

Framing Biodegradable Issues in Selected Online Nigerian Newspapers: An Environmental Communication Study

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Abstract: This inductive qualitative content analysis study analyzes the themes embedded in stories about biodegradable in five online Nigeria newspapers namely *the Cable*, *the Guardian*, *Leadership*, *Premium Times* and *the Punch* using discourse analysis. The aim of the study was to understand and uncover the themes used by journalists when reporting about biodegradables especially in relation to its adoption as one of the solutions to the problems associated with waste management and the environment generally. Agenda setting and framing theories served as the theoretical bedrocks that grounded the study. Data was collected over a five-month period between April 1, 2019 and August 30, 2019, with the consideration of June 5 each year celebrated as World Environment Day, data from two months prior and two months after can provide context into how newspapers reported about biodegradables within the backdrop of environmental coverage. Findings produced 12 news articles which aligned with the literature about the under reportage of the environment in Nigerian newspapers. The themes uncovered were; adaptation, adverse impacts, climate change, economic, legislation, mitigation, persuasion, political and pollution themes. The prevalent themes were pollution, legislation and mitigation themes. The study recommends the need for more coverage of biodegradables bearing in mind the benefits derivable from its adoption in waste management, power generation, job creation and a sustainable development for the earth's environment and its inhabitants.

Keywords: Biodegradable; Content analysis; Environmental; Newspaper; Nigeria

1. Introduction

Communication is central in shaping and understanding of the ecosystem, and the role played by humans in harnessing and exploiting its limited resources have been attributed as the main progenitors of some environmental problems and global warming faced by humans in their natural habitat. Considering that world's population is projected to be over 10 billion by 2050 (United Nations, 2019).

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Hoornweg and Bhada-Tata (2012) assert that solid waste generation and its management is one of the conundrums arising from the increase in global population and is expected to grow from 1.3 billion to 2.2 billion tons by 2025, with social, public health and environmental setbacks. 2.5 billion Metric ton of solid waste is generated in 192 countries with improper disposal littering the environment, causing water pollution, flood and environmental degradation. 275 million tons are plastic waste (UNEP, 2016).

Environmental issues are today priority areas in advocacy making headlines in global and national news, and as part of the United Nations (UN) Sustainable Development Goals (SDGs) that seeks to combat poverty, hunger, good health and well-being, clean water and sanitation, industry, innovation and infrastructure, sustainable cities and communities, life below water, life on land, and climate action that talks about the need to urgently combat climate change and its impact on earth (United Nations Environment, 2013). Recently, Greta Thunberg has been one of the stars of the environmental movement, and for her efforts in highlighting global climate change and environmental problems arising from man's harnessing of the earth's natural resources, she has been nominated for a Nobel Peace Prize and also named by *Time* magazine as its "Person of Year" for 2019 (Moore, 2020). Dorroh (2015) chimes in that the environment "is so fundamental to our well-being and our futures that responsible media of any kind would want to give it a certain amount of attention," (p. 1).

The media is the thread that holds all the pieces of activism towards environmental issues together, bringing focus to the issues raised, setting the agenda for discussion, and bringing environmental advocacy and advocates to the fore, thereby giving attention to the issues raised by activists and locals bearing the brunt directly of the impacts of the issues raised. The media does this in a number of ways such as news reports, feature articles, opinion pieces, editorials, pictures, sponsored op-eds by experts, professionals, business organizations and NGOs, all contributing meaningfully to inform the people about different facets of the climate change discourse and best practices.

The media, here, acts as a catalyst in enlightening a broad spectrum of the society on the issues arising from environmental issues. At the heart of this paper is the issue of biodegradable materials seen as one of the solutions to the problems associated with solid wastes. Biodegradable materials are important especially with regards to pollution of surface and subsurface resources as well as aquatic terrains. The culmination of the media processes is referred to media agenda setting; a process

where the media proposes what issues are considered important topics of discourse in the news by ensuring they appear as stories, commentaries, op-eds, editorials etc. in order to bring such issues to the government and public purview.

Environmental problems have been of concern in Nigeria and has negatively impacted many areas especially the Niger Delta region where the exploration and exploitation of Nigeria's huge crude oil and natural gas reserves has led to significant damages to the environment, ecosystem, health and human lives of the inhabitants of the region. This has been detailed in quite a number of studies (Ana, 2011; Kadafah, 2012; Ordinioha & Brisibe, 2013; Anejionu, Ahiaramunnah, & Nri-ezedi, 2015; Hodal, 2017), and movies (*Black November, Oloibiri, Black Gold, Sweet Crude, Daughters of Niger Delta*), and has led to incessant violent clashes that has left many dead, thousands displaced from inter and intra community clashes, violent militant agitations for the restoration of the environment between government forces and different militant groups in the region (Willie, 2018; Owolabi, 2017; Ugochukwu, 2017; DiChristopher, 2016). Most of the agitations were scaled down with the offer of amnesty by the administration of the Late Musa Yar Adua presidency, and was further deescalated by his successor President Goodluck Jonathan who was from the Niger Delta region and the militants considered one of their own (Ushie, 2013; Nwajiaku-Dahou, 2010; Rice, 2009).

The underlying issues still remain, and in the Ogoni region, where the acclaimed social activist Ken Saro Wiwa was hanged by the Abacha military junta in 1995 due to agitations against pollution by multinational oil companies operating in the area (Kriesch, 2015; Aigbogun, 1995), the United Nations Environment Programme (UNEP) in conjunction with stakeholders published a report for the restoration and remediation of the environmental impact of oil companies in the region which negatively hampered access to drinking water, fishing and agricultural activities in the area (Nwozor, 2019; The Guardian, 2011). The implementation of the report is currently ongoing and has been captured in media publications (Omorogbe, 2020; Ailemen, 2020).

One of the solutions suggested to combat environmental pollution is the use of biodegradable materials which can be broken down by microorganisms instead of hydrocarbons which are non-biodegradable and many a times have been found to affect flora and fauna, with large fishes turning up dead on beaches with plastics in their belly (Song, et al., 2009). DeBruyn et al. (2015) define biodegradation as the action of microorganisms to decompose a substance into its constituent elements or

new compounds. The process is carried out by microorganisms naturally found in the environment.

The aim of this paper is to explore how Nigerian newspapers have framed the mention of biodegradable materials as an alternative to combat environmental issues associated with pollution on the land and marine ecosystem in Nigeria. Nirmala and Aram (2018) state that print media can help people understand the complexity of the environmental issues and they can persuade individuals and communities to adopt eco-friendly practices. On this premise, this study was undertaken to understand how Nigerian newspapers have framed biodegradables in newspaper contents. The following research question served as a guide to the study;

1. What are the environmental themes perceptible from news articles reported in Nigerian newspapers about biodegradables, and what is their prevalence among the newspapers sampled?

Non-biodegradable materials are mostly hydrocarbons (fossil-fuel plastics), van den Oever, Molenveld, van der Zee, Bos (2017) allude on the other hand that, biodegradable plastics are available in many grades with varying properties with their suitability for particular applications depending on these properties. Appearance wise, biodegradable and non-biodegradable plastics may be indistinguishable to the end user, however, the logos and labels may provide additional information to the consumers, as well as how to dispose of them when damaged or after use because being biodegradable does not mean the material degrades in the environment in a short time. Also some qualifications like 'biodegradable' are not unambiguously defined. Therefore, logos and labels will need to be linked to a normalization and certification system. The main applications of biodegradables are currently in (food) packaging, food service ware, (shopping) bags, fibres/nonwovens and agricultural applications.

Setting the Agenda in Framing Reporting on Biodegradables

Agenda setting and Framing are theories in media and communication studies developed from the ideas of Lippman (1922). In his book *Public Opinion*, Lippman proposed that people form a picture of the world outside from the pictures in their head, he continues that people may live in the same geographical area but will perceive issues differently based on their individual constructs and images created for them by others and the media they are exposed to. This was formally developed by Lasswell (1948) into a communication sequence of who said what, to whom, in

what channel and to what effect. A further development was made by McCombs and Shaw (1972) which they called the agenda setting theory, and later, Goffman (1974) developed framing as a theory of communication studies. Mass media using this paradigm has the ability to create an image or perception in the minds of its audience, which goes on to influence what they think about, how they think about it and perception of such issues.

In broadening the discussion around agenda setting concept, McCombs & Shaw (1972) defined a 'primary' level of agenda setting as when issues reach the public forum (when they appear in the mass media) and a 'secondary' level of agenda setting, which involves the assignment of attributes to issues that reach the agenda (those responsible for the situations by their actions and inactions). The way issues are framed and problems defined shape the understanding of what causes the problems and the relative merits of various solutions. While primary agenda setting is about the media telling the public what to think about; secondary agenda setting has to do with how to think about the issues or framing. In my analysis of how the media presents biodegradable products as one of the means to alleviating the environmental malaise bedeviling Nigeria especially the Niger Delta region that has experienced countless upheavals due to man-made environmental degradation, I looked at how the newspapers presented biodegradable, first, their occurrence in the news, and then their treatment, a call to action citing relevant laws and the mention of stakeholders and policy makers in the environmental movement in Nigeria.

Agenda setting is essentially an exercise in power and influence. Setting the agenda involves not only getting issues onto an agenda but also being able to determine the way those issues are defined and the solutions that are considered to be suitable and how they are presented in the media discourse (Beder, 2002). Kingdon (1995) proposed a 'policy window' when dissecting the importance of agenda setting theory. A policy window is when the opportunity arises to change policy direction. Policy windows can be created by triggering or focusing on events, such as accidents and disasters, as well as by changes in government and shifts in public opinion. Rochefort and Cobb (1994) problem definition framework investigated how problems are strategically framed so as to increase their salience. The policy window in the environmental discourse in Nigeria gained international attention with the killing of Ken Saro Wiwa and 8 other prominent Ogoni men by the Abacha regime in 1995. It opened a Pandora's Box that has been minimally closed since the offer of amnesty by the Late Yar Adua government in 2009 (Rice, 2009). Although the

underlying issues still remain, stakeholders are working towards a peaceful resolution as seen in the implementation of the UNEP report in Ogoniland.

The root cause of most environmental issues is the priority given to economic concerns over their consequences on the environment. The Ogoni agitation arose when the communities demanded that oil companies operating in the region show more concern over the impact of their activities and to set in place conditions to correct the anomalies being encountered by host communities. Guber and Bosso (2012) stated that neoliberal environmental policies ensure that priority is given to economic proclivities to the detriment of environmental considerations. To them, huge profits can obscure environmental hazards, with corrupt government and local officials as willing tools. However, notwithstanding who the companies have in their corner, difficult conditions become public concerns after citizens and community leaders come to see them not as the product of accident or fate, but as something caused by human actions and amenable to human intervention to effect a reversal (Stone, 1988). Hence, when prominent people from the Niger Delta region lent their voice to the environmental issues in the Niger Delta and attempted to hold the oil companies to account for their actions, it led to a falling out that resulted in the death of Ogoni leaders, and violent clashes with agitating militants across the states in the Niger Delta. Biodegradables have been identified as one of the possible solutions to solid environmental pollution, as such, understanding how Nigerian newspapers present them in their reports will show how the public perceive it as a solution, findings and recommendations can help improve reporting about biodegradables.

2. Literature Review

Most literature on biodegradables in Nigeria is in the sciences (Bokani, 2019; Abioye et al. 2018; Olukanni, Aipoh & Kalabo, 2018; Ezeoha & Ezenwanne, 2013; Babayemi & Dauda, 2009) amongst a host of others. Most of them evaluated the use and management of biodegradables in Nigeria and their suitability as an alternative to non-biodegradables. In the humanities, studies were focused on environmental communication as a whole and its impacts in creating an understanding of how environmental issues are presented to the audience by the media. Yuliarti and Jatimurti (2019) using a qualitative content analysis research studied how Indonesian newspapers frame biodegradable materials in their news reporting. They found out that there was no adequate coverage for biodegradable issues in the newspapers thus there not being thoroughly framed in media coverage.

Bokani (2019) covers legislation against pollution in Nigeria in the 1999 constitution where they are captured under but not limited to Environmental Impact Assessment Act, Harmful Waste (Special Criminal Provisions) Act, Water Resources Act etc. and policies such as National Policy on Environment 1999, National Policy on Environmental Sanitation 2005, National Policy on Chemical Management 2010, National Policy on Solid Waste Management 2018, National Policy on Plastic Life Cycle Management 2019 (In the draft stage) (Bokani, 2019).

Adelekan (2009) studied the Nigerian press and environmental information for sustainable development. His work examined the role of the Nigerian press in reporting environmental issues using content analysis of two national newspapers, *The Daily Times* and *The Guardian* during a 5-year period 1999–2003. He assessed the degree of prominence and nature of environmental reports, results showed that energy issues dominate reports on the environment in both newspapers while climate change, a critical global environmental issue was accorded scant attention. Both newspapers assessed did not actively feature environmental articles tailored to issues of everyday life as majority of environmental publications are news reports. One of the problems is the lack of adequately trained journalists in environmental reporting as media organisations do not devote similar resources for journalists who cover politics or the economy, reporting about the environment is affected with inadequate reporting.

Uzochukwu, Ekwugha and Emmanuel (2014) discussed the challenges and prospects of Nigerian media's coverage of the environment. They state that Nigerian journalists are not properly trained for the rigors of reporting about the environment. Some of the factors they listed as militating against environmental journalism in Nigeria includes; unfavourable editorial philosophy, poor availability of human and material resources and also ethical challenges such as narrative distortion, distortions of balance, and sensationalism. They recommended that stakeholders work towards human resources development technical cooperation and allocating more resources to environmental reporting. John and Jonjua (2018) in their comparative analysis of factors influencing the coverage of environmental reporting in Nigeria and India also found out that journalists in both countries work under some constraints from government agencies and officials, organisations and powerful individuals. Within newspapers organisations, there are internal censorship from newspaper owners and editors. They suggested retraining of environmental journalists to equip them with the science and technicalities of environmental reporting as a way to improve the quality of environmental reporting in both countries.

Ogadimma and Mohamad (2017) studied the agenda setting functions of the press in covering environmental issues in four Nigerian newspapers using content analysis to determine the areas given priority by journalists covering the environment. They found that Nigerian journalists devoted more focus to issues of climate change and global warming ahead of local environmental problems like pollution, deforestation, waste disposal/management, open defecation, poor urban planning, nature conservation, loss of biodiversity, over logging etc. They considered this a misplaced priority as Nigeria is said to contribute less than one percent of carbon emission that causes global warming. They recommended that journalists should focus more on issues of local content, they also acknowledge the severity of global warming on a larger context, but that news organizations should build their coverage up to involve more national environmental issues compared to global problems. The most significant finding from the Nigerian studies on the environment was the inadequacy of coverage of the environment attributed to inadequate training of Nigerian journalists to cover the environmental beat.

One constant among the above literature and what sets them apart from this study is that while they were all focused on the environment and the shortcomings of media coverage in Nigeria, this study focused on the reportage about biodegradables, a sub-theme in environmental discourse in order to uncover the themes discernable from media reporting discourse. Explicitly, the following research question was formulated for the study, (1) what are the environmental themes perceptible from news articles reported in Nigerian newspapers about biodegradables, and what is their prevalence among the newspapers sampled?

3. Methodology

This study used content analysis to examine newspaper reports containing “biodegradable”. Prasad (2008) defines content analysis as “the scientific study of content of communication” (p. 174). Five online national daily newspapers were selected and analyzed; they include; *The Guardian*, *The Punch*, *Leadership*, *Premium Times* and *The Cable* newspapers. The period of study was a five month period from April to August 2019. This was done with the understanding that June 5 each year is celebrated as World Environment Day; therefore, news stories from two months before and after the event would be relevant to the environment. The data gathering starts with typing of the word ‘biodegradable’ in the search query of the websites of the selected newspapers, entries that fall within the research stipulations were selected for inductive qualitative discourse analysis.

Results and Discussions

The search produced a total of 12 news stories that had the keyword ‘biodegradable’ contained in the story. *The Punch* produced 5 articles, *Leadership* and *Premium Times* produced 3 and 2 articles respectively while *The Guardian* and *The Cable* had 1 each. This indicates that biodegradable was not adequately covered in Nigerian newspapers, it conforms with the views of the previous scholars seen in the literature (Yuliarti & Jatimurti, 2019; John & Jonjua, 2018; Uzochukwu, Ekwughu & Emmanuel, 2014; Adelekan, 2009) who also found out that environmental stories were not adequately covered in news stories by the media. Within 765 issues of all the sampled newspapers, only 12 (about 1.6%) stories emerged showing how biodegradable was underreported in Nigeria. Dorroh (2015) earlier stated that news organisations tend to focus more on politics and economics as against covering environmental news because on many occasions, it does not have the sensationalism of politics or the financial impact of economics. The core research question is addressed below.

1. What are the environmental themes perceptible from news articles reported in Nigerian newspapers about biodegradables, and what is their prevalence among the newspapers sampled?

The news reports are documented in table 1, the codes assigned to each news item would be used as reference in the thematic analysis, and they are presented below.

Table 1. News Reports on Biodegradables in Nigeria Newspapers

No.	Newspapers	Dates	Codes
i	<i>The Cable</i>	22/10/2019	01
ii	<i>The Guardian</i>	08/04/2019	02
iii	<i>Leadership</i>	21/07/2019	03
iv	“”	01/08/2019	04
v	“”	06/08/2019	05
vi	<i>Premium Times</i>	21/05/2019	06
vii	“”	14/08/2019	07
viii	<i>The Punch</i>	21/05/2019	08
ix	“”	21/05/2019	09
x	“”	17/07/2019	10
xi	“”	30/07/2019	11
xii	“”	30/08/2019	12

In addressing the core research question, the coding of the themes deductively produced the following themes nine themes; adaptation, adverse impacts, climate

change, economic, legislation, mitigation, persuasion, political and pollution themes. The analysis is presented according to the themes using discourse analysis and their prevalence discussed after the presentation of the themes.

Political Theme

Political themes are those stories centered on information from politicians and political office holders especially members of the government or other political parties. It was seen in only one news story, code 12. The news identifies the Governor of Lagos state, Babajide Sanwo-Olu urging manufacturers to use recyclable packaging materials to help the government with the challenges of tackling solid waste management in the state. Lagos used to be the former capital of Nigeria, and currently the commercial capital with the busiest airport and port as well as being the most populous state in Nigeria, tackling solid waste would be a significant challenge for the government. They see the use of recyclable and biodegradable materials as solutions to enhance waste management as recyclable materials can be converted into other useful materials and biodegradables can be decomposed by the action of naturally occurring microorganisms.

The governor understands that managing waste involves the cooperation of all stakeholders involved and starts from the home where wastes are bagged, thus he chose a conference of professionals to get his point across. In his own words;

“You will recollect that at the inception of our administration, I signed an executive order with clear instructions to the management of Lagos State Waste Management Authority to implement strategies that will ensure proper and efficient evacuation and disposal of waste across the state. Also, we reactivated the dormant landfill sites, as well as waste transfer loading stations located at strategic areas in the state. We will continue to solicit the cooperation of manufacturers in the production or usage of recyclable or biodegradable materials. I call on all stakeholders to support strategies and programmes aimed at ensuring environmental sustainability of the ‘Smart City of Lagos’.”

Hoornweg and Bhada-Tata (2012) assert that solid waste generation and its management is one of the conundrums arising from the increase in population and is expected to grow from 1.3 billion to 2.2 billion tons by 2025, with social, public health and environmental setbacks. Lagos is one of the most populated states in Nigeria, therefore, management of solid wastes is one of the challenges the state struggles to control. The governor is seen to use his political office to tackle the

menace of solid waste pollution, and not only identifying the problems but also proffers solution in the plea for the adoption of recyclable or biodegradable materials by manufacturers in their packaging in order to enhance waste management in the state.

Persuasion Theme

The persuasion theme was observed across several stories including codes 4, 09, 10, 11 and 12. Evidenced from the research, codes 4, 09, and 11 were the same story of how Ecobank (one of the commercial banks in Nigeria) was helping to remove plastics from the streets of Lagos with the aim of reducing environmental pollution with a cash for plastic promotion. Plastic bottles were exchanged for cash at designated locations across Lagos state. The bank used financial persuasion to convince Lagosians of the need to remove non-biodegradable materials to reduce pollution and environmental sustainability. The managing director, Ecobank Nigeria, Patrick Akinwuntan, stated that:

“Ecobank was committed to supporting the sustenance of the environment by assisting in the removal of all non-biodegradable elements as part of the universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. So far we have succeeded in removing over two million bottles from the streets of Lagos. We hope to get to the 4 million target we set for ourselves within the next few months. We are grateful to our partners who have been consistent in their push to achieve this target. I use this opportunity to renew the call on residents to take their used plastics to the Lagos sewage treatment plant in Amuwo Odofin and get cash instantly. Plastic waste is seriously affecting our food, oceans, harming marine life and threatening our food chain. As a responsible corporate organisation, we will do all it takes to check the trend to ensure a safer living environment.”

The financial inducement is the object of persuasion; the bank saw it as a worthy cause to reward citizens who partake in the environmental campaign of making Lagos cleaner and also removing non-biodegradable plastics from the environment and also as part of its corporate social responsibility. Making the environment cleaner and safer is collective effort and the bank understands the need to get as much people involved as possible. The drawback however, was why the campaign was limited to on Lagos state. Other states in Nigeria that are also industrial and commercial hubs Aba in Abia state, Onitsha in Anambra state, Port Harcourt in Rivers state and Kano are some of the cities the campaign should have been extended

to. Code 10 persuades in its appeal for the government to strengthen the institutions that regulate foods and drinks. The story was an opinion piece by a member of the civil society about the dangers of what citizens eat and drink in the face of global pollution. The article as whole was not about biodegradable materials, it was more about the dangers of plastics and non-biodegradables, thus it appears because of the search query used which involved biodegradables. It mentions the failure of the government to regulate food, drugs and drinks and makes its persuasion on government to improve modalities and strengthen government agencies tasked with the function of regulating food drugs and drinks.

In code 12, the Governor of Lagos state, Babajide Sanwo-Olu in his capacity as the Chief Executive of the state tries to use his office to persuade manufacturers operating in the state to switch to using biodegradables or recyclable materials in the packaging of their products in order to enhance waste management in the state. The governor understands the enormous responsibility required of government in the task of managing waste and pollution, thus, seeks the cooperation and collaboration in managing waste in the state.

Adverse Impacts Theme

Five stories mention the adverse impacts of environment pollution or non-use of biodegradable materials; from table 1, they include codes 1, 3, 4, 6, 8, 9, 10 and 11. Going further, some of the articles were similar stories reported by different or the same newspaper(s). In the story with codes 1, 3, 6, and 9, the adverse impact were captured in similar reports that discuss about a bill banning the use of and sale of plastic bags in Nigeria by the House of Representatives. Some of the adverse effects captured in the stories include; the release of toxic dioxins into the atmosphere when plastics are burnt posing a threat to vegetation, human and animal health leading to a high risk of cancer, respiratory illnesses, infertility issues, allergies, heart disease, damage to the nervous system, stunted growth in plants and aquatic animals, and the untenable exploitation of the earth's limited reserve of hydrocarbons which is not sustainable development. The alternative suggested by the House of Representatives was the use of paper bags, jute, bamboo, cotton, cassava and biodegradable plastics which are 100% biodegradable, recyclable, and reusable.

Codes 4, 9 and 11 were all on the Ecobank initiative to help remove non-biodegradable plastics from the streets of Lagos. The adverse impacts of non-biodegradable captured in the reporting include seriously affecting our food, oceans,

harming marine life, threatening our food chain and eventually increasing world poverty which is a threat to peace and prosperity on the planet. The adverse impacts captured in code 10 are the threat and harm to marine animals, the report by the Pew Charitable Trust cited by the United Nations says:

“...at least 800 species up to 13 million metric tons of plastic end up in the oceans every year, affecting over 800 species worldwide. “Fish, seabirds, sea turtles, and marine mammals can become entangled in or ingest plastic debris, causing suffocation, starvation, and drowning”.

The summary of the adverse impacts are the effects on sustainable development. Humans, animals on land and sea as well as the environment in general are affected by the continued use of non-biodegradable plastics.

Climate Change Theme

Climate change is more of a global theme than national in discussions about the environment especially in developing nations whose contribution to global carbon emission is negligible. Nigeria falls under this category as a consumer nation while the developed economies are mostly producer nations. Codes 1 and 3 touched on the impact of pollution on climate change. The mention of climate change in code 1 was as part of the consequences of burning non-biodegradable plastics which releases black carbon (soot) into the atmosphere thus contributing to climate change. Code 3 makes three references to climate change, first in mentioning that Nigeria is a signatory to Paris 2015 Climate Change Accord, then in mentioning the benefits of businesses switching to producing eco-friendly bags and packaging items, would contribute significantly in reducing emission and mitigating climate change impacts, and finally how legislative efforts would be redeeming Nigeria’s commitment to global effort in combating climate change.

Legislation Theme

Legislation on the banning of non-biodegradable plastics bags and containers in Nigeria was covered by all the newspapers sampled during the study period. Legislation is at the heart of any reform in the society as it gives legal backing to regulations on the use of items the law is being made for. Bokani (2019) also covered the legislation against pollution in Nigeria. Codes 1, 3, 6 and 8 addressed legislation

over the adoption of biodegradables by manufacturers and retailers in Nigeria. Progress has been made with the bill being passed by the House of Representatives. The bill, however, still requires some modification by the house committee before being sent to the Senate for deliberation and passage, and then to the president for assent in order to become a law. Nigeria hopes to model the environmental sustainability already in place in Rwanda which placed a ban on non-biodegradable plastics since 2008 and its capital Kigali dubbed as the cleanest city in Africa. To strengthen the legal framework, the bill makes some penalties for any person or organization that contravenes this law; N500, 000.00 or up to three years imprisonment or even both for individuals, companies face a fine of up to N5 million.

Code 2 was an international story about the planned regulation by Tanzania to ban the production, importation, sale and use of all single-use plastics in the country by July. The news was reported in April of 2019, giving users about three months grace to comply with the regulation. It states that Tanzania is expected to join over 60 other nations that have already banned, partly banned or taxed single-use plastic bags including Rwanda, Kenya, France, China and Italy. According to the Environment Minister January Makamba; “The regulations are ready for publication it is possible that July 1 will mark the end of the use of plastics in the country,”

Economic Theme

This theme addresses biodegradable stories from the economic angle. Codes 3 and 4 were filed under ‘*Business*’, 9 and 11 under ‘*Money*’, while 5 was filed under ‘*Energy*’. Economic concern in code 3 was the fear by industry operators of non-biodegradable plastics of being pushed out of business. They could be thrown into an already saturated labour market amidst huge investments already in place by Micro, Small and Medium Enterprises, (MSME) and large segments of the market already engaged by the industry by the passage of the bill banning plastics. However, part of the incentives for stakeholders is facilitation of access to finance for MSMEs that may be interested based on the new law.

Codes 4, 9 and 11 were the stories about Ecobank initiative to remove plastics from the streets of Lagos by offering cash incentives to people who bring plastics at designated locations in Lagos state. The plan according to the bank was a multi-purpose initiative of putting money in the pockets of Lagosians to reduce the effects of poverty and at simultaneously protect the planet and ensure all Lagosians enjoy peace and prosperity. The managing director, Ecobank Nigeria, Patrick Akinwuntan,

stated that the bank was committed to supporting the sustenance of the environment; he continues that “the idea for this is to support the removal of non-biodegradable materials from the environment to support healthy and safe living.” Dwelling on the agenda setting of McCombs and Shaw (1972), the media presented pollution as a problem, while Ecobank attempts to create a solution for the problem by framing pollution around the end users. They perceive that with a change in attitude with people picking up plastics and taking to designated places, the problem could be ameliorated. The success they achieved justifies the cash payment made to residents of Lagos on the need to sustain the campaign beyond the cash for plastics promotion, and ingrain proper waste disposal practices as part of their everyday activities.

The story in code 5 outlines the economic advantages of biogas as an alternative to fossil fuels. It outlined the launch of a new Biogas Electricity Generating Set (BEGS) digesters facility by the Nigerian government to improve electricity supply in the country in the policy of the government to generate 5 per cent of energy needs through biogas. The project is expected to reduce unemployment in the economy and improved management of waste by MSMEs such as restaurants, small farms, small artisanal clusters and small abattoirs.

Adaptation Theme

Adaptation theme involves the processes of modifying new technologies for different purpose. Thus, this will involve how biodegradable technology can be modified for other uses such as energy provision, agriculture, relocating species to save them, protection for riverside cities and necessity of adaptation and technology to test climate tolerance. The codes identified for adaptation theme are 2,3,5,6 and 7. The key information from all the stories except code 5 is the need to adapt and recycle plastics into reusable materials that would add value to the society and also create jobs. Code 3 adds that in addition to recycling, biodegradables can be adapted for agriculture and create economic value for producers in making bamboo, jute, cotton, cassava, etc. it stated that jute In the past was used to produce bags for grains but new system displaced the jute bags, and jute farming almost became history. But with the ban on plastics being considered, jute could be used to produce shopping bags of various designs and shapes.

Code 5 presents an adaptation of biodegradable materials in their use as power generators and for management of wastes for households and MSMEs such as restaurants, small farms, small artisanal clusters and small abattoirs. The government

through the National Biotechnology Development Agency (NABDA) introduced Biogas Electricity Generating Set (BEGS) digesters to reduce inadequate electricity supply and poor management of all categories of wastes. It functions through waste conversion to biogas using the Anaerobic Digestion Technology (ADT) and converts biodegradable organic feedstock to biogas, which is then deployed for electricity generation.

Mitigation Theme

This involves all the processes of ameliorating the impact of non-biodegradables and calls for adoption of biodegradable in the long run. It includes any mitigation policy, development of new technologies and alternative energy sources for mitigation of non-biodegradable and practices etc. The mitigation efforts can be subdivided into government and private sector efforts; the government effort was seen in the bill passed by the House of Representatives in mitigating the effects of non-biodegradable plastics. The bill was covered in codes 1, 3, 6 and 8. The use of non-biodegradable sources was also mitigated in their use for power generation and waste management as captured in code 5 as government effort. The Lagos state governor in mitigating the use of non-biodegradable plastics urged manufacturers switch to use of biodegradable or recyclable packaging materials in code 12. Such statements are encouraged if manufacturers are to adopt biodegradables; however, government has to include incentives to cushion the effect of new sets of equipment and production to support such industries as they strive to adopt biodegradables in their operations.

The other government mitigation efforts were seen at the continental and global levels; at the continental level as seen in code 2, the Tanzanian government announced a regulation banning the use of single-use plastics as packaging materials and at the global level as seen in code 7, environmentalists proposed tighter restrictions for plastic wastes. This is expected to discourage the manufacture and distribution of non-biodegradable materials and at the same time lobby more countries to sign up to out-rightly ban or toughen legislation against the production of non-biodegradable plastics. These measures will surely curb the production and distribution of non-biodegradables, the efforts have been yielding results with Rwanda, Kenya, Tanzania and now Nigeria joining the nations that have passed regulations banning non-biodegradable plastics or countries that are actively seeking to regulate them.

The private sector effort in mitigating the effects of non-biodegradable plastics was observed in codes 4, 9 and 11 where the efforts of Ecobank in removing plastics from the streets of Lagos was documented. The programme involved cash for plastics promotion where individuals are expected to bring plastics to designated locations in the state in exchange for cash. According to the Managing Director, Ecobank Nigeria, Patrick Akinwuntan, Ecobank Nigeria said it has successfully removed over two million plastic bottles in exchange for cash from the streets of Lagos. This is laudable and commendable project and should be replicated in all the states in Nigeria to help reduce plastic waste in Nigeria. If ten other banks key into this initiative and achieve the same level of success, we could be looking at the removal of over 20 million plastic bottles from dumpsites in Nigeria and recycled into other products. The government can also encourage this initiative by granting some incentives and tax breaks to private companies that help in tackling non-biodegradable solid waste management in Nigeria, every sector should be involved as the environment belongs to us all and its sustainability is for our common good.

Pollution Theme

Pollution theme is central to this study and to affirm that, all the news stories sampled mentioned pollution in one form from solid waste pollution on land to pollution in the marine environment and air pollution in different dimensions. The stories that had to do with the campaign by Ecobank Nigeria highlight land pollution by plastic wastes, and these plastics when burnt in open air contributed to dangerous carbon compounds in the atmosphere. The stories on legislation and regulation of non-biodegradable plastics and non-recyclables emphasize the effect on oceans, rivers, lakes, forests, wildlife, and humans and the need to mitigate the impacts when eventually it becomes law. The story on energy mentions pollution waste, with mentions of different category of waste, from organic waste, solid waste, household waste, sewer waste, and how they can be converted to biogas. Presented below is table 2 showing the themes and their occurrences in the sampled newspapers.

The media in this instance has exercised its agenda setting power and influence by emphasizing the importance of pollution as the central theme in environmental studies as stated by Beder (2002), and also following the problem definition network outlined by Rochefort and Cobb (1994) in discussing how problems are strategically framed to increase their salience, pollution was presented as a mainly man-made hazardous phenomenon which can be reversed by strong regulations and

enforcement, attitudinal changes in personal and corporate practices by those concerned. It is important to note that this is a collective where everyone is somewhat involved albeit on varying scales, deemphasizing on the economic objectives and give priority to the environment. Only a healthy individual can enjoy the profit accruing from business investments.

Table 2. Themes and Occurrence in Sampled Newspapers

No.	Themes	Newspapers				
		<i>The Cable</i>	<i>The Guardian</i>	<i>Leadership</i>	<i>Premium Times</i>	<i>The Punch</i>
1	Adaptation		✓	✓	✓	
2	Adverse impacts	✓		✓	✓	✓
3	Climate change	✓		✓		
4	Economic			✓		✓
5	Legislation	✓	✓	✓	✓	✓
6	Mitigation	✓	✓	✓	✓	✓
7	Persuasion			✓		✓
8	Political					✓
9	Pollution	✓	✓	✓	✓	✓

Deductions from table 2 indicate that three frames; legislation, mitigation and pollution frames were the prevalent frames (i.e. common) in the coverage of the newspapers. They all appears at least once in each of the newspapers, pollution frame however, was the most dominant, appearing in every article analyzed for this study. It was closely followed by mitigation frame. The other six frames were not prevalent as they do not appear in all the newspapers; political frame appears in only one newspaper making it the least discussed frame from the study sample.

Conclusion

This research explored the coverage of biodegradables in Nigerian newspapers within five months in 2019. It was conducted using deductive qualitative content analysis to uncover the themes embedded in reportage about biodegradables. The newspapers analyzed included *The Cable*, *The Guardian*, *Leadership*, *Premium*

Times and *The Punch*. The sampling frame of 765 issues produced 12 news articles which aligned with the literature about the under reportage of the environment in Nigerian newspapers. The themes deductively uncovered by the study were; adaptation, adverse impacts, climate change, economic, legislation, mitigation, persuasion, political and pollution themes. The prevalent themes were pollution, legislation and mitigation themes.

In conclusion, biodegradables offer significant benefits for the future and towards creating a sustainable environment, thus it is paramount that legislations and regulations be put in place towards its development, production and deployment into the public sphere. The challenges non-biodegradable plastics and packaging are too significant to ignore with effect of solid waste on the environment, marine animals where whales have turned up dead on beaches with belly full of plastics as well as other environmental hazards. There are resolutions that can play substantial in dealing with key challenges of pollution, but they need a collective action of all stakeholders working in the same direction. The individual has a role through appropriate use and proper waste disposal practices, the government and policy makers can set standards by providing a robust regulation of the plastic and packaging industries, and the industry can help by adopting biodegradables and recyclable materials in making plastics and packaging through product labeling to apprise and induce change, funding of pertinent research and well as developing technology towards adapting bioenergy as an energy source for industrial and home use.

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