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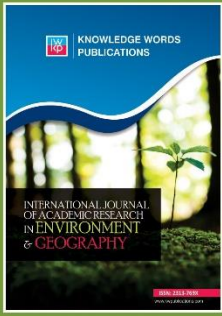
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## **New Media and Climate Change Communication: An Assessment of Utilization of New Media Platforms in Publication of Glocalized Climate Change Information by East Africa's Science Journalists**

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### **Abstract**

Africa's Agenda 2063 recognizes climate change as a major challenge for the continent's development (UNFCCC, 2020). In East Africa, economies are largely dependent on climate-sensitive sectors, such as agriculture, water, energy and tourism and their vulnerability has greatly been increased by adverse climatic change events. As such, the East Africa Community (EAC) has developed a Climate Change Policy, Climate Change Strategy (2011-2016; 2017-2022) and Climate Change Master Plan (2011-2031) with the overall aim of the Policy being to contribute to sustainable development in the region through harmonised and coordinated Climate Change adaptation and mitigation strategies, programmes and actions (EAC, 2011). The need for improved capacity building through increased public awareness that comes with enhanced information dissemination in the region, cannot, therefore, be overemphasised. Emerging global communication trends suggest that audiences are increasingly more interested in hyper-local content yet climate change by its very nature, is a global phenomenon, even if its impacts are experienced at a local level. Digital platforms have made it easier for communities to connect their realities with global trends and benchmark with the best practices around the world in crafting local solutions. The crisis of climate change and communication around its impacts, thus provide a nexus between the global and the local and present both opportunities as well as challenges. The purpose of this paper, therefore, is to assess, through the lenses of the new

media theory, how science journalists have utilized digital platforms to increase dissemination and access to localized climate change information so as to enhance climate resilience in East Africa. This is in cognisance of the fact that climate change information has largely been inaccessible owing to the mode and language of dissemination. There is therefore an urgent need to repackage and disseminate the globally shared information in newer accessible and locally-relevant formats.

**Keywords:** Environmental Communication, Climate Change, New Media Theory, Science Journalists, Glocalizing Climate Change, East African Journalists, Climate Action.

### Introduction

Although climate change is a global risk as its causes and effects are not limited to national borders, its risks and the responsibilities are not evenly spread Beck (2009) as quoted by (Sharif and Medvecky, 2018). This calls for international leadership but localized awareness and solutions to fight a successful war against this global threat.

According to National Centre for Science Education (2019:1), glocalization is “a strategy to tailor a global message to a local community” and “is one of the best solutions” for disseminating evidence based information in balanced personally resonating ways because “people are more likely to engage when they feel a connection to the data, and positioning a global problem like climate change in a relatable context can be the entry point to engaging more broadly.” As such glocalization of the climate change information is very crucial especially with the arising new world order following the Covid-19 pandemic. Goffman (2020) alludes that “as horrible as the coronavirus is, several analysts suggest that it might be an opportunity to correct a global economy that ravages the environment...” He goes on to suggest that “we need a new kind of glocalization, one predicated not on economic growth but on environmental awareness and economic equity” because according to him “a move toward a more sustainable society in the wake of the coronavirus is a society - or a network of societies - in which people really do live much more locally but think much more globally.”

This means that what science journalists should be more concerned about is trying to answer the question: How can I ensure my audience is being reached with climate change information in a mode and manner that enables them to make relevant climate change decisions? The answer to this is ensuring that the goal of every climate change science journalists 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).

To achieve this in the current world that is fighting Covid-19 but moving on with Climate Change and other battles, it is necessary to embrace and maximize use of new media in disseminating climate change information. New media in this context refers to all emerging forms of information communication technologies that are propagated through computer and mobile telephony resources causing media convergence on the internet and the World Wide Web. These

include all types of online platforms, websites, social media, smart apps and new forms of traditional media such as online TV, online radio, online newspapers and online magazines. The internet and associated technologies are a gateway to critical information services and provides numerous digital opportunities of telling and accessing glocalised climate change story to many people in developing countries especially following its convergence on the ubiquitous affordable easy-to-use mobile telephony technologies.

Undoubtedly adoption of new media is shifting the traditional media landscapes through media convergence, among other effects, and resulting into telling the story not only through multimedia platforms but also through multimedia formats which subsequently have led to new media journalism as well as overlapping of professional and citizen journalism. Consequentially, digital media opportunities that science journalists can tap into have continued to emerge, evolve and get adopted and these include: mushrooming of digital media houses and virtual newsrooms with less licensing bureaucracy for start-ups and as a result proliferation of media outlets; increased audience niches due to abilities to target specialized audiences more easily; increased networking opportunities; aggressive website publishing; dedicated social media postings; hyper-active bloggers and vloggers; and looped microblogging such as tweets (Wanon Media & SEI, 2020).

The report on the State of Internet Freedom in East Africa (2015) indicated that Internet access continues to rise, with penetration in Kenya standing at 69% of the population, Uganda (20%), Rwanda (31%) and Tanzania (22%) in 2015 and the mobile phone access rates standing at : Kenya (84%), Rwanda (74%), Uganda (62%), Tanzania (71%), and Burundi (31%). Currently, in East Africa, and of course the world over, there is increased demand for online information due to the proliferation of digital services. For instance, the Nendo Report (2020) ranks on popularity basis the most common digital media platforms used to disseminate information in Kenya and these include: YouTube, Facebook, Instagram, WhatsApp, Twitter and LinkedIn among others. According to the Report, the digital world in EA is growing relentlessly because of reasons that include: Movement from 'tangible' to 'non-tangible' is safer due to Covid-19; telecommuting and digitization of businesses and essential services is moving communication to the digital platforms; opening up of remote areas to Internet services e.g. Alphabet's Loon balloons by the government and Telkom Kenya in July 2020.

Science journalists in the developing East African Countries cannot, therefore, ignore these new media that have shifted and continue to dynamically impact the journalism landscape if they are to reach their target audiences with timely, accessible and relevant climate change information. As UNESCO (2021) postulates, "Policy making, awareness raising and other levels of intervention against climate change cannot be done outside of the information and media spheres" and "media outlets and information flow on digital communications platforms amplify the urgency of the crisis, communicate key facts about climate, and debunk climate change denial and other conspiracy theories."

Hence, the purpose of this study was to investigate, through the lenses of the new media theory, how science journalists in East Africa have been utilizing popular new media to increase dissemination and access to glocalised climate change information so as to enhance climate resilience and economic sustainability in the region. This is in cognisance of the fact that climate change information has largely been inaccessible owing to the mode and language of

dissemination and there is, therefore, an urgent need to repackage and disseminate the globally shared information in newer accessible and locally-relevant formats.

### **Study Objectives**

It is against this backdrop that this study was carried out with the main objective being to *investigate how East Africa's science journalists are utilizing new media platforms to increase publication of glocalized climate change information in the region.*

The study was further guided by the following three specific objectives:

- i) To examine the most popularly used new media platforms by East Africa's science journalists to publish glocalized climate change information.
- ii) To investigate if East Africa's science journalists regularly publish glocalized climate change information via popular new media platforms.
- iii) To analyse types of glocalized climate change information commonly published by East Africa's science journalists via new media platforms.

### **Study Rationale**

The researchers, having participated in the organization of the *East Africa Online Training on "Science and Environmental Journalism"* themed *"Communicating Climate Change and the Blue Economy: What are the opportunities for Story telling?"* that was hosted by Wanon Media in collaboration with Stockholm Environment Institute (SEI) from 16<sup>th</sup> to 18<sup>th</sup> November 2020, felt motivated to interrogate the adoption of new media in climate change communication which emerged as a strong area of interest among the journalists who attended the training. By so doing, the researchers felt that this study would make a contribution in building the capacity of East African science and environmental journalists as well as media editors to frame environmental stories in compelling yet simple and localized angles (Climate and Development Knowledge Network, 2019) and provide them with useful insights into disseminating the climate change story through more accessible channels and formats. Further, the research sought to build on an earlier study by the researchers, published in the journal *Sustainability* in 2020 titled, *"Beyond the Right of Access: A Critique of the Legalist Approach to Dissemination of Climate Change Information in Kenya"*, that revealed that most climate change information in Kenya and other developing nations of East Africa remained largely inaccessible.

Additionally, the researchers attended the International Association for Media and Communication Research (IAMCR) conference themed *"Rethinking borders and boundaries: Beyond the global/local dichotomy in communication studies,"* from 11<sup>th</sup> to 15<sup>th</sup> July 2021, and presented a paper on the topic of this study. Responses from the presentation made it clear that publishing the study results could encourage adoption of new media among existing or aspiring climate change journalists, so as to ensure that the dissemination of the East African environmental story in accessible impactful glocalized angles continues in spite of existing communication infrastructural challenges in the region.

The researchers, therefore, deem this study highly significant in so far as it closes some of the earlier established knowledge gaps, advances scholarly research in science and environmental journalism in East Africa and beyond, and advocates for the use of new media by journalists in bridging the current climate change communication gap between citizens and rich sources of transformative information (scientists and policy makers). This gap was considerably widened by

the effects of COVID-19 pandemic, which introduced new uncertainties in many countries, including disruptions in news dissemination owing to movement and social distancing restrictions.

### **Research Methodology**

This was a qualitative study that used desk research (*see the references*) and key informant interviews that were conducted via phone with the aid of a semi-structured interview guide (*Appendix 1*). The data collected sought to answer the following research questions:

- i) What are the most popularly used new media by East Africa's science journalists to publish glocalized climate change information?
- ii) Do East Africa's science journalists regularly publish glocalized climate change information via popular new media platforms?
- iii) What types of glocalized climate change information are commonly published by East Africa's science journalists via new media platforms?

The sample size was twelve science journalists from EAC were interviewed. Karania (2017) suggests approximately 10-30 informants are adequate for qualitative research. The Sampling Frame was the list of the 24 science and environmental journalists who attended the training workshop dubbed "East Africa online training on science and environmental journalism: communicating climate change and the blue economy" in December 2020 that brought together journalists with interest on environmental reporting from the six East African Community countries (Wanon-SEI Report, 2020). The journalists who attended this training that was organized by Wanon Media in collaboration with Stockholm Environmental Institute (SEI) came from diverse media outlets and it is from these names that the study subjects were purposively drawn: two science journalists from each of the six East Africa Community Countries: Kenya, Uganda, Tanzania, Rwanda, Burundi and South Sudan.

The new media theory guided the study and as such in the event that no two in the list from a certain country had adopted publishing of glocalized climate change content via new media outlets, snowballing sampling through them was used to identify suitable informants to fill in the gaps.

The interviews were audio-recorded, with permission of the interviewees, then later on transcribed and emerging data was analyzed using thematic narratives before merging with the findings of the desk research.

### **Study Findings, Analysis and Discussions**

#### **Popular new media platforms with East Africa climate change science journalists**

The first objective of this study was to examine the most popularly used new media platforms by East Africa's science journalists to publish glocalized climate change information.

The sampled science journalists attested that they commonly use the following new media platforms to publish glocalized climate change information: online radio, online TV, online newspaper, online magazine, websites, YouTube, Instagram, Facebook, twitter, WhatsApp, blogposts, vlogs and podcasts. Another one added that he is considering to start using the tiktok app. This shows that social media is especially used in its various forms, online versions of traditional media and websites. Indeed, one interviewee disclosed that *"I am managing the*

*National Environmental Management Council's social media sites to where I post issues related to the environment particularly climate change."*

When asked which new media platforms among these were more popular and as such they used them more often to publish glocalised climate change information to their audiences, online radio, online newspapers, Facebook, twitter and websites stood out. They supported their answers. Three journalists said online radio was the most popular for them because *"it has the biggest audience"* or as simply put by another *"yes, radio, because of its importance in the region."* This agrees to Luganda (2005) who alluded that in 'developing countries' and more specifically in rural areas, radio has been a principle medium through which climate change news is communicated. Yet another said its online newspapers because *"That's where I have a wider audience"* and one other said the most popular based on the situation of internet affordability in his country is *"actually Facebook because...many of our audience are south Sudanese and are in south Sudan ...because of internet we have issues. For you to upload a story from the website it takes a lot of bundles and it's too expensive now so we choose to use Facebook... because the headline is there and they will understand immediately. For them to go into details they have to go to the website and for the website unless you have enough bundles. So...we break it, very brief, we put it on Facebook and we see many people there and also put our link on our Facebook page...which is really helping. So Facebook is a major one."*

In addition, one seasoned Journalist who started out by doing Science Freelancing with Science Development Network said the most popular new media for him is *"Yes, it's a website... [e.g.] Cornell Alliance for Science [website which] is hosted by Cornell University...I am their correspondent in Kenya... although I also correspond for other African countries. I have reported in Tanzania, I have reported in Sudan, and so forth. So that one I developed ... blog posts but also multimedia ... photos and sometime short videos."* He further explained how websites enabled him to publish multimedia stories which catered for the diversified needs and characteristics of his target audiences such as those with physical challenges:

*"... Issues to do with climate change there's a lot of urge to show; not only to tell but to show. So videos and photos create a very good platform for ... online platforms... You want your audiences to watch these shows and also listen because you're also looking at aspects of... some people could not maybe hear but they can watch. So that multimedia really creates that unique platform.... In a website, you can create places where you ... post podcasts, a platform where within a website you post photo stories [and] where you posts vlogs. So you can tell a story in different formats ... your audience will get to experience all these at a go. Some people like young people would want to drive...in their cars listening to podcasts so you give them that opportunity to...."*

To investigate this further, when asked which of the new media they were deciding to zero in on to disseminate glocalised climate change information, most of the journalists reiterated the same as those they deemed the most popular among their audiences. However, one who deemed online radio as popular said she was considering moving on to *"Twitter because it has a bigger audience that is young."* Another one mentioned that his choice would be one that supports multimedia formats of stories but an app that is popular with his young audience members who

are mainly students. He explained, *"I will zero in on blogs but focus on multimedia stories... I am also considering tiktok because students interested in science are the main readers of our stories."* This alludes to the fact that several factors including format of story, audience characteristics, media affordability and ease of accessibility lead to choice of new media as the preferred platform for dissemination of glocalised climate change information by East African Journalists.

### **Frequency of publishing glocalised climate change information via new media**

The second objective of this study was to investigate if East Africa's science journalists regularly publish glocalised climate change information via popular new media platforms. To realize this, the informants were asked for how long they have been publishing climate change information via their popular new media platforms, how regularly and how often they publish, and which challenges they face in their endeavour to adopt new media platforms.

The results of the study showed that majority (37.5%) of East Africa climate change science journalists had had been using new media for 4 years whereas the science journalist who had been publishing via new media formats for the longest period is the one who said he had been doing so for over 6 years (12.5%). 25% had been on new media publishing for 3 years and another 25% for 1 year.

In regard as to whether publishing was done regularly or haphazardly over these periods of time and the frequency of the regular publishers, 50% were regular and the other 50% were irregular publishers. One of the journalists rated his weekly publishing pattern as, *"YES, I regularly publish climate change information via these media platforms. I publish two to three posts a week about climate change and on the remaining days, I publish other environmental information... Since June of last year [2020],"* while another had a daily pattern, *"Yes, I publish daily... for more than three years now."* Another regular publisher could not clarify his pattern but attested to frequently publishing when he said that, *"Yes, I publish them regularly... Especially things to do with environment, ... like now as we speak we are experiencing a flood in south Sudan which is too early for the flooding to come... people are wondering what's happening ... these are the results of climate change."*

On the other hand those who were irregular in their publishing and explained the challenges they faced to mainly comprise of lack of story sources and the seasonal occurrence of news stories on the subject of climate change. One who cited his major impediment as lack of information sources said, *"I publish sometimes, not often... Since 2017... I often use the sound cloud. This means that I publish podcasts. The challenge I face is the availability of information sources. I mean, even if you have a given pitch on climate change, it's not always easy to get information sources."* This challenge of sources was echoed by another one who said that, *"First of all even getting sources is a big challenge because for example if you are based at Nairobi, you would probably contact people, regional offices ... to understand what is happening on the ground..."* Another one published erratically depending on story availability. She said *"... You can see at least two stories on our Facebook a week... sometimes it's more, well it depends on the disaster because we only record disasters...."* and so she published erratically as according to her she only publishes *"When the stories are available."*

Another one said that although he had been using new media and specifically You-tube to post climate related stories, he did not publish regularly because of Internet availability challenges.



He mostly relied to the TV station that he works for to actually post You-tube formats of his work. This conforms to what Ngari and Petrack (2020:1) said when they analysed the state of Internet infrastructure in Africa. They found out that “more than 60% of Africans are still disconnected from the internet, with connectivity spread unevenly across the continent. And those who can connect often still only do so through expensive, unreliable connections.” As such, in East Africa like the rest of the continent, even employed persons suffer internet inaccessibility because, as Ngari and Petrack further explain, “despite the promising advances ...today... the internet is still beyond the reach of most of the continent’s population. Mobile data is particularly expensive, with users across the continent paying, on average, the highest prices for mobile data relative to monthly income in the world. And in areas where a physical connection to the internet is possible, the cost of the data package or of the digital device needed to connect makes broadband unaffordable for most Africans.”

Finally, on the challenges one of the journalists cited time limit as the main challenge especially because she worked in a mainstream radio where she dedicated most of her energies and work hours leaving her with little time to even publish or update her social media accounts. This agrees with The African Academy of Sciences (2021) which on its website postulates that, “In Africa, as elsewhere, science stories are overwhelmed by politics, sports and business news.”

### **Common climate change stories published online by East Africa science journalists**

This investigation would be incomplete without analyses of the most commonly published globalized climate change stories that the region’s science journalists as was crafted under specific objective 3.

Following the interviews, the themes presented in *Table 1* came out as the most common climate change story themes:

Table 1

*Common climate change stories story themes*

<b>S/No.</b>	<b>Story Theme</b>	<b>No. of Informants</b>
1.	The challenges of climate change in sub-Saharan Africa	1
2.	Mitigation of climate change in Africa	1
3.	Climate change and the Blue Economy	1
4.	Deforestation and climate change	2
5.	Renewable energy	1
6.	Floods and drought	2
7.	Environmental matters e.g. soil erosion and environmental conservation	2
8.	Wildlife conservation	1
9.	Agriculture as related to climate change	1
10.	Food safety and food security	
11.	Relevant government’s policies	1
12.	Climate change education	1

Whereas these themes were global climate change topics in nature, the content communicated was glocalized by contextualizing it to the region or country of reporting. One journalist for instance said that mostly he publishes on *“how climate change is affecting food safety... how floods are affecting food security ... there are a lot of issues to do with flooding areas washing away crops and the soil erosion, so I am looking at the next trend. What are the government policies that caution these farmers to make sure that their soil is sustained? And you know, doing flip back, going back to those agricultural clubs that were teaching students how to do farrowing, how to conserve the environment... I want to see what can be done of course with the new curriculum, CBC, what can be learnt.”* This journalist is undoubtedly able to contextualize the global climate change issues to the Kenyan context, his country of residence and work, such as food security because the country suffers famine every year following floods or droughts and in this country is where the CBC curriculum that he mentioned is new in schools and there is need to ensure that awareness of environmental matters is boosted from inception of education. Indeed, the informant observed later that *“the trend is that, looking at the stories that we have been able to publish people want to hear the voices of the people who are on the ground. It doesn't matter whether ... [it's] multimedia or blog, people want to hear the stories on the ground. So there has to be a lot of investment on bloggers or people who are writing the stories in digital formats to go to the ground and get those exclusive stories.”*

One of the other main ways of glocalizing climate change information is to pass it in local languages so that target audiences can understand it more clearly and with a deeper appeal emanating from usage of their everyday vocabulary. When asked about the language of publishing, 67 percent of the journalists said they published in English (for Kenya, Uganda and South Sudan); 22 percent in Kiswahili (for Tanzania); and 11 percent in French (Rwanda, Burundi) and Kirundi (for Burundi only). However, Tanzanian journalists sometimes used English in addition to the Kiswahili. Except for Kirundi, which is the national language for Burundi, and Kiswahili which is the official and national language for Tanzania, journalists from the other four countries did not localize climate change content through use of languages indigenous to East Africa. Kenya for instance is a multi-lingual country with over 40 indigenous languages and the country has currently several with media houses adopting use of these in their audience programming content but this is yet to be adopted for digital climate change communication. As Ageyo and Muchunku (2020:11) argued, *“repackaging of climate change information into local languages and into simple, relevant and easily understood messages is what will lead to its effective adoption and use.”*

Further, the science journalists were asked the main sources of the glocalized climate change information that they published via new media platforms and their feedback included the sources as depicted in *Table 2* that follows.

Table 2

*Common climate change stories story themes*

S/No.	Information Source
1.	NGOs and environmental organisations
2.	UNESCO
3.	Internet Research
4.	Online and social media leads
5.	Official sources/government officials
6.	Grassroots communities
7.	Farmers
8.	Experts
9.	Scientists
10.	Mainstream media story lines

One of the informants illustrated some of the NGOs and environmental organisations in the Region that act as his story sources when he said that, “*I use information from UNESCO, World Wide Fund, Green Peace, International Union for Conservation of Nature and others.*” The information obtained was processed into stories using various formats including: audio formats for online radio programs, short videos and multimedia formats for social media, vlogs, websites and online TV, written posts/articles for social media, blogs and online newspapers as well as podcasts for sound cloud. Each of these had its target audience among other reasons that influenced choice of format as earlier discussed. To increase access to climate change information, content should be tailored to suite different audience types and multiple formats used to reach them for instance by translating climate change information literally into different local languages and/or repackaging using less technical language and different lengths according to the target group’s needs (Dupar et al., 2019). Also, use of diverse formats to cater for people’s varying personal preferences e.g. blogs, photo stories, vlogs, animations, podcasts, video clips and other multimedia formats increases ease of use and easy of redistribution especially in the viral social media. In other words, ensuring that content can be readily understood, applied, and distributed to the intended audience increases access.

### Conclusion and Summary

The study concluded that the most popularly used new media by East Africa’s science journalists to publish glocalised climate change information included online radio, online newspapers, social media and websites but among these the place of radio as the most preferred media in the region continues to stand. Factors including format of story, audience characteristics, media affordability and ease of accessibility informed the journalists’ choice of publishing platform for glocalised climate change information.

Secondly, the study concluded that only 50% of the East Africa science journalists regularly publish glocalised climate change information via popular new media platforms. The other 50% did not manage due to challenges ranging from lack of story sources, impending internet infrastructure, lack of prioritizing of the climate change story and due to seeing the climate change story as a news story that is published only when it’s disastrous.

Finally, the study concluded that the most commonly climate change stories by East Africa's science journalists are similar to the global themes but the journalists have tried to contextualize the story to the region especially by framing the stories in the context of the needs of the East African grassroots communities such as food security. However, there lacks recognition of the glocalizing effect that use of indigenous languages can give to the stories in terms of increasing access and understanding.

It is undeniable that the East Africa science journalists have started to tap into the emerging digital opportunities presented by new media and they have been able to glocalize the climate change story through the diverse online platforms that allow multimedia formats to be dissemination. There is commendable effort in terms of adoption of multiple online platforms and formats of publishing as well as regular publishing schedules by these journalists. However, the challenges they face need to be addressed through training and investment interventions.

### **Recommendations**

The study recommends that

- i) There is need for training to aimed at enhancing the digital prowess of East Africa science journalists so as to increase the percentage of online journalism on climate change content in the region
- ii) There is also need for training for the East Africa science journalists to improve their skills in identification of potential climate change news sources and story ideas.
- iii) There is need to train the East Africa science journalists how to frame and present the climate change story locally especially as development story rather than an ordinary news story.
- iv) Investment in the internet infrastructure so as to increase accessibility by the East Africa science journalists needs to be prioritized by government and NGOs in the region.
- v) Content analysis of the digital links used by East Africa science journalists should be done to inform other training gaps that these journalists may have.

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