MT of waste monthly

(Ibiyemi, 2008; The Economist, 2014; Sanusi, 2018)! Yet, in Lagos, only 20-40% of municipal waste is collected, and only 10-15% is recycled (Thomas, 2000; Sanusi, 2018) – this is despite the fact that Lagos has the biggest waste management industry in Nigeria. The figures are worse in many other states in Nigeria and indeed, in many developing countries.

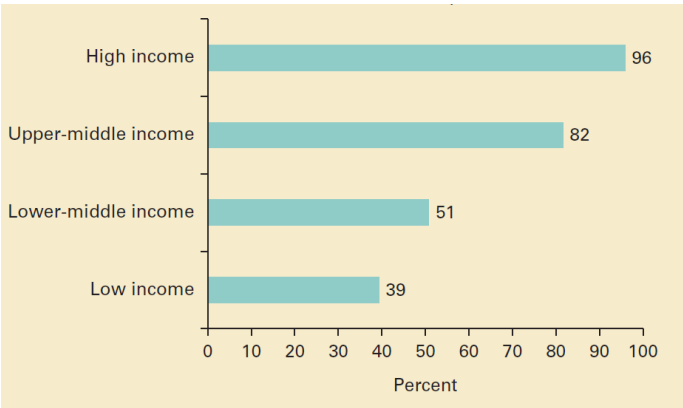


Figure 5: Waste collection rates, by income level (Silpa *et al.*, 2018).

In recent times, with environmental awareness on the rise, there has been a growing global attempt to ensure that countries adopt and entrench sustainable economic and environmental initiatives through sustainable exploitation of natural resources, responsible production and consumption, and effective waste management. This is in line with the UN Sustainable Development Goals (SDGs). The race therefore is on to ensure that countries replace linear economy models with circular economy models. A circular economy is an economic system that ensures maximum value and functionality are derived from products and materials. It thus, characteristically prioritizes optimal resource utilization, sustainable materials management, and effective waste management. One of the effective means of achieving a circular economy is through the implementation of the Extended Producer Responsibility (EPR) policy. This policy, also variously referred to as the Buy-Back Scheme (BBS); Extended Product Stewardship Programme (EPSP); Product Stewardship Plan, PSP; or Consumer Products Stewardship Programme (CPSP); basically makes manufacturers legally responsible for the management of their post-consumer products.

In 2014, Nigeria adopted the EPR as a matter of national policy, and in the same year, the Federal Government through the National Environmental Standards and Regulations Enforcement Agency (NESREA), released guidelines for the implementation of EPR policy in Nigeria. However, to date, EPR remains largely unknown and is often misconstrued, misapplied and underutilized. Implementation of the policy across Nigeria continues to face immense challenges and full coverage remains far from being achieved. Limited scientific literature exists on the framework and implementation of the policy in Nigeria, hence, the need for this paper. This paper, thus, examines the goals and benefits of EPR policy in Nigeria and why it is key to the quest for sustainability in Nigeria's business sector. It also examines the current framework for the implementation of the policy in Nigeria, scope, critical stakeholders and their roles, requirements for EPR/Products Stewardship Plan, and limitations of implementation of the policy in Nigeria. This is one of the first comprehensive studies on the EPR in Nigeria.

2. Methodology

The methods used for data collection and information gathering for this study include extensive literature reviews of high quality research materials on EPR in Nigeria and across the world, and relevant official documents from regulators such as NESREA which is the Federal Agency responsible for the implementation of the EPR in Nigeria. Various expert opinions, newspaper articles, journals and outputs of conference presentations and discussions on the subject matter also formed the basis of the study.

3. Results and Discussion

Brief History of the Extended Producer Responsibility (EPR) Program

Every agricultural, industrial, or manufacturing process produces waste. Likewise, every finished product from the factory, farm or workshop reaches the final consumer in a packaging material that is often left discarded as waste before or after the consumption of the product. Moreover, after sustained consumption or use, a product eventually reaches its end-of-life, and more waste results from its carcass/skeleton. Because of these factors, the cumulative total volume of waste produced globally has been increasing steadily. Sadly, waste collection and management facilities in most countries have not increased in commensurate measures. Thus, wastes often end up indiscriminately in the environment, resulting in dire environmental, health and economic consequences. Examples of common wastes found littering the environment are nylon, paper, rubber, empty tins, metal scrapings, fabrics, glass and plastic bottles, parts of or wholly abandoned electronics and vehicles, medical and organic wastes etc. Since some of these wastes, like plastic wastes, are non-biodegradable, they persist in the environment for long periods, sometime running into tens and hundreds of years.

The past few years have seen environmental awareness rise on a global scale, leading to more intense public demand for environmental sustainability. As municipal authorities juggle to live up to these rising expectations, waste management continues to take large chunks of their annual budgets. (Achankeng, 2003; UNEP, 2009; Kunlere *et al*., 2019a). Many authorities, particularly in developing countries, struggle to ensure proper management of their waste, however, only 20-80% of municipal waste is effectively collected (Achankeng, 2003). Over time, it became necessary that municipal authorities found innovative ways of reducing the costs associated with waste management while also ensuring effective municipal waste management.

In the 1990s, a new idea called EPR (Extended Producer Responsibility) which held producers responsible for their post-consumption products, and holds them financially responsible for the management of same evolved and gradually got more popular. The EPR also proved to be a better policy than a conventional eco-tax (like plastic tax) because it has a wider scope than only economic costs for producers. It extends to the entire lifecycle of the product. In practical terms, the EPR is a special form of public-private sector collaboration in the waste management where government enacts the guidelines that mandate manufacturers, rather than government, to bear the cost of final recycling or disposal of end-of-life products (PSI, 2014; Silpa *et al.*, 2018).

At the root of the EPR as an important public policy is the need for a clean and healthy environment can sustainably support the hopes and aspirations of the citizens. The EPR achieves this lofty goal by shifting the huge financial costs often associated with the management of post-consumption products from government and its agencies to the manufacturers/producers of goods and services. And consequently, to ensure that manufacturers/producers take into cognizance the need for a clean and healthy environment beginning from the product conceptualization, to product design, to the main production and distribution phases, and indeed, though its entire lifecycle. Thus, under the EPR, the responsibility of the manufacturer goes beyond recycling.

Germany was the first country to adopt EPR as a waste management policy in 1991/1992 when it introduced the game-changing policy called “Verpackungsverordnung” (FRG, 1991), which was a legislation on avoidance of packaging waste. This was followed by similar adoptions by Austria, Belgium and France (Cahill *et al.*, 2010). The policy was then quickly adopted across the European Union with national policies from these countries forming the template of the policy across Europe (Cahill *et al.*, 2010). In 1994, the EU introduced the EU Packaging Waste Directive (94/62/EC), which for the first time, set established collection and recycling targets for Member States as well as established key requirements for the design of packaging for use across the EU (EPC, 1994). However, that directive did not include a requirement for producers to bear the cost of waste collection and recycling. The requirement for financial responsibility for collection and recycling of packaging wastes was shifted to producers through subsequent legislations introduced by some Member States for their individual countries. Following the positive feedback on the implementation of the EPR program for packaging wastes across the EU, some EU countries expanded the EPR to include wastes from batteries and household appliances (Kunz *et al.,* 2014). After extensive

reviews of the earlier 1991 Batteries Directive, the EU expanded the EPR program to include End-of-Life Vehicles in 2000 known as 2000/53/EC (EPC, 2000); Waste Electrical and Electronic Equipment (WEEE) in 2003 known as 2002/96/EC (EPC, 2003) and; Batteries in 2006 known as 2006/66/EC (EPC, 2006). In the past few years, a number of countries in Europe have further expanded EPR to cover other types of wastes like chemicals, tyres, paper and oils (EPC, 2000, 2003, 2006; ECBI 2012; Kunz *et al.,* 2014). Different EPR programs covering various waste streams have also been adopted in various countries, including Canada, China, Malaysia, South Korea, Australia and in over 30 states in the United States of America (ETC, 2013).

EPR Policy in Nigeria

In Nigeria, it was clearly stated in some of the thirty-three National Environmental Regulations that NESREA has so far churned out over the past decade, that companies operating in the affected sectors of the Nigerian economy are required to have in place, an Extended Producer Responsibility (EPR) program. At the end of the various public dialogues, in 2014, NESREA released the first ever comprehensive guidelines on the implementation of the Extended Producer Responsibility (EPR) program in Nigeria.

The EPR can be described as an integrated waste management policy that extends (rather than merely assigns) financial and physical responsibility for the management of post-consumption (end-of-life) products to the producers (or importers and distributors) of such products, with the aim of reducing waste disposal, promoting resource conservation, increasing recycling, and encouraging more environmentally-friendly product design. The point must be made however, that EPR is not only about the management of post-consumption products. Rather, it places a demand on producers to bear responsibility for the entire lifecycle of their products, from the ideation, design, choice of production material/technology, production, shipment to the final consumers and then, management of post-consumption products. The underlining concept of the EPR is the 3R waste hierarchy (Reduce, Reuse, and Recycle). According to the World Summit on Sustainable Development, WSSD, the 3R waste hierarchy is an “effective means of achieving sustainable consumption and production (Srinivas, 2015; Ahmadi, 2017).

The EPR program addresses at least four key issues in relation to Waste Management Policy implementation: Waste avoidance, prevention and minimization; Waste disposal and collection; Material recovery, recycling and reuse, and; Treatment and handling of wastes. The EPR encourages and compels manufacturers to put in place policies, plans, environment-friendly technologies and collaborations to recall packaging and end-of-life wastes of their products from their final consumers; reduce, reuse, and when applicable, recycle these wastes and ensure efficient use of natural resources. The EPR reduces barriers to seamless flow of recyclable goods and materials and ensures a sound, material-cycle society that prioritizes both economic development and environmental preservation; a win-win situation.

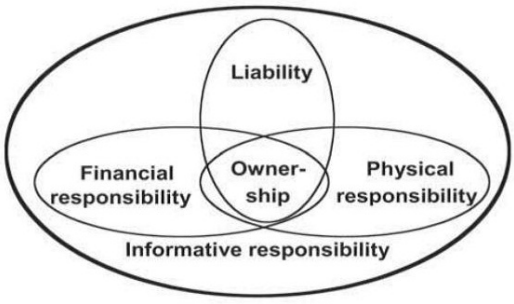


Figure 6: Model for Extended Producer Responsibility (Lindhqvist, 1992).

As seen in Figure 6, the EPR places four key types of responsibility on producers: Liability responsibility, Financial responsibility, Physical responsibility, and Informative responsibility. Liability responsibility pushes the cost of environmental damage that can be proven to have been caused by a product or its post-consumption form to the producer of that product. Specific liabilities associated with a particular product or group of products may be set

by targeted legislations and could cover part or all of the lifecycle of the product, including usage, recycling and final disposal. Financial (Economic) responsibility requires producers to wholly or partly foot the bill for the management of their post-consumption products. These costs are associated with collection, recycling or final disposal of the post-consumption products and they may be directly paid for by the producer or through a special fee. Physical responsibility describes a situation where the producer or his representative plays active roles in management of physical products or of the effects of the products. Lastly, Informative responsibility describes key public enlightenment by the producer that sheds more light on the environmental qualities of the product. This, for example, may include the producer supplying necessary information about properties of the product that may aid recyclers in easily recycling the post-consumption products (Lindhqvist, 2000).

Legal Basis for the Implementation of the EPR Policy in Nigeria

The right of Nigerians to a clean and healthy environment is enshrined in the Nigerian Constitution and the legitimacy of government's effort at achieving this derives from relevant sections of the Constitution. The social charter of the National Economic Empowerment and Development Strategy (NEEDS) also emphasized the need for environmental sustainability and stressed the need for a robust private sector participation in Nigeria's waste management sector. In terms of policy, the general priorities of the environment sector in Nigeria are broadly conceptualized in the National Policy on Environment which was first adopted in 1989, and reviewed in 1999, and most recently, between 2016-2017 (Ajani and Kunlere, 2017). For emphasis, no mention of EPR was made in the old or any of the revised versions of the National Policy of Environment. Sections 7 and 8 of the NESREA Establishment Act of 2007 spell out the functions and powers of the Agency, NESREA (National Environmental Standards and Regulations Enforcement Agency). Part of the Agency's powers allows her "In collaboration with other relevant agencies and with the approval of the Minister, [to] establish programmes for setting standards and regulations for the prevention, reduction and elimination of pollution and other forms of environmental degradation in the nation's air, land, oceans, seas and other water bodies and for restoration and enhancement of the nation's environment and natural resources (Section 8(o))."

Pursuant to the Agency's power to "make regulations for the purpose of protecting public health and promotion of sound environmental sanitation" (Section 25(1)); "make regulations, guidelines and standards for the protection and enhancement of the quality of land resources, natural watershed, coastal zone, dams and reservoirs" (Section 26(1)); "co-operate with other Government agencies for the removal of any pollutant excluding oil and gas related ones discharged into the Nigerian environment," she is expected to "enforce the application of best clean-up technology currently available and implementation of best management practices as appropriate" (Section 29). The Federal Government of Nigeria through the Agency has gazetted thirty-three National Environmental Regulations, which regulate impacts of specific sectors of the economy on the environment. Some of these national environmental regulations incorporate the EPR and contain provisions that mandate all companies operating within the affected sectors to adopt the EPR program as a waste management tool. Some of the national environmental regulations with EPR provisions include: National Environmental (Sanitation and Wastes Control) Regulations, 2009. S. I. No. 28; National Environmental (Food, Beverages and Tobacco Sector) Regulations, 2009. S. I. No. 33; National Environmental (Chemicals, Pharmaceuticals, Soap and Detergent Manufacturing Industries) Regulations, 2009. S. I. No. 36; National Environmental (Electrical/Electronic Sector) Regulations, 2010. S. I. No 23; National Environmental (Base Metals, Iron and Steel Manufacturing/Recycling Industries) Regulations, 2010. S. I. No. 14; National Environmental (Non-Metallic Minerals Manufacturing Industries Sector) Regulations, 2010. S. I. No. 21; National Environmental (Pulp and Paper, Wood and Wood Products) Regulations 2012, S. I. 34; National Environmental (Motor Vehicle and Miscellaneous Assembly Sector) Regulations, 2012, S. I. No. 35; and National Environmental (Domestic and Industrial Plastic, Rubber and Foam Sector) Regulations, 2010, S. I. No. 17.

Framework for the Implementation of EPR in Nigeria

To enable the smooth implementation of the EPR requirements as contained in the concerned national environmental regulations, the government organized various consultations with stakeholders (Figure 7). NESREA has also led various industry-led initiatives on the EPR in partnership with other stakeholders (Figure 8). Following

much deliberation with stakeholders, in 2014, the Federal Government of Nigeria through the National Environmental Standards and Regulations Enforcement Agency (NESREA), released the EPR Operational guidelines for Nigeria (Figure 9). The EPR Operational guidelines, a 36-page document, contain the framework for the implementation of the EPR policy in Nigeria (Figure 10). Amongst other things, the guidelines define the goals and benefits of the EPR program in Nigeria, identify the stakeholders, and spells out the roles each is to play in the EPR implementation process.



Figure 7: Lead discussants at one of NESREA's public consultation forums on EPR.



Figure 8: One of the several stakeholders meetings held on the EPR (Authors' research materials).

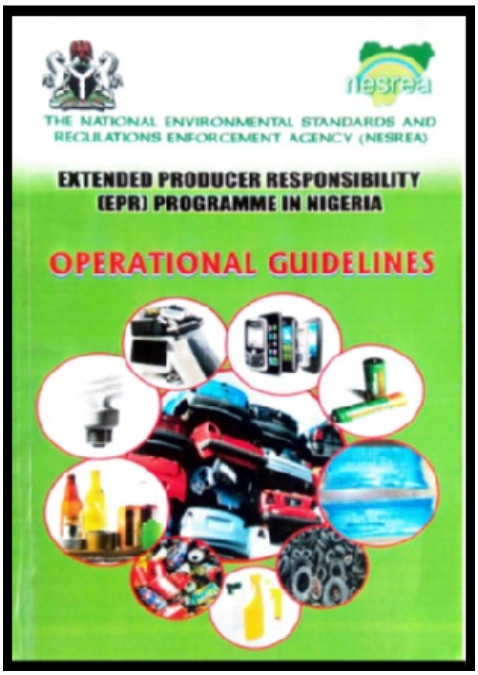


Figure 9: EPR guidelines in Nigeria (Authors' research materials).

Critical Stakeholders and their Roles in the Implementation of the EPR Policy

For the successful implementation of the EPR program in Nigeria, it is crucial to identify who the stakeholders in the process are, and what specific roles each stakeholder is to play. There are six major stakeholders in the EPR

process: Producers, Consumers, Producer Responsibility Organizations (PROs), Collectors, Recyclers, and Government and its Agencies (Figures 10 and 11).

The Producer is the manufacturer of the product. However, producers may also include converters in the supply chain, franchisees, assemblers, fillers, brand owners, importers, distributors or retailers of a product. Under the EPR policy, producers are expected to ensure that wastes arising from the use of their products by the consumers are safely managed through effective monitoring of the entire lifecycle of the product. *Consumers* are individuals or organizations who buy and use products produced by manufacturers but, whom at the end of the product's useful life, produce end-of-life or post-consumption products (wastes) that must be safely disposed of. Under the EPR Operational Guidelines, consumers are expected to safely dispose of their wastes through legal and appropriate means such as at collection centres managed by accredited collectors. Often times, producers who are practicably unable to effectively manage the end-of-life wastes of their products may assign a third-party to help them oversee the process through a network of collectors, and dismantlers and recyclers across the country. Thus, such producers may delegate or transfer their responsibilities under the EPR process. Alternatively, producers in a similar or related sector where the type of waste they produce are similar, for example in the food and beverage sector, may jointly delegate or transfer their responsibilities under the EPR policy to a single third-party. Generally, such third parties are known as *Producer Responsibility Organizations (PROs)*.

Also on behalf of producers, PROs are responsible for managing the entire process for awareness creation, collection, and securing workable arrangements with recyclers. Already in Nigeria, a couple of PROs have been established. These include: Food and Beverages Recycling Alliance (FBRA), a PRO that represents selected food, beverages and bottling companies, focuses on collection and recycling of plastic wastes; the Recycling and Economic Development Initiative of Nigeria (REDIN) which focuses on clean energy and; the Alliance for Responsible Battery Recyclers (ARBR) which focuses on recycling of hazardous battery wastes.

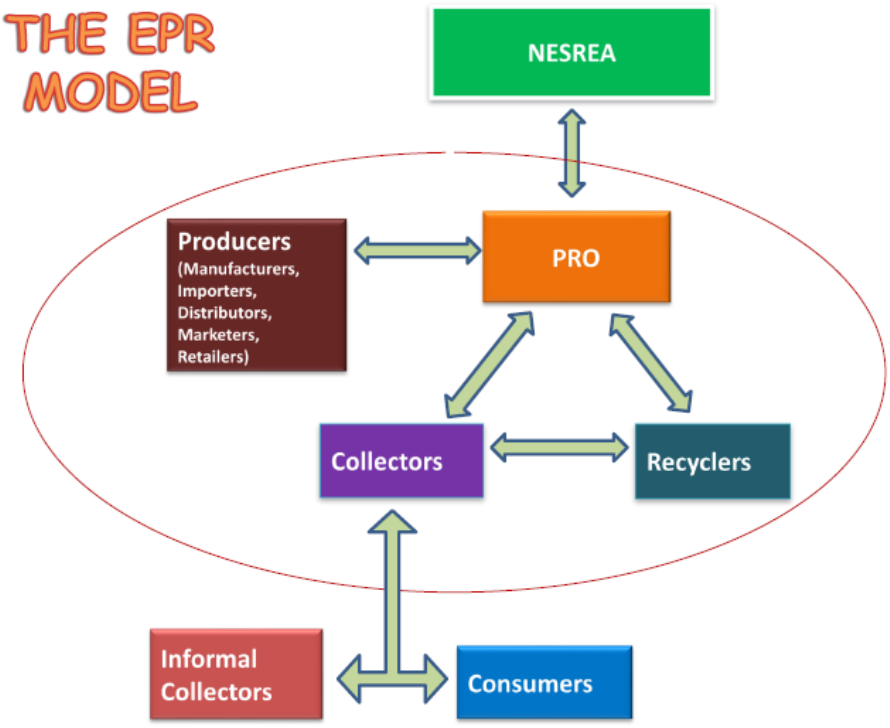


Figure 10: EPR implementation framework in Nigeria (NESREA, 2014).

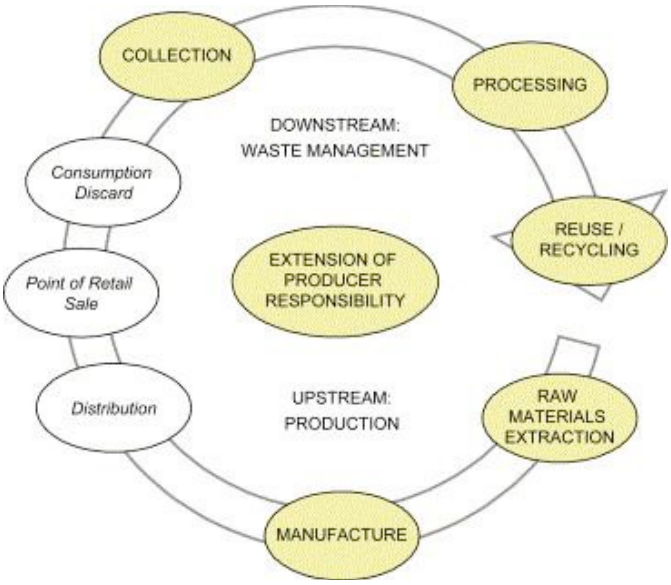


Figure 11: EPR implementation framework in Nigeria (NESREA, 2014; Anukam, 2018).

The Collector means a person or company that directly receives or retrieves post-consumption (end-of-life) products (otherwise called wastes) from the consumers, and sometimes, temporarily stores them before transmission to the recyclers. To make the process of collection easier, the collector may set a collection centre or other safe and effective means, depending on the factors on the ground. The collector may be informal, that is, operates a simple, structure-less, and oftentimes, unregistered business. Informal collectors include scavengers, cart pushers etc. and could be responsible for collection of between 20-60% of wastes, making them a key part of the EPR process. The collector may also be formal, which in this case, often refers to big, registered and better-structured businesses responsible for receiving or retrieving waste from informal collectors or directly from consumers.

The Recycler refers to person(s) or organizations that reprocess wastes into raw materials that can be used to produce new products of the exactly same kind (as the original product) or a different kind. Amongst other things, the recyclers are also to ensure that they adopt appropriate and global best technologies (and practices) in their operations and constantly provide to producers information that could help improve design, recovery, and recycling of their products and end-of-life products. *The Government* provides and implements the policy framework that regulates and ensures the effective implementation of the EPR process. While various agencies of government may be involved, directly or indirectly, in the EPR process, under the EPR Operational Guidelines, NESREA is the Agency responsible for the implementation and coordination of the EPR policy in Nigeria. The other roles of each of the six stakeholders are listed on pages 23-30 of the EPR Operational Guidelines.

Scope of the EPR Regulation in Nigeria (Products and Waste streams)

Items covered under the EPR guidelines are shown in Table 1.

Requirement for a Business EPR Plan

Businesses with significant waste outputs are required to have an EPR plan. The EPR plan of every company must be approved by NESREA before it is implemented and it must be in line with the National Environmental Regulations that applies to the sector the company belongs to.

Table 1: EPR: Categories of waste streams and their components (Source: NESREA, 2014).

Source	Examples
Packaging material	Aluminium, glass, laminate and composite, metals, paper, plastics (1-7), tetra pak, steel, wood and others.
E-wastes	Computer and electronic products, audio and video equipment, communications equipment, leisure and lifestyle equipment, small household appliances, large household appliances, electrical and electronic tools, monitoring equipment.
End-of-life vehicles and related accessories	End-of-life vehicles, ELV (vehicle carcass), used tyres, used oils, oil filters, oil containers, lead acid batteries and accumulators, airbag, ABS, shredder dust.
Chemicals, pesticides and pharmaceuticals	Asbestos, rubber, chemicals, pesticides, cosmetics, paint products.

Also importantly, every EPR plan must contain:

- Evidence of registration with a PRO
- Modalities for Waste collection
- Basic funding plan/business model
- Modalities for maximizing local economic benefits
- Other key information relevant to the implementation of the EPR plan.

Critical Stakeholders and their Roles in the Implementation of the EPR Policy

For the successful implementation of the EPR program in Nigeria, it is crucial to identify who the stakeholders in the process are, and what specific roles each stakeholder is to play. There are six major stakeholders in the EPR

Benefits and Critique of the Implementation of the EPR Program in Nigeria

The benefits of the EPR program include but are not limited to the following. It promotes sustainable material management (material recovery, resource efficiency etc.); Reduces the burden of the cost of waste management on government; Ensures unhindered supply of raw materials; Encourages active participation of stakeholders; Drives waste avoidance/reduction, and prevents waste pollution; Drives sustainable development; Promotes resource efficiency, cleaner technologies, creation of green jobs etc.; Ultimately reduces production costs; Encourages competitiveness and innovation within an economy; Improves environmental quality and improves the environmental rating and compliance status of manufacturing companies; Improves recycling targets.

A robust public participation is a key to the effective implementation of public policies on waste management, climate change etc. (Kunlere *et al.*, 2019b). A well-implemented EPR program ensures a systemic reduction in the amount of waste the consumer produces – it achieves this through a combination of factors which drive innovation in raw extraction and production processes, culminating in a reduction in the amount of waste that eventually end up indiscriminately in the environment or in landfills. It keeps environmental awareness and the need for sound resource utilization high while also driving public participation in the process. This is perhaps the important point. If members of the public, including at the grassroot, understand and imbibe the need for a policy like the EPR and its role in driving environmental sustainability, such they can see and appropriate for themselves, the benefit of the program and decide to willingly partake in it rather than only when government threatens sanctions, the policy is more likely to succeed. However, this has not been the case in Nigeria as many Nigerians still do not understand the reasons, benefits, implementation or their role in the EPR process. This explains the deep-rooted apathy and largely poor public participation that has thus far greeted the implementation of EPR. In fact, for many Nigerians, the term EPR has

remained a mysterious word, concept and another burdensome government policy. This situation runs contrary to the spirit of the policy.

Examples of other challenges facing the implementation in Nigeria include Lack of awareness on the part of the citizenry, Non-compliance by manufacturers with provisions of the EPR policy guidelines, lack of enforcement of appropriate sanctions against defaulting companies and inadequate spread of collection centres for retrieving specific wastes from consumers for onward transmission back to the manufacturers/producers or to recycling centres. In fact, for now the implementation of the EPR has been largely limited to urban centres, particularly Lagos, Abuja and Port-Harcourt while poor technical knowhow, gross limitation in installed and available recycling capacities, poor funding for the implementation of the policy nationwide and insufficient capital and investment by members of the private sector who are interested in setting up design advisory/recycling centres continue to limit the implementation of the program.

4. Conclusion

To drive sustainable development, it is clear that the Extended Producer Responsibility (EPR) Policy is one that must be encouraged and dutifully enforced. The EPR also helps ensure sustainable use of natural resources, resource efficiency, circular economy, and green economy. Businesses in Nigeria as well as the larger society stand to immensely benefit from the effective implementation of this Policy.

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