COVERAGE OF CLIMATE CHANGE IN SELECTED NIGERIAN NEWSPAPERS (JAN 2013-DEC 2014)

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ABSTRACT

The unprecedented change in climate caused by extreme weather variations threatens the existence of man and his environment. Environmental losses arising from climate change have been increasing since the beginning of the industrial revolution. This was lately felt in Nigeria through huge loss of farm produce due to extreme weather condition. This and other factors have made it necessary for journalists to carry reports on climate change in order to inform the public about the dangers it poses to the environment and provide solutions on how to curb the menace. This study therefore analysed four •prominent Nigerian newspapers: Daily Trust, leadership, The Nation and This Day from Jan 2013 to Dec 2Q14 with the aim of finding and comparing the level of attention they gave to climate change between the northern and southern papers, and the frames they used in reporting climate change, Findings show a low level of attention on climate change in all the papers. Daily Trust had the highest volume with 36 stories, followed by Leadership with 30, and ThisDay with 29 and The Nation with 19 stories. Result from the chi-square test showed no significant difference in the volume of reports between the northern and southern papers. Mitigating climate change with clean, and renewable energy was the dominant frame used in across the newspapers. Frame on causes[1] was poorly represented as only 13 articles were reported. Green-house gas emission and desertification were reported to be the main causes of climate change in Nigeria. The effects of climate change were also not adequately represented as only 21 articles were reported. The study concludes thai climate change was not given adequate attention in the Nigerian press. It is therefore recommended that the press should pay increased attention on climate change considering the critical impact it has n the environment, with more frames on causes and effect as these are required for increased knowledge of its mitigating and adaptation.

Background to the study

The history of the science discovery of climate change began in the early 19th century when natural changes in climate were first suspected and natural green-house effect first identified Tagbo (2010).In the late 19th century, scientists first argued that human emission of greenhouse gases could change the climate, but the details of the calculations were disputed. By 1950s and 1960s, the calculation of the

warming effect of carbon dioxide emission became increasingly convincing, although some scientist also pointed out that human activities in form of atmospheric aerosols could have cooling effects (IPCC 2010). By 1970s and 1980s, scientific opinions increasingly favoured the warming view point. The consensus position formed that human activity was in the process of warming the climate, leading to the modem period of what we have today as global warming. Climate change, green-house effect and global warming are used interchangeably.

The communication and interpretation of science to the general public is achieved through a variety of media the most important of which are the traditional print media, TV, radio and now the electronic channels such as the internet. Ladle, Jepson and Whittaker (2005), are of the view that environmental scientists have a prime responsibility to report findings that are likely to be of concern to society in an accurate, objective and simple a fashion as possible. However, the media do not simply mirror reality. On the contrary, they make their own selections according to some implicit criteria. Since the general public relies on the mass media as the main source of its knowledge about science, investigating the mass media's portrayal of global warming is crucial (Boykoff, 2007; Boykoff and Boykoff, 2004 as cited in Wilson, 2000).

"Research in the last decade has consistently found out that the general public gains understanding of science (and more specifically climate change) largely through mass media accounts" (Boykoff and Yulsman, 2013:2). Since the news media are the central "interpretative system" of modern societies, they are thus crucial for the societal uptake on climate change issues. They are central agents for awareness rising and information dissemination. As global climate change lies beyond the life-world and biographical horizons of most people, knowledge about it is mainly disseminated via public communication.

"Climate extremes experienced around the world are the greatest environmental challenges confronting the world today" (Onyekachi, Solomon and Ifeanyi, 2012:22), examples could be seen in the greatest ever recorded Tsunami water disaster that affected 14 countries, claiming millions of lives and property, the Haiti earthquake that claimed more than 80,000 lives and the Pakistan floods being the worst in 80 years, leaving the people physically, mentally, socially, psychologically, economically and politically vulnerable. In the most recent COP (Conference of Parties) 2015 meeting, it is recognized that climate change represents an urgent and potentially irreversible threatto human societies and the planet and thus requires the widest possible cooperation by all countries, and their participation in an effective and appropriate international response, with a view to accelerating the reduction of global greenhouse gas emissions thereby achieving the aim of addressing climate change.

In Africa, there is growing interest on the likely impacts of climate change on agriculture, economic growth and sustainable development. Indices of climate change in this region include changes in soil quality, atmospheric temperature, flood, unprecedented drought and desertification, rise in sea level, insecurity, specie-extinction, erosion and many more. These adversely affect food security over the continent (Thornton et al 2006 as cited in Ogbo, Lauretta and Ukpere, 2013). While addressing climate change in the New York summit held in September 2015, The President Buhari stated that "In Nigeria, we've seen extreme weather variations, rising sea levels, encroaching desertification, excessive rainfall, erosion and floods, land degradation all of which threaten the ecosystem. These developments have devastating human costs and are affecting food security, livelihoods and the very survival of our people."(Daily Trust, 2015).

The IPCC report in 2007 predicted that by 2020, between 75 and 250million people in Africa will be exposed to increased water stress caused by climate change, hence agricultural production and access to food in many African countries may be further threatened as most fanning practices are dependent on rainfall. The economic activities in Nigeria clearly show that over 60% of the population are engaged in agriculture for then* livelihoods directly or indirectly.

However Okunola and Ikuomola, (2010) have observed overtime especially in the last decade that a dwindling state of agriculture and the decreasing number of farming population mostly in Northern Nigeria known for the production of over 70% of the food crops in the country and other West African countries call for concern. Recent geographical survey has attributed these happenings to desert encroachment into farmlands caused by the changes in climatic conditions.

Diedioha (2007) as cited in Fawole and Olajide (2012:32) observes that "every state of Nigeria across the various ecological zones suffer from the effects of one climate variable change or the other". Nigeria is vulnerable to climate change impacts due to its geographical location, climatic variation, vegetation, population, settlement, agricultural practices (rainfall dependent), energy demands, economic and political structure. Some of the effects of climate change felt across the country includes: heat waves, desert encroachment, flooding, drought... these are supposed to be the trending issues in Nigerian newspapers as the climate affects all facets of life.

Statement of the problem

Empirical data shows that the Nigerian mass media have not been doing well in the coverage of the environment. According to Nwabueze (2007) as cited in Onyekachi et al (2012:24), the quantity of climate change coverage in African media is disproportionate to the level of threat it poses to the continent, hi Emekaumejie's weblog @justanotherwordpress.com, he stated that Nigeria would risk the worst ravages of global climate change if most of its mass media continue in their present ignorance of the basic issues and the grave challenges they face.

The fact as to the reason behind the low coverage of climate change stories in Nigeria stated by Nwabueze (2007) and the ignorant of the basic climate issues as stated by Umejie remains elusive. In light of this, assessing "assessing press coverage of climate change in Nigeria" becomes paramount.

Research Objectives

The following objectives are developed around the core issues in global climate change debate which includes:

1. To ascertain the volume of reports on climate change in *Daily Trust, Leadership, The Nation and This Day* newspapers.
2. To analyse the frames used in reporting climate change in these newspapers.
3. To find out if there is a significant difference in the volume of reports on climate change between the northern and southern newspapers.

Research questions

The research would attempt to provide answers to the following questions:

1. What is the level of attention given to climate change stories in *Daily Trust, Leadership, The Nation* and *This Day* newspapers?
2. Is there a significant difference in the volume of climate change reports between the northern and southern newspapers?
3. Which are the various frames used in reporting climate change in the four selected newspapers?

Literature Review

News coverage on global warming has increased markedly in recent decades (Doulton and Brown, 2009 as cited in Mazur: 2009), although McManus (2000) argued that the heterogeneous impacts of climatic change in fact reduce the likelihood of its being reported extensively. The communication of the climate change issue from scientists and policy-makers to a general audience via the mass media has also been a subject of increasing scientific interest because of its implications for the public understanding of the problem.

Newspaper publication started in Nigeria by the British missionary in 1859 and today, there are quite a number of government and privately-owned newspapers in the country varying in frequency and time of publication as well as circulation rate, target audience and achievements. (Ifenkwe: 2008). These papers come in tabloid formats.

Based on factors such as circulation, coverage, location and ownership, this study selected *Daily Trust, Leadership, The Nation* and *This day* for examination. This day is the flagship newspaper of Leaders and Company Ltd and was 1st published on 22 January 1995. It has two printing plants in Lagos and Abuja with its headquarters in Lagos. As of 2005, it had a circulation of 100,000 copies. It is proudly owned by Nduka Obaigbena.

The Nation is a daily newspaper published in Lagos by Vintage press. It was founded on 31st July 2006. The paper has business and political elite, the affluent, the educated and the upwardly as its target audience. It has printing plants in Lagos, Abuja and Port Harcourt. The Paper was named newspaper of the year in 2013 and is said to be owned by Bola Ahmed Tinubu.

Media Trust is a privately owned Nigerian newspaper publishing company based in Abuja. It publishes the Daily Trust, Weekly Trust, Sun Trust and the Hausa language Aminiya newspapers. The weekly trust was 1st established in March 1998 and Daily Trust in Jan 2001. The two are the largest circulating newspapers in the north.

Leadership is also a daily national newspaper published by Leadership Newspaper Group based in Abuja. Abraham Nda-Isaiah is the general manager. In 2009, it was awarded newspaper of the year by the Nigerian Union of Journalists.

The ever-increasing social and economic cost associated with extreme weather-related events in recent times have led to an upsurge in interest in the adaption and mitigation agenda from a range of different actors across both the public and private sectors. In reacting to the challenge of climate change, legal and institutional measures are used to collectively tackle the issue of climate change. Some of the institutions governed by international environmental laws include the pertinent provisions of the UN Framework Convention for climate change (UNFCC), the Kyoto Protocol (KP), the decisions of the Conferences of the Parties (COPS) as well as by Vienna Convention on the law of treaties, international custom and national legislation. The IPCC was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988, to assess scientific information about climate change relevant for international and national policy formulation. (Unit one, 2016).

Wilson, (2000:203) also states that "global warming story is one of the most complicated stories of our time which is affected by a number of journalistic constraints such as deadlines, space, one-source stories, complexity and reporter education". Climate change is not a subject solely for science or environmental reporters to cover because it's not just a story but the context in which so many other stories would unfold. It is therefore essential for journalists, editors and media owners to understand at least the basics of climate change and realise that there is more to it than water and disasters. Climate change is a difficult story to recreate for daily news budget, while a short term drought episode or any other weather event is much easier to visualise and portray. Wilson (2000).

In a comparative analysis of newspaper coverage of climate change in 27 countries around the world, Schmidt Ivanova and Scheafer (2013), sampled countries that have committed themselves to Green House Gas emission reduction under the Kyoto Protocol such as Germany as well as countries that are strongly affected by the consequences of climate change such as India. The analysis showed that climate change coverage had increased in all countries studied. A rise in international concern coupled with an increase in disaster led to an increase in the reportage of climate change issues around the world. Hurricanes, earthquakes, floods and the likes affects one country or the other at an alarming rate, this causes a growing concern about climate change on an international scale.

Fawole & Olajide (2012) content analysed the Guardian, Punch & Nigerian Tribune, the writers concluded by inferring that "the newspaper coverage of climate change news was widespread covering all areas of climate change. Most climate change news bothered on what applies to Nigeria's local climate". Limiting climate change news to Nigeria's climate will give the reader limited news about the issue. Events like Hurricanes, earthquakes and typhoons that happen outside the country will not be known by the readers thereby localising their understanding of the whole issue. However, Shanahan (2011) is of the view that most reports in developing countries rely on western agencies rather than local reports. More so, Batta et al (2013) are of the opinion that Nigerian newspapers should broaden the scope of climate change coverage and framing, widen local sourcing of reports, diversify the formats of reporting and frame the issues more in mould of adaptation.

Climate change is not a popular issue in the African context as Africa Talks Climate (2004) as cited in Oyeyinka, Olawole and Abdulbaqi "(2015:2) reports that 'There is low awareness of the concepts of climate change and global warming among the Nigerian public. Many understand climate change to mean changes in the weather or seasons. Opinion leaders agree the general public has very low awareness of climate change concepts and terminology." Moreover, Ogbo et al (2013:5) opines that the constant reportage of disasters occurring in Nigeria in the print and electronic media signals the enormous vulnerability of Nigerians to day-to-day natural and human-induced hazards. Recent Nigerian history is replete with various accidents and mishaps which reveal the lack of preparedness of this populous State to deal with emergencies.

Akpati (1996:1-2) as cited in Popoola (2014) provides further insight into the character of environmental reporting in the Nigerian print media. He notes that while environmental issues made more headlines in 1995 than ever before, most of the newspaper reports were not only "poorly packaged and presented but also lacked accuracy in the causal information disseminated" (1996:3) ostensibly because the reporters did not understand the phenomenon they were describing. He further observed that environmental news reporting in the Nigerian print media suffers chronically from sensational headlines which do not relate to the stories.

Reasons behind the low awareness on climate change viz a viz its impact on the African continent could be seen in Wilson (2000:203) "the global warming story is one of the most complicated stories of our time which is affected by a number of journalistic constraints such as; deadlines, space, one-source stories, complexity and reporter education". Other factors like geographical location, happenings and events, media ownership and gate keeping also contribute to its complication, African Journalist's may find it difficult to cope with the situation.

Still on Africa Tagbo (2010), after a study, found that apart from being a disposable beat, climate change is a relatively new subject in many African media. Less than 30 per cent of climate change journalists interviewed during the course of her study have reported the subject for more than three years of these, 60 per cent identified a lack of training and time pressure as major reasons why the topic has rarely generated coverage commensurate to its significance for the

comments future prosperity. In Africa, socio-cultural and religious belief of the people also poses as a threat to public's understanding of climate change. Isaac Barry, presenter of the programme "climate change and you" of Federal Radio Corporation of Nigeria (FRCN) in an interview disclosed that 60% of the audience believed in the human causes of climate change while as much as 40% attributed it to God.

The media is perceived as not doing enough in depth analysis of the climate factors that may be causing the disasters. Neither do they deliberately and as a strategy, develop specialized reporters on climate issues, let alone science writers. The media mainly focus on what the politicians are saying; they do not seek scientists' input (Sundblad, 2008 as cited in Agwu n Amu 2012). "Climate change is a global environmental problem that has transcended the boundaries of science and environmental ism to become a main stream political, economic and social concern". (Munoz and Sommer, 2011:1). In developed countries, climate change policies are used for campaigns in politics as it is an issue of public concern

Ann Kathrine Eckardt of NEON magazine in Munoz and Spmmer (2011:3) points out that "climate change is a difficult story to cover because it is very abstract: there are no good stories or headlines from a journalistic point of view and the long term nature of climate change makes it lack the freshness of immediacy of other news". Stocking and Leonard put it: "It ain't news unless it's new," and this leads to an "issue-of-the-month syndrome" that "allows persistent, and growing, environmental problems to slide out of sight if there is nothing 'new' to report". Part of what makes news is timeliness, climate change takes place as a gradual process and it may not always make it to the news desk.

Gans, (1979:169) asserts that there is a "repetition taboo whereby journalists reject stories that have already been reported in favour of news that is fresh, original, and new. In print and on the screen, this translates into a preference for coverage of crises, rather than chronic social problems that have already been discussed on the mass-media terrain". Since climate change occurs gradually over a long period of time, finding new issues relating to it can be difficult. But creating a pattern of reporting such issues would help in meeting the urgent need to curb climate change. Features and editorials can be used in providing useful information on climate change. Sadly, according to Nelkin (1987 as cited in Wilson, 2000), the journalists show little or no interest in climate change stories.

Interest in climate change, potential impacts, and adaptation /mitigation policy options increased dramatically during 1995-96. While there are many explanations for this, one contributing factor was the conclusion, reached by the Intergovernmental Panel on Climate Change (EPCC) in its Second Assessment Report (SAR)(IPCC 1996a-c) that, even considering remaining uncertainties, "the balance of evidence suggests that there is a discernible human influence on global climate." This conclusion, which was negotiated over a period of a year by hundreds of scientists and policy makers acknowledged the strong belief of most experts that human modification of atmospheric composition has led to noticeable climatic effects and likely significant climate change in the decades ahead (Moss and Schneider 2008). The build-up of green-house gases (GHGs) in the atmosphere, much of which is driven by human activity, is already affecting the global climate. Under current projections, concentrations of GHGs will continue to increase into the indefinite future, entailing a process of continued global warming.

Framing Theory

Approaches like priming and framing were based on the idea that mass media had potentially strong attitudinal effect, but that these effects also depend on predisposition, schema and other characteristics of the audience that influence how they process messages in the mass media (Me Quail. 2005). The media's ability to set agenda for the public would also have to deal with predisposition on the part of the reader and the writer in a larger context.

Gamson and Modighani (1987) define media frame as a central organizing idea or story line that provides meaning to an unfolding strip of events. It helps view media or news frames as necessary to turn meaningless and unrecognizable happenings into discernible events. Framing of climate change stories has therefore become necessary as climate happenings around the world are gradual and unrecognizable. Most of the citizens especially in developing countries find climate change stories meaningless until it is put in the right frame.

Media frames according to Tuchman (1978) as cited in Scheufele (1999) serve as working routine for journalists that allow them to quickly identify, classify and package information for efficient relay to their audiences. The way a journalist frames an issue may be influenced by several individual, ideological, socio-structural or organizational variables.

Numerous analyses of media content on climate change were also made using framing analysis.(e.g, Agwu and Amu 2013, Fawole and Olajide 2012) According to Kleinschmit and Sjostedt (2014:1), the mass media has the power to attach a specific meaning to an issue that an audience may subsequently use as a frame to discuss and interpret this issue. This applies to specific issues that cannot be experienced or known by mere knowledge but only be explained by scientists who carry out various researches. Because of the slow nature of the changing climate, impact of climate change is not seen rapidly.

Framing is therefore both a macro level and a micro level construct (Scheufele, 1999). As a macro construct, the term “framing” refers to modes of presentation that journalists arid other communicators use to present information in a way that resonates with existing underlying schemas among their audience (Shoemaker & Reese, 1996 as cited in Scheufele 1999). This does not mean that most journalists try to spin a story or deceive their audiences. In fact, framing, for them, is a necessary tool to reduce the complexity of an issue, given the constraints of their respective media related to news holes and airtime (Gans, 1979). Frames, in other words, become valuable tools for presenting relatively complex issues such as climate change, efficiently and in a way that makes them accessible to lay audiences because they play to existing cognitive schemas.

The relevance of framing theory to this research is that, a major strategy for analysing newspapers according to Entman () is to look at how contents are framed. Since newspapers have important roles in analysis and interpretation of daily happenings, this study is an analysis of newspaper contents on climate change. Over the years, scholars have tracked frames to identify trends in issue definitions, compare coverage across media outlets and examine variations among types of media (Batta, Bashir and Ashong, 2013). In this study, articles or stories are identified via keyword searches (climate change, global warming or green-house) which typically serve as

the unit of analysis. The study also compared climate change coverage and how the stories are reported in four selected newspapers.

Methodology

This study involves content analysis of four national dailies in Nigeria namely: Daily Trust and *Leadership* owned by some Northern Nigerians and operate form the nation's capital Abuja. Both papers represent the interest of the northerners, well known for their backpage columns. Daily Trust is the best paper in the north in terms of circulation and reach, (Batta, Ashong and Bashir, 2013) and The Nation and *This Day* which are based in Lagos and known for their wide circulation, sharp analysis and commentaries. These four selected papers are considered to be among the country's leading papers.

Content analysis is most suitable for analysing newspaper articles and it has been used by previous researches on the issue of press coverage of climate change. (Examples could be seen in Okoro, Odoemelam and Martin, 2013 and Fawole & Olajide, 2012). This study covered articles from January 2013 to December 2014 (24 months), this is because 12months cover the seasonal changes which may have different characteristics for different places around the country, hence different climate change issue through-out the year for 2years.

News, opinions, editorials, interviews and features are the categories of analysis. The study universe is 2912 which is the sum of all editions for both newspapers for 2years (24months) which were selected for reasons of availability, regularity of publication, wide circulation, relevant content and geographical location. In determining the sample size, Gans (1995) as cited in Ogboshi (2006) recommends 20% of the total population as sample size when the population is small. 20% of 2912 is 528. Therefore the sample size for this study is 528 editions of newspapers. Probability sampling technique was employed for thestudy in picking the 291 samples. A systematic random sampling where every element has equal chance of being selected was used in selecting samples.

The newspaper articles with any of the key words; climate change, global warming or green-house are the units of analysis and the coding sheet the instrument of data collection. The parameters for coding include; category of report (news, feature, opinion, editorial, interview), page placement (front, back, inside), key word appearance (Headline, In-text) length of report (Full page, half, one quarter, one eight...), area of climate change covered (Flood, Desertification, Gas flaring, Mitigation and Adaptation). The data obtained from the analysis are presented in tables and analysis done in percentages and interpreted based on research objectives.

Results

Articles on climate change published between January 2013 to December 2014 in *Daily Trust, Leadership, The Nation* and *This Day* newspapers were analysed. The papers were selected based on popularity, ownership and circulation. 528 editions of the daily publications were studied. 114 articles were specific on climate change out of the 528 publications. Below are the data.

Figure 1 Frequency of reports on climate change

Newspapers	Frequency	Percentage
Daily Trust	36	31.6
Leadership	30	26.3
The Nation	19	16.7
This Day	29	25.4
Total	**114**	**100**

Fig. 1 shows the frequency distribution of climate change articles as found in four different newspapers between January 2013 and December 2014. Results from the figure above shows that 114 articles were reported on climate change in the four newspapers analysed. *Daily Trust* gave more attention to climate change issues with 32% (36 out of 114 articles). This could be due to the dedication of pages relating to environmental issues in the paper and climate change being a frontier environmental issue. The absence of such a column in *The Nation* with 17% representation (19 out of 114) has affected the number of climate change articles in the paper, making it the least paper to carry reports on climate change. *Leadership* with 26% (30 out of 114) and *This Day* with 25% (29 out of 114) also have environmental column and therefore have significant representation of climate change. The threat and advancement of desert encroachment which is so obvious in the far northern states of Nigeria has led to a fight to reduce this encroachment through the great green wall programme and it is frequent in *Daily Trust and Leadership* newspapers.

In comparing the volume of reports on climate change between the northern (Daily Trust and Leadership) and southern newspapers (The Nation and This Day), 66 articles represent number of articles gotten from northern papers while 48 represent the number of articles gotten from the south. It is expected that there would be equal distribution of articles between the north and the south albeit it was observed that, the north had 66 while the south had 48. To check if there is any discrepancy in reportage between the two regions or the difference occurred by chance, chi square test was employed.

Table 2 chi-square

Category	Observed	Expected
North	66	57
South	48	57

$X=\Sigma(O-E2/E)$

Where x^2 is the Chi-square statistic, O is the observed frequency and E is the expected frequency.

Ho- there is no significant difference in volume of reports between the northern and southern newspapers.

Category	Observed	Expected	0-E	$O-E^2$	$O - E^2/E$
North	66	57	9	81	1.42
South	48	57	9	81	1.42
Total	**100**	**100**			**2.84**

Calculated chi-square value= 2.84
a= 0.05, degree of freedom=l

In this experiment, the critical value for chi-square at o=0.05 with 1degree of freedom is 3.84 which is greater than x^2-2.84. Therefore, the null hypothesis is accepted. Hence there is no significant difference in the volume of reportage of climate change articles between the northern and southern newspapers.

Frames used in reporting climate change

Climate change stories are mostly situated within the causes, effects, mitigation and adaptation frames. The tables below give us a view on how the four selected newspaper organizations frame climate change stories thus addressing research objective 3.

Table 3: Causes of climate change

Newspaper	Green-house gases	Deforestation	Agricultural activities	Mining/Explication	Total
Daily Trust	1	1	-	-	2
Leadership	3	-	1	1	5
The Nation	1	-	-	-	1
This Day	-	4	-	1	5
Total	**5**	**5**	**1**	**2**	**13**

13 (12%) out of 114 articles analysed reported on the causes of climate change. Green-house gas emission and deforestation are seen as the most prominent causes of climate change. *Daily Trust* reported one article on Green-house gas (carbon dioxide) as a cause of climate change. *This day* had no article, *Leadership* newspaper had 3 articles while *The Nation* reported one article. *This Day* newspaper had 4 articles reporting deforestation as the main cause of climate change *Daily Trust* reported one article while *Leadership* and *The Nation* had no article. Deforestation which is keen to the northern part of the country was not well represented by the papers. Gas flaring which is evident in the south-south part of Nigeria and is the major contributor of green- house gas was reported by *Leadership* newspaper once even though *The Nation* newspaper has a column for reporting stories on south-south, gas flaring was not reported as a cause of climate change in the paper. This shows how less attention is given to the issue in the paper.

Table 4: Effects of climate change

Newspaper	Erosion	Flood	Drought	Desertification	Food Security	Health issue	Total
Daily Trust	1	3	2	-	-	2	8
Leadership	-	4	1	1	-	-	6
The Nation	-	1	1	-	2	-	
This day	-	3	-	-	-	-	3
Total	1	**11**	**4**	**1**	**2**	**2**	**21**

In the table above, it is evident that the total number of articles reported on the effects of climate change by all papers is 21 (18%). Flood is reported as the dominant effect of climate change in all papers except *The Nation* with 1 article. *Leadership* reported flood most with 4 articles followed by *Daily Trust* and *This Day.* Drought was also reported in 4 out of the 21 articles with 2 from *Daily Trust,* 1 from *The Nation* and *Leadership* and none from *This Day.* Erosion which is very prominent in the south was reported by *Daily Trust* once, and desertification which poses serious threat in the north was reported once by *Leadership* newspaper. Food security was reported as an effect of climate change twice by *The Nation* newspaper and health issues were also reported twice by *Daily Trust.* This shows that little attention is given to the effects of climate change which is seen as a global threat.

Table 5: Climate Change Adaptation

Newspaper	Waste recycling	Biomass Energy	GMO	Others	All	Total
Daily Trust	7	2	1	2	1	13
Leadership	3	-	-	2	1	6
The Nation	3	1	3	3	1	11
Thisday	5	-	-	-	2	7
Total	**18**	**3**	**4**	**7**	**7**	**37**

In the table above, it is evident that recycling of waste is given more attention than other methods of climate change adaptation with a total of 18 out of 37 (32%) articles. 7 articles were presented by *Daily Trust,* 5 by *This Day* and 3 each by *The Nation* and *Leadership. 1* of the articles covered general knowledge on climate change adaptation while another 7 suggested other ways of adapting to climate change. While *Daily Trust* concentrated on carbon reduction, the nation gave more attention to genetically modified food (GMO). The use of bio-mass energy had 2 reports by *Daily Trust.*

Table 6: Climate Change Mitigation

Newspaper	Forest conservation	Carbon reduction	Clean & Renew Energy	Biodiversity Conservation	All	Total
Daily Trust	3	3	4	2	1	13
Leadership	1	3	4	1	4	13
The Nation	1	-	2	-	3	6
Thisday	-	-	6	3	2	11
Total	**18**	**3**	**4**	**7**	**7**	**37**

Articles on climate change mitigation appeared most with 43 (38%) out of 114 articles. Majority of the articles reported on mitigation were tilted towards the use of clean and renewable energy with 16 out of 43 articles. Carbon reduction and biodiversity conservation had 6 articles each while forest conservation had 5 articles. *This Day* reported more on clean and renewable energy with 6 out of the 16 articles followed by *Daily Trust* and *Leadership* with 4 articles each. 10 other articles were not keen on a particular method of climate change mitigation and were therefore labelled as others majority of which were found in the *Leadership* newspaper with 4 out of 10 articles.

Discussion of findings

In line with the objectives of this study, data obtained from content analysis set to answer the research questions.

Research question 1 on the volume of climate change stories reported by the four selected newspapers is being answered by Figure 1 that showed the frequency of reportage of climate change stories. Out of 528 sampled newspaper editions, a total of 114 articles on climate change were published. Among these, 36 articles were from *Daily Trust,* 30 from *Leadership,* 29 from *This Day* and 19 from *The Nation.* The articles were found to be reported in all the papers considerably with the exception of *The Nation* newspaper. This could be because *Daily Trust, Leadership* and *This day* have pages devoted to environmental stories/issues that appear on weekly basis which is absent in *The Nation* which has business and political elite, the affluent, the educated and the upwardly mobile as its target audience. Research question 2 on the difference in the volume of reports between the north and south was answered by fig. 2, hi comparing the difference in reportage volume, it is expected that there would be equal distribution of articles between the north and the south albeit it was found that, the north had 66 while the south had 48. To check if there is any discrepancy in reportage between the two regions or the difference occurred by chance, chi square test was employed. Chi-square value of 2.84 was obtained. With 0.05 probability level and 1 degree of freedom, chi-square table value is 3.84. This is higher than the calculated value of 2.84. Therefore, the null hypothesis that there is no significant difference in the volume of reports on climate between the northern and southern newspapers was accepted.

Tables 3, 4, 5 and 6 answer's research question 3 on the different frames used in reporting climate change by the newspapers. Kleinschmit and Sjostedt (2014:1) says “the mass media has the power to attach a specific meaning to an issue that an audience may subsequently use as a frame to discuss and interpret this issue”. This applies to specific issues that cannot be

experienced or known by mere knowledge but only be explained by scientists who carry out various researches.

Results from the analysis of these tables show that climate change articles were covered by all papers using the causes and effects and mitigation and adaptation frames. Articles on bush burning, mining, deforestation, gas flaring etc. relating to climate change were analysed on the causes of climate change. Green-house gas emission and deforestation were considered the major causes of climate change in the newspapers. Burning of fire wood for cooking is considered a major source of green- house gas by the papers. Cutting of trees for either domestic or commercial use is also considered a major cause of global warming. Gas flaring in the Niger-Delta which contributes 30% of the total carbon emission into Nigeria's atmosphere was completely downplayed by all the papers. Only 1 article was published on gas flaring as a cause of climate change in Leadership newspaper, calling for the gas being flared to be recycled and used as other petroleum by products.

The mitigation and adaptation frames are higher in all papers with a total of 43 and 37 articles respectively. Batta et al. (2013) also found mitigation frame dominant in Nigerian newspapers. In adaptation, some articles focused on sensitizing farmers on how to insulate their farms from the effect of climate change. Some of the papers advised farmers on the use of genetically modified organisms to produce pest resistant crops that emanate as a result of either poor agricultural practices or extreme weather condition. The production of bio-fuels (ethanol, bio-diesel, bio-butanol, bio-oil and bio-gas) gotten from bio mass energy is also one of the adaptive measures to be taken a:; reported by the papers. Also, recycling of waste and production of bio degradable plastic which is environmentally friendly are methods of adapting to climate change. Other adaptive solutions involve relocating from riverine (flood prone) areas to safer places, limiting mining an agricultural practices to avoid erosion.

The call for the use of clean and renewable energy is evident in all papers as the use of fossil fuel which is one of the major contributors to Global Warming is in the increase. 16 articles were published on clean and renewable energy. This might be because climate change mitigation is the driving theme of global climate talks. Examples of such articles are seen in *Daily Trust:* Wednesday 19/03/2013 “Industrialized nations polluting the world-Fashola”, Thursday, Dec 12/2013 “Renewable energy village reaches 80% completion”, Wednesday, Nov, 20/2013 “Experts canvass solar energy to combat climate change”. Solutions like the use of solar and hydro energy for electric energy, planting of more trees leading to forest conservation and reduction of desert encroachment are also areas of interest in all papers. Daily Trust and Leadership wrote articles on reducing the amount of carbon released into the atmosphere. People are advised to use cars less as fuel combusted into the atmosphere increases climate change risk. In countries like India and China, the atmosphere is always hazy due to smoke from industries and vehicles. The use of mitigation frame in climate change reporting might be because climate change mitigation is the driving theme of global climate talks as even in the last meeting of the Conference of Parties it is recognized that climate change represents an urgent and potentially irreversible threat to human societies and the planet and thus requires the widest possible cooperation by all countries, and their participation in an effective andappropriate international response, with a view to accelerating the reduction of global greenhouse gas emissions thereby achieving the aim of addressing climate change.

With regards to the effects of climate change issues discussed, desertification and flood are the frequently occurring issues. As the desert is encroaching through the north, tree felling is on the rise, this destabilizes the carbon cycle. Increase in the amount of rainfall with poor drainage system across the country increases the risk of flood which affects food security, lives and property. Other issues like earthquakes and hurricanes are rarely discussed. They trip in as news reports with the occurrence of such events and are not related to climate change.

Climate scientists believe that climate change has reached a stage where information on causes and effects is no longer necessary but action on how to reduce/mitigate activities that contribute to global warming. In a country like ours, people don't just act or accept without prior knowledge of the issue. Adequate information on the causes and effects of climate change will help convince the public on the need to take certain measures to mitigate or adapt to the issue. (IPC, 2007), Agwu and Amu 2012 also recommended that more specifics behind the mitigation and adaptation of climate change should be framed.

Conclusion

This study has demonstrated how climate change articles were reported in *Daily Trust, leadership, The Nation* and *This Day* newspapers between January 2013 and December 2014. Volume of reports on climate change issues is generally low among the papers worse of which is *The Nation* newspaper. These newspapers even though commercial have a significant attention for environmental issues except The Nation which had no page or column dedicated to the environment. However, result of the chi-square test showed no significant difference in the volume of reports on climate change between the papers situated in the north and those in the south. Climate change articles were reported using 4 different frames: Causes, effects, mitigation and adaptation. *Leadership* and *This day* reported more oncauses. *Daily Trust* reported more on effects followed by *Leadership.* Daily Trust and *Leadership* had more articles on mitigation, followed by *This day,* then *The Nation.* On adaptation, *Daily Trust* had more articles followed by *The Nation* and *This day,* then *Leadership* newspaper.

Some scholars are of the view that reporting articles on the causes and effects of climate will help increase knowledge and awareness of the issue, while some are of the opinion that knowledge about causes and effects will be of no good to the public but on how tackle the issue. Climate change is the context in which all of our lives will be lived; physically, socially, economically and politically. Its scale and impact over the coming decades will depend on the decisions we make in the next few years. Information will be critical. As Sri Lankan journalist Nalaka Gunawardene has said: “Good communication is essential for the success of both climate mitigation and adaptation. It's like the lubricant that helps the whole engine of climate response to turn and keep running.” (Policy Brief, 2011:4)

Recommendation

With the findings of this research, it is recommended that:

1. Climate change stories should be reported more frequently in newspapers as this will catch the attention of the readers and make them see it as a serious issue.
2. Reporters should concentrate on climate change issues that are keen to their environment. Their readers should be able to relate their writings to the local happenings. This will help inform them on the necessary measures to be taken to deal with the problem.

3. Reporting issues on the causes and effects of climate change will educate the Nigerian publics on the reason behind the necessity to take quick action to curb the issue.

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