

THE USE OF SOCIAL MEDIA IN COMMUNICATING ENVIRONMENTAL GOVERNANCE: A REVIEW OF TWO SOCIAL MEDIA PLATFORMS IN SOUTH AFRICA AND KENYA.

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Didunloluwa Tella
Department of Mass Communication
KolaDaisi University, Ibadan, Nigeria.
didunloluwa@gmail.com

ABSTRACT

Recent environmental disasters happening all around the world, particularly in Africa, have given rise to the need for ways to protect and preserve the environment. However, one of the ways to achieve this is via accurate dissemination of information regarding climate change to the citizens as information is crucial to action. This study examines the trends in the dissemination of information to the public regarding climate change and environmental preservation. Through a critical evaluation of the exchange and dissemination of information, via social media, between the government and the public on two official Twitter handles of environmental agencies in South Africa and Kenya, the paper examines the extent of awareness created by the agencies in respect of climate change and environmental issues. Approaching environmentalism from a communication point of view, the paper argues that much of the efforts/interventions towards addressing climate change will be more effective if the public are duly informed and involved. It intends to do this by establishing the current state of climate change knowledge/awareness in the selected countries, thereby contributing to knowledge on approaches to better environmental preservation/conservation. Thus, in order to ensure participation and achieve sustainable environmental governance in Africa, there is need for adequate and consistent education/awareness on the part of the citizenry.

Keywords: *Environmental Governance, awareness, public, Social Media, Africa.*

INTRODUCTION

Environmental governance can be described as the appropriate and judicious control or utilization of natural resources and the environment for development. The term is synonymous with interventions aimed at changes in environment-related incentives, knowledge, institutions, decision making, and behaviours. More specifically, “environmental governance” refers to the set of regulatory processes, mechanisms and organizational activities through which political actors and technocrats influence environmental actions and outcomes (Lemos and Agrawal, 2006). In current literature, however, the vested interest in environmental governance has gone beyond “political actors” to accommodate other actors (both state and non-state) thereby broadening the scope of environmental governance. It has also been argued that environmental governance is used to denote patterns of interaction that derive from the strategies of various actors (both state and non-state) to govern or “steer” society towards achieving environmentally-related objectives (Adger and Jordan, 2009). Be that as it may, environmental experts have

identified the absence of coordination among government agencies as a major challenge confronting environmental governance in Africa.

In the same vein, sovereignty, existing divergent values, different levels of development, corruption and insincerity of purpose have equally been identified among challenges militating against a healthy environment in Africa (Amollo, 2011). In much of these efforts that have examined challenges and ways to navigate out of them, little is often said about the critical role of the media. In seeking to fill that gap this paper turns to the use of social media platforms as major tools in the dissemination of information aimed at making that public significant role players in the campaign for a sustainable environment. In other words, as part of the strategies needed to solve the existing challenges highlighted above, the effort is to conceptualize the use of social media in achieving environmental governance.

Current research also shows that traditional mainstream mediums such as radio, television and newspapers have not enabled enough participation in programs

designed for environmental education especially in view of the opportunities made available by digital technologies. In other words, traditional media have not been sufficiently used to communicate environmental governance in Africa. Furthermore, they (traditional media) have also limited ordinary people's participation in the communication process, as prominence is given to the opinions of elites in the media (journalists, politicians, civil organizations) over those of the less privileged. The quest for a broad-based participation therefore makes the use of social media a thing to consider. In doing so, an examination of the potentials of social media in communicating environmental governance might be a good starting point.

Social Media as Game Changer

Social media is regarded as a useful vehicle for the sharing and exchange of information and to stimulate change at the global, regional, national, and local levels (Kavada 2014, 2012). Again, in view of the proliferation of new technologies, especially the Internet, opportunities exist for citizen participation in message production and consumption

(Castells, 2012). Thus, the advent of social media has enabled the democratization of citizen participation and the unrestricted flow/exchange of messages for action. As such, Information and Communication Technologies (ICTs) continues to play a crucial role pro-environmental and other social values to help shape consumer preference for greener or alternative lifestyles. In other words, social media on their own will not necessarily save the planet [however] "they might just encourage a more sustainable future" (Lie and Servaes 2015). In view of this, the objective is to explore the use of social media for environmental education in Kenya and South Africa. While these African states are diverse and can be differentiated using certain indices; these countries have been selected because they have made relative progress institutionalizing environmental governance in their countries respectively.

This study will highlight factors that has enabled the positive institutionalization of environmental governance in the selected countries. It intends to do this by examining the communicative approach that are being used to achieve such feat

particularly when it comes to communicating with their audiences' online. As such, the effort is to explore the kind of social media contents/messages that government agencies such as the Department of Environment in Kenya and South Africa uses to interact with their audiences' online. This is to evaluate the nature and manner in which environmental messages are being disseminated to the online audience in the selected countries. Another of such objective is to establish if the government environmental departments in both countries are living up to their mandate and are discharging their environmental duties as expected.

Going further, and apart from the efforts of the United Nations and other environmental stakeholders in utilizing social media as a tool/instrument in disseminating environmental information to the audience, there is the need to explore ways in which social media can be utilized as a tool for mainstream environmental education. Therefore, and in the context of the selected case studies; the question is: Is social media being used as a medium of communicating environmental governance in the selected

countries? What social media platforms are being used to communicate environmental governance? What are the contents of messages on the social media platforms and what kind of messages are being disseminated on the platforms? Ultimately, the aim is to assess the extent of participation and information being conveyed on these social media platforms and the reactions/feedback to such messages. Hence, a cursory look at the social media sites of the Department of Environment in Kenya and South Africa to explore and review the messages being disseminated and the reactions/feedbacks to the disseminated messages.

Social Media and Environmental Education in Kenya and South Africa

Current literatures reveal that social media has been an active instrument for the dissemination of environmental information in Africa particularly in the selected countries. This is evident in the report on the State of Internet Freedom in East Africa (2015). The report indicates that Internet access continues to rise, with penetration in Kenya standing at 69% of the population, and mobile phone access rates standing at

(84%) in Kenya. Furthermore, the Nendo Report (2020) ranks on popularity basis the most common digital media platforms used to disseminate environmental information in Kenya and these include: YouTube, Facebook, Instagram, WhatsApp, Twitter and LinkedIn among others. According to the report, the digital world in East Africa is growing relentlessly because of telecommuting and digitization of businesses and essential services is moving communication to the digital platforms; opening up of remote areas to Internet services. The same is true of South Africa as well as ICTs (social media) continues to permeate and has particularly been used as a tool for climate change communication. In a way, this indicates that social media is a pervasive educational tool in Africa.

However, despite all these positive developments, climate change information is still largely inaccessible owing to the mode and language of dissemination in Kenya (Muchunku & Ageyo, 2022). In South Africa, the challenge is that the South African media has not done much to improve the public's understanding of climate change

because citizens are unable to associate climate reporting with their day-to-day lives. As a result, citizens do not understand and are unable to relate to the essence of climate change as well as the mitigation and adaptation policies regarding climate change. The reason, according to Sithole (2023) is that South Africa's media houses rely too heavily on the use scientific languages and vocabularies that do not appeal to the interests of the greater number of citizens in their coverage of climate change messages.

As such, the goal is "to shift climate change from a problem that seems 'out there' and 'abstract' by telling "stories that show local impacts on people's lives" (Ledwell, 2017:1). One way to achieve this is to ensure that climate change messages are framed in ways that evoke emotion and interest and demonstrate usefulness especially by: simplifying and contextualizing climate information; using forms and media that are largely accessible to the audiences; and repackaging scientific information into local languages and non-scientific narratives that resonate with daily experiences of local communities

(Media & SEI, 2020). This, in a way, suggests that there is the need to inject more of local and indigenous languages in communicating environmental information in Africa. This thought re-echoes in the thoughts of (Muchunku & Ageyo, 2022) who recommends that climate change messages should be repackaged and disseminated globally in newer accessible and locally relevant languages and formats in Africa.

THEORETICAL CONSIDERATIONS

This study is grounded in new media theory. This theory focuses on the utilization of popular new media to increase dissemination and access to information - in this case, environmental/climate change messages. Broadly speaking, it conceptualizes the implications of digital technologies: from the novel socio-political configurations fostered by computer-mediated communication, to the aesthetic and cultural significance of digital culture (Giraud,2018). This new media includes the Internet, and other social digital platforms.

The new media theory earlier forecasted by Marshall McLuhan (1964) predicted that

communication would become fluid and dynamic as a greater force to change the trajectory of communication globally would emerge –which came in the form of the Internet and other associated digital communication technologies. Thus, this new media has been succinctly described as communication technologies that enable as well as facilitate user-to-user interactivity and interactivity between user and information (Rice, 1984). Focusing on the later kind of interactivity (user and information); has the new media enabled interactivity with climate change messages in the selected countries?

Furthermore, building on the new media theory in relation to climate change communication; O'Neill & Boykoff, (2021) highlighted three cardinal roles of the new media and its implications for climate change engagement which includes: Information, Interactivity, and Inclusivity. As such, the new media theory recommends that apart from its primary role which is to disseminate climate messages and information; the new media must be interactive as well as and be inclusive while at it. The next question then is: Are the social

media platforms (in the countries under study) informative, interactive, and inclusive in communicating climate change?

Again, what are the social media sites being used to communicate environmental governance in the selected countries (South Africa and Kenya)?

Focusing on two social media platforms (Facebook and Twitter), the effort is to know which of these social media sites is being used to disseminate environmental messages and how much of environmental messages is being disseminated via both platforms in the selected countries. These two social media platforms were selected because they are popular and rank high among the most commonly used social media sites for sharing and disseminating information (Irwin et al.,2012; Merchant, 2012; Kimmons, 2014). The attempt is to measure the level of citizens' participation and interaction to the environmental messages they receive on these social media platforms.

It is fast becoming common knowledge that social media now form part of the tools used by government and other corporate entities in sharing and

disseminating information. A cursory look at the selected social media platforms (Facebook and Twitter) will be done to indicate which social media platform is frequently being used. The study also intends to measure the extent of feedback/interaction, participation, and responses to the messages being received via these platforms. As stated, "the complexity, immediacy, and ubiquity of environmental problems and crises demand novel and unusual human responses. Understanding such responses better and using them well is necessary if tomorrow's population are to inherit sustainable planet". (Agrawal and Lemos, 2007:5). In other words, environmental education is sacrosanct towards sustainable environmental governance.

METHODS

The exploratory nature of both the study and the means to achieve the objective of the study already suggests the kind of method to be used- which is the qualitative kind of method. Thus, a qualitative review/content analysis of the content/messages on the official pages of the department of environment in both countries was done. It is assumed that the Ministries/Departments of

Environment (as the case maybe) in the countries of focus are expected to disseminate environmental messages to the citizenry (which forms part of their obligations). Thus, the Department of Fisheries, Forestry, and the Environment (DFFE) in South Africa, as well as the Ministry of Environment and Forestry in Kenya would serve as the cases in study.

The Department of Fisheries, Forestry, and the Environment signed up on the Twitter Platform in June 2015, their first tweet/engagement on the platform began on the 02nd of November, 2021. However, the content analysis will begin from the (1st of January, 2022 to 31st March, 2022). In Kenya however, the Ministry of Environment and Forestry in Kenya registered on the Twitter Platform in July, 2015, while their first public tweet/engagement on the platform began on the (25th October, 2021). Hence, the content review will begin from the (1st of January, 2022 to 31st March, 2022).

Thus, the content reviews and in both countries (South Africa and Kenya), will begin from (November, 2021- March, 2022). A quick glance through the

contents of the social media pages of the Department of Environment in Kenya and South Africa indicates the absence of environmental messages/information to the citizens on how to conserve the environment against the impacts of climate change and other environmental hazards. Rather, much of the contents of the social media pages were used to discuss and highlight the administrative activities of the department and ministries in both countries as it showed no messages relating to environmental education/climate change education.

Focusing on two social media platforms (Facebook and Twitter) in both countries, the researcher was unable to find any official Facebook handle belonging to the Department of Environment in Kenya and South Africa respectively. Thus, there was no sign/presence of communication on Facebook in both South Africa and Kenya. For Twitter however, there was presence of communication on the Twitter handles of the Ministries of Environment in both countries. This suggests that government and government agencies are comfortable and find the Twitter social platform a suitable place to

interact/engage with the citizens. Hence, focus will be on the Twitter handles of the Department of Environment in South Africa and Kenya.

Going further and in view of the advancements in technology and the provision of a digital feature called analytics used in social media platforms like Facebook and Twitter to (primarily meant to measure and do an aggregate on the contents and feedback and interaction of the tweets/information on social media platforms); the most convenient approach would have been to review the content of the analytics (if it was accessible), make inferences and draw conclusions. However, in view of the fact that this is a research work coupled with the fact that there are people who have been hired to handle and manage these platforms; it will be unethical and would constitute a breach of privacy to request for the platform’s analytics to conduct this research. Thus, in the absence of such, the author’s effort was to critically review the contents on the social media platforms (Twitter) as well as to check the engagement of the public to those messages.

The table below constitutes the

discussion and analysis of data gathered through the review of the contents on the official Twitter platform of the Department of Environment in Kenya and South Africa respectively. As earlier stated, the official Twitter platform of the Ministries of Environment in South Africa and Kenya showed sign/presence of engagement as the Facebook platforms of the Department of Environment in both countries is non-existent. Hence, only the Twitter handles of the Department of Environment in South and Kenya was used to carry out the content analysis.

The Twitter handle for the Ministry of Environment and Forestry in Kenya is represented as: @Environment_Ke; while the Twitter handle for the Department of Forestry, Fisheries, and the Environment in South Africa is represented as: @environmentza.

SN	Date and Month	Content on the Twitter Handle of the Department of Environment in South Africa: @environmentza	Total Number of People who reacted to the content in the form of likes, shares, and comments.@enviromentza	SN	Date and Month	Content on the Twitter Handle of the Ministry of Environment and Forestry in Kenya: @Environment_Ke	Number of People who reacted to the content in form of likes, shares, and comments: @Environment_Ke
1.	10/1/2022	The Fishing Rights Allocation Process Online Application has resumed	4 Likes 1 Retweet 0 Comment	1.	06/01/2022	Environment and Forestry Cabinet Secretary Gerardo Tobiko speaks to Kenya's National Broadcaster to give a progress report on the environmental conservation and climate change in the year 2021.	39 Likes 23 Retweets 5 Comments.
2	12/01/2022	Fire fighting Teams commended for efforts to bring blaze under control	9 Likes 4 Retweets 0 Comment	2	11/01/2022	Makindu County in Kenya to plant 90,000 tree seedlings in the next rainy season	39 Likes 14 Retweets 2 Comments.
3	13/01/2022	Minister condemns killing of security guards at Landfill site	19 Likes 2 Retweets 4 Comment	3	13/01/2022	Commencement of the 57 th year of the United Nations Environment Assembly (UNEA). The meeting will be held at UNEP Headquarters in Giza in	49 Likes 23 Retweets 1 Comment

4	14/01/2022	Minister of Forestry, Fisheries and the Environment deploys environmental management inspectors to support water anti-pollution of KZN rivers from sherry dam breach.	9 Likes 5 Retweets 1 Comment	4	14/01/2022	celebrate the 50 th Anniversary of UNEP's meeting for UNEA-5.2 and UNEP/WHO commemoration which was held from 29 th February to 4th March, 2022.	171 Likes 2 Retweets 1 Comment
5	17/01/2022	Official Visit of the Minister of Environment to the Kromrand area following the fire which destroyed over 3 hectares of vegetation and left one structure burnt.	4 Likes 4 Comments	5	16/01/2022	World Wetlands Day is commemorated on the 2 nd of February each year to raise awareness about wetlands. This day also marks the anniversary of the Convention on Wetlands, which was adopted as an international treaty in 1971.	581 Likes 27 Retweets 4 Comments
6	18/01/2022	Minister of Forestry, Fisheries, and the Environment, Mr. Barbara Crewey will be visiting the Overberg District as part of the Back to School	31 Likes 0 Retweets 0 Comment	6	17/01/2022	The Ministry of Environment in Kenya highlighting the benefits of wetlands and its critical importance to the ecosystem, climate mitigation and adaptation.	401 Likes 40 Retweets 2 Comments

7	19/01/2022	Minister Barbara addressing learners High Matrix learners about the impact of climate change.	11 Likes 0 Retweet 0 Comment	7	18/01/2022	availability. The Ministry of Education in Kenya continues with stating the advantages of wetlands to the management and regulation of water quality and availability.	51 Likes 16 Retweets 4 Comments
8	21/01/2022	The Department is hiring looking for a Communications Engagemnt/Technician	23 Likes 11 Retweets 2 Comment	8	19/01/2022	The Ministry goes down memory lane by stating that the first President of Kenya inaugurated UNEP's Headquarters in Kenya.	391 Likes 19 Likes 2 Comments
9	22/01/2022	The Minister sends condolences to the Piboko Tax Family	1 Like 1 Comment 0 Retweet	9	20/01/2022	The Ministry discusses the need for laws to be put in place to protect Environmental Rights Defenders with Cabinet Secretary of the Ministry, Kerika Tobiko.	40 Likes 19 Retweets 4 Comments
10	27/01/2022	The Department celebrates the World Wetlands Day	14 Likes 0 Retweets 0 Comment	10	22/01/2022	Celebrations continue in commemoration of the #WetlandsWeek. The celebration is Wetlands Action for People and Nature. #WetlandsDay2022	30 Likes 15 Retweets 2 Comments

11	28/01/2022	The Department reminds the general public of the online application for the Fishing Rights Allocation Process. #RA2022	61 Likes 8 Comments 0 Retweet	11	28/01/2022	Environment Cabinet Secretary writes parliament proposing changes to law on forest management	20 Likes 15 Retweets 0 Comment
12	02/02/2022	In celebration of the World Wetlands Day	51 Likes 4 Retweets 0 Comment	12	02/02/2022	Environment and Forestry Cabinet Secretary, Mohamed Elmi leads a procession in Kilifi town in Kilifi County to mark this year's World Wetlands Day.	40 Likes 16 Retweets 0 Comment
13	04/02/2022	In celebration of #WetlandsWeek, Deputy Minister Setya identifies 100 eco-tourism sites, school sites, bays, restaurants, outdoor bowls, colour-coded dishes and garden tools to the pupils of Stamenite's Primary Farm School, Free State to aid the learners and teachers at the school.	1 Comment 0 Retweets 0 Likes	13	03/02/2022	#SamahleWamama: mureR2020 is an Act of Parliament to establish an appropriate legal and institutional framework for the efficient & sustainable management of water in the framework of the green economy, the realization of the zero-waste goal. #NEP2019 #AdeP#Water	28 Likes 19 Retweets 0 Comment

14	05/02/2022	As part of World Wetlands Day celebrations, the Department hosted an outreach activity at K.L. Newton Primary School	51 Likes 1 Retweet 1 Comment	14	04/02/2022	Plans underway to protect endangered (Ndizi) wetland in Kiambu.	121 Likes 8 Retweets 0 Comment
15	07/02/2022	Deputy Minister visits Malindi Municipality to report back on the waste management intervention.	61 Likes 2 Retweets 1 Comment	15	05/02/2022	The fifth United Nations Environment Assembly (UNEA.5.2) meeting which was held from 21 st to 29 th March, 2022 at UNEP Headquarters in Egypt will be followed by a special session to be held 3-4 March, 2022 to commemorate the 50 th anniversary. #NEP2019 #AdeP#Water	67 Likes 19 Retweets 2 Comments
16	09/02/2022	DFFE Report back on the Riteso Parkshing in South Africa in 2021.	14 Likes 18 Retweets 4 Comments	16	07/02/2022	441st management meeting marks a green recovery from COVID-19 are some of the issues the UN Environment Assembly (UNEA.5.2) will address when it convenes for the second part of its fifth session	441 Likes 18 Retweets 1 Comment

17	10/02/2022	The Department announced a new date for suppliers to join and register for the workshop	71 Likes 0 Retweets 1 Comment	17	09/02/2022	The Cabinet Secretary held a virtual meeting with Her Excellency Katrina Zifka Lepolobova, the Slovak Republic Ambassador to Kenya to discuss how both countries can further enhance the bilateral cooperation.	71 Likes 0 Retweets 1 Comment
18	16/02/2022	The Minister, Mr. Barbara Crewey held a virtual stakeholders engagement ahead of the United Nations Environment Assembly	21 Likes 1 Retweet 1 Comment	18	10/02/2022	Kerika President Uhuru Kenyatta has been named the new chairperson of the Committee of African Heads of State and Government on Climate Change (CAHSSCC).	59 Likes 20 Retweets 0 Comments

19	17/02/2022	Deputy Minister Setya joined the African Women Independent Forum to deliver an address as a Round table Discussion at Cape Peninsula University of Technology, Bellville Campus.	71 Likes 2 Retweets 0 Comment	19	11/02/2022	80% of Kenya's landmass is held & Semi-arid lands making climate change mitigation & adaptation a survival issue. Agriculture, the mainstay of the Kenyan economy, is predominantly rain-fed, making it highly vulnerable to climate change. #ClimateAction: #NEP2019 #AdeP#Water	51 Likes 28 Retweets 4 Comments
20	21/02/2022	Minister Crewey has declared potpourri of land as an extension to the Harold Porter National Botanical Garden	11 Likes 0 Retweets 0 Comment	20	14/02/2022	Cabinet Secretary, Kerika Tobiko holds talks with Germany Deputy Ambassador Thomas Wimmer on the establishment of the International Climate Club, engaging cooperation in the assist, possible support for the development of the third NCCAP.	141 Likes 10 Retweets 0 Comments
21	24/02/2022	Minister Crewey welcomed the Minister of Environment	2 Retweets 1 Comment 0 Likes	21	15/02/2022	Cabinet Secretary, Kerika Tobiko meets with HON. Deputy Director Dr. Jula	111 Likes 10 Retweets 1 Comment

22	26/02/2022	Finance Minister to incorporate the carbon tax as a way to ensure that South Africa lowers its greenhouse emission.	121 Likes 19 Retweets 10 Comments	22	16/02/2022	Knowledge to collaborate and address deforestation and exploit opportunities in the environment and forestry sectors.	461 Likes 13 Retweets 3 Comments
23	28/02/2022	Minister Crewey announces trophy hunting quotas of black rhino, leopard and elephants for 2022.	31 Likes 2 Retweets 0 Comment	23	17/02/2022	Nature-based solutions offer cost-effective ways to tackle the triple planetary crisis of climate change, biodiversity loss and pollution. It would also improve rural livelihoods, build resilience and support COVID-19 recovery. #AdeP#Water #NEP2019 #AdeP#Water	30 Likes 14 Retweets 2 Comments

24	01/03/2022	Finance Minister to incorporate the carbon tax as a way to ensure that South Africa lowers its greenhouse emission.	121 Likes 19 Retweets 10 Comments	24	16/02/2022	Nature-based solutions offer cost-effective ways to tackle the triple planetary crisis of climate change, biodiversity loss and pollution. It would also improve rural livelihoods, build resilience and support COVID-19 recovery. #AdeP#Water #NEP2019 #AdeP#Water	461 Likes 13 Retweets 3 Comments
25	28/02/2022	Minister Crewey announces trophy hunting quotas of black rhino, leopard and elephants for 2022.	31 Likes 2 Retweets 0 Comment	25	17/02/2022	AMEN Session held under the theme, "Securing the people's wellbeing and ensuring environmental sustainability in Africa. The Cabinet Secretary attended a virtual meeting of the 9th Special Session of the African Ministerial Conference on the	30 Likes 14 Retweets 2 Comments

26	04/03/2022	Deputy Minister, Mo Malhotra Soya will tomorrow host a #DietDevDevelopmental odel feedback stakeholders engagement session in Bhorofod, North West district of the Presidential Incho which will be hosted on Saturday in Mahlang.	11 Likes 1 Comment	26	24/02/2022	Environment and Forestry Cabinet Secretary Kerika Tobko welcomes all delegates from Kenya and all over the world to the resumed fifth Session of United Nations Environment Assembly (UNEA-5.2) at #UNEP69 which kicks off on the 29 th February to 4th March 2022.	66 Likes 30 Retweets 1 Comment
27	18/03/2022	President @CyrilRamaphosa embarks on a visit to the North-West Province this Saturday, 17 th March 2022. For the #PresidentialIncho taking place in Ngaka Modiri Molema District Municipality in Mahlang following his State of the Nation Address last month.	39 Likes 22 Retweets 26 Comments	27	25/02/2022	Environmental Management Commission Act is under review to incorporate latest best practices and jurisprudence-@S Tobko at a meeting with a team of CEO and ED @UN Global Impact, Santa Qibambo.	19 Likes 7 Retweets 0 Comment.
28	11/03/2022	The National Marine Spatial Planning(MSP)	51 Likes 10 Retweets	28	24/02/2022	Urban green spaces such as parks, sports fields, woods.	41 Likes 29 Retweets

		Bherha Creecy at the #WorldMeteorologicalD ay2022 celebration.				Government decided to put forward a global award Anansi and Matzaga Awards, a global award to persons, institutions who champion environmental sustainability and peace.	24 Likes 10 Retweets 1 Comment
34	24/03/2022	OFFICE & Treasury/SA launched Technical Handbook on Issuance of Sustainable Municipal Bonds in South Africa.	61 Likes 4 Retweets 1 Comment	34	04/03/2022	United Nations Assembly, Cabinet Secretary, Kerika Tobko termed it as the most successful UNEA owing to the adoption of resolutions including Global Agreement on Plastics.	10 Likes 4 Retweets 1 Comment.
35	25/03/2022	The Minister, together with the Premier of Kwazulu-Natal and Mr. Ravi Pillay will officiate the much-anticipated @Sunguliso Investment Summit.	81 Likes 3 Retweets 1 Comment	35	08/03/2022	In commemoration of the International Women's Day, Kerika Tobko called for embracing of women in high level leadership for gender equality and promote equity through community initiatives and advocacy for a sustainable tomorrow.	10 Likes 10 Retweets 1 Comment.
36	27/03/2022	Minister Bherha Creecy	71 Likes	36	09/03/2022	The Permanent Secretary of	11 Likes

		Data and Information Report (NDR) has been finalised and is now available to the public.	2 Comments			lakesides and gardens give people the space for physical activity, relaxation, and peace. They are associated with better air quality, reduced traffic noise, cooler temperatures, and greater diversity. #Act for Nature @UNEP69	1 Comment
29	12/03/2022	Minister Bherha Creecy joined the President's delegation for the Presidential Incho in Mahlang where the President and all three spheres of government will interact and engage community members on service delivery issues affecting them.	31 Likes 1 Comment	29	27/02/2022	Environment and Forestry Cabinet Secretary, Kerika Tobko has today launched #UNEP69 center at City Park at a ceremony where 183 trees were planted representing 183 UNEA member states.	111 Likes 31 Retweets 0 Comment
30	14/03/2022	Deputy Minister Soya joined the delegation to the 46 th Session of the Commission on the Status of Women (CSW66) taking place	11 Likes 2 Retweets 1 Comment	30	28/02/2022	Environment Cabinet Secretary, Kerika Tobko held bilateral talks with European Union team led by Commissioner for Environment and Oceans,	91 Likes 20 Retweets 1 Comment

		has urged any applicant who is dissatisfied with the 2021 Fishing Rights Allocation Process to lodge an appeal from 29March to 29April, 2022.	2 Retweets 1 Comment			The Ministry of Environment, Dr. Apwoko has called on sports persons to partner with the Ministry in environmental conservation, saying there is a strong relationship between sports, health and leadership.	40 Retweets 2 Comments
37	31/03/2022	Minister Bherha Creecy spoke to SABC News about the land reform programme, which has enabled those who were dispossessed of land for political reasons to reclaim their land in terms of the laws governing land restitution	21 Likes 2 Comment 1 Comment	37	13/03/2022	UNEA5.2 made history by adopting a resolution to adopt plastic pollution through an international legally binding instrument and establish science-policy panel to contribute further to the sound management of chemicals.	47 Likes 10 Retweets 0 Comment
				38	14/03/2022	Chief Justice and President of Supreme Court, Honorable Justice Martha Koome launches the Environment and Land Court Users Committee with a call for collaboration	17 Likes 1 Comment.

		from 14 to 23 March 2022 at the UN Headquarters in New York				Virginia Sirokovic at the sidelines of UNEA 5.2 Meeting in Giza #UNEA5 @UNEP50.	
31	15/03/2022	Deputy Minister Soya delivered a speech on African Women Resilience in the context of climate change during a side event at the Commission for the Status of Women in New York.	71 Likes 1 Retweet 1 Comment	31	01/03/2022	Environment Cabinet Ministry said Kenya is expecting the international community to come up with a common resolution that will address plastic littering menace at #UNEA5 #UNEP.	201 Likes 10 Retweets 20 Comments
32	18/03/2022	The Department is celebrating #GlobalWatersDay and #Waterweek in partnership with different stakeholders in every Paal, Mahlang.	16 Likes 7 Retweets 1 Comment	32	02/03/2022	UN Environment Assembly adopts landmark resolution on the path to #ZeroPlastic Pollution at #UNEA5. In a major win for people and planet, nations have committed to develop a legally-binding agreement on plastic pollution #ActForNature.	239 Likes 13 Retweets 19 Comments
33	21/03/2022	Address by the Minister of Forestry, Fisheries and the Environment, Mo	21 Likes 1 Comment 0 Retweet	33	03/03/2022	In recognition and to celebrate 50 years of #UNEP50, the Kenyan	51 Likes 0 Retweets 1 Comment

						between state and non-state actors	
				39	17/03/2022	SDG12 is about decoupling economic growth from environment degradation, increasing resource efficiency, & promoting sustainable lifestyles. There can be no sustainable development without sustainable consumption and production first. #InternationalDayOfForests	171 Likes 20 Retweets 0 Comment.
				40	18/03/2022	21 st March of every year is the International Day of Forests. The Day celebrates and raises awareness of the importance of all types of forests. The National Celebration will be held at Corner Bateh, Ngong Hills under the theme "Forests and Sustainable Production and Consumption" #SDG14	57 Likes 20 Retweets 1 Comment.
				41	21/03/2022	lined up activities for the commemoration of the	9 Likes 2 Retweets

					International Day of Forests include: - Tree growing exercise - Demonstration of Gallery Erosion Management - Demonstration of Dune Technology - Signing of MoU's on adopt a forest - Demonstration of seed dispersal - Soil organic carbon measurements - Mirandi Forest Model.	0Comment
		41	23/03/2023		Today is #WorldWaterDay held on 22March every year since 1993. The core focus of #WorldWaterDay is to support the achievement of Sustainable Development Goal 6: Water and Sanitation for all by 2030. The theme for this day's event is Groundwater, making the invisible visible.	44Likes 27Retweets 2Comments
		49	23/03/2023	Environment and Forestry		33Likes

					Cabinet Secretary Kericho Tishio's message during World Meteorological Day whose theme is "Early Warning and Early Action".	12Retweets 0Comment
		44	23/03/2023	Environment and Forestry	Cabinet Secretary Kericho Tishio is currently in New York at the UN General Assembly for the preparatory meeting for Stockholm-50 ahead of the commemoration in June.	37Likes 19Retweets 0Comment

Source: Author's own analysis/interpretation.

DISCUSSION

The above are the analysis of the contents of the messages on the Twitter platforms of the Ministries of Environment in both countries (South Africa and Kenya). The table further reveals the rate at which people interacted with the messages disseminated on the Twitter platforms. A number of issues emerged from the reviews.

The language used on the official Twitter platforms of the Ministry of Environment in South Africa and Kenya is the English language. As is expected on such official accounts, the language was formal and succinct. However, the tone and expression of the language used on the

Twitter platform of the Ministry of Environment and Forestry in Kenya was more explicit and engaging compared to the language used on the Twitter handle of the Department of Fisheries, Forestry, and the Environment in South Africa. That, in a way might be responsible for the increased level of citizen engagement / interaction on the Twitter handle of the Ministry of Environment and Forestry in Kenya. This, in a way, highlights the importance of language in disseminating environmental messages. Drawing on the recommendations of the new media theory which places emphasis on inclusivity and interaction - were the languages used (in the social media platforms of both countries) inclusive and interactive? It is important to state that in order to stimulate climate change action, proper use of language in communicating climate change is important.

Furthermore, and from the analysis of the contents of the two Twitter handles, there was little or no evidence of messages informing or educating citizens on how to conserve their environment and mitigate against the effects of climate change.

Thus, the bulk of the messages seen on both Twitter platforms were only to highlight the administrative activities / engagements of the Ministry of Environment in both South Africa and Kenya. There were few occasions when the twitter handles of the Ministry of Environment and Forestry in Kenya tried to briefly educate the citizens especially in commemoration of some environmentally significant days. These days are insignificant compared to the constant reportage of the administrative activities of both Departments. While these observations are not intended to water-down the efforts of the Ministries in both countries in showcasing and bringing the citizens up to-date with the activities of the Ministries, there is need to do more in terms of using those social media handles to educate, teach, and create awareness to the people on how to conserve their environment against the impact of climate change.

Another significant finding is the evidence of citizen interaction to the messages on the official Twitter handles of the Ministries of Environment in Kenya and South Africa. This was in the

form of likes, shares, and comments. It is evident that there is an online audience. However, the number of citizen interaction to the messages differs in both countries, there was evidence of citizen interaction to the messages on the official Twitter handles of the Department of Environment in both countries. As indicated in the table above, the number of citizens who interacted to the messages from the Department of Environment in South Africa is low compared to that of Kenya. The question to then ask is: What is responsible for the higher level of citizen's interaction/engagement to the messages disseminated on the twitter handle of the Department of Environment in Kenya? This, in a way constitutes a topic for further research- to explore the approaches the Ministry of Environment in Kenya is using to keep/engage the interests of their citizens to the messages.

Going further, and from the analysis in the table above, the bulk of messages from the official Twitter handles of the Department of Environment in both countries were purely administrative and official messages. There was no evidence of messages to educate the

masses on environmental conservation, adaptation skills and strategies to mitigate against climate change and other environmental issues. This is clearly a gap that needs to be filled. This, therefore raises the need for increased environmental education/awareness, and training in both countries. While it is understandable that the primary task of any official social media platform of any government ministry is to highlight the efforts and activities of that same Ministry to the public it swore to serve; it also would not be out of place for the Ministries of Environment to educate the public on ways to safeguard and conserve their environment against the impacts of climate change- which in fact is their primary duty and mandate. From the reviews of the official Twitter pages in both countries, there was clearly no clearly no effort at educating the citizens through the social media platforms. This clearly defeats the purpose of utilizing such social media platforms.

However, considering the power that social media wields in mass education; there is really no better media platform capable of reaching the public faster than

social media especially in this digital age. Thus, it suffices to say that, the Ministries of Environment in both countries (South Africa & Kenya) have under-utilized the capabilities of their social media platforms in educating the masses on environmental governance/climate change.

Upon further investigation, it was discovered that the Department of Fisheries, Forestry, and Environment in South Africa (DFFE) has been able to achieve this by publishing a quarterly environmental newsletter that gives a more robust and comprehensive details of the Department's activities to the public. The newsletter also contains other relevant and useful information to the public on the environment. The name of the newsletter is 'Environmental Quarterly' and its recent release was for February to March, 2022.

CONCLUSION

There is no doubt that despite the various forms of interventions and investments from the United Nations and other stakeholders towards achieving sustainable environmental governance, environmental governance remains a challenge in Africa. This, according to the findings

from this study is as a result of the manner and ways in which climate change messages are created and disseminated on social media platforms. Channeling and tailoring climate change messages in appropriate and understandable languages (particularly on digital platforms) is key in educating the public. This is taking into account the heterogeneity of the public and their different learning patterns. It cannot be over-emphasized that

social media play an important role in mass education. As such, environmental education via appropriate social media platforms need to be done using the appropriate language. A bottom-top approach is useful in making available climate change and environmental governance messages to the public in order for them to participate and be involved in environmental governance crusades.

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