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Volume of Agricultural Related Climate Change Issues in Selected Nigerian Newspapers (2020-2022)

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Abstract
The main objective of this study sought to evaluate the coverage of agricultural related climate change issues from 2020 to 2022. Through the use of purposive sampling, three newspapers, Daily Sun newspaper, Punch newspaper and Vanguard newspaper were chosen. All the data were collected from 216 daily publications and were also analyzed using the simple descriptive statistics. Results of the study showed that there was only 0.53%, 1.56% and 1.95% coverage of agricultural related climate change issues in 2020, 2021 and 2022 respectively. Flooding stories received more coverage in all three publications. The primary source of information was Individual Personalities. Additionally, a two-way ANOVA on the interaction between year of publication and the content categories on volume of coverage revealed $F_{calculated}$ values of 87.826 at 1% significant difference, 67.921 at 1% significant difference, and 32.000 at 1% significant difference, respectively thereby indicating a strong positive correlation coefficient. It was however concluded that agriculture-related climate change issues received insufficient coverage in the three newspapers analyzed. It was recommended that Nigerian media should give more consideration to covering issues related to agriculture and climate change because such issues are perceived as important to the extent that the media makes them appear to be based on the emphasis, prominence.

Keywords: Agricultural news, Climate change, Newspaper, Vanguard, Daily Sun, Punch.

Introduction
Since many years ago, environmental issues have gained importance. National governments and the UN have taken action to raise awareness and focus on issues such as air and water pollution, deforestation, desertification, greenhouse gas emissions, global warming, and climate change (Olorunfemi, Komolafe, Fasinmirin, & Olufayo, 2019). These issues have forced the need for numerous summits, conferences, conventions, and declarations. One such instance is the environmental declaration from the Rio Conference. The greatest environmental concern currently confronting civilization is most likely climate change. Generally, Climate change "is predicted to bring a heightened hazard, new permutations of vulnerabilities and possibly severe repercussions" for human development and wellbeing, as well as that of other species of both plant and animal life and the environment (Praveen, & Sharma, 2019).
In Africa, for instance, where lower-income nations experience disproportionately high rates of natural catastrophe casualties and economic losses that can reach 10% of GDP in tiny, vulnerable economies, the impact of climate change on food security is particularly pronounced (Eckstein, Künzel, & Schäfer, 2021). Agrarian economies in sub-Saharan Africa are expected to be the most negatively impacted by food insecurity issues as a result of their reliance on rain-fed agriculture, according to scientific data on the effects of global warming (International Food Policy Research Institute, 2019). Impacts on agricultural productivity are heavily emphasized in growing economies in order to support rural populations. For instance, the short supply of certain food items such as fresh pepper, vegetables, tomatoes, corn and other agricultural produce across Nigerian markets in the month of June 2012, raised a lot of questions as to what was wrong (Bohr, 2020). Traders and farmers in the country attributed this event to inconsistent rainfall which is a direct consequence of climate change.
Gough, (2017) further stated that the impact of climate change has grown in Nigeria as a result of anthropogenic activities like deforestation. According to an FAO assessment from 2005,

Nigeria has Africa's greatest rate of deforestation. This is so because fuelwood is the major domestic energy source in most rural households. Also, increased level of rural-urban migration has resulted in the tearing of more forests for settlement purposes. Increasing population rate and vast activities of coal, oil, and gas exploration have further contributed to a change in Nigeria's climate over the years leading to a major air pollution index which will further increase (Yakubu, 2018). The average Nigerian farm family is engaged in such agricultural activities as crop production, animal husbandry, fish farming, and postharvest activities. No matter the kind of crop grown, whether annual or cash crops, most of farmers depend on rainfall to water their crops. While the farmers in the south leave the fate of their crops to rain due to the abundance of rainfall in the region, the farmers in the northern region depend on flowing rivers for irrigational purposes. Climate change effects such as variations in rainfall patterns have greatly affected the agriculture of both regions. The south has been plagued with reoccurring flooding which has left most farmland devasted, underwater, plagued with pests and diseases, and inaccessible by farm owners and also led to the displacement of most rural households (Matemilola, Adedeji, Elegbede, & Kies, 2019), while the north has experienced continuous high temperature that has led to smothering of their crops. Variations of sunlight periods (photoperiods) have greatly affected the flowering and fruiting time of commodities like cashew and cocoa, oranges, kolanut, oil palm, rubber, coffee, and cotton resulting in flower and fruit abortion which has given rise to a loss of 5.5 metric tonnes/ha, farmers of cereals, cassava and yam has also suffered a loss of at least 2.5% in annual yield (Durodola, & Mourad, 2020).

Since 1780, when a number of magazines and newspapers created exclusively for farmers first appeared, agricultural information has been disseminated through print media (Yusuf, Krul, & Marufu, 2016). Without fully utilizing all channels for agricultural information dissemination, agriculture cannot experience significant development because this knowledge is best shared through the use of as many channels as feasible. When newspapers are utilized to disseminate agricultural information, in addition to the benefits of other mass media outlets, material can be archived for future use. As a result, it shouldn't be underused in the area of agriculture (Mtega, 2021). To this end, it becomes vital to ascertain the extent to which Nigerian newspapers provide the general people with information on agriculturally linked climate change issues.

The broad goal of this research is to assess the coverage of agricultural related climate change issues in Nigerian Newspapers. The Specific Objective are to;

i. determine the volume of agricultural related climate change information reported in Nigerian Newspapers.
ii. ascertain the subject matters of agricultural related climate change issues covered in Nigerian Newspapers.
iii. identify the sources/events that drive the coverage of agricultural related climate change issues in Nigerian Newspapers.

Methodology

This study combined a content analysis and descriptive approach. The descriptive design is suited for examining a current event in order to describe the circumstance as it actually exists while content analysis is a research method for the objective, methodical examination of the manifest content of communication. Such evident content could include editorials, letters-to-the-editor, opinion pieces, news items, features, cartoons, photos, and other illustrations in a newspaper or magazine. This helped guide the study's use of content analysis to determine how newspapers covered issues linked to agriculture and climate change.

Sampling Technique

The population of this study consisted of all 282 daily newspapers published in Nigeria between year 2020 and 2022 (NPC, 2013). Three newspapers were purposefully chosen for this research due to their accessibility, high readership, comprehensive coverage of issues, and widespread appeal (Ojemola, 2019). These newspapers are Punch Newspaper, Vanguard Newspaper and Daily Sun Newspaper. Systematic sampling technique was used to choose four months every year for each of the three newspapers making a total of 12 months for the three newspapers respectively within the study period. Secondly, two weeks (1st week and 3rd week) from each month were chosen to be studied, and then 3 days from each week were analysed. Therefore, data was collected from 216 daily publications within the study period.

Table 1: Total number of Newspaper Publications studied for this research work.

Name of Newspaper		Year of Publication		
	2020	**2021**	**2022**	**Total**
Punch Newspaper	24	24	24	**72**
Daily Sun Newspaper	24	24	24	**72**
Vanguard Newspaper	24	24	24	**72**
Total	**72**	**72**	**72**	**216**

Source: Field Survey

Data Collection

Secondary data were the type of data used in this investigation. Data that has previously been gathered from primary sources and made easily accessible for academics to use for their own research is known as secondary data. Books, private sources, journals, newspapers, websites, government documents, etc. are examples of secondary data sources. For the purpose of this study, data were gathered using two separate instruments. They are carefully arranged newspapers used to collect manifest material, and the data collection guide for content analysis was utilized to capture and record the information in accordance with the objectives of the study. An in-depth page-by-page analysis of each edition of the newspapers was used to generate data from the newspapers.

Data Analysis

A descriptive study methodology was utilized to ascertain how frequently and how much agricultural related climate change issues appeared in the chosen newspapers between

January 2020 and December 2022. Answers to all of the research's objectives were provided, along with findings. A quantitative data analysis was carried out using SPSS (version 26) and a qualitative data analysis was also performed using Atlas.ti (version 8).

Measurement of Variables

1. Volume of coverage of agricultural related climate change issues: This represents the total number of agricultural climate change-related concerns that the chosen newspaper covered within the study period. Both percentage and frequency are used to measure it.
2. Subject Matter on agricultural related climate change issues: This is the discussion of agricultural related climate change concerns on topics such as temperature rise, variable rainfall, drought, desertification, sea level rise, erosion, floods, thunderstorms, bush fires, landslides, radiation, loss of biodiversity, natural disasters, and other global agricultural related climate change issues etc. as is reported in the newspapers.
3. Sources of Information on agricultural related climate change issues: They comprise of all the channels that brought about the information on agricultural related climate change issues and include international events, government agencies, seminars, conferences, individual personalities (eye witness, victims, and residents) and media agencies.

Results and Discussion

The results of this research are summarized as follows:

Table 2: Volume of Coverage of Agricultural related Climate Change issues by Year.

		2020		2021			2022		
NEWSPAPERS	**A**	**a**	**Coverage(%)**	**A**	**a**	**Coverage(%)**	**A**	**a**	**Coverage(%)**
Daily Sun	2323	12	0.52	2323	38	1.64	2323	41	1.76
Punch	2232	13	0.58	2232	32	1.43	2232	40	1.79
Vanguard	2424	12	0.50	2424	39	1.61	2424	55	2.27
Total	**6979**	**37**	**0.53**	**6979**	**109**	**1.56**	**6979**	**136**	**1.95**

Source: Field Data, 2023

A: Total number of issues in the Newspapers; **a:** total number of agricultural related climate change issues found in the newspapers.

The result on Table 2 shows that out of a total of 6979 issues found in the newspapers in the year 2020, agricultural related climate change issues accounted for only 0.53% in the selected newspaper. The Punch newspaper with 0.58% followed by the Daily Sun newspaper with 0.52% and then the Vanguard newspaper with 0.50%). In the year 2021, agricultural related climate change issues accounted for only 1.56% in the selected newspaper. The Daily Sun newspaper with 1.64% recorded the highest number of agricultural related climate change issues followed by the Vanguard newspaper with 1.61% and then the Punch newspaper with 1.43%. In the year 2022, agricultural related climate change issues accounted for only 1.95% in the selected newspaper. The Vanguard newspaper with 2.26% recorded the highest number of agricultural elated climate change issues followed by the Punch newspaper with 1.79% and then the Daily Sun newspaper with 1.76%. Although there was low coverage of agricultural related climate change issues, there was relatively highest coverage of agricultural related climate change issues in the year 2022. This could be because of the devasting effect of the opening of the Cameroun Lagbo Dam which threw Nigeria into drastic destruction of homes, farmlands, livestock, lives and properties. This finding aligns with that of Asogwa (2023) in her work addressing food security in Nigeria: insights from newspaper records where it was clearly stated that 2022 was a year flood inundated farmland and consequently, crops and aquatic animals and floods were all wasted. In the same vein, the extreme nature of such events cannot be ignored by the media hence another reason for the increased coverage of agricultural related climate change issues in 2022.

Table 3: Subject matter on agricultural related climate change issues.

Subject Matter	Daily Sun	%	Punch	%	Vanguard	%	Total	Percentage
Temperature rise	2	3.65	2	2.98	4	3.77	8	3.47
Rainstorm	10	8.77	13	10.57	4	3.77	27	7.70
Flood	51	52.44	45	51.74	75	70.75	171	58.31
Flooding alert	11	11.10	22	22.62	16	15.09	49	16.27
Water scarcity	6	8.94	0	0.00	0	0.00	6	2.98
Windstorm	9	13.40	0	9.71	3	2.83	12	8.65
Natural disaster	2	1.69	2	1.63	4	3.77	8	2.37
Conference	0	0.00	1	0.76	0	0.00	1	0.25
Total	**91**	**100.00**	**85**	**100.00**	**106**	**100.00**	**282**	**100.00**

Source: Field Data, 2023

Table 3 reveals that during the period of study, the case of flood with 58.31% was the most prominent agricultural related climate change issue covered in the across the three newspapers. Vanguard newspaper recorded 75 stories on flood, followed by daily sun newspaper which recorded 51 stories, and lastly the punch newspaper with the least record of 45 stories. Flooding alert follows next with 16.27%. punch newspaper had 22 stories on rainstorm, followed by vanguard newspaper with 16 stories, and lastly daily sun newspaper with 11 stories. Windstorm accounted for 8.65%, with daily sun newspaper having 9 stories on windstorm and vanguard newspaper had 3 stories, there was no record of

windstorm in the punch newspaper. Rainstorm made up 7.70% of the subject matter recorded in the selected newspapers with punch newspaper having 13 stories on the subject, followed by daily sun newspaper with 10 stories, and vanguard with 4 stories. Next was international agricultural related climate change issues with 3.47%, vanguard newspaper had 4 stories, while daily sun newspaper and punch newspaper both had 2 stories each on the subject matter. Water scarcity follows next with 2.98%, daily sun newspaper accounted for the highest number (5) of stories, while punch and vanguard had no record of the subject matter. Natural disaster with 2.37% was covered the most by vanguard newspaper with 4 stories, and 2 stories each for both daily sun newspaper and punch newspaper. Conferences on climate change issues had the least coverage of 0.25% accounting for only a single story found in the punch newspaper. In the context of this research, these subject matters were chosen because agriculture in Nigeria is still widely rain-fed, and hence such issues would have a great impact on our agriculture.

The subject matter most discussed across the three dailies were on flood. This may be so because more news on rainfall, and flood were covered during the rainy period which is usually between April – October. This finding concurs with Guanah, & Ijeoma (2020) who set out to determine the volume of coverage given to news about Climate change by The Punch, The Guardian, and Vanguard newspapers; and in their findings revealed that periodic flooding takes place in Nigeria due to heavy rain falls, and it has always been devastating because they leave in their trail's destruction of lives and property. The year 2022 had the highest record of flood incident, across the three newspapers. The present study is concurrent with Asogwa (2023) in her work addressing food security in Nigeria: insights from newspaper records where it was clearly stated that 2022 was a year flood inundated farmlands and consequently, crops and aquatic animals and floods were all wasted. The vanguard newspaper gives a typical description of information on flooding:

"The Nigerian Meteorological Agency, NiMet, on Thursday advised Nigerian farmers and other critical stakeholders in the agricultural sector to take full advantage of farming in the dry season as part of efforts to prevent a food crisis. This recommendation came in response to the ongoing increase in food commodities that came as a result of the devastating floods that ravaged most states, washed away farms, including destruction of lives and properties".

Away from flood, rainstorm (heavy rainfall) was the next major subject matter on agricultural related climate change issues found in the newspapers. Within the period of study, it was discovered that punch newspaper had recorded the most rainstorm issues, followed by daily sun newspaper, and then vanguard newspaper. An example of an article found in the punch newspaper appeared as follows:

"RESIDENTS of Ekiti and Ondo states have been subjected to anguish and tears as heavy rainfalls had devastating effects on buildings and negative impacts on their economies. Farmers are counting their losses in Ado-Ekiti and the ancient town of Owo, following the havoc caused by rainstorms, during which foodcrops of several farmers were washed off. Residents lamented that the first rain of the year, which was expected to bring joy, has left tales of woes and anguish".

Similarly, for flooding alert, punch newspaper had recorded the most issues on the subject, followed by daily sun newspaper which had more records of flooding alert than vanguard newspaper. The following passage from an article in vanguard newspaper presented a typical description of a flooding alert found in the daily sun newspaper:

"THE Federal Government's 2022 Annual Flood Outlook, AFO, Friday, placed Adamawa, Bayelsa, Benue, Delta, and other 31 States on high alert ahead of predicted floods. This was made known by the Minister of Water Resources, Engr Suleiman Adamu, at a press conference held at the Ministry's headquarters in Abuja".

On the subject of windstorm, daily sun newspaper had the most coverage, followed by vanguard newspaper, and there was no publication on the subject matter in the punch newspaper within the study period. A typical example of an on windstorm as found in daily sun newspaper was presented as follows:

"Windstorm has destroyed properties worth millions of naira in Niger State.

The windstorm which was said to have lasted for over two hours occurred during the first rainfall, some eyewitnesses in Kuta, Shiroro local Government Area of the state, disclosed. In a statement signed by Sailas Sabo, the Public Relations Officer, Coalition of Shiroro Associations, said the windstorm rendered many people homeless, others jobless, and farmlands inefficacious".

The vanguard newspaper reported more issues on natural disaster while daily sun newspaper and the punch newspapers had the same number of publication on natural disaster. The following description of an article on natural disaster is an excerpt from vanguard newspaper:

"FAO raises alarm over anticipated invasion of desert locusts in West Africa. As hunger continues to bite harder coupled with uncontrollable rise of high cost of food in Nigeria and rest of West Africa, the Food and Agriculture Organisation, FAO, Wednesday, raised the alarm over anticipated invasion of desert locusts in the West African Sub-region".

There was only a single record of agricultural related climate change conference and it was found in the punch newspaper.

Table 4.1.3: Sources that spurred the coverage of agricultural related climate change issues.

Sources	Daily Sun	%	Punch	%	Vanguard	%	Total	Percentage
Seminar/Conference	0	0.00	0	0.0	4	6.77	4	2.26
Government agencies	31	31.80	30	33.6	28	25.47	89	30.30
International events	4	3.38	5	6.53	8	7.52	17	5.81
Individual personalities	53	60.29	46	55.43	59	54.26	158	56.66
Media	3	4.53	4	4.42	7	5.98	14	4.98
TOTAL	**91**	**100.00**	**85**	**100.00**	**106**	**100.00**	**282**	**100.00**

Source: Field Data, 2023

In table 4, the prominent source that brought about the coverage of agricultural related climate change issues by the selected Nigerian newspapers is the individual personalities with 56.66%, vanguard newspaper had 59 stories, followed by daily sun newspaper with 53 stories and the punch newspaper with 46 stories. Individual personalities in this study refer to residents, eyewitnesses, and victims, of climate change as it borders on agriculture in Nigeria. Next is the government setting accounting for 30.30% of the stories reported. Daily sun newspaper reported 31 stories, followed by the punch newspaper which reported 30 stories, and lastly vanguard newspaper with 28 stories. Government agencies encompasses information such as government visits to flood victims, assistance provided by the government, and warning/alerts on climate change issued by government agencies. Next was International event with 5.81% (vanguard newspaper had 8 stories, punch newspaper had 5 stories, and daily sun newspaper had 4 stories), followed by the media with 4.98% had 7 stories in the vanguard newspaper, 4 stories in the punch newspaper, and 4 stories in the daily sun newspaper. seminar/conference had the least coverage of 2.26% with 4 stories recorded in the vanguard newspaper and no record in the daily sun newspaper and punch newspaper. This is saddening as seminar/conferences on agricultural related climate change issues are a great place for media to source for relevant agricultural information that will benefit the public this is because the media plays an important role in circulating crucial information to farmers, also communicating research messages needed for famers and reaching their concerns. Such events will booster the needed relationship between agricultural stakeholders and media editors.

Conclusion

Th findings of this study revealed that there were only 282 (36 in 2020, 109 in 2021, and 136 in 2022) agriculturally related climate change issues discovered throughout the study period from 2020 to 2022, out of a total of 20937 issues discussed in the studied newspapers suggesting that there was little coverage of these issues at that time.

Within the three years (2020-2022) of the study, the vanguard newspaper placed highest among the three, with 160 articles on themes relating to agriculture and climate change, while punch newspaper had the least amount of coverage, with only 85 articles.

Flooding, rainstorms, and flooding alert were the three most popular topics on agricultural-related climate change issues that were reported in these newspapers during the study period, with 171 stories, 49 stories, and 27 stories, respectively. Conferences and international events on these topics were the least popular topics, with each having just one story.

With 158 stories, citizens, eyewitnesses, and victims of agriculturally related climate change disasters were the primary sources that sparked coverage of these topics. The government setting was a close second with 89 tales. Seminars and conferences were the least significant sources of climate change issues in agriculture.

Recommendations

Based on the findings of this study, the researcher recommended that:

1. Publication of agriculture related climate change issues should be encouraged and more frequent.
2. The civil society organizations with responsibilities for agriculture ought to mobilize, advocate for, and inform media executives about the value of covering agricultural news.
3. Additionally, media executives should be urged to hire recent graduates in agriculture as line reporters for sensitive agro-based stories.

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