Media(ted) climate change in South Africa, Nigeria, and Kenya: Reimagining the public for engagement

By

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Declaration by the Candidate

With regard to the first and second article publications included in this dissertation as Chapter Two (p. 35-57) and Chapter Three (p. 58-77) as well as the manuscripts yet to be published and included in the dissertation as Chapter Four (p. 78-107) and Chapter Five (p. 108-149), the nature and scope of my contribution were as follows:

Nature of contribution	Extent of contribution (%)
Conceptualisation	75%
methodology, data curation, software, analysis, investigation, writing original draft and final, visualisation	100%
research project administration.	90%

The following co-author have contributed to the first and second article publications included in this dissertation as Chapter Two (p. 35-57) and Chapter Three (p. 58-77) as well as the manuscripts yet to be published and included in the dissertation as Chapter Four (p. 78-107) and Chapter Five (p. 108-149):

Name	e-mail address	Nature of contribution	Extent of contribution (%)
Prof Martinus Peter de Wit		The author's contribution is in the following capacity: Conceptualisation	25%
		Supervision, validation, audit trailing, funding acquisition	100%
		Research project administration	10%

Signature of candidate: …… …

Date: ……20/07/2021……..

Declaration by co-authors

The undersigned hereby confirm that

1. the declaration above accurately reflects the nature and extent of the contributions of the candidate and the co-authors to the first and second article publications included as Chapter Two (p. 35-57) and Chapter Three (p. 58-77) as well as the manuscripts yet to be published and included as Chapter Four (p. 78-107) and Chapter Five (p. 108-149),
2. no other authors contributed to the first and second article publications included as Chapter Two (p. 35-57) and Chapter Three (p. 58-77) as well as the manuscripts yet to be published and included as Chapter Four (p. 78-107) and Chapter Five (p. 108-149), and
3. potential conflicts of interest have been revealed to all interested parties and that the necessary arrangements have been made to use the material in the first and second article publications included as Chapter Two (p. 35-57) and Chapter Three (p. 58-77) as well as the manuscripts yet to be published and included as Chapter Four (p. 78-107) and Chapter Five (p. 108-149) of this dissertation.

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Abstract

Climate change is the defining challenge of our time. The rise in global temperature observed in recent decades poses high risks to social and natural systems. It also has exacerbating effects on existing social problems such as poverty, hunger, infrastructural deficit, and human security challenges. The situation is worse for poorer communities, the majority of whom live in the Global South, including Africa, where resilience levels are low. As the global community grapples with addressing the challenge through mitigation and adaptation measures, it is suggested that climate change is an all-encompassing and cross-sectional policy issue. A whole systems approach needed requires input from all relevant stakeholders and at multiple levels. Attention has generally turned to communicative actions as conduits of generating public perception, attitudes, and support for climate policy. Consequently, (mass) media representation of climate change – media(ted) climate change communication (CCC) – has gained attention in the policy corridors and among researchers as an important space where citizens make sense of climate issues. Scholarship in the subject area provides several contributions to our understanding of the role that media play regarding sense-making about climate change and the public. This study focuses on addressing two gaps in the media(ted) CCC literature. First, although, "the public" is featured in media(ted) CCC research as a significant audience, little attention has been given to problematising it as a category of actor constellations engaged in sense-making around climate change governance. Considering that sustainability transitions require an engaged public who are negotiating, endorsing, and legitimising policy options, this study (re)directs attention to how the processes of sense-making in media(ted) CCC reveal positionalities and material realities that condition the climate change discourse. Second, our understanding of how societies in the Global South engage in sense-making around climate change through the media is limited due to a paucity of research interest in the region. In this study, a case is made for media(ted) CCC in Africa whose climate vulnerability is well established and yet has received little scholarly attention. The purpose of this qualitative case study is therefore twofold: (1) to develop an African context-relevant theoretical framework for CCC, and (2) to utilise the same in the analysis of how specific occasions of media(ted) CCC from three African countries, South Africa, Nigeria, and Kenya, (dis)enable public engagement. In the study, media(ted) CCC refers to the representation of climate change issues in six newspapers across South Africa, Nigeria, and Kenya, and public engagement as the process by which various social actors enact

subjectivities and conduct sense-making around climate change in the mediascapes. Triangulated data (comprising of relevant literature, 315 newspaper articles and 11 semi-structured interviews) were analysed employing conceptual, framing, and thematic analyses. While the conceptual exercises (in chapters two and three) tease out what constitutes a mediascape that is supportive of inclusive climate change coverage, the empirical research (in chapters four and five) describe and explain how and whether the cases examined illustrate the representation of inclusive subjectivities (diversity of actors) and the pluralities of ideas (frames diversity). The study concludes with discussions important for driving climate change governance through communicative actions.

Opsomming

Klimaatsverandering is die bepalende uitdaging van ons tyd. Die styging in die wêreld se temperatuur, wat die afgelope dekades waargeneem is, hou groot risikos vir sosiale en natuurlike stelsels in. Dit het ook 'n verergerende uitwerking op bestaande maatskaplike probleme soos armoede, honger, tekort aan infrastruktuur en menslike veiligheidsuitdagings. Vir armer gemeenskappe, waarvan die meerderheid in die Globale Suide, insluitend Afrika, woon, en waar vlakke van veerkragtigheid laag is, is die situasie hagliker. Aangesien die wêreldgemeenskap sukkel om dié uitdaging deur middel van versagtende en aanpassingsmaatreëls aan te spreek, word aan die hand gedoen dat klimaatsverandering 'n allesomvattende en oorkoepelende beleidsaangeleentheid is. 'n Nodige omvattende stelselbenadering verlang insette van alle relevante belanghebbendes, en wel op verskeie vlakke. Die aandag het oor die algemeen na mededeelsame aksies verskuif as afleistelsels om openbare persepsie, houdings en ondersteuning vir klimaatbeleid te genereer. Gevolglik het (massa) mediavoorstelling van klimaatsverandering – gemedieerde klimaatsveranderingskommunikasie (KVK) – aandag in die beleidskorridors en onder navorsers getrek as 'n belangrike ruimte waar burgers sin maak van klimaataangeleenthede. Wyer kennis van die vakgebied bied verskeie bydraes tot ons begrip van die rol wat media in die sinvolheid van klimaatsverandering en die publiek speel. Hierdie studie fokus op die aanspreek van twee leemtes in die gemedieerde literatuur. Eerstens, hoewel "die publiek" in gemedieerde KVK-navorsing as ’n beduidende gehoor aangetoon word, is daar min aandag gebied aan die problematisering daarvan as 'n kategorie van rolspelerskonstellasies wat betrokke is by die sinvolheid van die bestuur van klimaatsverandering. Aangesien volhoubare oorgange 'n betrokke publiek vereis wat beleidsopsies onderskryf, hulle wettig, en daaroor onderhandel, (her)vestig hierdie studie die aandag op hoe sinvolle prosesse in gemedieerde KVK posisionaliteite en materiële werklikhede openbaar wat die klimaatsveranderingdiskoers kondisioneer. Tweedens, ons begrip van hoe samelewings in die Globale Suide besig is om deur middel van die media sin te maak van klimaatsverandering is weens ’n gebrek aan navorsingsbelangstelling in dié gebied beperk. In hierdie studie word 'n saak - uitgemaak vir gemedieerde KVK in Afrika waarvan die klimaatkwesbaarheid goed gevestig is, maar tog min wetenskaplike aandag geniet. Die doel van hierdie kwalitatiewe gevallestudie is dus tweeledig: (1) om 'n Afrika-konteksrelevante teoretiese raamwerk vir KVK te ontwikkel, en (2) om dit toe te pas in die analise van hoe spesifieke geleenthede van gemedieerde KVK uit drie lande, Suid-

Afrika, Nigerië en Kenia, openbare betrokkenheid voorkom. In die studie verwys gemedieerde KVK na hoe aangeleenthede oor klimaatsverandering in ses koerante regoor Suid-Afrika, Nigerië en Kenia voorgestel word, en na openbare betrokkenheid as die proses waardeur verskillende maatskaplike rolspelers subjektiwiteite bepaal en sinvolheid oor klimaatsverandering in die media as geheel aanbied. Driehoekige data (bestaande uit relevante literatuur, 315 koerantartikels en 11 semi-gestruktureerde onderhoude) is geanaliseer en het konseptuele, raamwerk- en tematiese ontledings betrek. Terwyl die konseptuele oefeninge (in hoofstukke twee en drie) ontlok wat media in sy geheel behels en wat inklusiewe dekking van klimaatsverandering ondersteun, beskryf en verduidelik die empiriese navorsing (in hoofstukke vier en vyf) hoe, en of die ondersoekte gevalle, die voorstelling van inklusiewe subjektiwiteite (diversiteit van rolspelers) en die meervoudigheid van idees (raamwerkdiversiteit) uitbeeld. Die studie word met besprekings, wat van belang is vir die bestuur van klimaatsverandering, deur middel van kommunikatiewe aksies afgesluit.

Dedication

To the earth and all its fullness.

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List of Abbreviations

AJO	African Journals Online
AR1	Sixth Assessment Report
AR6	Fifth Assessment Report
ARF	African (Afro)-relational framework
AU	African Union
CAQDAS	Computer-aided qualitative data analysis software
CCC	Climate change communication
CCG	Climate change governance
CCR	Climate Risk Index
CH_4	Methane
CIGI	The Centre for International Governance Innovation
CO_2	Carbon dioxide
COMPON	Comparing Climate Change Policy Networks
CoP	Conditions of practice
COP	Conference of Parties
CRI	Climate Risk Index
GEM	Graduate Economic and Management
GHGs	Greenhouse gases
GMT	Global mean temperature
INDCs	Intended Nationally Determined Contributions
IPCC	International Panel on Climate Change
M&G	*Mail and Guardian*
N_2O	Nitrous oxide
NFCCC	United Nations Framework Convention on Climate Change
PRISMA-P	Preferred reporting items for systematic review and meta-analysis protocols
REC: SBER	Research Ethics Committee: Social, Behavioural and Education Research
SABC	South African Broadcasting Corporation
SAJ	Sabinet African Journal
SDGs	Sustainable Development Goals
UK	United Kingdom
UN	United Nations
UNEP	United Nations Environment Programme

USA	United States of America
USA	United States of America
WMO	World Meteorological Organisation
WoS	Web of Science

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1 Chapter One: Setting the scene

1.1 Background

The overwhelming acknowledgement that the global climate is changing with heightened risks for social and ecological systems remains a priority concern requiring public engagement across societies (Capstick, Whitmarsh, Poortinga, Pidgeon & Upham, 2015; IPCC, 2018). Climate scientists use changes in global mean temperature (GMT) to gauge the severity of climate change. Over the years the language of the scientific community concerning changes in the GMT as well as the associated risks and attribution of blame, and allocation of responsibility, has become firmer since the First Assessment Report (AR1) of the International Panel on Climate Change (IPCC) in 1990. The Sixth Assessment Report (AR6) concluded unequivocally that "Human influence has warmed the climate at a rate that is unprecedented in at least the last 2000 years" (IPCC, 2021:6). Human activities relating to the cultivation, manufacturing, extraction, and general expropriation of several of the earth's resources have strong links with the three most important greenhouse gases (GHGs) identified as drivers of climate change: carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) (WMO, 2018).

Recent findings from the World Meteorological Organisation (WMO, 2018) based on global observations show that the atmospheric concentration of these gases reached new highs in 2017 from the pre-industrial level (1850-1900). Of particular interest is human-induced CO_2 emissions which IPCC (2021) asserts has "a near-linear relationship…[with] global warming" where 100 GtCO2 emissions is likely to cause between "0.27oC to 0.63oC increase in global surface temperature" (IPCC, 2021:36). It is instructive to note that the increased GHG emissions parallels global demand and energy use since the dawn of the industrial age (Bulut & Yildiz, 2016). Between 1750 and 2000, the world's energy per capita consumption increased by 4000%, from 3500 kwh for the base year (for a population of 791 million people) to about 17,000 kwh (for a population of 6.52 billion in 2000) (Akizu, Urkidi, Bueno, Lago, Barcena, *et al.*, 2017:18046). This phenomenon highlights the relationship between population growth, economic expansion and energy demand on the one hand, and climate change on the other hand (Bulut & Yildiz, 2016). Energy is required to power industrial developments and is an essential input for agriculture, transportation, and other sectors of many national economies. Historically, global energy system has relied heavily on fossil fuel use which thus explains the

upward growth of CO2 emissions in the recent times (Oluoch, Lal, Susaeta & Vedwan, 2020; Pandey & Sharma, 2021). Following this clarification of the human contribution to the changes in GMT, the discussion about climate change communication (CCC) undertaken in this study relates to sense-making efforts around human-induced or anthropogenic climate change (henceforth just 'climate change') through mass media communication.

Manifestations from the changing climate have increased at an alarming rate in recent times. Several land regions and seasons are experiencing warming greater than the global annual average with climate and weather extremes becoming more intense and frequent (IPCC, 2018, 2021; Russo, Sillmann, Fischer, King, Karoly, *et al.*, 2018). Although the science by which individual extreme weather events can be linked to human-induced climate change is still evolving (Otto, 2020), a recent survey of the field shows some reason to be concerned. A study that analysed more than 170 published research documents covering 190 extreme weather events around the globe linked about two thirds of them to climate change (Schiermeier, 2018). The events manifested as heatwaves, intense droughts in west and north-eastern Asia, many parts of South America and much of Africa, and increasingly intense precipitation events across the world (IPCC, 2020). Extreme weather events have negative effects on health and productivity[1] (Zaitchik, 2017), but also place stress on other human and natural systems (Patz, Frumkin, Holloway, Vimont & Haines, 2014), contributing to biodiversity loss, food insecurity (Rahut, Aryal & Marenya, 2021), human insecurity (Sedova, Schewe, Pohl, König, Detges, *et al.*, 2020) and infrastructural challenges (IPCC, 2018).

The global social cost of climate change already shows a high impact (IPCC, 2020). Between 2000 and 2019, for instance, the Climate Risk Index (CRI) 2021 report shows that across the globe more than 475 000 deaths and losses amounting to US$ 2.56 trillion (in purchasing power parity) were directly linked to over 11 000 extreme weather events (Eckstein, Künzel & Schäfer, 2021). Of the ten most affected countries in 2019, Mozambique[2] (1), Zimbabwe (2) and Malawi (5) are in Africa. The three countries were hit by tropical cyclone Idai, recorded as "the deadliest and costliest tropical cyclone in the South-West Indian Ocean" (Eckstein *et al.*, 2021:8). In Zimbabwe alone, 340 lives were lost, and an additional 270 000 persons were

[1] The link between vector-borne, zoonotic, and waterborne diseases and extreme weather events is one pathway in which climate change exerts influence on health. Malaria for example, is known to be sensitive to climate conditions and with increased climate variability, there is a projection that regions that are traditionally less prone to the disease may become more susceptible to it (Zaitchik, 2017).

[2] Mozambique suffered two cyclone impacts in 2019. In addition to Cyclone Idai, a category 4 cyclone named Kenneth made landfall and caused serious damage to life, homes, infrastructures and farms (Eckstein *et al.*, 2021).

gravely affected. The overall economic worth of the damage caused by Cyclone Idai was put at US$2.2 billion. The impact of the two cyclone was made worse particularly by the vulnerabilities of affected communities indicating that impact of climate change is felt most intensely by the poorest[3]. For instance, Rahut *et al.* (2021:4) showed that Mozambique's vulnerability was particularly made worse by the country's "lower per-capita and higher percentage of the population in poverty".

As many African countries are among the world's poorest, their vulnerability to climate variabilities of extreme nature relative to world's wealthiest is high (Harrington, Frame, Fischer, Hawkins, Joshi, *et al.*, 2016; Wright, Kapwata, du Preez, Wernecke, Garland, *et al.*, 2021). Low community resilience and governance capabilities have aggravating effects on the ability of societies to respond adequately to climate risks (Busby, Smith & Krishnan, 2014). Most African countries face monumental development challenges, according to findings from a 2016 Spring Pew Survey which included South Africa, Nigeria, and Kenya. Respondents from these nations reported that their "very big problems" include poor quality schools, poor health care, income inequality, lack of access to clean toilets and drinking water, food shortages, poverty, poor infrastructure (e.g. roads and bridges), pollution and other forms of environmental damage, in addition to governance challenges such as corruption (Pew Research Center, 2016). This basket of problems is suggestive of the peculiar challenges Africa faces, with climate change posing a further threat.

Against this backdrop, it is crucial to probe how citizens mobilise for climate change in Africa. Despite the wide acknowledgement of and growing concern about climate change, it remains a challenge to generate strong support for transformative climate actions across all levels of society. At the international level, one response to the heightened risk associated with climate change is the United Nations (UN) Paris Agreement of 2015, which commits nations to hold "the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5^{o}C above pre-industrial levels" (Pfleidere, Schleussner, Mengel & Rogelj, 2018:2). This temperature goal requires "unprecedented" levels of system changes for governments and their citizens both in terms of

[3] As Chapungu (2020) documented, the communities affected by the southern African cyclones were mostly rural dwellers with poor infrastructures such as "pole and *dagga* houses" that had very little chances of surviving disaster impacts. Also, several of the survivors narrated how they were ill-prepared for the disaster largely due to poor early warning systems at the grassroot. These phenomena highlight poorer communities' level of resilience to extreme weather hazards.

scale and pace (Painter, 2019). The urgently required changes would affect energy, infrastructure, land, industrial systems, and the ways of living as many know. It is also highlighted that the forms of governance required for the transformation go beyond the traditional state-centric approach reminiscent of conventional international politics. The argument is that processes which produces GHG emissions are embedded in local sites where citizens and sub-national actors enjoy much control (Betsill & Bulkeley, 2006). Also, as climate change is an all-encompassing and cross-sectional policy issue, Painter (2019) suggests that what is needed is "a 'whole systems' approach" requiring action from all relevant stakeholders. The approach calls for involvement, cooperation and coordination across sectors and social segments to address climate change problems.

Attention has generally turned to communicative actions as conduits for generating *public engagement* (Carvalho, Van Wessel & Maeseele, 2017). As Splichal (2018:2) argues, "Publicness refers to a specific 'mode of relationship among people' based on visibility and access, which is essential for the processes of collective self-understanding and constitutive to democratic societies". It is in this public space of relationships that the understanding of social risks is problematised, and alternative solutions are discussed to pave the way for addressing them. Communicating climate change concern through mass media is considered an important channel in this regard (McCright, Charters, Dentzman & Dietz, 2016). It raises public awareness and support for addressing climate change challenges (Ding, Maibach, Zhao, Roser-Renouf & Leiserowitz, 2011; Dong, Hu & Zhu, 2018; Feldman, Hart, Leiserowitz, Maibach & Roser-Renouf, 2017; Hamilton, 2016). While the importance of communication is highlighted in many studies (Ballantyne, 2016; Carmichael & Brulle, 2017; Martins, Weaver & Lynch, 2018; Thaker, Zhao & Leiserowitz, 2017); however, not enough has been done to unravel the dynamics of communication as a conduit for getting people politically connected to the challenges of climate change in various societies (Carvalho *et al.*, 2017).

Several researchers investigating the public disconnect from climate change issues from a media communication perspective often suggest that this is a knowledge gap problem, indicating that people are not getting adequate or "correct" messages, an understanding broadly shared among "climate scientists, environmental activists, environmental/science journalist, and sympathetic policy makers" (Carvalho *et al.*, 2017; McCright *et al.*, 2016:76). As such, CCC research focusing on the media has tended towards analysing depth of coverage (Dotson, Jacobson, Kaid & Carlton, 2012; Nwabueze & Egbra, 2016), issue attention (Liu, Lindquist &

Vedlitz, 2011; Saunders, Grasso & Hedges, 2018) and frame analysis (Lakoff, 2010; Molek-Kozakowska, 2017) with the intention to identify the fault lines in the agenda setting or framing effect of media discourse.

These contributions, as significant as they are, implicitly or otherwise, assume the alleged persuasive power of communication and framing on the public (Carvalho *et al.*, 2017). But the disconnect between growing media concern on climate change across many societies (Schäfer & Schlichting, 2014) and the lack of corresponding or sufficient public engagement with the issues (Carvalho *et al*, 2017) demands that we reconsider this assumption and interrogate our understanding of communication as a concept. Could the gap be a case of what Habermas (2009:153) described as "an inflation in political communication" but with contents giving rise to "a communicative liquefaction of politics"? In other words, it is argued here that while we have increasingly seen a rise in media attention to climate change, it may be the case that the forms of communicative actions have done little to accommodate the necessary politics – the engagement of the people in the communication processes.

The separation of the politics or sense of engagement from the communicative action required can be likened to what Baxter (2017) termed "reification", a process by which the communicatively structured life-word is increasingly captured by the economic and administrative systems. Carvalho *et al.* (2017) and Pepermans and Maeseele (2014:2018) have articulated how such a process tends to conceal or fail to acknowledge "the political" in CCC. The process constrains people to playing a passive role instead of actively articulating and influencing the creation of options for alternative futures. Kunelius and Eide's (2012) work regarding the impact of the "field of climate politics" on the coverage of international climate summits is an example in this respect. They argue that the events present a space where the kind of power often associated with economies of scale (and of technology) influences global discourse. They further submit that communicative spaces often simply mirror the political arena, so that during climate summits journalists struggle to "identify communities of interest not congruent with national border" politics, such as civil society actors (Kunelius & Eide, 2012: 277). Within this tension, voices outside the politically privileged arena suffer from lack of representation and engagement in CCC.

Meribe's (2017) paper on *The political economy of climate change reporting in Nigeria* is insightful regarding the effect of structural factors in the shaping of CCC. The study interrogates how the economic interests of stakeholders in the media (owners, editors, and

reporters) within a fragile business environment prone to corruption affects media coverage of climate change. While Meribe (2017) did not specify how such a structure affects the availability of "spaces where alternatives can be asserted" (Carvalho *et al.*, 2017:132), the conclusion the author draws on pecuniary interests in media production has far-reaching impacts on the nature of claims-makers and claims representation in the media[4]. bound

The present study builds on the burgeoning literature that draws attention to the interactional aspects and the power-based relationships as well as social identities that define the (re)production, negotiation, and bounding of meaning around climate change in the media (Carvalho *et al.*, 2017; Comfort, Tandoc & Gruszczynski, 2020; Dotson *et al.*, 2012; Freeman, 2017; Khuhro, Adnan, Khan & Asghar, 2020; Mercado-Sáez, Marco-Crespo & Álvarez-Villa, 2019; Parks, 2020; Wagner & Payne, 2017; Watts & Maddison, 2014). These works focus, in varying ways, on the nature of the "[s]ocial actors available to the media […] as *Primary definers* [emphasis in original]*"* in climate change discourse (Antilla, 2005:344). Also identified as claims-makers or sources (Comfort *et al.*, 2020), the actors actively negotiate space in the media to exert an influence on the nature of meaning created around climate change. The research agenda focusing on "the political" undertaken in the present study has two related aspects: (1) an interest in the nature of subjectivities or social relations; (2) and a focus on the ideas, perspectives or claims discursively constructed in media(ted) CCC – i.e., the media representation of climate change.

1.2 Problem statement

While the public does feature in mediated CCC research as a significant audience, scholarship interest remains largely at the broader level (Carvalho, 2010; Carvalho *et al.*, 2017). Relatively, little attention has been devoted to problematising the public as involving categories of actor constellations engaged in sense-making around climate change governance (CCG). This gap ignores the understanding that sustainability transitions require an engaged public, negotiating, endorsing, and legitimising policy options.

This study joins recent attempts to redirect attention to the network of actors underpinning mediated discourse on climate change. The objective inverts the notion that "transition studies

[4] For example, the author's argument that media editors in Nigeria privilege stories that attract revenue over climate change can lead to the question about whether such institutional disposition correlates with how various social actors' interests are represented when climate change stories are covered.

have often focussed on the technological or institutional levels, paying relatively little attention to the fact that changes in policies and politics are essential preconditions of most socio-technical transitions" (Ylä-Anttila, Gronow, Stoddart, Broadbent, Schneider, *et al.*, 2018:2). Importantly, as more research examines the processes by which "meanings are constructed and negotiated across space, place and at various scales" in the media, there is a need to pay more attention to the ways that the processes reveal positionalities and material realities that condition the climate change discourse (Goodman, Littler, Brockington & Boykoff, 2016:678). Specifically, this study takes seriously the concern that few studies have focused on the *diversity* of claims-makers (social actors) and claims (frames) representations in the media (Neff, 2020).

In the African contexts, the combined interest in actor-frame representation in media(ted) CCC is sketchy, even as the level of climate vulnerability for the region and the need to mobilise the public for transformative actions (mitigation and adaptation) remain important (see Eise, Lambert, Adekunle, Eversole, Eise, *et al.*, 2020; Schäfer & O'Neill, 2017; Schäfer & Painter, 2020). Also, the Global Southern perspective and particularly African theoretical insights are largely absent in the media(ted) CCC literature. Especially in Africa where a *relational* perspective on personhood and community drives the dominant worldviews (Eze, 2008; Metz, 2017a, 2018, 2020; Okoliko, 2018; Tavernaro-Haidarian, 2017), not enough has been done to explore how a relational theoretical lens can contribute to our understanding of the ways in which the media structure the engagement of various publics in climate change discourse.

1.3 Purpose statement

The purpose of this qualitative (multi-site) case study is twofold: (1) to develop an African context-relevant theoretical framework for CCC, and (2) to apply the same in the analysis of how specific occasions of media(ted) CCC from three African countries – South Africa, Nigeria, and Kenya – (dis)enable public engagement. Media(ted) CCC in this study refers to the representation of climate change issues in selected newspapers across South Africa, Nigeria, and Kenya.

Following the suggestion by Carvalho *et al.* (2017:122) "that communication practices not only help create the conditions for political engagement but they also comprise the modes of such engagement", public engagement in the present study refers to how various social actors enact subjectivities and conduct sense-making around climate change in the media space. The study

undertakes to establish whether and how the cases examined demonstrate the representation of inclusive subjectivities (actor or claims-makers diversity) and pluralities of ideas (frames diversity), and to explain factors that constrain or facilitate such inclusivity regarding the coverage of climate change.

1.4 Research objectives and questions

The general objective of this research is to provide an understanding of how media(ted) CCC in three African countries (South Africa, Nigeria, and Kenya) (dis)enable public engagement. The objective is pursued under four sub-objectives listed below. Each objective has corresponding research question(s) that guide the design and conduct of sub-studies which are presented in this dissertation as separate but interlinked research articles.

1.4.1 Objective I

The article presented in chapter 2 of this dissertation aims to systematically review and describe the extent of growth and diversity, theoretical and analytical commitments, and the use of African perspectives in the body of literature that empirically examined media(ted) CCC in Africa.

Q1: To what extent is there growth and diversity in the media(ted) CCC research field within the African context?

Q2: What theoretical assumptions are found in the field, and do they have African epistemic attributes?

The study (Okoliko & de Wit, 2020) is published in *African Journalism Studies* (see Appendix 1).

1.4.2 Objective II

The article presented in Chapter 3 of this dissertation aims to develop a conceptual framework for understanding CCC that draws and reflects on African worldviews and lifeworld.

Q3: What assumptions about sociality and understanding of the concept of personhood underpin the conventional practice of CCC in Africa?

Q4: How might reflecting on the concept of "person-community relations" shape the understanding of (mediated) CCC to enhance public engagement in Africa?

The study (Okoliko & de Wit, 2021) is published in *Journal of Media Ethics* (see Appendix 2)

1.4.3 Objective III

The article presented in Chapter 4 aims to analyse subject and ideational plurality in the way that the news media in South Africa, Nigeria, and Kenya cover climate change.

Q5: How are subject and ideational plurality discursively constituted in the media representation of climate change in South Africa, Nigeria, and Kenya?

Q6: Are there differences between the media of the same country and across countries?

The manuscript for the sub-study is under review with *Geoforum* (seeAppendix 3).

1.4.4 Objective IV

The sub-study presented in Chapter Five aims to explore how role orientation, norm application, routines, and the working conditions of journalists in three African countries – South Africa, Nigeria, and Kenya – affect inclusive coverage of climate change.

Q7: How do the African journalists' role orientation, norm application, routines and working conditions influence frame-building for inclusive climate change?

The manuscript presented for this sub-study will be prepared for journal submission in the coming days.

1.5 Study rationale and scope

1.5.1 The focus on the African context

The broad site of investigation is Africa. The interest in the African context is driven by two rationales: the vulnerability status of the region and the conspicuous neglect of the region in global research focusing on mediated CCC. Vulnerability is here understood as a function of exposure and sensitivity to climate change, and the ability to adapt (van Rensburg, 2016).

1.5.1.1 Africa and climate change impacts

Africa is regarded as highly vulnerable to climate variability but with low resilience levels (Ahmadalipour, Moradkhani, Castelletti & Magliocca, 2019; IPCC, 2018). Resilience as used by IPCC refers to:

> The capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation (IPCC, 2014a:5).

A low resilient system is one which struggles to cope, adapt, transform and function when exposed to perturbation and uncertainty (Demiroz & Haase, 2019). Even under 1.5^{o}C global warming, "exceptional" heatwaves are expected in many Africa regions with increased frequency and intensity (Diedhiou, Bichet, Wartenburger, Seneviratne, Rowell, *et al.*, 2017; Harrington, L Otto, Dosio, Mentaschi, Fischer, *et al.*, 2018; Russo *et al.*, 2018). Also, many communities in the region are confronted with heightened drought risks (Ahmadalipour *et al.*, 2019), reduced freshwater availability (Muller, Waha, Bondeau & Heinke, 2014) and flooding such as the occurrence of tropical storms in the Southern Africa region (Eckstein *et al.*, 2021; Rapolaki & Reason, 2018). In South Africa, for example, changing rainfall patterns causing extreme droughts have exacerbated water scarcity (Adam, 2020). The recent threat of "Day Zero" in which water supply systems nearly ran dry in the Western Cape Province of the country following a three-year drought leading up to 2018 particularly spotlighted how climate impacts can challenge city management in the Global South. The City of Cape Town was forced to take extreme water-rationing measures to avoid a day when taps would stop providing water for households. Figure 1.1 below provide an example of guidelines from the City's managers that limited water usage by residents to under 50 litters per a day.

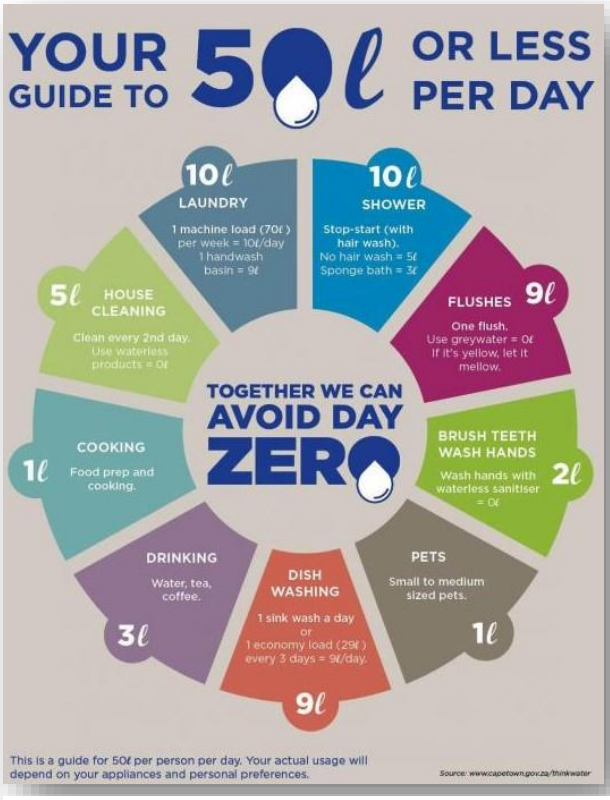

Figure 1.1. A campaign poster from Cape Town's City authority on avoiding Day Zero.

source: Kassirer (2020).

Furthermore, occurrence of climate stressors poses significant challenges to Africa's growing population. By 2050, "almost 1 in 4 people" in the world will come from Sub-Saharan Africa (Suzuki, 2018). Many of these people will be sustained by economic activities which depend largely on the performance of sectors such as agriculture, forestry, energy, tourism, coastal and water resources, which are highly susceptible to the impacts of climate change (Abidoye & Odusola, 2015; Owusu, Ma, Emuah & Renwick, 2021). This raises concerns about how the region can meet development goals such as those enumerated under UN (United Nations) Sustainable Development Goals (SDGs): ending poverty, zero hunger, achieving good health and well-being, clean water, and sanitation, etc. The rural communities and their livelihoods are particularly vulnerable to climate change impacts. They accommodate the largest share of the poor and practise rain-fed agriculture (Dendir & Simane, 2021; Molua, Benhin, Kabubo-Mariara, Ouedraogo, Molua, *et al.*, 2010).

Given the intricate link between land, agriculture, nutrition and climate change, climate variabilities have dire consequences for lives and livelihoods in many African communities

(Fanzo, Davis, Mclaren & Choufani, 2018). A study which examined 2018 data on household farming in Ethiopia, Kenya, Malawi, and Mozambique, for instance, concluded that farmers across these countries mentioned "droughts, floods, hailstorms, and crop pests and diseases" as "the most common climate threats" to their livelihood (Rahut *et al.*, 2021:1). Studies examining farmers' perceptions of climate impacts across various African countries report decreased agricultural output (Asante, Guodaar & Arimiyaw, 2021), water insecurity (Steynor & Pasquini, 2019), crop failure and lower crop quality (Talanow, Topp, Loos & Martín-López, 2021), and reduced income (Ojo & Baiyegunhi, 2021). These bodies of evidence suggest that existing food crises on the continent can worsen as more severe climate impacts are expected and this can push back efforts to end poverty and hunger. Already, there is fear that some of the SDGs attained on the continent are being reversed as climate impacts worsen under weak adaptive systems (Fanzo *et al.*, 2018).

1.5.1.2 Public understanding, attitude, and support for climate change in Africa

The limited studies examining public understanding and attitude about climate change as well as the willingness to prioritise and/or support climate policy show a worrisome trend in Africa. Following the global trend, there is a growing awareness about climate change in many African societies (Bakuwa, 2015), but this awareness is highly circumscribed around sensory evidence of local climate variability. A large set of studies investigating farmers' perceptions of climate events documents sensory evidence related to the increased occurrence of erratic weather, droughts, flooding, high temperature, heat stress, storm, frost, fluctuation in seasons' onset, environmental degradation and drying water bodies in Malawi (Bakuwa, 2015), Ghana (Asante *et al.*, 2021), Ethiopia (Dendir & Simane, 2021), Nigeria (Liverpool-Tasie, Pummel, Tambo, Olabisi & Osuntade, 2020; Ojo & Baiyegunhi, 2021), Kenya (Nyang'au, Mohamed, Mango, Makate & Wangeci, 2021) and South Africa (Talanow *et al.*, 2021). Furthermore, there is evidence of observed changes of marine habitats by managers of protected marine areas in West Africa, including beaches and mangroves (Failler *et al.*, 2020; Failler *et al.*, 2020). Given this personal experience of climate change, Steynor and Pasquini (2019:5:8) argue that compared to developed countries, climate change is "reasonably psychologically close in Africa" as a "current and imminent threat".

Beyond the awareness of experienced climate events, however, citizens have a poor understanding about the responsibility pathways and are therefore constrained in their

mitigation and adaptation options. An Afrobarometer survey report[5] which distinguishes African "climate change aware" (populations that have heard about climate change) from "climate change literate" (populations that understand both the human role in causation as well as the negative effects of climate change) is telling. The Pan-African report indicates that on average across 33 countries of Africa, while about "58% of citizens have heard of climate change" only about 28% of them can be considered climate change literate (Selormey, Dome, Osse & Logan, 2019:15). Similarly, Liverpool-Tasie *et al.* (2020), who examined actors along the agricultural value chain and their understanding of climate change, corroborate the Afrobarometer findings. Only a few of the actors believe activities in their sector can affect the environment negatively or contribute to climate change.

Also, in terms of public attitudes to climate policies, it is reported that climate change does not feature "highly on priority lists of most African governments" (Nkhonjera, 2017:19). It is not better with citizens either. Examining voters' behaviour relative to whether a political candidate or party support climate policy or not in Southern Africa, Obradovich and Zimmerman (2016) show that support for climate action can actually lead to electoral loss for a candidate. Other concerns hamper climate change actions for many citizens and leaders (Lenzholzer, Carsjens, Brown, Tavares, Vanos, *et al.*, 2020). For instance, a qualitative study which examined audience perceptions about climate change among semi-urban dwellers in South Africa concluded that relative to other cultural and social priorities, people "have a vague understanding of the science and its relevance to them" (van Rensburg, 2016:1). With such low awareness levels, it is no surprise that many communities in Africa struggle to adjust to the changing climate (Williams, Máñez Costa, Celliers, Sutherland, Williams, *et al.*, 2018).

1.5.2 Media use and climate change

Media use, among other things, is acknowledged in both the academic and policy circles as an important factor in creating public perceptions, attitudes, and support for climate policy (Antilla, 2005; Carvalho *et al.*, 2017). Many in various societies access and engage with information on climate change through the mass media – "the means of communication [e.g., newspapers, TV, radio, online multimedia] that distribute content such as text, pictures, and sound to anonymous and spatially diverse public via technical means" (Schäfer, 2015:853).

[5] The report relied on data derived from 45,823 interviews conducted across 34 African countries between September 2016 and September 2018. For details, see Selormey *et al.* (2019).

Albeit with other moderating factors such as ideological and cultural orientation, religiosity, worldviews, and personal experience of climate events (Drews & Bergh, 2016), media use is positively related to public perception (Ruiz, Faria & Neumann, 2020) and policy support for climate change (Drews & Bergh, 2016) or its perceived efficacy and importance (Hart & Feldman, 2016).

Consequently, several empirical studies have shown that media exposure (individual use of media, including traditional and new media, to access climate change information) significantly explains climate awareness in Singapore (Liao, Ho & Yang, 2016; Yang, Chen & Ho, 2020), public concern in Japan (Sampei & Aoyagi-Usui, 2009a), policy support in Australia (Akter & Bennett, 2011) and China (Gong, Zhang, Zhang, Cheng, Wang, *et al.*, 2020; Wang, 2017), and pro-environmental behaviour in Taiwan (Huang, 2016). The moderating role of the media is hinged on the belief that access to "information increases individual and collective climate action by improving perceived risks of climate change to personal lives" (Dong *et al.*, 2018:410). Others have shown that the extent to which the media is able to perform this role depend on whether a particular media uses trusted or "credible" sources and cover climate change accurately (Dong *et al.*, 2018; Malka, Krosnick & Langer, 2009; Thaker *et al.*, 2017), and personalise stories about climate events (Wald, Johnston, Wellman, Harlow & Wald, 2021). Also, the nature of the individual media diet (Nisbet, Cooper & Ellithorpe, 2015; Porten-Cheé & Eilders, 2015) as well as media ideological leaning (McCright *et al.*, 2016) and other demographic factors such as education and gender of media users (Baumer, Polletta, Pierski & Gay, 2017) are considered as important elements to consider for media effect regarding CCC.

In Africa, the available literature emphasises the importance of media exposure and climate change awareness (Bakuwa, 2015; Elum, Modise & Marr, 2017; Selormey *et al.*, 2019; Siyao, 2021). Table 1.1 (see below) presents a synthesis of survey results in selected literature for Africa. In the three studies participants were asked to name sources where they get information about climate change-related issues (e.g., in the case of Kenya, renewable energy). The Afrobarometer report (Selormey *et al.*, 2019) focused solely on media sources, hence it indicates the relative importance of the five different media types. Accordingly, respondents who access news from the internet, social media and newspapers "are substantially more likely to have heard of climate change than those" who use the television and radio (Selormey *et al.*, 2019:10). In contrast, radio (also in Kenya) and television appear as the dominant sources of climate change information in Bakuwa (2015), while Oluoch *et al.* (2020) also show significant

appreciation of newspapers as an important source. The difference in the outcomes may be explained by the differences in the data collection methods applied. Oluoch *et al.* (2020) focused on the peri-urban respondents, Bakuwa (2015) on both urban and rural, but no information is provided for Afrobarometer. Nevertheless, the surveys highlight the importance of the media as sources of climate change information in Africa. Even where non-media sources such as family and friends were counted as significant sources of climate information, Bakuwa (2015) indicates that media sources enjoy more credibility and trust, and respondents who use them were more likely to form an accurate understanding of climate change.

Table 1.1. Sources of information about climate change

Media	**Frequency (%)**		
	Pan-African, N = 45,823	**Malawi, N = 1030**	**Kenya, N = 1086**
Internet	74	6.5	45
Social media	72	–	–
Newspapers	72	9.7	62.5
Television	65	9.9	58
Radio	64	24.0	68.5

Sources: Pan-African (33 countries) (Selormey *et al.*, 2019), Malawi (Bakuwa, 2015), Kenya (Oluoch *et al.*, 2020).

Note: For Malawi and Kenya, only data on media are presented. Other sources in the studies include word of mouth/family/friends, church/mosques, educational institutions, agricultural extension workers and others.

Given the importance of the media as sources of climate change information, and the corollaries of climate awareness, understanding, attitudes and policy support, it is important to understand how the media (re)present the issues and engage various publics in Africa.

1.5.3 Media framing of climate change: The "what", "who" and "why"

1.5.3.1 Trends in the field

The field of CCC research has grown exponentially since its emergence in the 1990s, the same time when climate change became a major public issue (Gkiouzepas & Botetzagias, 2017; Schäfer & Schlichting, 2014). In turn, extensive works reviewing the field document the plurality of theoretical commitments, research agendas, methods and interests in the various modes of communications through which the public discourse on climate change is mediated (Agin & Karlsson, 2021; Akerlof, Bromser-Kloeden, Timm, Rowan, Olds, *et al.*, 2021; Anderson, 2017; Ballantyne, 2016; Boykoff & Luedecke, 2016; Comfort & Park, 2018; Doyle,

Farrell & Goodman, 2017; Eise *et al.*, 2020; Filho, 2019; Okoliko & de Wit, 2020; Olausson & Berglez, 2014a; Pearce, Brown, Nerlich & Koteyko, 2015; Sakellari, 2015; Schäfer, Berglez, Wessler, Eide, Nerlich, *et al.*, 2016; Schäfer, 2012, 2015; Schäfer & Painter, 2020; Wihbey, Ward, Wihbey & Ward, 2016). There is an acknowledgement that the field attracts scholars from multiple disciplines – from media and cultural studies, sociology, anthropology, political science, psychology, geography to development studies (Schäfer, 2012; Schäfer & Schlichting, 2014). Given that climate change is an issue that is cross-sectional with a need for trans- and interdisciplinary perspectives, these developments are pointing in the right direction (Smith & Lindenfeld, 2014).

However, the role of mass media and journalism for communicating climate change remains the top research interest in CCC (Akerlof *et al.*, 2021). This trend follows the critical role that the media play in shaping public perception and influencing policy process as earlier discussed (see section 1.5.2). Two broad research agendas can be observed within the scope of media(ted) CCC research: A focus on the salience of climate change across geography/time, and the character of the reporting in the media (Gkiouzepas & Botetzagias, 2017). The salience studies respond to the question: *How much* attention is given to climate change issues by a particular media or across cases? (Schmidt, Ivanova & Schäfer, 2013; Tagbo, 2010).

1.5.3.2 Salience studies

Several studies have examined coverage patterns across different media types and contexts. Examples of single-country case examinations include the United Kingdom (UK) (Saunders *et al.*, 2018), Canada (Stoddart, Haluza-DeLay & Tindall, 2016), Poland (Kundzewicz, Painter & Kundzewicz, 2019), Mexico (Pulver & Sainz-Santamaría, 2018), Russia (Boussalis, Coan & Poberezhskaya, 2016), Chile (Dotson *et al.*, 2012), and Kenya (Siyao & Sife, 2020). These attempts have been complemented by a burgeoning literature that compares coverage trends across countries (Painter, Kristiansen & Schäfer, 2018; Schmidt *et al.*, 2013; Su & Hu, 2021). Examples include comparison of media coverage of climate change between the top two greenhouse gas emitters (USA and China) (Su & Hu, 2021) and large country cases (27 countries) (Schmidt *et al.*, 2013). Also, new media, including Twitter (Kirilenko, Molodtsova & Stepchenkova, 2015; Kirilenko & Stepchenkova, 2014; Veltri & Atanasova, 2017), Facebook (Bloomfield & Tillery, 2019), YouTube (Shapiro & Park, 2015), as well as analysis across the various online media (Facebook, Twitter, news sites, Google Images) (Olteanu, Castillo, Diakopoulos & Aberer, 2015; Ross, Rivers & Ross, 2019), and online platforms

(Olteanu *et al.*, 2015) have come under increased scholarly attention. This diversity indicates a maturity of the field and highlights the expanding frontiers of research.

A common theme in the salience literature attest to increasing media attention to climate change in several societies with observable peaks and troughs, as well as country differences (Stoddart *et al.*, 2016). The rise in global media attention to climate change was observed between the 1990s and 2000s (Schmidt *et al.*, 2013) and the increase in attention is associated with the belief that journalism is largely responsible for a steep rise in public awareness about climate change in recent decades (Mcilwaine, 2013). There is also evidence that the increasing media coverage also coincides with an increase in climate and crisis co-occurrences (Parks, 2020), and with the association of weather anomalies and climate change discussions in the media (Kirilenko *et al.*, 2015). Media attention in several of the developing countries, including those often identified as most vulnerable to climate variability has, however, lagged compared to the global trend. For example, Siyao and Sife's (2020:2) analysis of newspaper coverage of climate change in Tanzania concluded that the issue did not receive the "necessary level of prominence".

The theoretical underpinnings for salience studies can be clustered under agenda-setting. The theory seeks to provide explanations for the drivers of attention (Brossard, Shanahan & McComas, 2004; Liu *et al.*, 2011; McComas & Shanahan, 1991; Saunders *et al.*, 2018; Young & Dugas, 2011). To this end, analyses identify "news prompts" (Saunders *et al.*, 2018) or "attention-grabbing factors" (Liu *et al.*, 2011) as "problem indicators" (e.g. rising greenhouse gas emissions, precipitation patterns, rising sea levels and other meteorological events); focusing events (e.g. high-level climate events such as the annual Conference of Parties meetings); and "feedback" (e.g. scientific publications, civil society events, and government reports) (Liu *et al.*, 2011; Saunders *et al.*, 2018; Schäfer, Ivanova & Schmidt, 2014; Schmidt *et al.*, 2013). For instance, the peaks in global media attention around 2006 to 2007 are explained by media responses to the Bali United Nations Framework on Climate Change (UNFCC) Conference of Parties (COP 13), as well as to the release of the IPCC's Fourth Assessment Report, and the award of the 2007 Nobel Peace Prize to the IPCC and Al Gore (Schmidt *et al.*, 2013). In Tanzania, severe drought in the same period was noted as a domestic driver of media attention (Siyao & Sife, 2020). However, there is a concern that international news wires (largely domiciled in the industrialised countries) also set the agenda for coverage by developing countries whose media tend to rely on foreign contents (Takahashi & Meisner,

2012). For instance, the analysis of newspaper coverage between 2007 and 2009 by Batta, Ashong and Bashir (2013) indicated that 63.4% of news items on climate change were foreign-sourced. The phenomenon has been shown to explain why media coverage in developing nations is slanted towards mitigation and international politics, with little attention devoted to adaptation issues (Batta *et al.*, 2013; Gordon, Deines & Havice, 2010).

A critical point to note is that agenda-setting studies assume a direct link between increased media coverage and an increased public salience of climate change as a policy issue. This is the case of what Cacciatore, Scheufele and Iyengar (2016) argue that the "media tell people what to think about based on issues being covered more frequently or more prominently". Increased coverage is then linked to the importance that the public can attribute to the issue (Scheufele & Tewksbury, 2007). However, findings from media effect studies are mixed. A positive case is Sampei and Aoyagi-Usui's (2009) study, which found that increased media coverage of global warming is linked to rising public concern in Japan, but only for a short time. In contrast, increased coverage during President Clinton's campaign for public support for an international climate treaty did not match national concerns about global warming in the United States of America (USA) (Thaker *et al.*, 2017). Instead, the study observed segmented differences: concern rose among Democrats but fell among Republicans. It is largely agreed that the influence of media on the public is not straight but lies in complex factors[6] that condition meaning making and interpretation (Anderson, 2009). Thus, the present study agrees with the statement that coverage is "a necessary but not sufficient condition" for raising awareness and motivation for climate change (Ford & King, 2015:144). It draws attention to the social and political complexes that inform coverage as well as the nature of the climate change issues represented in the media.

1.5.3.3 Character of reporting

Interest in the content of climate change media coverage has also been studied for country (e.g., Chetty, Devadas & Fleming, 2015; Yun, Ku, Park & Han, 2012) and cross-country (e.g., Comfort *et al.*, 2020; Freeman, 2017) analysis over time. While a number of theories are applied in this type of research, the "frame" concept occupies a central place (Gkiouzepas & Botetzagias, 2017:492). Frames are interpretive models by which an individual structure and make sense of information. As cognitive devices (Günay, İşeri, Ersoy & Elega, 2021), frames help to structure and give meaning to experience. The commonly referenced definition states

[6] See section 1.5.2 for references to some of the factors including demography, media diet, and ideology.

that framing is a means to "*select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation*" (Entman, 1993:52 italics in original).

As an analytical tool, framing directs analysis in ways that are different from agenda-setting research. The former focuses analysis on the volume of media coverage and seeks to clarify how climate change as a policy issue gain public attention against other competing issues. In contrast, Carvalho (2008:169) argues that "what is at stake in the analysis of framing as a discursive strategy is *how*, and not *whether*, an actor frames reality" (emphasis in original). The approach focuses attention on the mode of representation, arguing that "the effect of messages" is less about "content differences" but more about "differences in the modes of presentation" (Scheufele & Tewksbury, 2007:9). In other words, the characterisation of an issue in media content is taken as the foci of audience perception and general media effect. Three strands of the research agenda can be identified under the framing theory, namely, a focus on how contents are *created*, *processed*, and *frame effect*. Of the three approaches, the second has received the most scholarly attention (Schäfer & O'Neill, 2017). Frame effect, which is generally assessed in experimental and other audience-centred study designs (for example, see Jang, 2013; Olausson, 2011; Spence & Pidgeon, 2010), is not examined in the present study for the reason that it is outside the scope of interest.

With regard to the second approach, several researchers have content-analysed media coverage of climate change to uncover variances among climate change frames i.e. the various patterns of interpretation (and their prominence) on climate change issues, and they include single country (Agwu & Amu, 2015; Cramer, 2008; Moernaut, Mast & Pauwels, 2018; Stoddart *et al.*, 2016) and cross-country analysis (Günay *et al.*, 2021; Midttun, Coulter, Gadzekpo & Wang, 2015; Stoddart *et al.*, 2016; Wessler, Wozniak, Hofer & Lück, 2016). Recent review studies on climate change framing indicate that frames observed across different media and societies are numerous and difficult to categorise (Badullovich, Grant & Colvin, 2020; Schäfer & O'Neill, 2017). In part, this is largely a result of differences in research focus and methodological approach. For instance, some authors focus their analysis on particular news events such as the publication of AR5 (Kundzewicz *et al.*, 2019; O'Neill, Williams, Kurz, Wiersma & Boykoff, 2015) and international climate events (Hopke & Hestres, 2018) or specific issue-types such as the representation of the science of climate change (Young &

Dugas, 2011), or adaptation (versus mitigation) in the media (Ford & King, 2015; Günay *et al.*, 2021; Kingdom & Kingdom, 2019).

For example, the interest in climate science (and scepticism) coverage in the news media have been analysed using the framing perspective for the USA (Antilla, 2005; Schmid-Petri, Adam, Schmucki & Häussler, 2017a), the UK (Grundmann & Scott, 2014), Canada, (Young & Dugas, 2011), France (Aykut, Comby & Guillemot, 2012), and in comparative studies (O'Neill, 2020; Tschötschel, Schuck & Wonneberger, 2020), including non-Western countries (Painter & Ashe, 2012), as well as online (Bloomfield & Tillery, 2019; Williams, McMurray, Kurz & Lambert, 2015). The examination of the media content typically analyses for the prominence of views such as "belief in global warming, belief in human activity causing global warming, worry about global warming [impacts], and support for public action" (Bayes, Bolsen & Druckman, 2020:7) and of those that contest these (variously labelled as climate scepticism or denialism).

The manifestation of the contention is identified as conflict frames and two conclusions can be drawn from the findings in various studies. First, early research found that news coverage of scepticism is more concentrated in the USA, UK and to a lesser degree Canada, while it is nearly absent in the media contents from the developing countries (Painter & Ashe, 2012). Second, the coverage of scepticism is variously explained by the journalistic norm of 'balance' (Antilla, 2005; Boykoff & Boykoff, 2004), and the political learning of a media platform (Painter & Ashe, 2012). For example, Antilla (2005) and Boykoff and Boykoff (2004) showed in their study of the American press that journalists' commitment to balance reporting led to bias coverage of anthropogenic climate change. The norm led the journalists to "present competing points of views on a scientific question [climate change] as though they had equal scientific weight, when actually they do not" (Boykoff & Boykoff, 2004:127).

In contrast to the issue-specific framing analysis, other researchers collate samples of general media content (e.g., newspaper articles) referencing climate change and related terms (global warming, greenhouse gases) and analyse for manifest frames (e.g., Carvalho, 2007). For example Cramer (2008) quantitatively content-analysed three regional newspapers in South Africa for climate change manifest frames and found that the "environmental", "political" and "scientific" frames (in that order) were more prominent relative to the "human impact", "economic consequences" and "human interest" frames. Analysis of content frames as seen in Cramer (2008) has, however, been criticised as fragmented, with several approaches yielding

different results (Agin & Karlsson, 2021; Schäfer & O'Neill, 2017). The recent review of framing approach in CCC by Badullovich *et al.* (2020) is an authoritative synthesis of current knowledge in this regard. The study systematically reviewed 281 articles (comprised of scholarly and grey literature) published on the subject and concluded that from the spectrum of frames associated with CCC, "scientific", "economic" and "environmental" frames are the most common. Table 1.2 (see below) provide the full list of frames and their functions in line with Entman's (1993) definition. This review as well as other relevant publications (Bolsen & Shapiro, 2018; Freeman, 2017; Moernaut *et al.*, 2018) on framing provide the baseline for the analysis of perspectives on climate change undertaken in the present study.

Table 1.2. List of climate change frames and their functions from a review study

Function	Frame
Diagnose causes	Public accountability/governance
	General causes
	Political conflict
	Scientific
Suggest remedies	Response efficacy
	Middle way
	Self-efficacy
	Social progress
	External efficacy
	General remedies
Make moral judgements	General judgements
	Religious
	Morality/ethics
Define problems	General problems
	National security
	Disaster
	Public health
	Environmental
	Economic
	Title framing

Source: Badullovich *et al.* (2020:10)

1.5.3.4 Analysing for the social actors

Beyond the identification of manifest frames in media contents, another point of interest in mediated CCC analysis is the complex social interactions that are both latent and covert in media representations of climate change. The important variable of interest is the representation of claims-makers in mediated CCC. Claims-makers (also regarded as sources in media studies) "can be an individual, agency, institution, organisation, or company that is involved in

promoting or sponsoring issues, defining problems, or participating in media debates" (Das, 2020:8). The importance of sources to news-making processes has been indicated to include (but not limited) to: 1) helping to verify news accounts; 2) enabling credibility for news stories; 3) providing multiple perspectives; 4) reducing uncertainty under deadline pressure; and 5) protecting against claims of bias (Dimitrova & Strömbäck, 2012:609). Boykoff and Luedecke (2016) argue that in CCC, several social actors seek media access to influence "perceptions on various climate issues contingent on their perspectives and interests".

In the early stages of climate change mediatisation (1980s) – i.e., media uptake of climate change issues – climate scientists had uncontested dominance in the media as the "exclusive definers of climate change", particularly in the UK (Carvalho, 2007:228) and USA (Boykoff & Boykoff, 2004; Trumbo, 1996). Much research into social actors' visibility in media representation of climate change after the 1990s has documented a change in the structure with emergence of new players (see Table 1.3 below). Table 1.3 provides a sample of empirical evidence indicating where the research has been conducted, the theories and analyses applied, and the variables investigated. The findings coalescence around the observation that across diverse contexts, the increased participation of diverse actors beyond the scientific community is uneven. The visibility of political actors in mediated CCC appears to be unparalleled. There is also a gender bias, with a "male" hegemony (Semujju, 2015). Important as these contributions are, concerns have been raised about the depth of explanations the studies offer, given their heavy reliance on media-content (Brüggemann & Engesser, 2017; Engesser & Brüggemann, 2016; Schäfer & Painter, 2020).

Table 1.3. A synopsis of empirical studies on actor representation

Author	Focus	Context	Theory/analytical tool	Analysed	Most visible
Garcia and Proffitt (2021)	Sourcing trends in editorial coverage of climate change	USA	Political economy/content analysis	Politicians, scientists, NGOs, citizens	Politicians, scientists
Young and Dugas (2011)	Longitudinal trends in national print media coverage of climate change	Canada	Content analysis	Environmentalists, business groups, think tanks, university-based experts, politicians, government employees, international agency, citizens	Government employees, politicians, and university-based experts
Takahashi *et al.* (2017)	Scientific sources and geography, reporting frequency, and authorship	US and Canada	Hierarchy of influence model/content analysis	Science sources. Non-science sources (government, businesses, and interest-group)	Non-sciences (USA and Canada)
Kukkonen *et al.* (2021)	Policy actors in media debates on Arctic climate change	Finland and Canada	Discourse network analysis using Discourse Network Analyzer software	Government, research, NGOs, businesses, political party	Finland: Greenpeace, Governments, and universities Canada: government, and universities
Chetty *et al.* (2015)	Framing of climate change science in newspapers	New Zealand	Framing/content analysis	Academic/expert, non-expert commentator/citizen, business, economists, independent research groups, politicians, NGO, sceptics, no source	Politicians, and academics
Freeman (2017)	Coverage of climate change	ASEAN (Singapore, Malaysia, Brunei, Cambodia, Indonesia, Vietnam	Content analysis	Scientists/researchers, politicians/government officials. Businesses, interest groups, citizens, experts/authors/historical figures	Government
Yun *et al.* (2012)	Coverage of climate change	South Korea	Content analysis	Government, businesses, civil society, academic journal, media, others	Government
Laursen and Trapp (2021)	Experts vis-à-vis advocates as sources	Denmark	Expertise, journalistic norms/content analysis	Interest groups, think tanks, independent university researchers	Researchers

Table 1.3 continues

Author	Focus	Context	Theory/analytical tool	Analysed	Most visible
Poberezhskaya (2015)	Actors and factors influencing coverage	Russia	Politics	Russian officials, foreign officials, businesses, science, NGOs, international organisations, others	Russian officials
Carvalho and Burgess (2005)	Cultural perspective on climate change perception and media	UK	"Circuit of culture"/discourse analysis/content analysis	Government, scientists, interest groups	Early stage, scientists then political actors
Wozniak *et al.* (2017)	Professional groups involved in communicating the COPs	COPs' venues	Content analysis and semi-structured interview	Journalists, government, NGOs	NGOs
Robbins (2020)	Government level communication on climate change	Ireland	Interviews	Ministers, and senior media advisors	
Vu *et al.* (2019)	Global network of NGOs	Twitter	Social network analysis	Global north and south networks	Global North and Oceania
Das (2020)	Framing of climate justice	India, newspapers	Content analysis	Politicians, international politicians, bureaucrats, international bureaucrats, experts/think-tanks, NGOs, businesses, media/journalists	Politicians and experts
Khuhro *et al.* (2020)	Diversity of news sources	Pakistan	Content analysis	Government, politicians/political party, environmental groups, citizens, educational/research institution, NGOs, news agencies, businesses, journalists, sceptics	Government and politicians/political party

Table 1.3 continues

Author	Focus	Context	Theory/analytical tool	Analysed	Most visible
Comfort *et al.* (2020)	Attention and sourcing patterns	Singapore, China, India, and Thailand	Content analysis	Government, UN official/group, scientists/academics/researchers, business/industry groups, activists, members of the public/non-expert, news organisation	Government, then scientists
Takahashi and Meisner (2012)	Coverage of climate change	Peru	Content analysis	Foreign vs Peruvian, NGO, industry, researcher/expert, civil society, celebrity, government (national, regional, local), multi-state organisation,	Foreign (wire services), government, then experts
Midttun *et al.* (2015)	Coverage of climate change	Norway, China, Ghana/newspapers	Content analysis	Politicians/public officials, scientific/academic community, business/company, international actor, local NGO/civil society, ordinary individual	Norway: academics, China and Ghana: politicians/public officials Ghana: heavy on international actors
Semujju (2015)	Coverage of climate change	Uganda/ newspapers	Feminist media theory/content analysis	Male vs female for reporters/writers and sources	Male (reporters/writers) and sources
O'Neill (2020)	Climate change visual discourse	UK and US/newspapers	Longitudinal content, frame, and iconographic analysis	Politicians, scientists, businesses, celebrities, others	Politicians
Wagner and Payne (2017)	Climate change coverage	Ireland/newspapers	Frame and discourse network analysis	Businesses, governments, political parties, research bodies, NGOs, others	Actors' dominance varies according to thematic frames: politicians and scientists for governance, and business for technology/energy
Parks (2020b)	Climate change and crisis co-occurrence in coverage	US/newspapers	Content analysis	Journalist, scientist/academic, politician/policymaker, advocate, business, citizen/other	Journalists, then politicians
Kundzewicz *et al.* (2019)	Coverage of IPCC AR4	Norway, Poland, Spain, and UK/newspapers	Content analysis	IPCC authors/representatives, other scientists, civil servants, NGOs, businesses, media, common persons, others	IPCC authors/reps across board, civil servants for UK (also politicians) and Norway

1.5.3.5 The role of journalists

The over-reliance on content and its limitations in accounting for factors that influence the frame-building process have spurred further research into the role of journalists who are involved in creating climate change-related media contents (Brüggemann, 2014; Brüggemann & Brüggemann, 2017; Brüggemann & Engesser, 2014, 2017; van Eck, Mulder & Dewulf, 2019; Engesser & Brüggemann, 2016; Evans, 2016; Hiles & Hinnant, 2014; Olteanu *et al.*, 2015; Van Witsen, 2020). Largely driven by earlier research in the USA that documented the influence of journalistic norms such as 'balance' on the coverage of controversies regarding climate change in the media (Antilla, 2005; Boykoff & Boykoff, 2004), much of the research explores whether the trend has continued across space and time (Brüggemann, 2014; Brüggemann & Engesser, 2014, 2017; van Eck *et al.*, 2019; Engesser & Brüggemann, 2016; Hiles & Hinnant, 2014). Evidence suggests shifts in perspectives and roles for journalists: more journalists are now interpretive and are committed to an advocacy-oriented climate journalism (Brüggemann & Brüggemann, 2017).

In Africa, attempts to understand the role of journalism in climate change frame-building include Elia's (2019a, 2019b, 2021) and Siyao's (2021) focus on the information-seeking behaviours as well as the climate change literacy of Tanzanian journalists covering climate change. Finding highlight that journalists in Tanzania are generally aware of climate change but consider their level of knowledge as inadequate and their information-seeking behaviour constrained by information technology affordance. Also, Meribe's (2017) political economy analysis of Nigerian journalism and its influence on the coverage of climate change is an important contribution. The interview study with journalists concluded that diverse interests (mainly financial) influence how climate change is covered in the country. In extending these works, the present research (pursued under objective IV, see section 1.4.4) is different as it specifically focuses on how the journalists and their working conditions influence inclusive coverage of climate change. Inclusivity in this sense, refers to the extent to which diverse claims-makers and diverse perspectives (claims) on climate change is represented in the media of the cases examined.

1.5.4 Gaps in the literature and the contributions from the present research

One well-referenced observation about the CCC literature is the conspicuous neglect of interests in non-Western contexts, particularly, the countries that are most vulnerable to climate

change (Agin & Karlsson, 2021; Eise *et al.*, 2020; Olausson & Berglez, 2014a). Recent empirical reviews of the field highlight the paucity of research interest in the African region (Agin & Karlsson, 2021; Comfort & Park, 2018; Schäfer & Schlichting, 2014). Of the total global research into CCC, African contexts analysed represent 4% (n=274) in Schäfer and Schlichting (2014) and 2% (n=407) in Agin and Karlsson (2021). For comparison, Africa lags behind Oceania (5.2%) and Asia (6.2%), but is ahead of South America (0.7%), while North America (31%) and Europe (22.4%) have the highest level of representation in the category of continents for data collection (Agin & Karlsson, 2021). Consequently, various review authors have reiterated the call for researchers to broaden the research field beyond the Global North.

In the present research, the first response to this call begins with a closer examination of extant empirical research examining contexts in the African region. The systematic review undertaken establishes the extent of growth and the diversity of the literature on mediated CCC in the region. Also, in accounting for the various theoretical and analytical commitments within the literature on Africa, the present study examines any use of epistemic attributes emergent from Africa in the literature. An important finding of the analysis establishes whether and how the African research field responds to the caution to avoid "a simple transfer of western ideas, concepts, theories, analytical approaches, etc., to the rest of the world" without interrogation or adaptation to contexts (Olausson & Berglez, 2014b:248).

Much research directed to countries in the Global South points out that while there are similarities in the ways media cover climate change across societies, "results from studies of Western media are hardly translatable to the context of developing countries" (Olausson & Berglez, 2014a:140). For instance, the study by Evans (2016:492) on Philippine newspapers suggests that "Western journalistic norms do not describe Philippine climate reporting well". Yet, as review studies show consistently, North America and Europe have dominated contexts of research and lead in theoretical contributions to CCC literature. Eise *et al.* (2020) consider the phenomenon troubling and have claimed that it is another form of "ethnocentrism", a concept described earlier by Wang (2010:1) as "a set of views and principles developed on the basis of the European experience yet aspiring and presented as universal [...] one of the primary factors leading to a serious imbalance in knowledge production".

The low visibility of Southern research and knowledge contribution on CCC may be explained by "the abiding global inequalities of power and resources" (Czerniewicz, Goodier & Morrell, 2017:399) and by the role of language – the dominance of English publications in widely

searched databases, for instance (Hunter, North & Slotow, 2021) – which continues to define global knowledge participation. Nevertheless, it is desirable to reduce the North-South divide in CCC research and, by so doing, minimise bias based on a single worldview and maximise context-relevant knowledge in support of policy. The second contribution in the present study is to that end; it provides an exploration into a set of African political theories relevant for the conceptualisation of the social and the forms of communication that can better serve public engagement.

Drawing from the literature on African communitarianism (e.g., Chimakonam, 2018; Eze, 2008; Menkiti, 2018; Wiredu, 1999), Ubuntu/Botho (e.g., Metz, 2007; Molefe, 2019; Ramose, 2015) and communication, an African (Afro)-relational framework (ARF) for CCC developed engages the concept of 'persons', 'community' and 'communication' to draw out the implications for communicating climate change, especially in African context. Although these traditions are not homogenous or without contestation, nor are the ideas they express exclusively limited to the African intellectual heritage. Their common interest in emphasising relationality as a central concept to understanding 'person' and 'community' have long been held as markedly African in the literature (Chimakonam, 2016; Etieyibo, 2017; Matolino, 2014; Matolino & Kwindingwi, 2013; Oyowe & Yurkivska, 2014; Rauhut, 2017; Wiredu, 2008). The discussion detailed in Chapter Three delineates "deliberative" or co-creative epistemology (Tavernaro-Haidarian, 2018) for (re)imagining the media as a space of relationship between diverse actors engaged in co-creation of meaning around climate change and with special interest in "*local* geographies of knowledge" (Mahony & Hulme, 2018:398).

The third contribution of this study is the application of ARF as a theoretical lens to the examination of specific instances of representations of climate change in the media across the African countries of South Africa, Nigeria, and Kenya. The contribution extends the literature on the character of reporting in several ways. First, there is limited evidence of the character of reportage on climate change in Africa beyond the analyses of media attention to the issues (see Table 1.3 above). Also, while a number of studies evince the nature of climate change frames permeating African media spaces (e.g., Cramer, 2008; Nwabueze & Egbra, 2016), only few have considered the character of the social actors and their frame sponsorship in the media (e.g., Semujju, 2015). Furthermore, there is a dearth of comparative analysis of the patterns of diversity in media coverage across countries in Africa, with a number of exceptions (Evans & Musvipwa, 2016; Günay *et al.*, 2021; Nwabueze & Egbra, 2016; Tagbo, 2010). Tagbo (2010)

compared newspaper coverage of climate change in Nigeria and South Africa (with an oversite exploration into the media in Ghana), while Evans and Musvipwa (2016) focused on the Southern African countries of South Africa, Zimbabwe and Zambia. The present study extends these efforts to compare coverage across three regional blocs in sub-Sahara Africa: Southern (South Africa), west (Nigeria) and east Africa (Kenya) respectively.

Lastly, the insights derived from the content-focused analysis is complemented by a qualitative exploration of factors that affect journalists' contribution to frame-building regarding the pluralisation of mediated CCC. The study extends a growing body of literature that draws attention to behind-the-scenes processes in the production of climate change media content (i.e., the frame-building processes) (e.g., Brüggemann & Engesser, 2017), but does so through the ARF theoretical lens. Importantly, it problematises the concept of "the engaged" publics in the cases of the mediated CCC analysed and explores several factors which constrain or facilitate media access for the variety of social actors.

1.6 Research methodology overview

1.6.1 Researcher's reflexivity

Climate change has been acknowledged as a cross-sectional issue and, as such, may be approached from several disciplinary perspectives, or a combination of them. The study of climate change representation in the media is no exception. Review studies on the subject suggest that researchers from diverse disciplines have approached the subject with their specific research paradigms and tools, and have made meaningful contributions (Agin & Karlsson, 2021; Comfort & Park, 2018; Schäfer & Painter, 2020). While the subject area draws from various disciplines including media and communication, environment-related fields, psychology, linguistics, education, political science, anthropology, sociology and others, it is media and communication scholars who have dominated it (Agin & Karlsson, 2021).

It is important to provide a statement concerning the researcher's positionality at the outset. I am not a media professional in the sense of being a journalist or a student of journalism. Also, I am not a climate scientist or a student of climate science. My post-secondary academic developmental route begun with a bachelor's degree in Philosophy, after which I went on to major in International Relations (Honours' level), and later Political Science (Master's level). The present study is presented as a full requirement for a doctoral degree in Public and

Development Management. With this disclosure, it should be borne in mind that my interest in climate change, media and by extension communication, as pursued in this dissertation, is primarily to contribute to our understanding of how various groups of social actors required to manage climate change risks make sense of the issues through communicative acts.

My journey through the disciplines of Arts and Social Sciences has been guided by an interest in critical skills development that is cutting edge and more amenable to the increasing cross-sectional challenges that confront our modern world. Hence, I approached the present study from a multidisciplinary perspective carrying with me the knowledge and skills that I acquired through multidisciplinary training. A multidisciplinary approach essentially involves the integration of multiple epistemologies (ways of knowing) within a research process (Lindenfeld, 2018). This is to say that I brought something of myself to bear on the research reported here drawn from the disciplines to which II have been exposed. I add that my lens as a researcher thus, is interpretivist. However, it is not purely built on a constructionist paradigm, by which it is sometimes claimed that climate change is a product of language or entails the contestation of meanings in the social world. As argued earlier in this chapter (see 1.1 and 1.5.1.1), the physical manifestations of variability and extreme weather occurrences will continue to serve as a check and balance for debate on climate change. More importantly, I accept it that "climate change has both a 'natural life' and a 'social and cultural life', both of which are capable of affecting the other (directly and indirectly). … [and] that the outcomes of current debates, claims, and talk will have physical expressions and consequences in the near future" (Young & Dugas, 2011:2–3). This view is broadly offered as critical realism as it recognises both the ontology of nature and the role that socio-cultural factors play in how we make sense of, interact and shape it (Carolan, 2005; Gorski, 2013).

Consequently, taking into consideration, the importance of the social and cultural life of the phenomenon of climate change, I applied my knowledge and skills acquired from a multidisciplinary background and drawing theoretical inspiration from African Political Philosophy, I interrogate the forms of sense-making about climate change ongoing in selected media from three African countries. The interrogation has become necessary owing to the immanence of climate change impacts in Africa and the need to widen policy support across the board. The exercise begins with probing what our definition of communication means with reference to climate change issues and how much of it accommodates the human persons needed to engage in social transitioning. Thus, by centring communication on the concept of

persons vis-à-vis climate change, my aim here is to offer critical perspectives on how CCC constrains or facilitates inter-subjectivity.

1.6.2 Research design

The notion of relationality which grounds the research undertaken in this study establishes the process of inquiring as a "deliberative epistemology" (Tavernaro-Haidarian, 2018). A deliberative epistemology takes knowledge "as the essence of experience after communal discourse about its meaning" and by means of "relations with others" (Tavernaro-Haidarian, 2018:230). By means of "paradigmatic choice", this research is conceptualised within the qualitative tradition (Boeije, 2010). Paradigmatic choice in research design follows philosophical considerations that seek to *understand,* in this context, how CCC practices in the media within selected Africa mediascape illustrate engaged publics. Given that the study of CCC is an emerging field in Africa, and that this researcher is not familiar with research utilising African perspectives (*relationality* in particular), the present study is explorative in nature. As Creswell (2009:18) argues, a qualitative research approach is most appropriate where "the topic has never been addressed with a certain sample or group of people, and existing theories do not apply with the particular sample or group of samples".

Within a qualitative research tradition, there are an array of approaches to the processes of investigation. In addition to Creswell and Poth's (2018) five approaches – namely, narrative, phenomenological, grounded theory, ethnographic, and case study research – there is also participatory/action research (Miller, 2005). Of these approaches, both the phenomenological and case study approaches suit the purposes of the present research. Whereas a phenomenological study seeks to describe a common meaning of experience of a concept or a phenomenon for a particular people, a case study as a type of research design in qualitative research allows a researcher to explore "real-life, contemporary bounded system (a case) over time, through detailed, in-depth data collection involving multiple sources of information […] and reports a case description and case themes" (Creswell & Poth, 2018:75; 196-197).

The emphasis on the central phenomenon inherent in phenomenological approach makes it apt for consideration in the present research. The approach allows for a focus on the "what*"* and "how*"* of climate change representation in the media in Africa, opening vistas of meaning that can help to reimagine practice in CCC. But to provide context for such a phenomenological reflection, "multisite cases" (Creswell & Poth, 2018:97) are selected from Africa for illustrative

purposes. A combination of this sort is not uncommon in the qualitative tradition, because one of the characteristics of qualitative research is methodological flexibility allowing for adaptation to context (Babchuk, 2019).

The multisite (multiple) cases serve an illustrative purpose. Although a number of studies have examined the media-climate change nexus in Africa, few have done so in a comparative context (e.g., Tagbo, 2010). The multisite cases serve to enrich our understanding of the relationship beyond the single case study and do so by focusing on the conditions of public engagement within the media (specifically newspapers) of the selected African countries: South Africa, Nigeria, and Kenya.

Purposive sampling guided the selection of the cases. In the literature purposeful sampling is usefully applied in a research design which seeks to select cases which are "information-rich" and can offer sufficient insights into the central issue of the research (Coyne, 1997:624). Detailed justifications for the selection of cases (country and media type analysed) are described in the separate empirical chapters (4 and 5) presented in this dissertation. Suffice to note here that the selected countries all practice representational democracy with freedom of the press (at least, in principle) enshrined in their political systems. Together with their resource-dependent economies which make them susceptible to climate variability, they hold potential ground for public interest in climate change discourse.

1.6.3 Research strategy

The study was conducted in four phases (translating into independent research papers) with each phase addressing one of the research objectives (see section 1.4). Each research paper has its own methods of data collection, analysis, result presentation and discussion. Details of these features are described in the various relevant chapters. Table 1.4 (see below) presents a general overview of the various methodologies employed. It is important to note that, although, the qualitative research process was iterative, the processes initiated in one phase fed into the seceding phase, hence, the approach can be considered as sequential.

Table 1.4. Methodological schemata for the study

		Paper I	Paper II	Paper III	Paper IV
Objective		Systematically reviews and describes the extent of growth and diversity, theoretical and analytical commitments, and the use of African perspectives in empirical literature on media(ted) CCC focusing on Africa.	Develops a conceptual framework for understanding CCC that draws and reflects on African worldviews and lifeworld.	Analyse for subject and ideational plurality in the ways that the news media in South Africa, Nigeria, and Kenya cover climate change.	Explores how role orientation, norm application, routines and working conditions of journalists in three African countries – South Africa, Nigeria, and Kenya – affect inclusive coverage of climate change.
Design		Systematic literature review	Phenomenological reflection	Multisite case study analysing newspaper articles	Multisite case study using semi-structured interviews
Sample	***Universe***	English publications that empirically examine representation of climate change in African setting	English publications on African political theory/philosophy, communication theory and media(ted) CCC	Africa: South Africa, Nigeria, and Kenya	Africa: South Africa, Nigeria, and Kenya
	Strategy	Concept-driven sampling – Systematic selection of literature drawing on the PRISMA protocol (Shamseer, Moher, Clarke, Ghersi, Liberati, *et al.*, 2016)	Concept-driven sampling – targets literature discussing the concepts of 'person-community relations', 'communication' and CCC	Purposefully sampled two newspapers with online presence from each country.	Semi-structured interviews with journalists/reporters covering climate change in the multisite: sample strategy used included purposive and snowball.
	Source	Peer-reviewed literature: ISI Web of Knowledge (WoK), Scopus, EBSCOhost, Sabinet African Journals, and African Journalism Studies	Peer-reviewed and grey literature	South Africa: *The Mail & Guardian* and *Business Day* Nigeria: *The Guardian* and *Vanguard* Kenya: *The Daily Nations* and *Standard*	11 study participants (at least 3 in each of the three countries)
	Analysis	Qualitative synthesis using ATLAS.ti	Conversational approach (Chimakonam, 2017a)	Content analysis of frames and actor-frame relations using ATLAS.ti.	Thematic analysis using ATLAS.ti. (Babchuk, 2019; Creswell & Poth, 2018; Friese, 2011)

1.6.4 Research ethics and integrity

The study was carried out in full compliance with the *Policy for Responsible Research Conduct at Stellenbosch University* (2016) and as approved by the Research Ethics Committee: Social, Behavioural and Education Research (REC: SBER) with project number 14633 (see Appendix 4). Two types of data were collected for the study: Primary and secondary data. The latter consisted of grey (e.g., newspaper articles) and academic literature (e.g., peer-reviewed journal articles) (see Table 1.4 above). These were publicly existing information. Primary data were collected by means of semi-structured interview of 11 journalists covering climate change in South Africa, Nigeria, and Kenya. In chapter 5, more is said about the justification for the sample and other considerations. Below, is a highlight of steps taken in compliance with REC: SBER's fundamentals of research integrity and ethics.

The researcher approached the conduct of the research with the utmost respect for participants (including those contacted but who did not participate in the study). All spheres of contacts maintained with the participants employed the language of respect for human dignity in line with relational ethics of researching in "humble togetherness" (Swanson, 2007). Appendix 5 shows a copy of the email invitation extended to potential participants. Additionally, the embedded flyer in the email invitation was also used for recruiting participants on social media (Twitter and LinkedIn).

Journalists who accepted to take part in the study were forwarded a consent form via email (see Appendix 6 for a copy) and were requested to read through and understand the content. All the participants included in the study returned a signed copy of the form indicating their consent to participate in the study. The consent form specified the aims of the study and provide clarifications on participants expectations as well as their rights (e.g., the freedom to withdraw from the study at any stage without prejudice to them). It also assured the participants of the researcher's intention to anonymise their identity and those of their employers.

To this end, the researcher made use of codes to refer to all the 11 journalists included in the study (see Table 1.5 below) right from the point of transcription. The codes combined the first letter of the countries where each of the journalists practice with a unique number. For example, for the three journalists included from Kenya, they were given the code K1, K2 and K3 respectively.

Table 1.5. Code tags used to anonymise study participants

Country	Journalist	Media
South Africa	S1	Media-S1
	S2	Freelance
	S3	Media-S2
	S4	Media-S2
Nigeria	N1	Media-N1
	N2	Media-N2
	N3	Media-N3
	N4	Media-N4
Kenya	K1	Media-K1
	K2	Media-K2
	K3	Media-K2

The code names for the media houses followed a similar pattern. In Kenya, the journalists were sourced from two media organisations coded as Media-K1 and Media-K2. In Nigeria, the four journalists interviewed work in different media organisations and were coded as Media-N1 to Media-N4. In South Africa, three of the journalists work with the two newspapers included in the sub-study three. Additionally, one freelance journalist whose works featured prominently in the articles analysed for sub-study three was included in the study. Therefore, the code tag for media organisations for the South African cohort were Media-S1 and Media, S2. The code tags were then used in the writing of the research report and this way, the identities of all participants were protected.

Furthermore, additional care was taken to protect the data collected. All data collected were stored and managed in a personal computer that is used only by the researcher. Passwords for the computer was changed periodically (every three months) as a safety measure. These general steps complied with the guidelines provided under the REC: SBER. Additionally, the dissertation was subjected to plagiarism test on Turnitin (see Appendix 7). Similarity score after filtering out citation references was 9%.

1.6.5 Validity consideration

While "complete objectivity" is an unrealistic and unnecessary expectation within a qualitative research given its inherent "analytic necessity of interpretation" (Connor & Joffe, 2020:4), several procedures were followed to ensure the credibility and reliability of the research reported in this dissertation. Each of the processes is described below.

1.6.5.1 Use of triangulation

Triangulation describes a process whereby researchers use multiple and different sources of information or data to generate research findings. "Data source triangulation" (Lazar, Feng & Hochheiser, 2017) was employed to support the interpretations and descriptions of mediated CCC provided in this dissertation. The data analysed in this research include documents (scholarly and grey literature, and reports relevant to the subject area), observation (systematically selected newspaper articles on climate change), and semi-structured interviews with journalists covering climate change across the cases. The procedure allowed for convergence of evidence rather than basing the researcher's interpretation and description on "a single incident or data point" (Creswell & Miller, 2000:127).

1.6.5.2 Member checking

Specifically for chapter 5, which involved study participants, member checking (Babchuk, 2019) was used as to enhance credibility and ensure ethical practice. The interviewees were each given their own interview data (individual transcripts) to comment on its accuracy and their inputs were all considered.

1.6.5.3 Researcher reflexivity

Researcher reflexivity involves self-disclosure of researcher's assumptions, beliefs and biases that may shape the inquiry (Creswell & Miller, 2000). Accordingly, in section 1.6.1, the researcher provided a personal reflection on his positionality.

1.6.5.4 Supervision and audit trail

An audit trail in qualitative research involves the use of "auditor" or "readers" who are "formally brought into the study" to interrogate the research process and in that way add to the credibility of the research (Creswell & Miller, 2000:153). Between June 2018 and the present time (2021) during which the study was conducted, the researcher's reflexivity on the research and the entirety of the research process, from conceptualisation to reporting, was subjected to supervisory validation. Several meetings (face-to-face and virtual) were held, and correspondence was exchanged between the researcher (including the documentation of research decisions) and the promoter duly assigned by the School of Public Leadership, Stellenbosch University. Through these exchanges the different stages of the research were subjected to critical review and the professional guidance provided within the process made invaluable contributions that ensured the inquiry reported in this dissertation was sustained with rigour.

1.6.5.5 Peer debriefing

Peer review involves subjecting a research process and supporting data to persons who may be familiar with the research or phenomenon explored (Creswell & Miller, 2000). For this study, two processes were followed. In the first instance, the researcher belongs to the group of Graduate Economic and Management (GEM) scholars who regularly meet to share individual research journeys and learn from the process. The various phases of the study, from proposal to the final report, were presented in the GEM meetings where members served "as a sounding board for ideas" (Creswell & Miller, 2000:129). The second process involved blind reviews of the various papers presented. Except for sub-study four see chapter 5), which is yet to be submitted for publication, all the sub-studies have undergone double-blind reviews provided by reputable academic journals.

1.7 Study overview and structure

This study consists of a general introduction, four sub-studies and a conclusion. Their presentation in this dissertation is as follows:

- Chapter One: *Setting the scene*

  The first chapter introduces the study, outlining the background, research problem, question, objectives, contributions, and methodological overview.

- Chapter Two: *Climate change communication in Africa and public engagement: A systematic review of the research field*

  This chapter presents the results of the systematic review of media(ted) CCC literature specific to the African context with a focus on growth trends, geographical characterisation, theoretical and methodological commitments, and research gaps. The chapter is published as a research article in *African Journalism Studies* (see Okoliko & de Wit, 2020).

- Chapter Three: *From 'communicating' to 'engagement': Afro-relationality as a conceptual framework for climate change communication*

  As a follow up from the literature review paper, this chapter proposes a conceptual framework, informed by a spectrum of theoretical considerations regarding the understanding of personhood, the community/society/public and CCC. The chapter is published as a research article in *Journal of Media Ethics* (see Okoliko & de Wit, 2021).

- Chapter Four: *Media(ted) climate change and public engagement in South Africa, Nigeria, and Kenya: An Afro-relationality informed content analysis*

  The chapter presents a content analysis of selected newspaper representation of climate change issues in three Africa countries: South Africa, Nigeria, and Kenya. The analysis, theoretically driven by ARF, describes the extent to which the media(ted) CCC sampled illustrates the plurality of actors and climate change frames. The chapter has been submitted for publication in *Geoforum.*

- Chapter Five: *Reflecting on 'the engaged' with climate journalists: Evidence from South Africa, Nigeria, and Kenya*

  This chapter presents the results of a reflection with journalists covering climate change in the three selected countries and discusses how their role orientation, norm commitments and conditions of work interact to influence inclusive climate change coverage. The chapter has not been submitted for publication yet.

- Chapter Six: *General conclusion*

  The final chapter synthesises key findings and draw conclusion on the four sub-studies while highlighting the contributions to knowledge in the fields of climate change governance and communication. It also comments on limitations of the study and offers recommendations for policy and future research.

2 Chapter Two: Media(ted) climate change communication in Africa and public engagement: A systematic review of relevant literature

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https://www.tandfonline.com/doi/abs/10.1080/23743670.2020.1770114 (see Appendix 8 for copyright permission).

Abstract

In Africa and elsewhere, climate change is a socio-political challenge. The required changes linked to addressing climate change risks in terms of mitigation and adaptation measures relate to decision-making processes as found in socio-political systems where debate and discourse are unavoidable. There is a burgeoning literature on media representation of climate change documenting how various societies are making sense of climate change issues via public discourse. However, global reviews suggest a dearth of such studies on Africa. Importantly, there is no empirical information on the extent of the research paucity and the dynamics of research on public discourse on climate change in the region. This paper presents a systematic review of literature on media(ted) climate change communication (CCC) in Africa and describes the extent of growth and diversity in the field. It also probes whether the emerging field is paying attention to any contribution from Africa's theoretical lenses. Results suggest there is a pale picture of the understanding of what communication effort is underway to get Africans to engage with climate change issues via the media. The study's report is useful to policymakers, researchers, climate change communicators and organisations interested in bridging the value-gap in climate change governance.

Keywords: climate change, media, communication, public engagement, Africa, systematic review

2.1 Introduction

In Africa and elsewhere, climate change is an environmental, social, economic, and political challenge. The manifold climate change impacts in the form of severe droughts, floods, sea-

level rise and temperature variability threaten both the social and natural systems (IPCC, 2014a). These may be geological phenomena but the kind of required changes linked to addressing climate change risks in terms of mitigation and adaptation measures relate to decision making processes as found in socio-political systems where debate is unavoidable (Carvalho *et al.*, 2017). The transformations – for example, in transport, energy, buildings, lands, industry, emergence, and security management – involved have significant implications for lifestyles and all individuals thereby warranting careful considerations. However, with a growing literature on media representation of climate change documenting how various societies are making sense of the issues via public discourse, global reviews suggest a dearth of study on Africa with sketchy information on the dynamics of climate change communication (CCC) within the region (Anderson, 2009; Schäfer & Schlichting, 2014).

This is worrisome given that Africa is positioned as one of the most vulnerable regions to climate change (IPCC, 2014a). In view of governance fragility confronting the continent, climate change risks exacerbate challenges relating to food and water security (Adenle, Ford, Morton, Twomlow, Alverson, *et al.*, 2017), health management (Adenle *et al.*, 2017), economic stability (Wossen, Berger, Haile & Troost, 2018), land-use (Ahmadalipour *et al.*, 2019), and social and cultural cohesion (CIGI, 2009) in many African societies. The compounded challenges pose a significant threat to Africa's aspirations to reduce poverty, address conflict and build resilient, peaceful and prosperous societies as contained in the most recent policy vision of the African Union Commission: "Agenda 2063: The Africa we want" (AU Commission, 2015).

Understanding what forms of discursiveness in the public space shape socio-political response to these challenges in Africa, is key to driving the AU's ambitions and to realising sustainable development across African societies. Media(ted) CCC – the (re)presentation of climate change issues in the media – is priced as an integral instrument to engage and motivate the public for climate actions (Hart, Nisbet & Myers, 2015; Nisbet, 2009). Mass media is acknowledged as "the 'master forum'" of the public where multiple sets of issues from politics to economy, culture, science, nature and other common concerns are placed and discussed (Schäfer *et al.*, 2016:81). As the "'interpretative system' of modern societies" (Schmidt *et al.*, 2013:1233), the media provides important forums where "discursive spaces over" climate change issues (e.g. science of, imparts, policy options) can be "publicly created, debated, and bounded" (Ford & King, 2015:144). Thus, it makes sense to understand how Africans in their various settings are

being engaged with the conversations around climate change issues in these forums.

This paper presents a systematic review of literature on media(ted) CCC in Africa describing the extent of growth and diversity, theoretical and analytical commitments, and the appropriation of African perspectives in the field. To this end, the review asks: (Q1) To what extent is there growth and diversity in the media(ted) CCC research field within the African context? And (Q2) what theoretical assumptions are found in the field, and do they have African epistemic attributes? Apart from providing an up-to-date knowledge of the African research landscape, the findings reported in the paper are useful to policymakers, researchers, climate change communicators and organisations interested in bridging the value-gap in climate change governance through media(ted) CCC. The paper begins with a discussion on why it is important to empirically establish the status of media(ted) CCC research in Africa. The methodology for the review is then considered followed by the presentation of results. Lastly, we conclude by discussing our findings.

2.2 Why the focus on Africa?

The increasing impacts of climate change in Africa and the challenge to widen public engagement warrant that we take stock of what communication effort is on the way in the region. The twin cyclones (Idai and Kenneth) that ravaged the Southern African countries of Zimbabwe, Malawi, and Mozambique in March and April 2019 put in perspective how severe weather variability associated with growing 'global heating' can exacerbate Africa's many social stressors. According to the UN Office for the Coordination of Human Affairs (OCHA, n.d.), Cyclone Idai alone caused over 600 deaths with more than 1 600 people injured and a lot more displaced in Mozambique. Both the tropical storms left affected communities across Southern Africa devastated with losses of livelihoods and in need of shelter, clean water, food, and hygiene.

Literature on CCC offers us the understanding of how societies across the world are making sense of climate change and responding to the need for mitigation and adaptation through communication practices. In particular, knowledge of how media covers climate change is an important indicator of how the public are exposed to narratives that have influence on resource use, environmental behaviour and emergency response (Roby, Gonzales, Quesnel & Ajami, 2018:249). But, as the global research on CCC grows, limited attention is focused on Africa

(Schäfer & Schlichting, 2014), underscoring the concern that not enough information is available about the means and mode through which citizens are affected by climate change narratives in the region.

This study provides empirical information regarding the challenge by examining the nature of media(ted) CCC research in Africa. In the first instance, we account for how much attention is given to media(ted) CCC in both research and practice in Africa. As Schäfer and Schlichting (2014) argue, increased scholarly attention to media representation of climate change across varied platforms can indicate the level of media attention to the issue as significant for the public in a society (also see Schmidt *et al.*, 2013). To establish the claim as it relates to an African region, we accounted for when studies were published, the countries in Africa analysed (including those analysed comparatively with non-African contexts), the types of media analysed, the design and methods employed in the studies, and the disciplines and the geospatial locations from which researchers are showing interest in the subject area. This approach is established in studies reviewing research fields as noted in environmental communication (Comfort & Park, 2018) and global media representation of climate change research (Schäfer & Schlichting, 2014).

In the second instance, we seek to understand how media(ted) CCC research in Africa appropriates African thoughts categories to shed light on CCC in the region. As observed in other fields, such as philosophy and education, the debate on "epistemic justice" (Chimakonam, 2017b) requires that research on CCC in various societies will do well to benefit from categories of thoughts evolving in those regions to render contextually intelligent what climate change concerns there are in those societies. Olausson and Berglez (2014, 258) referenced this concern in their remark: "Instead of a simple transfer of western ideas, concepts, theories, analytical approaches, etc., to the rest of the world, research on media(ted) climate communication should give us an increasingly diversified picture and understanding of climate reporting". In similar terms, Scoville-Simonds (2018, 357) argue for the inclusion of perspectives beyond "the scientific worldview that dominates climate debates" to support local adaptation and in consonance with epistemic justice as an aspect of climate justice.

Thus, in this early phase of researching media(ted) CCC in Africa, it is important to scrutinise what forms of theoretical expertise are being brought to the analyses on the continent and to interrogate their alignment with Africa's aspirations to tell their own story about experiences

of the changing climate and how they respond. In general, our focus is to account for diversity in the field as it relates to the African context.

2.3 Methodology

This study is a systematic review of the media(ted) CCC field in Africa. Our analysis focuses only on publications that present empirical examination of media(ted) CCC within the African context, borrowing from Schäfer and Schlichting's (2014) similar work in the global field. While reviews generally provide an overview of knowledge available in a certain field by way of analysing trends and debates (Mouton, 2001:179), the present study employs systematic review techniques to allow for precision and rigour in the selection and analysis of data. A systematic review "attempts to collate all relevant evidence that fits pre-specified criteria to answer" specific research question(s) (Shamseer *et al.*, 2016). A systematic review can have meta-analysis or qualitative synthesis or both (Comfort & Park, 2018:865). In our case, since our focus is not to integrate statistical data in relevant publications but to synthesise related research examining media(ted) CCC in Africa, we employed the qualitative aspect of the methodology.

2.3.1 Data collection and processing

Included in the systematic review are scholarly publications which focus on Africa (including countries in Africa) and examine the representation of climate change in the media (print, online, broadcast, and social). Table 2.1 below details the criteria for including a publication. Both peer-reviewed and non-peer-reviewed publications were included to broaden the scope beyond Schäfer and Schlichting (2014) since the field is believed to be relatively new in Africa. Only empirical studies were considered – publications which analyse case(s) of media coverage of climate change and its variant aspects within Africa.

Table 2.1. Criteria for including a publication

Criteria	
Inclusion	**Exclusion**
Publications examining media representation of climate change	Publications not related to media representation of climate change
Publications examining Africa (also countries in)	Publications examining non-African contexts
Publications appearing before 30 April 2019	Publications appearing after 30 April 2019

Publications which considered various aspects of climate change but not in relation to media representation, and studies which analysed media and the climate change nexus outside the African context, were not considered. Exception was provided for media(ted) CCC studies comparing an African context with non-African context(s) to broaden insights. Moreover, for reasons of language skills, only publications appearing in English were considered.

To optimise the chances of capturing relevant literature for the review, six web catalogues were searched employing definitive terms. The web catalogues included Scopus, ISI Web of Science (WoS), EBSCOhost, Sabinet African Journal (SAJ), African Journals Online (AJO), and African Journalism Studies (AJS). WoS (Core Collection), Scopus and EBSCOhost are renowned databases that catalogue a wide range of publications across multiple fields, including the social sciences. The decision to combine the search on these databases with the other three regional web catalogues was taken in view of the observation that Southern knowledge outputs are not well represented in the Western-based databases (Schäfer & Schlichting, 2014). This bias reflects the structural dichotomy between the Global North and the South as "centrality" and "marginality" respectively, and with implication for knowledge participation (Czerniewicz *et al.*, 2017). SAJ and AJO are regional databases, and AJS is a journal which focuses on the African journalism and communication research.

The identification procedure is diagrammatised in Figure 2.1 below. The search employed the combination of terms that have been sufficiently demonstrated in previous studies on media-climate change nexus (Boykoff & Roberts, 2007; Schäfer & Schlichting, 2014). They are mentioned in Table 2.2 (see above).

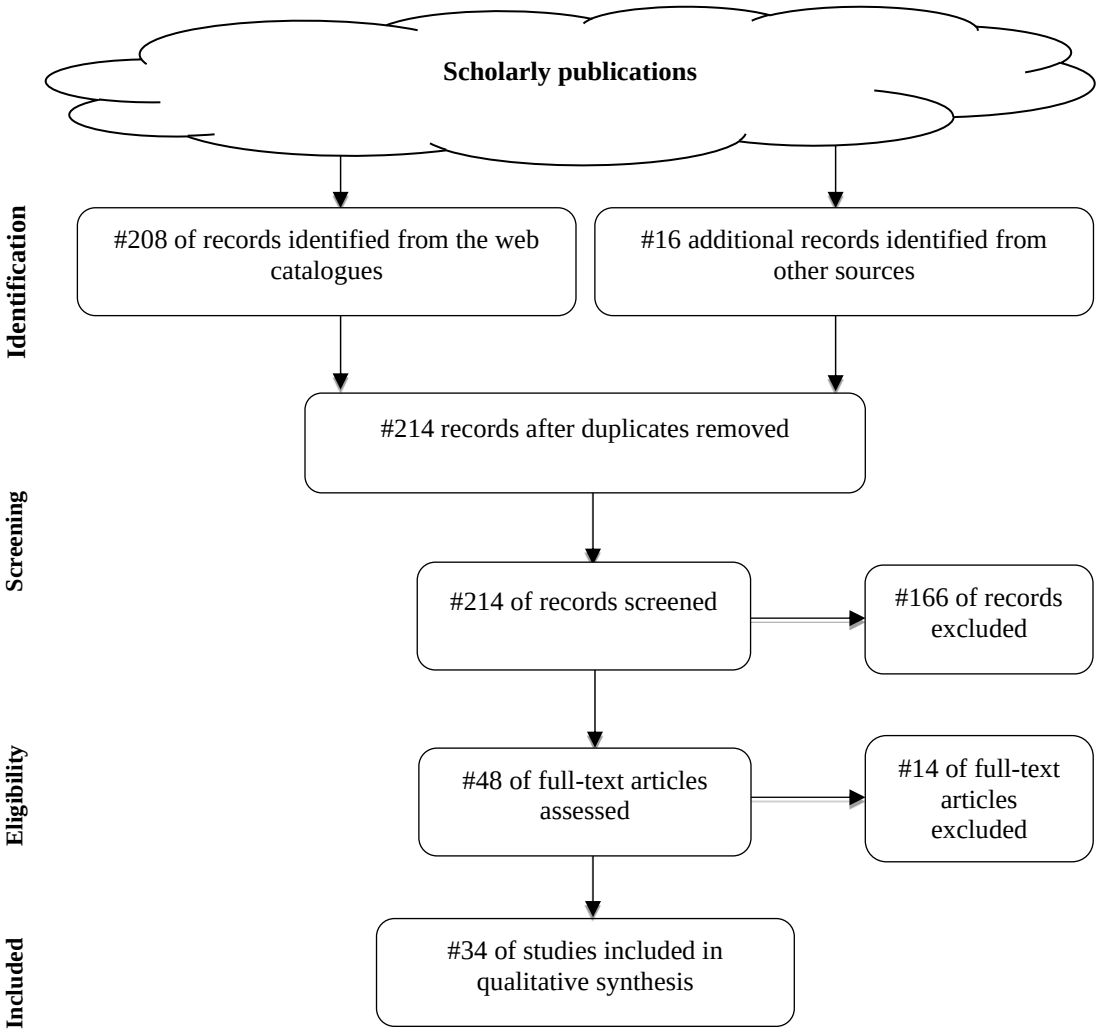

Figure 2.1. Flow diagram for data collection

Source: Adapted from PRISMA-P (Moher, Liberati, Tetzlaff & Altman, 2009:267)

Table 2.2. Search operation terms

	Concept	Search operation
#1	Media	"media", "press", "newspaper" "broadcast", "online media", "communication".
#2	Climate change	"climate change", "global warming" and "greenhouse effect".
#3	Africa	"Africa" OR "Countries in Africa" OR "country in Africa" OR "African nations" OR "nation in Africa" OR "nations in Africa" OR "region in Africa" OR "regions in Africa" OR "African regions" OR "African region".

#1 and #2 were searched in the title filters and #3 in the ALL fields filters of the databases. These sets of terms were operationalised together on WoS (Core Collection), Scopus (e.g., see fig. 2) and EBSCOhost (Africa-Wide Information and GreenFILE); while only #1 and #2 were

employed on SAJ. In each case, a year limit was not applied in the search to allow the inclusion of every possible study in the region.

Figure 2.2. A screenshot demonstrating the search operation on Scopus database.

AJO was slightly different as the search engine of the web catalogue was not flexible enough. Instead, a simple search of "media coverage of climate change OR global warming" returned some significant results for consideration. For AJS, the researchers scanned and read the titles of articles appearing on all the issues of the journal page (via Taylor and Francis online) from 2019 to 1990 (in that order) to determine whether an article meets the inclusion criteria. Where in doubt, the article was extracted, and the abstract was read. This yielded an extra seven articles not earlier identified. The decision to stop at 1990 was taken as it was observed that after 2012, no publication featuring climate change and media issues was found. We considered that it has been established in literature that the global CCC field took shape in the 1990s (Schäfer & Schlichting, 2014).

The entire search exercise was conducted in April 2019, and 208 records were identified from the web catalogues. As indicated in Figure 2.1 above, 16 additional studies of relevance were identified and added through supplementary sources. Next, the title and abstract of the total 214 identified records were screened to determine their relevance for inclusion in the study and to clean up duplicates. This narrowed the collection to 48 records. A final eligibility decision was taken after the full text of the 48 records was assessed.

At the end, only 34 publications were included in our dataset: journal articles (85%), theses (9%), a Reuter Fellowship paper (3%) and a book chapter publication (3%). These records were

then imported into ATLAS.ti 8 for analysis. ATLAS.ti is a computer-aided qualitative data analysis software (CAQDAS) that has proved useful in qualitative research approach (Friese, 2016).

2.4 Results

2.4.1 Q1: Growth and diversity in the field

In this section, we first present results for Q1 which account for when the studies in our dataset were published and the years analysed, the countries analysed, the media analysed, and methodological considerations employed. Equally, we focused on the researchers, the location of their institutions and their disciplinary affiliation to demonstrate the diversity of interest in media(ted) CCC studies within Africa.

2.4.2 Timeline of media(ted) CCC research in Africa

Our analysis of media(ted) CCC research development in Africa suggests that the field is still in a nascent phase with only a decade of activities. Figure 2.3 below indicates an erratic growth trend for media(ted) CCC research examining African context. The first scholarship in the data is Cramer's (2008) master's thesis on "The framing of climate change in three daily newspapers in the Western Cape Province of South Africa". The next two years witnessed one journal publication each and after a pause in 2011, research output resurfaced in 2012 with five publications – 2013 stands out as significant in the dataset as the number of publications peaked at eight.

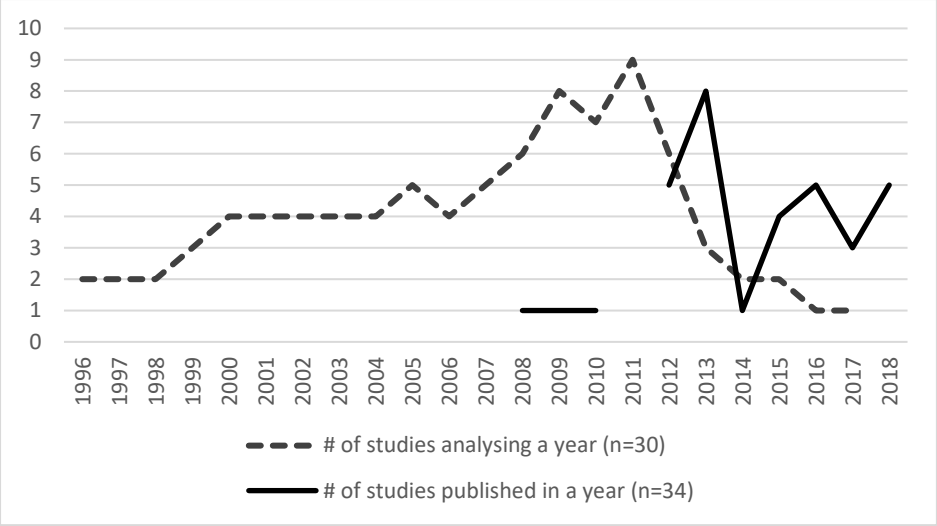

Figure 2.3. African media(ted) CCC research trend over time

Note: For the year(s) analysed in the studies, four publications were not included because while they studied media representation of climate change, they did not specifically analyse coverage in the media, but factors which influence coverage (e.g., media organisational factors and access to media by certain demography).

When compared to the years which were analysed in the different studies, the 2013 sharp rise in terms of research output needs to be explained. The latter compares well with the number of studies analysing the year 2011, suggesting that the 2013 peak in output was responding to the significant global climate event held in South Africa in 2011. The UN Climate Change Convention's (UNFCC) 17th Conference of the Parties (COP 17) meeting in Durban seems to have attracted not only media attention to climate change, but also spurred scholarly attention within Africa (e.g., Johannessen, 2013; Meiring, 2013). However, the attention was not sustained as publication output dropped to one the following year, before rising in 2015 and 2016. These latter peaks are significant for the conversation around the 2015 Paris Agreement signed at the 2015 COP 21 meeting in France.

Compared to when studies examining media(ted) CCC in Africa was first published, our result as presented in Figure 2.3 above indicates that the years analysed in the individual studies begun earlier. In the dataset, the first year analysed is 1996. Interest in the subsequent years grew to peak in 2011 which had nine studies examining a period in that year. Afterwards, the growth curve for the number of studies looking at the subsequent years sloped, and this aligned well with the slowed growth in terms of publication output. In recent years, both trends deviate

from global report indicating general rise in scholarship in both output and years analysed (Schäfer & Schlichting, 2014). Our results suggest that the African context emerged in media(ted) CCC research almost a decade later (2008) compared to the global start period which pegged around the early 1990s (Schäfer & Schlichting, 2014:148).

2.4.3 Countries analysed in the studies

We checked for which African countries have been analysed in the dataset. The result as presented in Figure 2.4 below suggests only 9 out of a possible 54 African countries have been analysed. The most studied countries in the group are South Africa (16 publications), Nigeria (13) and Ghana (4). In terms of geopolitical relevance, West Africa has two countries represented (Ghana and Nigeria), Southern Africa has three (South Africa, Namibia, and Zimbabwe) and East Africa, three (Uganda, Tanzania, and Kenya). Algeria is the only country from North Africa which made the list. The list suggests that many African countries are still virgin area of research in media(ted) CCC and validates earlier work which suggests a dearth of African studies (Schäfer & Schlichting, 2014).

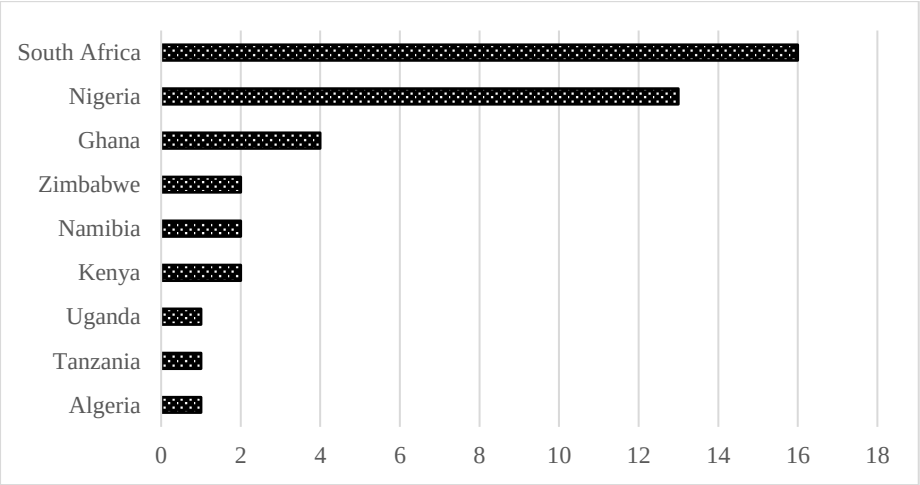

Figure 2.4. Number of African countries analysed in the studies

Note: An African country is counted if it appears in a study, and as a study may mention more than one African country, the total does not tally with the 'n' value of the study.

We also analysed the number of cross-country studies in the dataset, including intra-African studies and those comparing African societies with other contexts. Our finding presented in Table 2.3 below suggests that there are more studies comparing nations in Africa to non-African societies than there are with intra-African comparative studies – 10 of the 14

comparative studies examined one or more African countries alongside non-African societies (see Table 2.3). Of the 10 studies, South Africa appeared in all but one while Algeria, Ghana, Namibia, and Nigeria had a singular share each. The reason for this bias in favour of South Africa may be due to data access. The news databases such as LexisNexis, which some of the comparative study authors utilised, have more South African media representation than other African countries (e.g., Grundmann, Scott & Wang, 2013).

Table 2.3. Number of countries in Africa that appeared in comparative studies (n=14)

Country	Frequency
With non-African nation(s)	
South Africa	9
Algeria	1
Ghana	1
Namibia	1
Nigeria	1
Between African nation(s)	
Ghana	3
Nigeria	3
South Africa	2
Zimbabwe	1
Namibia	1

Note: A country is counted if it appears in a study comparing either an African nation with another, or with non-African(s). Some publications mentioned more than one African country, hence, the total does not add up to 14 (e.g., Schmidt *et al.*, 2013).

With reference to cross-country studies within Africa, the West African countries in our dataset enjoyed more comparison (three times). The next cluster is Southern Africa with South Africa appearing more. Other regional blocs are absent indicating a limited effort to compare insights across Africa in the research field.

It is important to also note that African nations have been studied alongside nations drawn from diverse global regions (see Figure 2.5 below for the list). There seems to be no clear lead between countries of the Global North and South in this regard. For instance, both USA (in the Global North) and India (in the Global South) have the highest appearances in the study. Overall, the result indicates growing interest in cross-national studies and a broadening of scope beyond the dominant Anglo-American context.

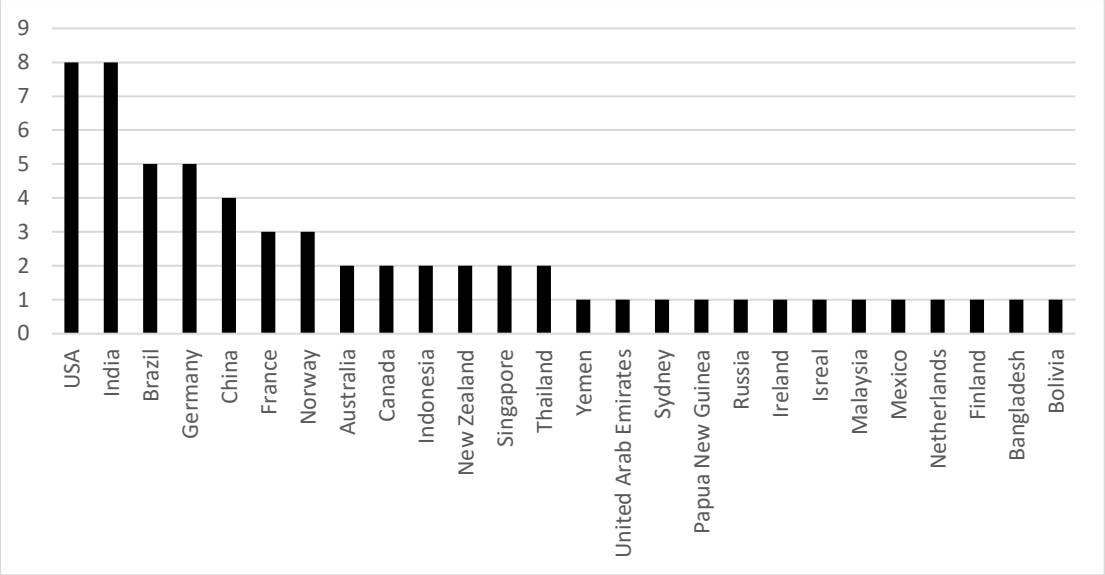

Figure 2.5. Non-African countries analysed alongside African nation(s)

2.4.4 Types of media analysed

When we analysed for the media type studied in our dataset, the overall picture shares similarity with the global trend as reported in Schäfer and Schlichting (2014). The share of print media (newspaper) is dominant – more than three-quarters of the share of all the media type analysed (see Figure 2.4). The significant difference between the African context and the global trend is that new media is yet to be taken seriously in the former. Bosch's (2012) examination of Twitter and Blog pages in South Africa is the only attempt in this regard. The broadcast has also received attention, but only in relation to television with a total absence of radio and online broadcasts.

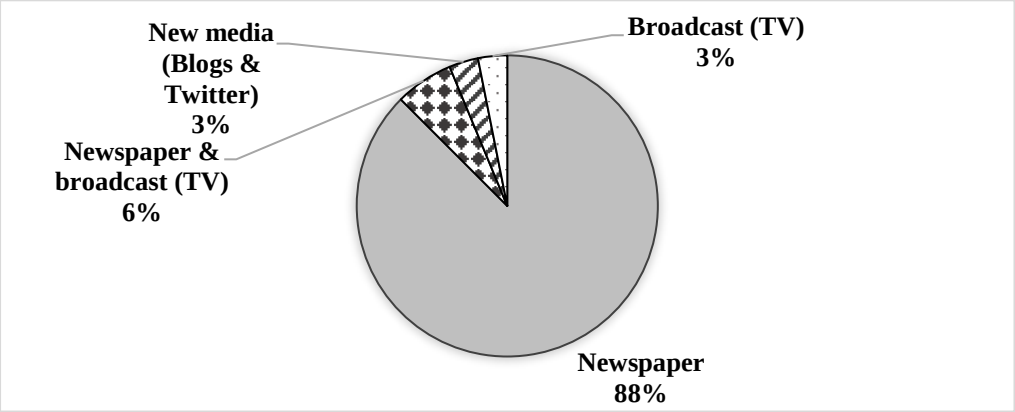

Figure 2.6. Media type analysed in the study (% of the total)

2.4.5 Methods and designs employed in the studies

Table 2.4 below presents results for our analysis of methods and designs in the dataset. For the method, we sought to clarify whether a study used predominantly quantitative or qualitative or both approaches. We coded a study as predominantly quantitative if it is large in scale (sample size), emphasises numeric data, and employs statistical analysis and inferences, or predominantly qualitative if it is small in size, emphasises textual data, and utilises interpretative analysis (Schäfer & Schlichting, 2014:147). As observed in Schäfer and Schlichting's (2014) analysis of the global field, we equally noticed diversity of approaches to research in our dataset; although, more than half of the studies in the dataset utilised quantitative approach in their analysis of media(ted) CCC. A combination of quantitative and qualitative approaches follows with 32% while the qualitative studies were less than a quarter of the entire dataset.

Table 2.4. Methods and designs applied in the studies

	Frequency	**% Total**
Method		
Predominantly quantitative	19	56
Quantitative and qualitative combined	11	32
Predominantly qualitative	4	12
Total	**34**	**100**
Design		
Case study	13	38
Comparative study	4	12
Longitudinal study	5	15
Comparative and longitudinal study	9	26
Others	3	9
Total	**34**	**100**

We also observed diversity in the designs applied within the study group. Case study design in which studies analysed only one country, was predominant in the dataset (38% of the total). Comparative and longitudinal studies, which compare trends across scale and time, share about a quarter of the total, followed by comparative design studies which compared more than one country only with 12%. However, these two groups are dominated by studies comparing African nation(s) with non-African context (e.g., Karlsson-Vinkhuyzen, Friberg & Saccenti, 2017; Schmidt *et al.*, 2013; Wozniak, Lück & Wessler, 2015). Longitudinal studies examining

singular case were relatively small sharing equal volume (three publications each) with studies categorised as 'others'. The latter refers to publications which employed interviews and surveys to examine organisational factors affecting media(ted) CCC (Amu & Agwu, 2012; Gadzekpo, Tietaah & Segtub, 2018; Meribe, 2017) and access to media(ted) CCC by farmers (Falaki & Adegbija, 2013; Ndhlovu & Mpofu, 2016). In both method and design categories, the fairly diverse approaches found in the nascent field of media(ted) CCC research in Africa, are encouraging.

2.4.6 Author's home institution and discipline

We were also interested in ascertaining which disciplines are involved in media(ted) CCC research in Africa and where the researchers' institutions are based. We observed a similar pattern as noticed in the countries analysed within the dataset. The two leading countries in the previous category, Nigeria, and South Africa, also edged higher under the category of where researchers' institutions are located (see Table 2.5 below). However, Nigeria leads South Africa (with a difference of 6 publications) and the rest of the countries in the dataset. This latter finding indicates that the South African case generated more interest from global studies than it did from home institutions.

Table 2.5. Country base of researchers' intuitions

	Country	Frequency
Within Africa	Nigeria	10
	South Africa	4
	Kenya	2
	Ghana	2
	Uganda	1
	Zimbabwe	1
	Tanzania	1
Outside Africa	UK	4
	USA	3
	China	2
	Germany	1
	Netherlands	1
	Sydney	1
	Brazil	1

Note: A country is counted if it appeared in a publication as an author(s)' institutional affiliated country (n≠34). Where it is not stated, a search was run to locate the mentioned institution's country of location.

The diversity of the research field is consolidated by the variety of disciplines interested in the subject area. As expected, communication studies (including sister fields such as journalism, media and information studies) dominate with 18 of the publications reporting at least one authorship affiliation with the field (see Table 2.6 below). Agricultural (extension) and Rural Development are next with four publications. The dominance of the former suggests the research field is still strongly considered as basically a communication subject area. However, the slow penetration of other diverse disciplines from the social sciences and humanities is encouraging and it indicates the growing interests in the transdisciplinary benefit of climate change research and of CCC in particular. Interest from Agricultural (extension) and Rural Development particularly resonates with one of Africa's main climate concerns namely, impact on food productivity. Researchers from the field are attempting to make sense of how local farmers' interaction with climate change knowledge as media(ted) through the media can help them adapt better to climate impacts on agricultural activities.

Table 2.6. Disciplines reported in the studies.

Disciplinary field	Frequency
Journalism, Media, Communication & Information studies*	18
Agric. (Extension) & Rural Development	4
Geography	2
Information & Technology	1
Language & Social Sciences	1
Sociology & Social Policy	1
Sociology & Anthropology	1
Public Admin. & Policy	1
Demography & Population Studies	1
System & Synthetic Biology	1
Geo-informatics & Meteorology	1
Commerce	1
Humanities	1

Note: Frequency represents the number of times a field is mentioned in a publication (n≠34). *Aggregates studies mentioning any of the fields designate.

2.4.7 Q2: Theoretical assumptions and African perspective in the studies

In Q2, we sought to identify theoretical and analytical perspectives applied in the dataset. In addition, we probed whether attention is given to contributions from African theoretical traditions in the emerging field.

Observing our data, we found that researchers investigating climate change and the media nexus within Africa, approached the subject with diverse theoretical and analytical frameworks applied to different questions. It is encouraging to find such diversity within the short span of time that the media(ted) CCC research field emerged in the region. As earlier shown, this diversity which cuts across various traditions, is expected given the expanding scope of climate change problems and the art of public discourse around it (Comfort & Park, 2018). Table 2.7 below presents the number of theoretical applications found in the dataset. We grouped the theories into two categories, those aligning more with communication/media theories and those which represent contributions from fields in the social sciences – politics, sociology, and geography.

Table 2.7. Theories and analytical frameworks applied in the studies

Theory	Fx	Publications

Communication theories	Framing (including multimodal)	17	(Agwu & Amu, 2015; Ajaero & Anorue, 2018; Atieno & Njoroge, 2014a; Batta *et al.*, 2013; Cramer, 2008; Elia, 2019b; Fawole & Olajide, 2012; Lück, Wessler, Wozniak & Lycarião, 2018; Meiring, 2013; Midttun *et al.*, 2015; Nwabueze & Egbra, 2016; Osindo, 2012; Semujju, 2013; Tagbo, 2010; Ukonu, Akpan & Anorue, 2012; Wessler *et al.*, 2016; Wozniak *et al.*, 2015)
	Agenda setting (including issue attention)	12	(Adelekan, 2009; Amu & Agwu, 2012; Batta *et al.*, 2013; Bosch, 2012; Cramer, 2008; Elia, 2018; Evans & Musvipwa, 2016; Gurwitt, Malkki & Mitra, 2017; Nwabueze & Egbra, 2016; Nwabueze, Nnaemeka, Umeora & Okika, 2015; Schmidt *et al.*, 2013; Tagbo, 2010)
	Discourse analysis	3	(Batta *et al.*, 2013; Johannessen, 2013, 2015)
	Reception, encoding and decoding, and gratification	1	(Ndhlovu & Mpofu, 2016)
	Risk communication	1	(Falaki & Adegbija, 2013)
Others	Synchronisation and homogenisation framework	1	(Grundmann *et al.*, 2013)
	Sociology of media	1	(Gadzekpo *et al.*, 2018)
	Securitisation	1	(Schäfer, Scheffran, *et al.*, 2016)
	Accountability and governance	1	(Karlsson-Vinkhuyzen *et al.*, 2017)
	Political economy	1	(Meribe, 2017)
	The geography of environmental news	1	(Lawhon, Pierce & Bouwer, 2018)
	Ubuntu-ism	1	(Meiring, 2013)

Note: The table shows the number of theories for which authors in the data corpus adopt, or reference, as a guiding framework for a whole or a part (e.g., a question) of their study. Fx represents the number of publications a theory appears in (n≠34, some publications referenced more than one theory).

Following from the observation made earlier on the dominance of communication (media, etc.) discipline as indicated in Table 2.5 (see page 54), it is not surprising that communication theories dominate the current category. Table 2.7 (see page 55) shows that the prominent theories in this regard are framing, agenda-setting and discourse analytical framework. Their dominancy reflects both trends in global media(ted) CCC and general media studies (Anderson, 2009). However, we also observed contributions, albeit in small number, from social sciences in the dataset reflecting perspectives from political science (securitisation, accountability and governance, and political economy), sociology (synchronisation and homogenisation framework, and sociology of media), geography and philosophy (Ubuntu-ism). Of these theoretical lenses, only the Ubuntu-ism framework was found to have a bearing with African intellectual tradition.

2.5 Discussion

This study was interested in two research questions: first, to what extent is there growth and diversity in the media(ted) CCC research field within the African context? Second, what theoretical applications are employed in the African media(ted) CCC research field? While we discuss our findings in relation to these questions below, we draw conclusions on whether the literature we reviewed afforded attention to African theoretical tradition(s) in researching media(ted) CCC problems within Africa.

Our findings strongly support earlier reports that there is a dearth of media(ted) CCC research focusing on the African region (Anderson, 2009; Schäfer & Schlichting, 2014). Although we combined both publications, which analysed societies in Africa, with those which compared African context with societies outside the region, we still found limited research interest in the African context. The dearth of scholarship is particularly acute when individual African countries analysed in our dataset is considered. Only nine countries were investigated with higher attention to South Africa and Nigeria than all other nations on the continent. In contrast to the rising scholarly attention observed at global level (Schäfer & Schlichting, 2014), our findings show that the African field growth curve is erratic. After the 2013 sharp rise following the Durban COP 17 hosted by South Africa, scholarly attention has since slowed in Africa. This may be a consequent of the tendency of researchers to focus on political climate event (Christoff, 2010; Johannessen, 2013; Wozniak *et al.*, 2017). As such events shifted to other region, attention to Africa also declined. The limited coverage of research in the region gives the impression that what is known about CCC effort in Africa, is narrow in scope.

Similar to the countries analysed, scholarly interest in media(ted) CCC, as observed in the dataset, is clustered with more interest coming from non-African institutions and limited interest from institutions in the Western, Southern and East African regions. Nigeria and South Africa gained the highest research interest. In a previous study which looked at the global field, scholars from the Global Southern institutions (Africa included) were found not to be represented (Schäfer & Schlichting, 2014:157). We find similarity with the report when we only considered studies that examined an African context(s) with non-African contexts. Of the 10 publications in this category, only two reported a co-author affiliation with institutions based in Africa, respectively, in Ghana (Midttun *et al.*, 2015) and South Africa (Lawhon *et al.*, 2018). Therefore, we find it plausible to hold that Schäfer and Schlichting's (2014) dependence on

WoS skewed them to access limited work on Africa as compared to our approach in the present study.

We posit that the underrepresentation of African research and researchers in the global media(ted) CCC as demonstrated in this study may not be unrelated to trends in the dynamics of global knowledge creation. Medie and Kang's (2018) work in gender studies for instance, demonstrates that structural disparities orchestrated by the international political economy of knowledge creation constrain the participation of South-based scholars in knowledge production. They mentioned editorial policies of publishers, institutional incentives, poor funding for universities in the South, and heavy teaching loads as some of the limiting factors. The geospatial distribution of research as demonstrated in the current study, and in comparison to Schäfer and Schlichting (2014), may not be an exemption. The level of North and South disparity in knowledge participation and distribution calls for greater attention to further inclusive epistemic justice in the global knowledge economy (Scoville-Simonds, 2018).

In terms of intra-Africa dynamics, the leadership of South Africa and Nigerian institutions in the field may be explained by the positioning of the nation's educational sector relative to other countries. Particular interest in South Africa from the global studies follows from the advantage it enjoys over others in the area of technological appropriation that facilitate information distribution (Czerniewicz *et al.*, 2017). Conscious effort is required to distribute research attention to other parts of Africa to enable the emergence of a broader picture of media(ted) CCC effort in the continent. It is profiting to widen media(ted) CCC research coverage in Africa because "diverse academy is more likely to pose a broader array of research questions, adopt diverse methods and have access to a greater variety of sources" (Medie & Kang, 2018:41) that could yield richer understanding of media(ted) CCC challenge in the continent.

Another area that requires greater diversification in the African research field – as our results demonstrate – is interest in other media types apart from the newspapers. We observed a poor interest particularly in the new media (social media and blogs) and the radio. The embeddedness of radio in the larger population of rural communities in Africa warrants special attention to provide understanding of how the media facilitate public engagement of climate change at the local level (Ndhlovu & Mpofu, 2016). Moreover, the penetration of new media technology into Africa warrants greater consideration if citizens' engagement in the various platforms is to be given deserving importance in CCC (Bosch, 2012).

On the theoretical front, the emerging field of media(ted) CCC in Africa is showing signs of diversification as contributions extend beyond traditional communication frameworks. However, our data suggests stronger commitment to the communication field as framing, agenda-setting, and discourse analytical frameworks were frequently employed as explanatory lenses in the studies. Contributions from the other sciences (broadly considered) were minimal. This bias correlates with the dominance of communication disciplines among researchers in the field as observed in the sample. Observing a similar pattern in the broader environmental communication field, Comfort and Park (2018) point out that it will be profiting to see the development of theoretical understanding that draws strength from the varied areas of intersects which characterise environmental challenges.

Although we expected to see contributions that theories relating to social imaginings in African intellectual traditions can bring to the field, we found that only one study met this expectation, Meiring (2013). In the study, "Ubuntu-ism" was presented as "the capacity in African culture to express compassion, reciprocity, dignity, harmony and humanity in the interest of building and maintaining a community with justice and mutual caring" (Meiring, 2013:10). The concept was specifically used in examining whether the South African public broadcast media, the South African Broadcasting Corporation (SABC), expressed "a sense of national purpose, identity and pride" in the coverage of the COP 17 meeting (Meiring, 2013:67). The author found that the public media lived up to expectation as it covered stories which drew on national identity and motivate for collective responsibility to the environment. A case cited was a story by then Minister in the Presidency, Trevor Manuel, who, in the launch of the "Beehive Project" at the Botanical Gardens in Durban, remarked that: "This beehive is about what we are capable of being. And what we need to be capable of, is living as one with our environment" (Meiring, 2013:87). In the story, Minister Manuel is perceived as drawing on Ubuntu's principle of 'harmony' to motivate for climate action. This insight presents an alternative to the narrative which leans towards persuading the public with only climate science claims.

Lastly, we found comparison between approaches which lean toward traditional communication theories and contributions from the other sciences. It is our understanding that while the former approach (especially, the agenda setting paradigm) disposed researchers to be concerned about whether climate change is receiving enough coverage, the latter approach was more concerned about how media intersection with society condition the representation of climate change. In the dataset, the former category utilised more quantitative methods and

devised content analysis than the latter. The little attention given to evolving analytical framework that addresses local peculiarity of media(ted) CCC in Africa should be a concern. We posit that to understand what worked, and did not work, and what will work in relation to CCC within Africa, there is a need to go beyond transferring frameworks as they exist elsewhere to the African context without the rigour of ensuring they fit into the lived experience of the African people. Future research effort should be directed to this end.

2.6 Conclusion

Our analysis of media(ted) CCC research in Africa shows promising ground, as well as areas that require attention. Although the field in the region is still new with only a decade of activities, it shows strength in the array of theoretical application that draw insights from disciplines such as communication, sociology, political sciences, and geography. But we observed overbearing influence from communication discipline and little contribution from theoretical explications indigenous to Africa to shed light on CCC challenges in Africa. Moreover, our study established empirically, what has been hinted in several literatures, that very few studies have examined media(ted) CCC in the African context. Despite the robust attempt to capture relevant English literature on the subject area, we found that only nine African countries have been analysed since 2008 in the continent and that general growth in terms of research output, has slowed since 2013. Lastly, our analysis suggests the overbearing focus on news media (newspaper) over other relevant media in African context (especially radio and the emerging new media). Thus, for policy and funding, we advocate for supportive initiatives to broaden research penetration in Africa on media(ted) CCC as important steps to advance climate governance in the region. It will also be of interest to see future research directed towards incorporating theoretical frameworks that reflect specific lived-in experience of the Africans in the analysis.

We acknowledge limitations to this study. First, systematic review limits inclusion through operation of search terms (Comfort & Park, 2018:874). There could be studies which examined media(ted) CCC in the context of Africa but did not capture the specific terms utilised in the present studies. However, we believe our approach which triangulated sources and variated search terms to suit individual web catalogues, minimised this risk. Second, the study only captured English publications and did not include publications examining the subject area in other languages. For this reason, there is a limit to which the results can be generalised. Future

reviews should seek to include non-English work to broaden understanding in this regard.

3 Chapter Three: From 'communicating' to 'engagement': Afro-relationality as a conceptual framework for climate change communication in Africa

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Abstract

This study interrogates conventional understanding of and practice within mediated climate change communication (CCC) as a forum where transformative ideas on sustainability practices are shaped. Besides the dominance of non-African contexts and epistemologies in literature analysing the media-climate change and public nexus, there is little attention given to problematising public engagement. Common assumption pitches 'the public' on the one side and 'the communicator' on the other side. This bifurcated model of 'communicating' climate change has import for the forms of subjectivity in climate (in)action, including a weakened citizenship representation in climate discourse and the de-pluralisation of ideas. This study argues that because it is *people* who are to be engaged in climate campaigns, it is important to draw attention to what understanding of "person" and "community" undergird current CCC practice. The work draws insights from African political theories and communication studies to position CCC toward inclusive public engagement.

Keywords: climate change; communication; person and community; Afro-relationality framework; Africa

3.1 Introduction

This paper presents a report of a conceptual reflection on media(ted) climate change communication (CCC) – that is, a media representation of climate change – with a focus on the African context. The reflection is guided by two questions: (1) What assumptions about sociality and understanding of the concept of personhood underpin the conventional practice of CCC in Africa? And (2) how might reflecting on the concept of 'person-community

relations' shape the understanding of (mediated) CCC to enhance public engagement in Africa? Sociality, as used in this paper, refers to our understanding about the organisation of society and the relations of individuals in it.

The reason for focusing on Africa is twofold. Firstly, Africa is highly susceptible to climate change impacts due to multiple interactions of biophysical, political, and socioeconomic stressors (Connolly-Boutin & Smit, 2016). The linkage between the environment and livelihood practices such as agriculture which is dominant in many African societies (Schlenker & Lobell, 2010) particularly exemplifies the vulnerability of peoples and communities to physical stressors amplified by the impacts of climate change (Thompson, Berrang-Ford & Ford, 2010) as evident in increasing food security challenge – the lack of availability, access and utilisation of food – on the continent (Mbow, Van Noordwijk, Luedeling, Neufeldt, Minang, *et al.*, 2014). Despite the acknowledgment of Africa's peculiarities, public awareness and engagement on climate change remain problematic in the region (Selormey *et al.*, 2019). Thus, it is important to interrogate both current practice and understanding of mediated CCC as a forum where transformative ideas are shaped in the region (Schäfer *et al.*, 2016).

Secondly, there is the evident dominance of non-African contexts (Schäfer & Schlichting, 2014) and epistemologies in the literature analysing the media-climate change and public nexus, and with little attention to problematising 'public engagement' within CCC. Common assumption pitches 'the public' on the one side and 'the communicator' on the other side. The bifurcated model of 'communicating' climate change has import for the forms of subjectivity in climate (in)action, including a weakened citizenship representation in climate discourse and the de-pluralisation of ideas. Given that it is people who are to be engaged in climate campaigns, this paper draws attention to the understanding of 'person' and 'community' that undergirds current CCC practice.

The paper assumes that communication is a political function, and as Matolino (2018:101) argues, theorising about the notion of persons is intertwined with theorising about the organisation of politics, including the structuring of communication. Similarly, Shepard (1992:203) argues that "[i]n defining communication, we define what it is to be human" as the understanding we have of the former represents our "visions of personhood". The approach employed in this phenomenological reflection incorporates discussions from political thoughts in Africa and beyond, and in a "conversational method" (Chimakonam, 2014, 2017a) the paper

teases out *public engagement* vis-à-vis the concepts of *person* and *community*, and their implication for CCC in an African context.

While the focus of the reflection here is on Africa, the discussion it sustains has implications for how communication is understood and practiced in other contexts. The paper particularly brings fresh perspective to bear on the growing literature advocating for participatory engagement in CCC (Ballantyne, 2016; Carvalho *et al.*, 2017; Nerlich, Koteyko & Brown, 2010), making this contribution from less acknowledged epistemologies in media discourse. As Wasserman (2009) acknowledges elsewhere, the Western liberal theory has a stranglehold on media theory and practice globally with trade-offs for the cultural and political plurality in the world. The theoretical intervention in this paper thus serves to stimulate expanding frontiers of conceptual imagining of the media landscape. The illustration brought to bear from the African perspective suggests that there are alternatives to the popular media model which limits engaging people in mediated CCC to that which articulates personhood and agency in a way that supports participatory media model.

In the succeeding section, the methodology of the study is presented and followed by a consideration of the implications of the changing climate for Africa using food security as an example. Next, the practice of CCC as it is currently understood with specific focus on the African context is discussed to set the pace for the theoretical reflection that follows. Lastly, we discuss 'person' and 'community' from an African perspective, their relevance to the understanding of public engagement and CCC, and the global appeal behind the communication framework they inspire.

3.2 Methodology

This study employed a "conversational" approach (Chimakonam, 2014) to the investigation of concepts. Chimakonam (2014:17) defined the approach as entailing "the rigorous engagement of individual African philosophers [and other political theorists of relevance] in the creation of critical narratives through the fusion of relevant elements of tradition and modernity for the construction of future". Thus, to reimagine a better form of CCC in contemporary practice especially in Africa, this study interrogates what visions of sociality undergird CCC practice with a view to inform the construct of its future.

The literature utilised consist of writings on the concepts of 'person' and 'community' as found

in the African political philosophy – African (Afro)-communitarianism and Ubuntu – and other relevant literatures (e.g., broader communication literature and political philosophy) to tease out implications for reorienting CCC towards 'engaging' the public for sustainability practice. The bias towards the African perspective in this paper serves to decentralise knowledge as it relates to the understanding of CCC from the perspective of "the epistemologies of the [Global] South" (Santos, 2016:18) and to reorient practice within the continent towards context-relevance.

"African" as used in this paper connotes theorisation which "reflects on the conceptualisations of the live-worlds of Africans" (Ikhane, 2018:225). This understanding does not negate the diverse cultures within various African societies and the different reflections which have accrued therein. Rather, it recognises that while this fact gives rise to differences in the content and details of African worldviews and theories, there are similarities in the ontological structures which permits a conversation (Kamwangamalu, 1999:25–26). With reference to "regime[s] of 'self'" for instance, Rose (1998:1–3) argues that despite the "confused ethical climate" surrounding the understanding of self, "a common normativity – a kind of family resemblance in the regulative ideals concerning persons" can be discerned from historical examination. Similarly, this paper avoids the bias of an ethno-philosophic approach which is associated with unanimity of thoughts that disregard "differences, historical developments, and social contexts" (Gade, 2017) by drawing insights across traditions to rethink CCC to support climate change campaigns, especially in Africa.

3.3 Changing climate and food security in Africa

Africa's vulnerability to climate change impacts is widely acknowledged in literature (Ahmadalipour *et al.*, 2019; IPCC, 2014a). While climate change exposes people to greater risks on multiple layers, the scale of impacts is disproportionate with the poorer societies bearing the harshest brunt as a result of their geographical location, knowledge, technological and financial gap (Busby *et al.*, 2014). Governance fragility and attendant developmental challenges confronting the African continent means that climate change risks exacerbate existing challenges relating to food and water security (Adenle *et al.*, 2017; CIGI, 2009; Nkhonjera, 2017), health management (Adenle *et al.*, 2017), economic stability (Abidoye & Odusola, 2015; Wossen *et al.*, 2018), land-use (Ahmadalipour *et al.*, 2019), and social and cultural cohesion (CIGI, 2009; Wodon, Liverani, Joseph & Bougnoux, 2014). These compound

challenges threaten Africa's aspirations to reduce poverty, address conflict, and build a resilient, peaceful and prosperous society as contained in the most recent policy vision of African Union Commission: "Agenda 2063: The Africa we want" (AU Commission, 2015).

While Africa has a low historical contribution to climate change relative to wealthier nations in the Global North (including emerging markets such as China and India), prevalent "lower adaptive capacity" remains the main causes of higher vulnerability among African poor communities (Füssel, 2010:297). These communities' worst exposure is in the area of food security and human health because of the connection between climate change, agriculture and nutrition (Fanzo *et al.*, 2018). In Africa, the agricultural sector is the largest employer of labour with significant contributions to the national economy (Paul, Frelat, Birnholz, Ebong, Gahigi, *et al.*, 2018). Agricultural practices suffer as climate change affect temperature and precipitation patterns. In recent times, the frequency and severity of extreme weather events have been on the rise (Kotir, 2011). Droughts, heat waves, flooding and other extreme weather events disrupt farming seasons, decrease crop yields as well as quality and livestock productivity, affect fisheries and agroforestry practices, and thereby poses higher risks to food security.

A number of studies already document how such impacts affect households in Africa (Hornby, Nel, Chademana, Khanyile, Hornby, *et al.*, 2018; Paul *et al.*, 2018; Thornton, Jones, Alagarswamy, Andresen & Herrero, 2010; Wossen *et al.*, 2018). For example, in Ethiopia and Ghana, the interactions between climate and price variability was shown to negatively affect household income and food security (Wossen *et al.*, 2018). Similarly, Hornby *et al*. (2018) suggest that smallholder farmers in the KwaZulu-Natal province of South Africa face "double exposure": vulnerability to both the impacts of post-Apartheid agrarian dynamics and the risks of climate change.

The examples above illustrate that food security in Africa is threatened due to climate change impacts intersecting with existing socio-economic challenges with the impacts cutting across the entire food systems – from the "agricultural production through storage, processing and distribution, retail and marketing, and home food preparation and consumption" (Fanzo *et al.*, 2018:13). It is no surprise then, that a recent Afro-barometer public opinion survey (which documents low climate change awareness across Africa) reported that about half of respondents believe that climate conditions for agriculture have worsened over the last decade (Selormey

et al., 2019:3). It is of value to interrogate the forms of CCC in Africa and probe how they engage people in meaning-making regarding both climate change as an issue and its intersection with issues such as agriculture; particularly as meeting food demand remains a challenge for the rising population on the African continent.

3.4 Mediated climate change communication in Africa

This paper is a follow-up on a recent study which systematically reviewed empirical scholarships on media representation of climate change in Africa (Okoliko & de Wit, 2020). The study reported a near-absence of Global Southern or African theoretical representation among the toolkits used in examining CCC within the continent. Among the 34 publications reviewed by Okoliko and De Wit (2020), only Meiring (2013) referenced "Ubuntu-ism" as an African lens through which the media-climate change interaction was examined. The other publications drew from theoretical and analytical frameworks in communication science, sociology, political science and geography, with cores in the Western academic tradition, including agenda setting and priming (e.g., Adelekan, 2009; Semujju, 2013; Tagbo, 2010), discourse analysis (e.g., Batta *et al.*, 2013; Johannessen, 2015), framing (e.g., Ajaero & Anorue, 2018; Nwabueze & Egbra, 2016), reception theory, encoding and decoding (Ndhlovu & Mpofu, 2016).

In the body of literature reviewed, the need to document climate change coverage across Africa was a major concern (Okoliko & de Wit, 2020). The study revealed that only a limited number of African nations have been examined (9 countries); that there is a trend of cyclical and event-centred coverage in Africa; and that there is a near-consensus that compared to Africa's climate vulnerability status, media attention to climate change have been marginal (Ajaero & Anorue, 2018; Nwabueze & Egbra, 2016). Furthermore, the study reports that international events (e.g. United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP) meetings) were more likely to drive media attention than local events (Tagbo, 2010), and that the media contents of the African coverage were much rather sourced externally than locally (Evans & Musvipwa, 2016).

Two observations are worth noting about the foregoing. Firstly, the neglect of Africa's theoretical contributions to research in CCC arguably furthers "epistemic [in]justice" which tend to push a single narrative agenda in global knowledge (Chimakonam, 2017b). As Olausson and Berglez (2014:258) argue, however, "[i]nstead of a simple transfer of Western ideas,

concepts, theories, analytical approaches, etc., to the rest of the world, research on mediated climate communication should give us an increasingly diversified picture and understanding of climate reporting". The present study addresses this challenge by providing African resonance to the CCC problems.

Secondly, it is important to acknowledge that the overbalance on media reportage of climate change on the continent is understandable. As mediated CCC research focusing on the region is relatively new, there is a need to demonstrate the level of media attention to the most defining issue of our time. However, beyond finding out whether the attention is on the rise, it is equally important to highlight whether the media provides forums where the public can engage with the various aspects of climate change issues, including the challenges of sustainable agriculture. It appears that the theoretical commitments which led to the near neglect of the *how* of climate change coverage betrays certain assumptions that are problematic for the African socio-political context. The assumptions underscore an understanding of communication as a process of transmission where CCC effort largely translates to feeding "deficits" in laypeople's scientific literacy so that they become better informed about climate change related problems (Carvalho *et al.*, 2017).

There are three implicit claims that are problematic for the African sociality under the transmission model:

(1) The media is a linear channel through which climate change related problems can be conveyed (Bucchi, 2008).
(2) In the communicative enterprise, it is possible to conceive of the source context (specialist, e.g., scientists and media professionals) separate from the target context (the public).
(3) The target context is passive and largely ignorant while the source context is full of vitality and self-assertion (Joubert, 2018).

With the first assumption, the media is burdened to 'correctly' convey the science claims of climate change and it is sometimes accused of failing as a result of communication disturbances such as journalistic norms (Boykoff & Boykoff, 2004), inadequacies of reporters (Gadzekpo *et al.*, 2018), media organisational culture and economies (Meribe, 2017), etc. In the second instance, the bifurcated roles for the source and the target context privileges the former for exclusive claim-making. In related form, the third instance assumes the public to have deficit

knowledge of climate change which justifies their near absence in mediated climate change discourse.

These assumptions explain why not much effort is made to find local angles to media representation of climate change in Africa. For example, Anaafo (2019:203) acknowledges that the transmission model is "the dominant way through which climate change information is communicated to the general population in the Bolgatanga Municipality" in Ghana. But as Lawhon *et al.* (2018) argue, there is an important relationship between the environment, place and geographical imaginaries in relation to media discourses on environmental problems like climate change, so that the more remotely represented issues are less likely to resonate with local media users. The transmission model, it will be shown below, betrays the importance of relationship, deliberation and engagement which are hallmarks of African sociality and the nature of the fledgling democracies in Africa. By bifurcating the communication process and privileging 'experts' voices (Ballantyne, 2016; Carvalho *et al.*, 2017), cues to local experience, skills and knowledge on climate change are not being shared.

The underlying thinking serving the transmission model is a view of the sociality that is suspicious of relational attributes. As demonstrated in Figure 3.1 below, the model assumes communication function as a one-way transmission process initiated at the *communicator's* end and terminated at the *audience's* point (the public).

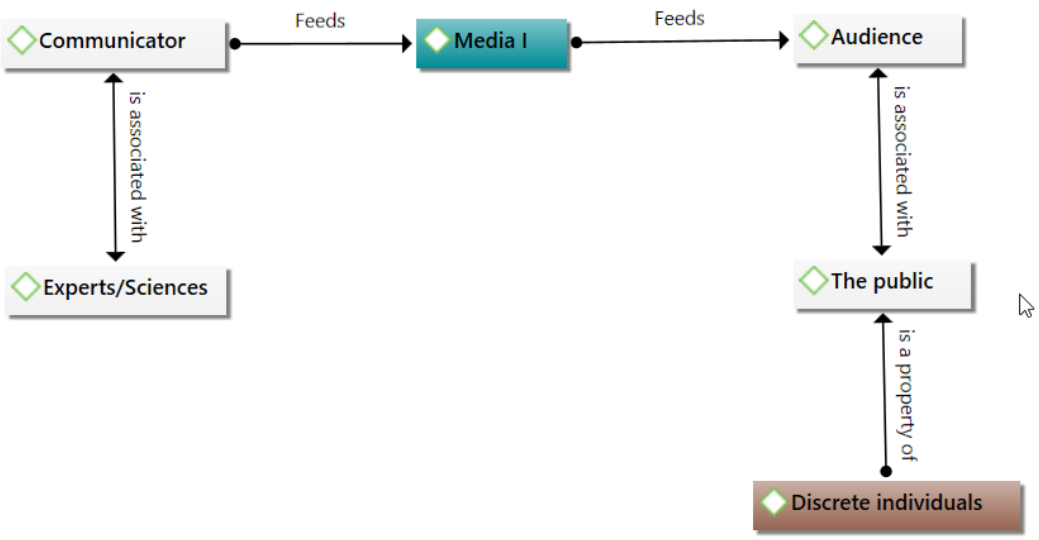


Figure 3.1. Communication as transmission model

Source: Authors 'construct

Such a construct of communication pathway assumes that the public consists of discrete rather than relational individuals. The problem with this construct will be explained as we turn to examine an alternative sociality that resonates more with the African context.

3.5 Defining the public: An Afro-relational perspective

There is a dominant understanding of Africa's sociality which underscores communion or relationship as the foundation of cultural and political life. In African political philosophy, this understanding is couched within the concept of personhood and community. While the former referent what understanding underpins perceptions about the self or identity or agency (Rossouw, 2012), the latter relates to how that understanding shapes the relationship between persons in a given polity. We identified at least three strands of thought on the subject of relationality in the African context, namely the pro-communion, the pro-individual and the pro-complementary views. In Figure 3.2, these views are represented as a continuum with the pro-communion view to the far left the pro-individual view to the far right and the complementary view in the middle.

Figure 3.2. Three views of persons and community in African literature

Source: Authors' construct

The pro-communion view is largely identified with Menkiti (1984) who contrasts a view he called "African" against the "Western view", arguing that unlike in the latter where a person is defined by reference to physical or psychological features of a human being, the former view defines a person by reference to the environing community and their social embeddedness in

it. The Western view which he qualifies as individualism because of its fundamental orientation to the internal attributes of the individual – the soul, rationality, will, and memory – can be associated with Western political theories of John Locke, Rene Descartes, John Rawls, Immanuel Kant, John Mills and Richard Hull (Rossouw, 2012).

The emphasis on the psychophysical elements identified by these thinkers laid the foundation for the modern liberal ideology and its obsession with autonomy. A modest version is the view of personhood according to which "to be a person means to be an individual with the capacity for autonomy, understood as either the ability to engage in rational self-control or at least the potential to develop that ability" (Hull, 1978). Or consider Rawls' proposition that "persons are autonomous in the original position because they choose and give themselves the moral law out of their nature as rational, independent, and mutually disinterested persons" (Rossouw, 2012:56). Menkiti's contestation of this position can be likened to Hegel's insistence that individuals are contextually and historically situated and Marx's argument "that autonomy is in fact impossible since we are all the products of class-consciousness and social conditions" (cited in Rossouw, 2012:23).

In Menkiti's (1984) account, personhood is procedural and bespeaks of attainment mediated within social relations. Owing to its procedural nature, one could fail or succeed at "becoming" a person by which Menkiti means, attaining moral "excellence" (Eze, 2018; Molefe, 2019), and because it is the interaction within the community that makes this possible, the community has primacy over the individual (Menkiti, 1984:176). The primacy of the community over the individual is interpreted by the pro-individual proponents as a direct attack on individual autonomy and rights in the African normative regime (Matolino, 2014; Obioha, 2014) leading to the development of parallel regimes identified as "moderate" (Gyekye, 1998), "limited" (Matolino, 2014) and "weak" (Oyowe, 2018) Afro-communitarianism. To varying degrees, these perspectives highlight the inalienability of individual rights in the face of collective duties (Gyekye, 1998; Matolino, 2014) and the need to accommodate the increasingly diverse character of modern African societies in theorising about social organisation in Africa today (Oyowe, 2018).

Regardless of the difference between the pro-communion and pro-individual views, however, there is a consistent commitment to communal values underscoring a social ontology that is relational in African politico-ethical philosophy. An example is Asouzu's (2007:378) *Ibuanyidanda* ontology drawn from the Igbo lifeworld which argue that being is "that on

account of which anything that exists serves a missing link of reality". Similarly, an Ubuntu ontology from Southern Africa underscores "be-ing" as "rheomodic" – that is, founded on the notion of motion in an onerous universe where harmony is the essential character (Bewaji & Ramose, 2003:413). These ontological understandings inform the political-ethical structure of the social that preoccupied most African thinkers where emphasis is on "beingness-with-others", albeit in varying degrees (Ikuenobe, 2018:88).

The tension between the parallel camps is not about a "'chicken-or-egg'-type of debate" as it has been construed in the past (Horsthemke, 2018). There is instead, a difference in approach which has led both sides to conclude either in favour of the community or the individual. Chimakonam (2018) particularly argues that the dominance of Aristotelian logic in methodological consideration explains the divergent positions. The two Aristotelian logical principles he identified are *contradiction* which asserts that "every statement that is necessary cannot be impossible" and *bivalence* which states that "every statement is either necessary or impossible" (Chimakonam, 2018:133–134). Under these principles, if one grants "that the community component is primary in communitarianism – the reason it is called communitarianism – then she cannot negate the primacy of the community over the individual or uphold the primacy of the individual or even the contemporaneity of the two" (Chimakonam, 2018:134).

In resolving this dilemma, Chimakonam's furtherance of Eze's (2008) "contemporaneity" thesis on individual-community relation is apt. Eze (2008:386) had argued that "[t]he individual and the community" are not to be considered as "radically opposed in the sense of priority but engaged in a contemporaneous formation". He construes the identity of the two entities as subjectivities that are "mutually constitutive and hence none is supreme" (Eze, 2008:388). Chimakonam (2018) takes this interlaced characterisation of person-community relations further to ground it in *Ezumezu* logic, an African three-valued and context-dependent logic that steers away the dilemma identified with the Aristotelian reasoning.

The alternative principles are identified as *complementarity* and *trivalence*. Complementarity allows that "given two seemingly opposed statements, there may be a context in which both may hold", and trivalence states that "for any two polar truth values, there is an intermediate point at which they may come together to form a complementary truth value" (Chimakonam, 2018:136). These principles ground Eze's contemporaneity concept, allowing for the "mutual complementation of identities" of both the individual and the community without the

dissolution of one into the other (Chimakonam, 2018:136). Within this framework thus, "and depending on context, one can defend the priority of individual endowments or community values or even their contemporaneity" (Chimakonam, 2018:136). We call this theorisation, the pro-complementary view, and submit that it provides the basis for relational sociality which finds resonance beyond the traditional homogenous African societies to include the plural nature of contemporary polities.

The foregoing African view is a relational perspective on the understanding of the self as a person. *A relational perspective put forward a picture of the self that affirms a relation to the other as inter-subjectivities.* The view on the self so postulated grants subjectivity to the individual but goes further to affirm the subjectivity of the other which form the relational basis by which the individual appropriates selfhood. As Mbiti (1970:141) puts it, "[o]nly in terms of other people does the individual become conscious of his own being, his own duties, his privileges and responsibilities towards himself and towards other people". The Afro-relationality as a perspective on the person-community nexus can be expressed as *persons-in-relationship* or *persons-in-community*. This way, the community, comprising of relations is one in which persons as subjectivities are contemporaneous and the public or community or society in this case is a space of relations of subjectivities. A brief attention to Ubuntu theorisation on this perspective will serve to explicate the social implication for reimagining CCC.

Ubuntu as a communitarian view exemplifies a relational perspective. "Ubuntu" is treated in literature as "human excellence" (Metz, 2016:137) or "humanness" (Ramose, 2015). Desmond Tutu expresses it as "[m]y humanity is caught up, is inextricably bound up, in yours. We belong in a bundle of life" (cited in Swanson, 2007:58). "My humanity" being bounded up in "a bundle of life" that the "other" is a part of, simply affirms the interconnectivity and interdependence or the complementarity that marks the relations of persons-in-community. Elsewhere, it has been argued that the interconnectivity expands beyond the social world as Ubuntu system of value concerns "the entire spheres of human relations" (Molefe, 2019), a view which underscores a pro-nature empathy (Okoliko, 2018).

Ubuntu is not tied to any finite or abstract feature about the being of humans but is about the "becoming" occasioned through daily interactions (or the capacity for this) within a community (Ramose, 2015). This way, it is a non-essentialist normative view admissible about anyone in certain relations. Metz (2007, 2016) articulates two relational modals by which one can

demonstrate humanness in this relational framework: by means of (1) identity and (2) solidarity. In the first instance, one considers the self as a part of the whole where one shares "a way of life, belonging and integrating with others" (Metz, 2016:138). The second instance calls for activity in pursuit of common good nurtured on the feelings of empathy and concern for others. Together, these modals specify "what it is to commune or harmonise with others" as an ethical-political outlook (Metz, 2015a:77).

This Afro-relational understanding is expressed in the Nguni saying, "*Umuntu ngumuntu ngabantu",* meaning "a person is a person through other persons" (Tschaepe, 2013:49). The proposition stresses the principle of relationship couched as complementarity where the pursuit of the common good – the solidarity element – equally serves the interests of the individual and those with which the individual is in relation with – identity element (Chimakonam, 2019a). This way, Afro-relationality, to use Berman's (1988) expression, "seeks a symbiosis of individual and community interests".

3.6 Implication for mediated climate change communication

The sort of social imagining that emerges from the foregoing discussion on person-community relations has import for the consideration of communication practice as it relates to climate change, especially in Africa. The thought is captured diagrammatically in Figure 3.3 below. Unlike in the case of Figure 3.1 (see page 69) which illustrates the transmission model (in which the public stands removed from the expert communicators), the public in this case is represented as *persons-in-relationship*. Consequently, the media space is construed as a space of *engagement* between persons-in-relationship or within community of persons – civil societies, governments, interest groups, businesses, and professionals (including media, climate scientists and others) – interacting to create meaning.

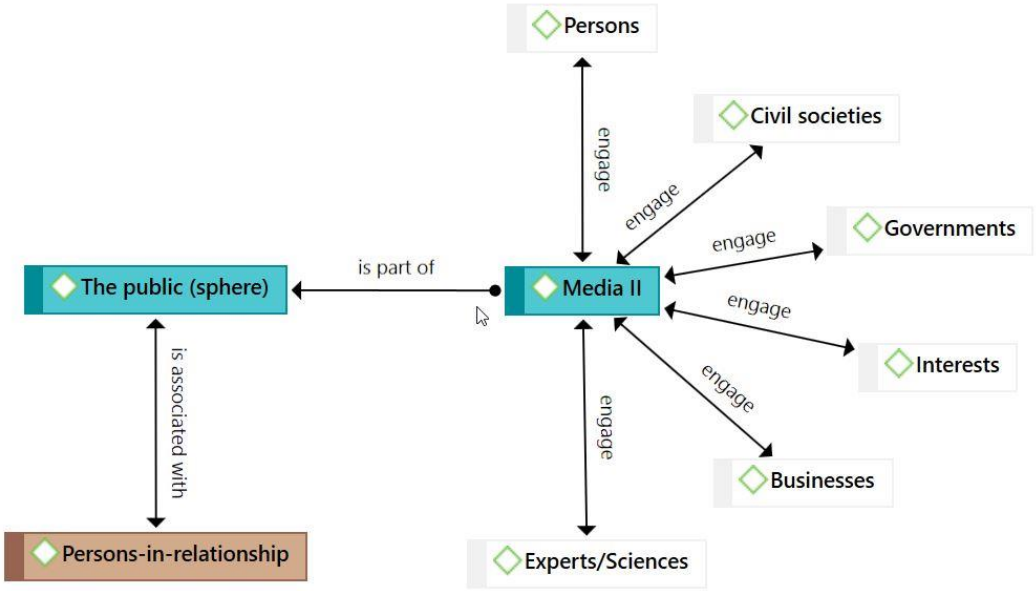


Figure 3.3. An Afro-relationality inspired media model

Source: Authors' construct

A media inspired by the Afro-relational framework (ARF) takes it as a duty to foster communion by providing space for engagement among persons-in-community. While the pursuit of profits might be a motivation for media operationalisation, an ethical outlook founded on relational principle requires media organisations to equally foster relational goals in the community and to act as facilitators of relationships of identity and solidarity (Metz, 2015a:83). By identity, it calls out media to provide room for the expressions and representations of subjectivities in coverage. In the same token, because it requires media to buy into the welfare of the community, they are to act in solidarity with the latter to promote contents which sustain common good (Blankenberg, 1999). This latter point calls into question the lack of adequate attention given to the issue of climate change in the African media as earlier referenced (see the literature section in chapter 0). The immanence of climate threats and the urgency of actions needed require that the media prioritises the concern in their operations as underscored in the ethical framework advanced here.

Mediated CCC driven by ARF can function under two related ideas that Carvalho *et al*. (2017) identifies as functions of communication: *interactional* and *ideational*. The interactional function points to how "the statuses of and relations between policy-makers, corporations and citizens [including farmers], amongst others, are constructed through communication

practices" (Carvalho *et al.*, 2017:126). It relates to the construct of agency and subject positions in climate discourse. The ideational function constitutes "the meanings that are socially constructed about climate change and possibilities to address it" (Carvalho *et al.*, 2017:126). The two communicative functions become primary cues to the engagement of persons as they both give expression to the relationality in personhood. The sense is that allowing for diverse voices and perspective diffuses agencies or the expression of selves.

The construct of positionality within communicative practice imagined as relational is inter-subjective with the evident place for dialogue. ARF envisages a self in relational terms, hence, emphasising relations of subjectivities in communication. It is to say that "[a] self exists only within 'webs of interlocution' and all self-interpretation implicitly or explicitly 'acknowledges necessarily social origin of any and all of their conceptions of the good and so of themselves'" (Christians, 2004:239). With this understanding, the media can be a platform that encourages and enables people to self-express, a forum that mirrors the sense of sharing and solidarity which characterises persons-in-relationship setting (Metz, 2015a:389).

In contrast, the transmission model (see Figure 3.1 on page 69) that takes for granted "humanism (an emphasis on the pure person)" and "incorporeality (a neglect of embodiment)" (Davies, 2013:695) leads to a distrust in the lay people's capacity for engagement. ARF's emphasis on humanness as persons-in-relationship underscores the embodied experience of persons as meriting participation in meaning-making. Meaning-making under this guise is a "deliberative epistemology" oriented towards "humble togetherness" where discourses are framed "around ways of knowing in mutually inclusive, complementary and open-ended ways" (Tavernaro-Haidarian, 2018:238).

With respect to the ideational level, ARF favours inclusivity over unanimity in the approach to debate. As a "context-dependent" perspective (Chimakonam, 2018:136), a straight-jacket approach to problem-solving is problematic within such a framework. Instead, with room that "everyone adds their own voice and subjectivity" (Tavernaro-Haidarian, 2018:230) in discussing challenges relating to changing climates, a richer perspective with relevance to local conditions can be gained. Pursuing a singular narrative as practiced in conventional CCC has disregard for internal diversity and complexity in contemporary societies (Carvalho *et al.*, 2017) and the complexity of systems challenges as they relate to climate change. But as Menkiti (2002:49) cautions, while the sense of belonging is central to a relational ethos, "[u]nanimity in all things pertaining to the group is not necessary". There is room for different perspectives,

for example, on the challenges of food security (taking into account differences in gender, age, location, economic status, etc.) in a changing climate conditioned by local experience which a "co-creating deliberative" (Tavernaro-Haidarian, 2018) CCC can unearth.

A diversity of voices is best supported within a framework that guarantees *active listening* as envisaged in ARF. It argues for democratic media participation beyond "who gets to speak?" to "who is heard, and to what end?" (Dreher, 2009:447). The latter question is broader than conventional media representation as it draws attention to the politics of *listening* (Ward & Wasserman, 2015). "Co-creating deliberative discourses" (Tavernaro-Haidarian, 2017:437) or what Chimakonam (2019b:128) called "critical re-othering" allows for approaching differences with empathy, flexibility, curiosity, patience and a bit of vulnerability. Deliberation is thus, approached in humble-togetherness because critical re-othering as opposed to "othering" (where the self is in opposition to the other) "see the self as a form of otherness and the other as a form of self" (Chimakonam, 2019b:129). Such a disposition holds possibility for conversion of beliefs, attitudes, and behaviour necessary to support climate action.

Active listening is difficult in a media culture that presents deliberation in binary format with conflictual posture where the end goal is for a winner to take all as associated with liberal media informed systems (Tavernaro-Haidarian, 2017:436). Discursive formation as an expression of power is shown under this form as a conquest or domination. Rather than see power this way, it is possible to view social goals as mutual empowerment which can reorient us to a more participatory communicative engagement that show respect to "listening across difference" (Dreher, 2009). In this light, the "co-creating deliberative discourses" (Tavernaro-Haidarian, 2018:437) as envisaged in ARF holds potential to managing plurality in mediated discourses.

3.7 Afro-relationality in conversation with 'others'

We are not to think that the theoretical enterprise undertaken thus far is entirely an African affair. Negedu (2018:56) has correctly argued that a communitarian view is not peculiar to the African societies or to the theoretical works identified with the continent (see also Christians, 2004). Similarly, we submit that a relational perspective as presented in this paper find appeal across non-African scholarship and some of them are briefly presented below with a view to enriching the discussion sustained thus far and to provide "cross-cultural validation" (Eze, 2018; Tavernaro-Haidarian, 2018).

In *Inventing Our Selves*, Nikolas Rose (1998:7) proposes a re-imagination of identity construct, arguing that "human corporeality" opens doors to relationship which forms the basis for identity. The author writes that:

> The questions to be addressed [about subjectivities] concern not 'the constitution of the self' but the linkages established between the human and other humans, objects, forces, procedures, the connections and flows made possible, the becomings and capacities engendered, the possibilities thus foreclosed, the machinic connections formed that produce and channel the relations humans establish with themselves, the assemblages of which they form elements, relays, resources, or forces (Rose, 1998:182).

Rather than the intrinsic features drawn up as definitive of persons in individualistic traditions – an approach that lends itself to essentialism – Rose (1998) seems to suggest here that the occasions of relations available to the human provide the self the richness of identity, a point which aligns with the ARF position. Within the space of relation, the self is in a constant act of formation so that personhood is possibly captured as "acquired" embodiment.

In similar terms, Martin Buber (1958) addressed the question of subjectivity in his three concepts of "spheres of relations": with humans, nature and spiritual beings. As if speaking of communion in the world, Buber (1958) asserts that "[w]e live our lives inscrutably included within the streaming mutual life of the universe" so that "real living is meeting". There are two modes through which relation happens for humans: the mode of "experience" and "encounter". In the former, Buber (1958) argues that humans experience the world through "the primary word *I-It*". Through the mode of encounter, which he describes as the *I-Thou* relation, the other is present to the self in a mutual holistic existence (Rossouw, 2012:92). It is a relation between subjects. Between these two modes of relating, Buber argues that "without *It* man cannot live. But he who lives with *It* alone is not a man" (sic) (Buber, 1958). Buber's emphasis on inter-subjectivity for human relation as the hallmark of lived-out humanness places him side-by-side with the Afro-relational perspective.

Another philosopher that is worth mentioning is John Macmurray (1969:38) who describes the self as an agent in relation to others of the kind he called "the you and I". An agent is relational by definition as it means that a person is one "acting in relation" (de Wit, 2018:13). Similarly, as an "agent-centred" perspective (Molefe, 2019), ARF defuses the dichotomy between knowledge and praxis, so that as De Wit (2018:11) recent reading of Macmurray puts it, knowledge "is 'knowledge in action', and not knowledge about an object". The point mirror's Ramose's (2009:71) argument that it is rather difficult to conceive of subjectivity where the

subject stands aloof from the object of experience because being is "wholeness" which cannot yield easily to "absolutism and dogmatism" that are offshoots of abstract reflection. Instead, being in the universe of relationship, "the responsibility resting on the self is to remain an agent" (de Wit, 2018:13) actively involved in the shaping of history. In this sense, it is plausible to hold that a media space that eschew citizen participation negates the subjectivity or agency of the people that it commits to uphold within the logic of democracy.

Lastly, a relational philosophy can be cited from thoughts within the Eastern tradition. Julian Baggini's (an editor of *The Philosopher's Magazine*) commentary on an exchange between the West and the East on the question of the "self" provides sufficient insight. Baggini (2016) writes:

> Whereas in the West the self is understood primarily as an autonomous ego whose existence is distinct from that of others, in the East, it is often argued there is no meaning of self that is independent of our relations to others. The self is irreducibly social.

This thought bears resemblance to the Afro-relationality, albeit that our discussion recognises the balancing of person-community relation in complementary modal. The interaction and commonalities of the non-mainstream Western philosophers with the Afro-relational perspective as briefly shown is an area which needs further exposition but is beyond the scope of this paper. The point intended by their mention is to demonstrate that there is a cross-cultural validation for theoretical assumption undergirding ARF advanced in this paper. The common thread is that a sociality that is relational requires a communication framework that accounts for the interaction of subjectivities rather than a bifurcated space as envisaged in conventional media practice.

The disconcert associated with the growing media attention to climate change globally (Schäfer & Schlichting, 2014) and the lack of corresponding or sufficient PE with the relevant issues (Carvalho *et al.*, 2017) begs that we reconsider understanding the media as linear and the public as consisting of discrete individuals or as Rawls puts it, "mutually disinterested persons" (cited in Rossouw, 2012:56). The public engagement gap is about what Habermas describes as "an inflation in political communication" but with content giving rise to "a communicative liquefaction of politics" (Splichal, 2018:7). In other words, while we have seen a rise in media attention to climate change, it appears that the forms of communicative actions taking place has done little to accommodate the politics – as we argued here, the engagement of the people in the communication processes in terms of representation and ideation.

As a feminist lens reveals, the dominant view of communication seen "*as* processes of influence" (Shepard, 1992b), of bringing power to bear over intended individuals or groups appears to bifurcate communication process between source and target camps and with power differential (Ballantyne, 2016; Carvalho *et al.*, 2017; Hulme, 2007). This understanding ignores an important element within the human society where communicative action takes place. Our analysis of the concept of "persons" and their relational situated-ness in the African context draw attention to the relational qualities of concern, care, and responsibility foundational to social sustainability as placed against the brute practice of politics of influence. If considered, CCC can be shaped to accommodate inclusivity in subjectivities and perspectives.

3.8 Conclusion

There is evident links between climate change, agriculture and nutrition which makes Africa's vulnerability to climate change impacts peculiar. This paper provided an Afro-relational perspective on the challenge of nurturing climate action facilitated through media discourse. It evaluated conventional mediated CCC and gauged it as deficient given its assumption of communication as a linear process and the separation of citizens from the media platform as passive consumers. Through the discussion of the concept of "persons" and "community" *vis-à-vis* "communication" from African political theories, it argues that Africa's propensity for bounded ties and the treatment of sociality as relations of persons-in-community, provide a useful way to reimagine mediated CCC as a participatory model allowing inputs of people (in their diverse modes) to make sense of local experiences (such as changes in agricultural practices) in relation to climate change problems.

We modestly suggest that a view about media ethics informed by the idea of shared humanity as explained in this paper can have useful application beyond the African context. However, our objective is not to suggest the supplanting of global ethics by this African ethics. Rather, following from a growing interest to diversify the field of ethics to accommodate the plurality of cultures in the world (Ward & Wasserman, 2015), we consider it important to provide an African perspective and our undertaking so far, presents the theoretical strengths of ARF as an alternative to the discredited transmission model in CCC which continues to hold sway (Carvalho *et al.*, 2017). Beyond this, as Rauhut's argued elsewhere, we submit that the perspective has a global appeal because it takes on humanity as such and not this human or that human (Rauhut, 2017:143).

Finally, beyond the scope of this paper, it remains a future project to apply ARF to practical situations of CCC. Such a research agenda can have as an objective, the examination of media representation of climate change which assesses the inclusivity of subjectivities and/or perspectives in media representation of climate change issues. Another research agenda with relevance to ARF could aim to examine factors which limit diversity of subjectivities in this regard, considering for example, news sourcing practice in journalism. Lastly, it can be useful to design experimental research that tests for effects of ARF informed media representation of CCC in a sampled population. Particularly in Africa, we direct future mediated CCC research agenda in these directions.

4 Chapter Four: Media(ted) climate change and public engagement in South Africa, Nigeria, and Kenya: An Afro-relationality informed content analysis

Abstract

The media is an important forum where meaning is negotiated and bounded, and where public opinion is shaped on policy issues related to climate change, yet limited attention has been given to the dynamics of actors and social relations behind the exchange in the media. This paper provides evidence from an analysis of climate change coverage by six newspapers from South Africa, Nigeria and Kenya between March and August 2019. Drawing on an Afro-relational theory of the public sphere and on the concept of framing, the analysis focuses on the constellations of actors within the African mediascapes to reveal levels of visibility for the different actors identified and their relations to specific frames. Results show a modest broadening of interpretive models by which meaning around climate change is structured in the African newspapers. However, regarding actor visibility and sponsorship of climate-issue frames, the prevalence of the vocality of public office actors appeared to constrain the uptake of contributions from other relevant social actors. The implications for engaging the public towards climate action are discussed.

Keywords: climate change, media, Afro-relational framework, public engagement, Africa

4.1 Introduction

Climate change is an issue of public concern across various societies and is considered as a "risk" (Scheffran, Link, Schilling, Scheffran, Link, *et al.*, 2019) or "threat multiplier" (IPCC, 2014b) with a potential to exacerbate existing social challenges. In Africa, the threat is particularly heightened given the prevailing social-political challenges of the region[7]. Various communities in the region are dependent on climate-sensitive livelihoods, including agriculture, tourism, forestry and infrastructure, with limited capacity to cope with climate impacts (Ford, Berrang-Ford, Bunce, McKay, Irwin, *et al.*, 2015). Nevertheless, little is known about how African populations are engaged in making sense of climate change through the

[7] Consider protracted political crises in the Democratic Republic of Congo, South Sudan, Central Africa, and terrorism-driven conflicts in the western Africa. Conflict impacts on institutions in ways that weaken community resilience to climate hazards occurrence.

mass media (Agin & Karlsson, 2021; Okoliko & de Wit, 2020; Schäfer & Schlichting, 2014). Research from the emerging field of media(ted) climate change communication (CCC) – the media representation of climate change – provide evidence for the utility of the media as a forum where meaning is negotiated and bounded and where public opinion is shaped on climate change policy issues (Anderson, 2009). In Africa, there is a dearth of cross-national studies examining "the political" character of the mediated CCC (Carvalho *et al.*, 2017; Okoliko & de Wit, 2020). "The political" refers to the complex network of actors involved in negotiating, creating and bounding meaning around interlocking issues associated with climate change (Carvalho, 2010). While Carvalho *et al.* (2017) argue that communication practices are themselves a condition of political engagement, Okoliko and De Wit (2021:37) add that since "communication is a political function", it is useful to focus attention on the actors as a means to acquire richer perspectives on how different social actors influence public sense-making around climate change.

It is necessary to examine the way that competition for roles and perspectives in the meaning-making process play out in media(ted) CCC. Governance frameworks on the systemic risks of climate change tend to lean towards efficiency considerations over and above ethical issues such as the distribution of power among actors (e.g., Luo & Kaul, 2019). However, governance systems "evolve in historically, geographically, and politically situated ways, through all kinds of synergetic encounters, contradictions, conflicts, and active struggles" (Bergsten, Jiren, Leventon, Dorresteijn, Schultner, *et al.*, 2019:21). Climate change governance (CCG) reflects this mix; it is inherently political. The effective implementation of transformative actions relating to infrastructure, agriculture, public health, ecosystem protection and conservation, emission reduction and others depends largely on political variables (Javeline, 2014). Javeline (2014) argues that they require addressing concerns relating to the political economy (cost implications), political theory (e.g., social justice), regime type (under what political systems can actions be best supported?), responsibility and agency (who is to share the burden of blame and responsibility?). Given that the media is one important public sphere where these issues are debated and bounded (Ford & King, 2015), it is important to examine African mediascapes to gain insights into the nature of public sense-making around climate change in a regional highly vulnerable to climate change (Ahmadalipour *et al.*, 2019; IPCC, 2018).

This paper adopts an African (Afro)-relational framework (ARF) as a theoretical lens to assess the diversity of subjects as climate claims-makers and the claims they are associated with in

the six news media outlets selected from South Africa, Nigeria, and Kenya. ARF, a heuristic model for understanding media(ted) CCC, proposes a media model that engages diverse subjects as *persons-in-relationship* (Okoliko & de Wit, 2021) and is characterised by a shared humanness (Eze, 2008), "deliberative epistemology" (Tavernaro-Haidarian, 2018) and "active listening" (Ward & Wasserman, 2015). Locating the research in ARF is to position the analyses of media(ted) CCC in Africa in ways that tilt observation and evaluation in the direction of relationality with a focus on the social actors. The framework accounts for participatory media(ted) CCC and considers pluralisation of the mediascape as an important element for building a public engaged with climate change issues (for details, see Okoliko & de Wit, 2021).

Of particular interest is subject plurality, which refers to "the statuses of and relations between" various actor representations, and "ideational plurality", which refers to the various "meanings that are socially constructed about climate change and possibilities to address it" (Carvalho *et al.*, 2017:126). The present paper provides evidence of how discursive representations of climate change in six newspapers from South Africa (*Mail and Guardian* and *Business Day*), Nigeria (*Guardian* and *Vanguard*) and Kenya (*Daily Nation* and *Standard*) between March and August 2019 illustrates such plurality.

The paper proceeds to discuss the research problem in relation to the literature, followed by an account of the methodology, the results from our observations and the conclusions.

4.2 Analysing for the social character of coverage

To help unpack the representation of subject and ideational plurality in the cases of interest, this study draws from two concepts that are commonly applied in the analyses of media(ted) CCC, namely "pluralisation" and "framing". Schäfer (2009:478) describes pluralisation as an outcome of the shift in science communication in general away from the model that perceives the media as "'transmitters' or 'translators' of science to the broader audience". In this transmission model scientists are the primary definers of claims in the media for a largely "uninformed" public (Nisbet & Scheufele, 2009). The shift, Schäfer (2009) argues, has produced an increased diversity of actors other than scientists as sponsors of claims in the media coverage of science issues.

Regarding mediated sense-making around climate change, the process has been observed in several societies, including the USA (Garcia & Proffitt, 2021; Trumbo, 1996), Canada (Young & Dugas, 2011), the UK (Carvalho & Burgess, 2005) and India (Das, 2020). Other than the

scientists who had unparallel dominance in the media as the "exclusive definers of climate change" in the early phase of media(ted) CCC (Carvalho, 2007:228), new evidence suggests a growing accommodation of diverse actors from the government, civil society, business, and members of the public (e.g., Comfort *et al.*, 2020; Khuhro *et al.*, 2020). Acting as "claims-makers" (Comfort *et al.*, 2020), the actors help "to construct the definition of [the] social problem" related to climate change (Dotson *et al.*, 2012) as they "chose the day's news, provide the facts, and shape the frames and the typifications" (Nord, 2015:132).

Frame analysis helps to identify the claims sponsored by the various social actors. Frames are interpretative models (Entman, 1993) or "clusters of assumptions that underpin positions on policy issues" (Baumer *et al.*, 2017:293). Framing in communication is generally taken to mean "communicative processes of sense-making in which some aspects of reality are emphasised and others are de-emphasised" (Schäfer & O'Neill, 2017). The concept is useful in examining *how* actors structure reality (for example, the climate change phenomenon) taking on the assumption that the modes of (re)presentation is important to understanding the effect of messages (Carvalho, 2008; Scheufele & Tewksbury, 2007), and that media reports are "forums for framing contests" between multiple actors seeking media attention (Wozniak *et al.*, 2017:1435). Framing strategies help actors to give salience to certain aspects of an issue and so promote it as an important problem definition, causal explanation, moral assessment and/or treatment recommendation (Entman, 1993). Content-oriented framing analysis has been applied extensively in media(ted) CCC (Agwu & Amu, 2015; Cramer, 2008; Günay *et al.*, 2021; Hopke & Hestres, 2018) and, owing to differences in approach, the types of frames accounted for have been described as fragmented (Agin & Karlsson, 2021; Schäfer & O'Neill, 2017). We rely on a recent synthesis of typologies of climate change frames drawn from a review of 281 articles in Badullovich *et al.* (2020) as well as on other literature to provide a baseline for the present investigation.

The present study contributes to recent attempts to go beyond looking only at the structures of meaning (frames) applied to climate change in media contents to also examine the visibility of different claims-makers (Areia, Intrigliolo, Tavares, Manuel & Sequeira, 2019; Comfort *et al.*, 2020; Dotson *et al.*, 2012; Trumbo, 1996). For example, Garcia and Proffitt's (2021) analysis of sourcing trends in editorial coverage of climate change in the USA revealed higher media visibility for politicians and scientists compared to members of the civil society and the public. The dominance of political actors and scientists has been accounted for in several other

contexts (Das, 2020; Khuhro *et al.*, 2020; Takahashi & Meisner, 2012). But while past analyses identify various kinds of claims-makers and the volume of attention given to each in publication spaces, the mapping of actors' relations to claims have received little attention. The Comparing Climate Change Policy Networks (COMPON), which has taken on this challenge at the international level, has yet to include African cases in the approximately 20 projects it has conducted to date (e.g., Kukkonen *et al.*, 2021; Ylä-Anttila *et al.*, 2018). The objective of the present work is modest in comparison to the general focus of COMPON. COMPON focuses on policy networks analysis and draws evidence from non-textual contexts to map actor constellations around climate change policy. In contrast, the present study explores and problematises differential outcomes in actor-type visibility and maps relationships between actors and claims representation across the selected mediascapes of an understudied region.

Literature on actor-frame analysis is sketchy in the African context as research on the continent has predominantly focused on attention (salience) studies examining for coverage depth (e.g., Nwabueze *et al.*, 2015; Tagbo, 2010) and media use (Balarabe & Hamza, 2020). Even when the category of frame is given consideration, the analysis of claims-makers is ignored (e.g., Nwabueze & Egbra, 2016) or subsumed under the category of general news sources as local, African or international (Elia, 2018). Consequently, little is known about how different social actors contribute to public sense-making around climate change in Africa. In response to this challenge, this paper analyses for subject and ideational plurality in the way the news media in South Africa, Nigeria, and Kenya cover climate change. The research questions are:

Q1: How are subject and ideational plurality discursively constituted in the media representation of climate change in South Africa, Nigeria, and Kenya?

Q2: Are there differences between the media of the same country and across countries?

4.3 Methodology

4.3.1 Sample selection

Included in this study are South Africa, Nigeria, and Kenya, i.e., African countries that have constitutional support for democracy and press freedom, upon which media vitality is predicated. Also, the countries have resource-dependent economies (agricultural and extractive resources; e.g., oil for Nigeria and for Kenya as an emerging player, coal for South Africa, and agriculture for all three) which make them fertile ground for examining the public interest in

climate discourse (Ritchie & Roser, 2017; Smith, 2019). Furthermore, they are leaders in their respective regional blocs – South Africa for Southern Africa, Nigeria for Western Africa, and Kenya for Eastern Africa.

For each country, two newspapers were selected for analysis: *Business Day* and *Mail & Guardian* (*M&G*) for South Africa, *The Guardian* and *Vanguard* for Nigeria, and *Daily Nation* and *The Standard* for Kenya. Three reasons prompted the consideration of newspapers rather than other media in the study. First, the newspapers included have a strong online presence and influence, which appears to be the new avenue for news consumption in Africa today (Newman, Fletcher, Schulz, Andı, Robertson, *et al.*, 2021). Also, while news consumption via social media is higher than the newspapers for the countries included (average of 76% compared to 32% for print), trust in social media is low across the countries (average of 36% compared to 56% for the media) (Newman *et al.*, 2021). Second, research has shown that print news uses more source diversity than do broadcast media (e.g. radio and television) (Watts & Maddison, 2014) and this makes them ideal for the analysis of representational plurality. Third, access to quality data was also considered. Archiving of media products is still problematic in Africa (Schäfer *et al*., 2016) and this limited our interest to newspapers with accessible online content. The selected newspapers are influential in their various countries with wide circulation, high quality and a reputation for agenda-setting (Atieno & Njoroge, 2014b; Lawhon & Makina, 2017; Nwabueze & Egbra, 2016).

4.3.2 Search strategies

Included in the study are articles of the selected newspapers which discussed climate change issues and were identified by their mention of "climate change" and/or "global warming" or "greenhouse effect". Notable media databases (e.g., LexisNexis, Factiva) commonly used to source articles in similar studies (Bohr, 2020; Carvalho, 2007; Norton & Hulme, 2019; Post, Kleinen-von Königslöw & Schäfer, 2019) were limited in their coverage of the newspapers of interest. Alternatively, the Advanced Google search algorithm was employed to search the online publications of the selected newspapers. The exception is the *M&G* records for which the SA Media database of the University of the Free State was used because it facilitated access to downloadable files for returned hits.

Search operations combined the key terms identified earlier and covered the six months between 1 March and 31 August 2019, a period that witnessed several climate-political events

and meteorological disasters in Africa, including, the Africa Climate Week in Ghana, the One Planet Summit in Kenya, as well as the tropical cyclones (Idai and Kenneth) that ravaged the Southern African countries of Mozambique, Malawi, and Zimbabwe. These events are considered as news prompts (Saunders *et al.*, 2018) that boost media attention to climate change.

From the searches conducted, 978 articles with positive hits were recorded. Duplicates and articles which mention but did not discuss climate change, as well as those originating from news agencies (Agence France-Presse, Reuters, Xinhua, etc.), were identified and excluded to allow for a focused content on the African contexts. The final sample consisted of 315 articles and was analysed in ATLAS.ti, a computer-assisted qualitative data-analysis tool that facilitates a systematic way of sorting, structuring and querying data (Friese, 2019).

4.3.3 Coding and analyses

The content analysis of the imported dataset in ATLAS.ti applied a "manual holistic" (Schäfer & O'Neill, 2017) approach to analyse the actor and frame representations. The approach allows for the application of a frameset developed from the literature in the analysis of media content. The reason for this approach is that the literature on climate change frames is currently saturated (Badullovich *et al.*, 2020; Bolsen & Shapiro, 2018; Schäfer & O'Neill, 2017). It was considered important to adopt a standardised approach to the analysis to allow room for cross-context comparison. The frame typeset applied draws from an extensive literature review which highlights the dominant frames in CCC which, Schäfer and O'Neill (2017) have argued, "appear to be similar in many countries".

First, we sought to identify how, as a function of framing, climate change issues were sectionalised in the selected newspapers and the scale of focus for each article (Vu *et al.*, 2019). Three broad categories were examined for this purpose: articles appearing in a month, the sections within which the news articles appeared, and the geographical focus of the discourse (generic/global, Africa, national and sub-national scale). Second, we examined for subject (claims-makers) plurality by identifying and sorting subjects represented in the dataset to assess diversity. We broaden the definition of a subject offered by the Media Ecosystems Analysis Group (Kassova, 2020) to include, on the one hand, *actors of statements* – the individual(s) and institution(s) to which any statement(s) or action(s) is ascribed in the story. On the other hand, we examined for represented subjects who were generally spoken about or spoken to in

the media(ted) CCC (*actors mentioned in a statement*). This allowed us to assess the level of engagement of subjects as either passive or active in the media(ted) CCC. In both cases, we adopted the common practice of categorising the subjects according to whether they hold public office or are members of the scientific/expert community or are business, civil society, development, or media actors. The last category designated as the 'publics' in the present sub-study refers to members of the public who do not fit into any of the groups mentioned, including farmers, those designated in the publications as residents, consumers, workers, students, citizens, etc. Further information on these categories is provided in the supplementary material.

Third, we analysed to identify the spectrum of perspectives on climate change captured across the selected media by applying the frame typeset identified from the literature to the dataset and adjusting for context specificities. As indicated in Table 4.1 below, the issue-frames are clustered under the four functions of framing identified in Entman's (1993) definition of frames offered earlier.

Table 4.1. The frameset applied in the study.

Function	Issue-frame	Description
Define problems	Agriculture	where climate change is discussed in relation to agriculture
	Economic	claims about both microeconomic and macroeconomic implications and solutions relating to climate change
	Energy	focus on energy production, need, and use in relation to climate change include claims about renewable energy, energy transition, gas flaring, etc.
	Health	claims relating to the health implication of climate change and ecological disturbance
	Impacts	claims about the direct or indirect effects of climate change, including environmental effects such as sea rise, melting glaciers, desertification and natural disaster and extreme weather conditions like rising temperature
	Security	discuss climate change issues broadly considering security (human, food, water, job, energy security included)
Diagnose causes	Attribution	claims identifying drivers of climate change and attribution of blame
	Governance	focus on issues of governance, regulations and policies or their absence or fragility manifested through misallocation, mismanagement of resources, corruption, weak enforcement mechanism, etc.
	Political	focus on conflict among actors and stating the political strategy behind policies, the winners/losers, and nature of political debates
	Scientific	describes basic concepts and ideas about the science of climate change, including the description of the greenhouse effect
Moral evaluation	Morality/Ethics	focus on the ethical/moral consideration related to action on climate change and express a sense of responsibility/stewardship tied to the notion of interconnectedness, intergeneration, and solidarity
Proffer solutions	External Efficacy	focus on the responsiveness of public institutions, industry actors and elites in taking action
	Midway Efficacy	focus on the potential for success from generic policy action to address climate change
	Self-efficacy	focus on the personal responsiveness and the behavioural changes of individuals to address climate change

Sources: Badullovich *et al.* (2020); Bolsen and Shapiro (2018); Vu *et al.* (2019) and own dataset.

The coding process in ATLAS.ti was iterative. Each article was read severally and sections of texts and images that capture meaning were assigned codes, as suggested by Saldaña (2013).

Visual materials were included in our analysis, drawing on Rodriguez and Dimitrova's (2011) denotative approach. In the denotative approach the interest was on what is depicted in the images embedded within the content of the newspaper articles analysed. Inclusion of the images was important, because they provide an extra layer to the discursive strategies deployed in media(ted) CCC (Wessler *et al.*, 2016) and are powerful attention grabbers for readers (Rodriguez & Dimitrova, 2011).

The coding process also allowed for additional themes to emerge from the dataset. An initial pilot coding was conducted on randomly picked articles from the dataset (first article of the odd months were selected from the six newspapers). Insights from the process led to a refinement of the codebook. One significant category that emerged during this phase was the non-active actors – subjects who were not authors of statements or actions but are spoken about or to in the articles. It was considered that accounting for these actors can provide additional information on the structures of subjectivity embedded in the media(ted) CCC. In the second round, the 315 articles were coded in ATLAS.ti. Further information on the codes and the process is provided in the supplementary material. The coding process was conducted by the principal investigator, while the second researcher provided critical supervision and reflection (Belfer, Ford & Maillet, 2017). In this case, rather than "intercoder agreement", "dialogical intersubjectivity" was applied to sustain rigor in the coding process (Saldaña, 2013:35).

Result visualisations are presented in simple statistical representations utilising tables, figures, and percentages as visualised within the ATLAS.ti analytical dashboard. An important aspect of our analysis was to identify which of the actor categories were likely to be associated with a particular frame as the originator(s) of and as likely referent(s) in the statements analysed. The code co-occurrence table tool in ATLAS.ti was used for the exercise as it can demonstrate "associations between concepts [codes]" and the intensity thereof (Contreras, 2011). In the code-document table, we matched the 14 frames in a column to actor-designated codes in a row to reveal degree of co-occurrences (association). ATLAS.ti automated C-coefficient values given in parenthesis in a co-occurrence table indicate strength of relation between codes with a range of 0 to 1, where 1 indicates a code in a column and the corresponding one in a row co-occur wherever they are used (Contreras, 2011). For this sub-study, a value of C-coefficient of 0,07 (for Figure 4.8 on page 103) and 0,08 (Figure 4.10 on page 105) and above indicate *stronger association*. These values represent the middle number between the two extremes found in each of the tables: 0,00 – 0,14 (Figure 4.8) and 0,00 – 0,17 (Figure 4.10).

4.4 Result

4.4.1 Articles, scale, and placement framing

Before presenting our results on the representation of subject and ideational diversity, we describe the number of articles published in a month by each newspaper, the geographical scale, and the news section framing for each of the articles analysed. The Kenyan newspapers had more publications than those from Nigeria and South Africa. Table 4.2 below shows that on average *Daily Nation* of Kenya published climate change stories more than twice as often as *Business Day* of South Africa in a month within the period investigated. Also, the only weekly newspaper in our dataset, *M&G*, compared well with the Nigerian dailies as it featured an average of seven stories monthly in comparison to six by *Vanguard* and nine by the *Guardian*.

Table 4.2. Number of articles published in a month by the selected newspapers, Mar-Aug 2019.

Country	Newspaper	No articles	Monthly average
Kenya	*Daily Nation*	82	14
	The Standard	70	12
Nigeria	*The Guardian*	52	9
	Vanguard	36	6
South Africa	*M&G*	39	7
	Business Day	36	6
	Total	315	54

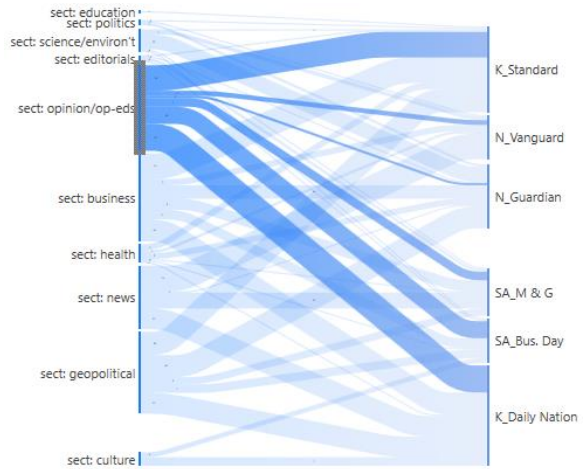
Additionally, Figure 4.1 below presents the results for section and scale analysis for the various publications. Figure 4.1(a) suggests climate change featured in diverse media-layout sections across the three countries. It can be observed that there is a shift from understanding climate change as primarily a science story given the various filters (indicated by the different sections) through which the issues were featured: business, health, politics, culture, and geopolitical (national or sub-national). The pattern follows the expectation that with the maturity of media attention, climate change issues will get filtered beyond scientific lenses (Trumbo, 1996). The exception is the Nigerian cases: The *Guardian* categorised over 20% of its stories as science and environment issues; in contrast, *Vanguard* featured more than half of its stories as hard news.

a

Code–Document Table

	K_Daily Nation	K_Standard	N_Guardian	N_Vanguard	SA_Bus. Day	SA_M & G	Totals
sect: business	18 21,95%	21 30,00%	11 21,15%	5 13,89%	8 22,22%	9 23,08%	72 22,86%
sect: culture	7 8,54%				4 11,11%		11 3,49%
sect: editorials		1 1,43%	1 1,92%		1 2,78%	2 5,13%	5 1,59%
sect: education		1 1,43%					1 0,32%
sect: geopolitical	17 20,73%	19 27,14%	18 34,62%		7 19,44%	6 15,38%	67 21,27%
sect: health	1 1,22%	5 7,14%	5 9,62%	2 5,56%	1 2,78%	1 2,56%	15 4,76%
sect: news	17 20,73%		1 1,92%	21 58,33%		13 33,33%	52 16,51%
sect: opinion/op-eds	22 26,83%	21 30,00%	2 3,85%	4 11,11%	14 38,89%	7 17,95%	70 22,22%
sect: politics		1 1,43%	2 3,85%	1 2,78%			4 1,27%
sect: science/environ't		1 1,43%	12 23,08%	3 8,33%	1 2,78%	1 2,56%	18 5,71%
Totals	82 100,00%	70 100,00%	52 100,00%	36 100,00%	36 100,00%	39 100,00%	315 100,00%

b



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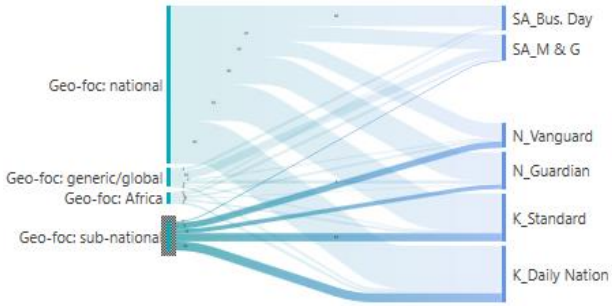


d

Code–Document Table

	K_Daily Nation	K_Standard	N_Guardian	N_Vanguard	SA_Bus. Day	SA_M & G	Totals
Geo-foc: Africa	4 4,88%	3 4,29%	1 1,92%	3 8,33%	2 5,56%	4 10,26%	17 5,40%
Geo-foc: generic/global	3 3,66%	2 2,86%	5 9,62%	2 5,56%	4 11,11%	12 30,77%	28 8,89%
Geo-foc: national	62 75,61%	53 75,71%	40 76,92%	22 61,11%	30 83,33%	22 56,41%	229 72,70%
Geo-foc: sub-national	13 15,85%	12 17,14%	6 11,54%	9 25,00%		1 2,56%	41 13,02%
Totals	82 100,00%	70 100,00%	52 100,00%	36 100,00%	36 100,00%	39 100,00%	315 100,00%

Figure 4.1. News sections where climate stories appear in the newspapers and their geographical focus.

Note: In the code-document Tables (a) and (d) percentage is given in terms of column relative frequencies; (b) and (c) are Sankey diagrams representing code frequencies across the document groups (the 6 newspapers). The width in the relations is proportional to the frequencies represented in the tables.

Furthermore, the Kenyan papers included more opinion pieces in their publications than the others did (see the Sankey diagram in Figure 4.1(b) above). While the section is more than a quarter of the individual total stories published in the Kenyan newspapers and *Business Day* (South Africa), the Nigerian cases were the least in the category. Also, we observed that editorial articles were few, with only two articles from *M&G* and one each from *Standard*, *Guardian*, and *Business Day* (see Figure 4.1(a) above).

Regarding the scale of focus, the national level carried the highest weight across the newspapers. Note that our dataset excluded news stories from international news agencies, and this may explain the observed bias towards the national scale. Figure 4.1(c) and (d) above report the differences across the newspapers. The Sankey diagram (Figure 4.1(c)) shows a near-absence of the sub-national scale in the two South African newspapers. In contrast, the code-document table in Figure 4.1(d) shows that the sub-national level was the second strongest focus for the Kenyan titles, *Standard* (17,14%) and *Daily Nation* (15,85%), and Nigeria's *Vanguard* (25%) and *Guardian* (11,54%).

4.4.2 Subject plurality

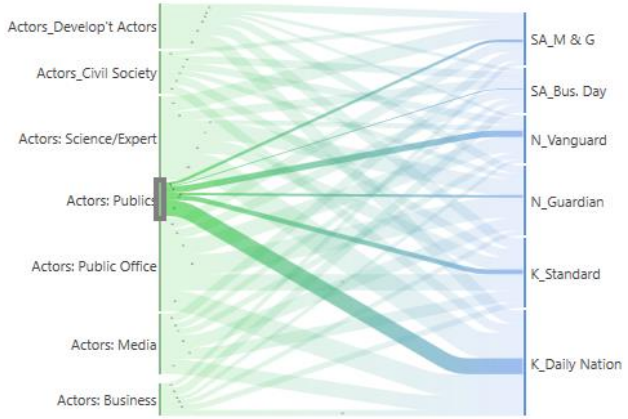
For the analysis of actors of statements across the titles, the result as presented in Figure 4.2 below is striking. Public office actors were a leading voice (23.77%) in the media(ted) CCC across the three countries and were followed by the science/expert group (21.37%) (see Figure 4.2(a)). The two groups were likely to be given a voice twice as much as the civil society and development actors, and even more as the business and publics groups. The publics group was particularly underrepresented across the titles. While the *Daily Nation* (Kenyan) and *Vanguard* (Nigerian) engaged more publics in their stories, the South African papers did little in the category (see Figure 4.2b).

a

Code–Document Table

	K_Daily Nation	K_Standard	N_Guardian	N_Vanguard	SA_Bus. Day	SA_M & G	Totals
actors: business	26 5,62%	26 8,44%	20 6,49%	16 7,62%	36 18,65%	20 8,62%	144 8,40%
actors: civil society	40 8,64%	37 12,01%	23 7,47%	33 15,71%	34 17,62%	16 6,90%	183 10,68%
actors: develop't partners	57 12,31%	45 14,61%	35 11,36%	14 6,67%	16 8,29%	33 14,22%	200 11,67%
actors: media*	66 14,25%	51 16,56%	56 18,18%	27 12,86%	25 12,95%	38 16,38%	263 15,34%
actors: public office	91 19,65%	72 23,38%	90 29,22%	70 33,33%	39 20,21%	44 18,97%	406 23,69%
actors: publics	70 15,12%	22 7,14%	11 3,57%	28 13,33%	4 2,07%	12 5,17%	147 8,58%
actors: sciences/experts.	113 24,41%	55 17,86%	73 23,70%	22 10,48%	39 20,21%	69 29,74%	371 21,65%
Totals	463 100,00%	308 100,00%	308 100,00%	210 100,00%	193 100,00%	232 100,00%	1714 100,00%

b



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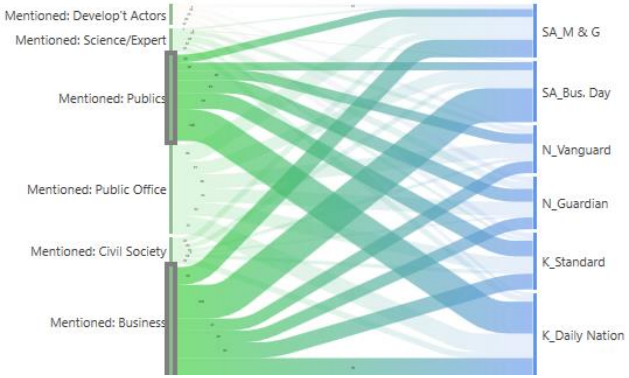

d

Code–Document Table

	K_Daily Nation	K_Standard	N_Guardian	N_Vanguard	SA_Bus. Day	SA_M & G	Totals
mentioned: business	77 23,05%	61 27,48%	46 22,55%	47 25,41%	133 55,19%	69 33,50%	433 31,11%
mentioned: civil society	24 7,19%	15 6,76%	6 2,94%	13 7,03%	20 8,30%	22 10,68%	100 7,18%
mentioned: devep't partners	12 3,59%	20 9,01%	21 10,29%	14 7,57%	1 0,41%	12 5,83%	80 5,75%
mentioned: public office	72 21,56%	53 23,87%	54 26,47%	56 30,27%	51 21,16%	66 32,04%	352 25,29%
mentioned: publics	127 38,02%	61 27,48%	51 25,00%	38 20,54%	32 13,28%	30 14,56%	339 24,35%
mentioned: science/experts	22 6,59%	12 5,41%	26 12,75%	17 9,19%	4 1,66%	7 3,40%	88 6,32%
Totals	334 100,00%	222 100,00%	204 100,00%	185 100,00%	241 100,00%	206 100,00%	1392 100,00%

Figure 4.2. Actor types represented in the newspapers as actors of statements and as actors mentioned in statements.

Note: See the explanation in Figure 4.1.

With actor-types represented as actors mentioned in statements analysed, there is a deviation from the picture painted above. Under this category, the business (31.10%) and publics (24.26%) appeared as significant groups alongside the public office group (25.34%) (Figure 4.2(d) above) making them the main subjects addressed or spoken about in the climate change discourse analysed. The South African *Business Day* discussed climate change in relation to the business group more than its counterparts in the in-country and across the dataset (see Figure 4.2 c, d). In contrast, the Kenyan newspapers were more publics-oriented – *Daily Nation* (37.76%) and *Standard* (27,48%) – and are followed by the Nigerian titles – *Guardian* (25,00%) and *Vanguard* (20,54%). Note that these publications also had a greater sub-national focus than the South African cases (see Figure 4.1d).

4.4.3 Diversity of perspectives

The stacked columns in Figure 4.3 below show that the dominant frames across the African publications examined were impacts, energy, attribution, external efficacy, midway efficacy, and agricultural frames in that order. While the impacts frame emerged strongly across the newspapers, the agricultural frame was higher for the newspapers with higher sub-national focus – the *Daily Nation* (19%), *Standard* (11%) and *Guardian* (12%) than those which largely focused on the national scale (*Business Day* and *M&G*). The *Vanguard* is an exception as it had a significant sub-national focus but covered the agricultural frame the least (3%).

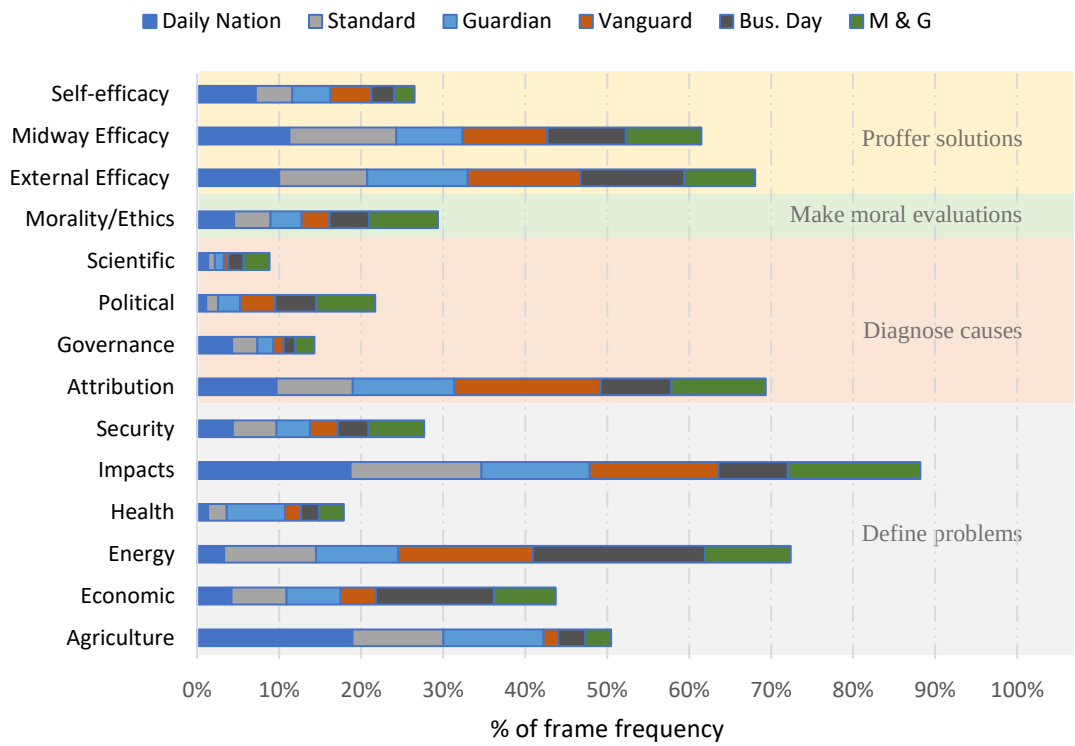

Figure 4.3. Stacked columns showing the frequency of frames (%) appearing in the newspapers.

Note: The percentage is relative to each title and not across titles. E.g., *Daily Nation*'s share of the agricultural frame as represented is relative to the other frames for that title.

Some of the substantive issues that appeared under the various categories in the titles analysed are presented below. Samples of quotations presented under each frame are illustrative and follow the order of significance (frequency).

4.4.3.1 Issue definitions

On issue definitions, the climate impacts frame dominated, but was stronger for the *Daily Nation* (19%), while the energy frame was higher in *Business Day* (21%) and *Vanguard* (16%), health for *Guardian* (7%) and security for *M&G* (7%) (see Figure 4.3 above). As observed in Figure 4.4 (see below) climate change is framed as impacting on food security owing to "delayed and below-average rainfall" and high temperatures (Quotation 223[8]). Notice the flow of arrows from the impacts frame to the agriculture, security, health, and economic frames. They suggest the interlinkages between the issues within the discourse. Thus, "ongoing dry

[8] The quotation number as used reflects the serial numbering standard applied in ATLAS.ti coding system. In Figure 4.4, an example of where to locate the number is given.

spell" (also, an impact frame) is presented as forcing more "cases of human-wildlife conflict" in Kenya (Quotation 203) and is the occasion for water insecurity dubbed "Day Zero" in South Africa (Quotation 54). Also, in Quotation 310, "high heat" is discussed in association with chronic kidney disease. Framing climate change as offering opportunities to cut costs (economic framing) through green innovation at a micro (Quotation 80) and macro level (energy framing (Quotation 2)) provide contrasts to the other samples.

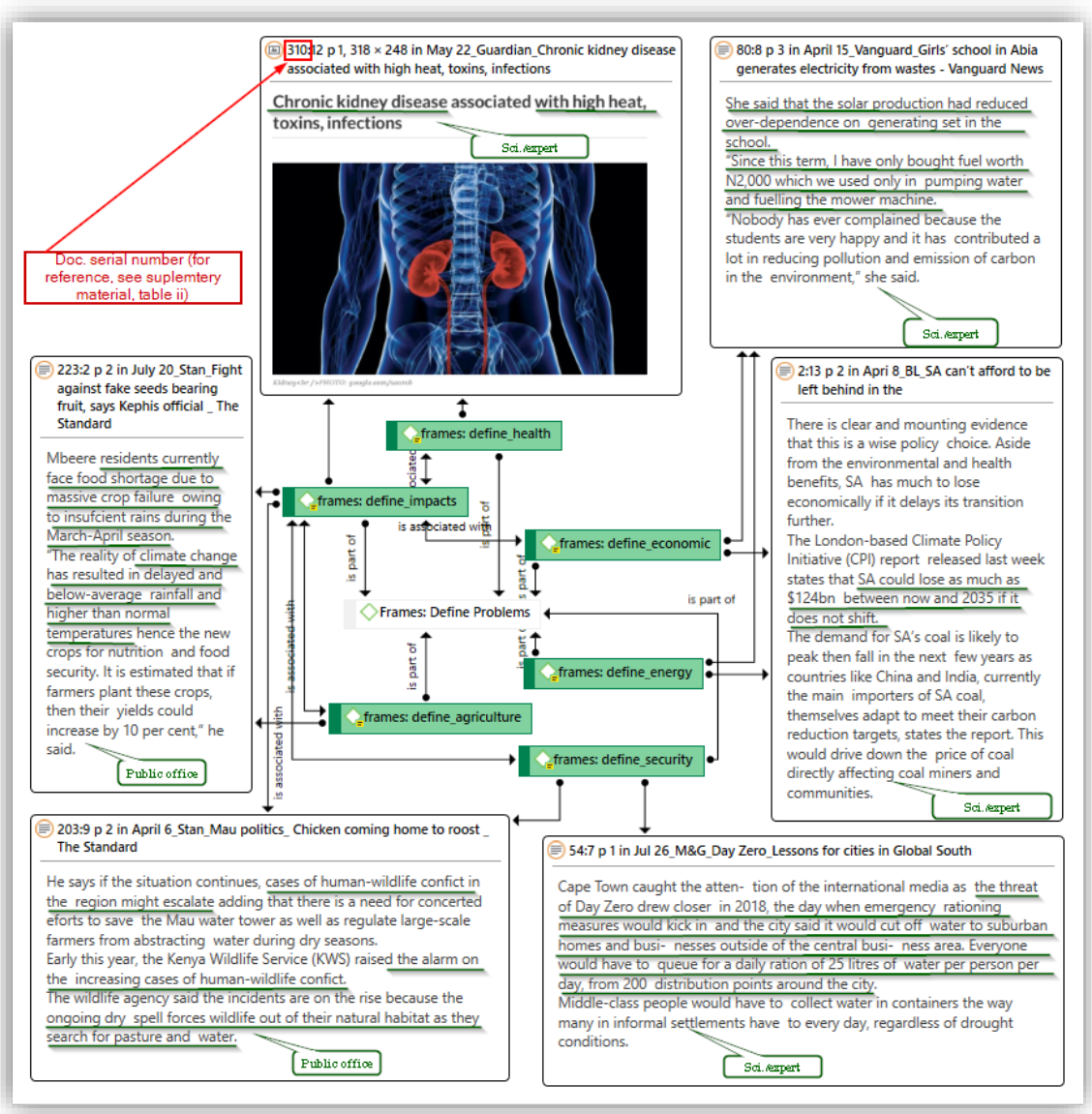

Figure 4.4. A network of selected frames under 'define problems' and their quotations.

Note: The quotations were selected from the newspapers based on the frames which have a higher frequency in a title.

4.4.3.2 Diagnoses of the issues

In framing factors that drive the climate crisis, the newspapers analysed generally leaned heavily on blame attribution (see Figure 4.3 above), but also discussed the issues through the political, governance and scientific frames. The discourse generally followed the consensus claim of human-induced climate change as illustrated in the quotations sampled in Figure 4.5 below. In Quotation 76, "gas flaring" from oil exploration in Nigeria is discussed as an "emission" driver. Similarly, political conflict is amplified as a contributor to climate inaction in the discussion on international negotiations around geoengineering governance in which United States, Brazil and Saudi Arabia are blamed because they "watered down" (Quotation 66:2) proposals for actions. Climate change is also diagnosed vis-à-vis weak enforcement of (conservation) laws indicating governance frame (Quotation 315)

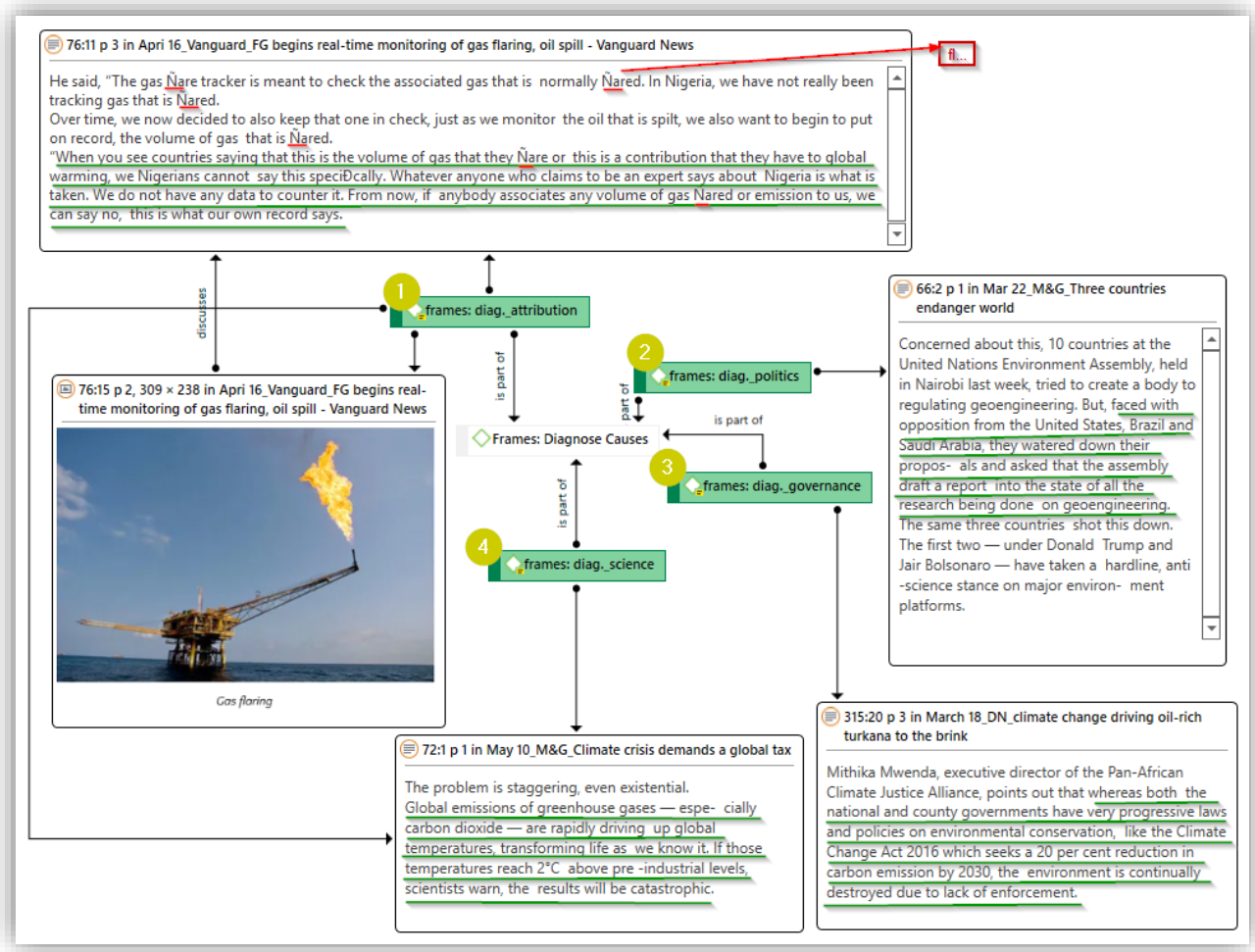

Figure 4.5. A network of selected frames under 'diagnose causes' and their quotations.

4.4.3.3 Moral evaluations

The moral evaluation frame was less prominent across the data but featured three themes: (1) interconnectedness, (2) the obligation to future generations, and (3) climate justice (see Figure 4.6 below). The examples given in Figure 4.6 includes the emphasis on the human-nature relationship framed as symbiotic (Quotation 304:3) so that it requires "balance" (Quotation 74:9). Also, bringing to bear concern for the unborn, climate action is motivated as "a duty to" (Quotation 95:4) future generations (Quotation 228:11). Lastly, for climate justice, there is the discussion on the disproportionality of impacts (Quotation 126:2) and energy transition vis-à-vis inequality (Quotation 31:20).

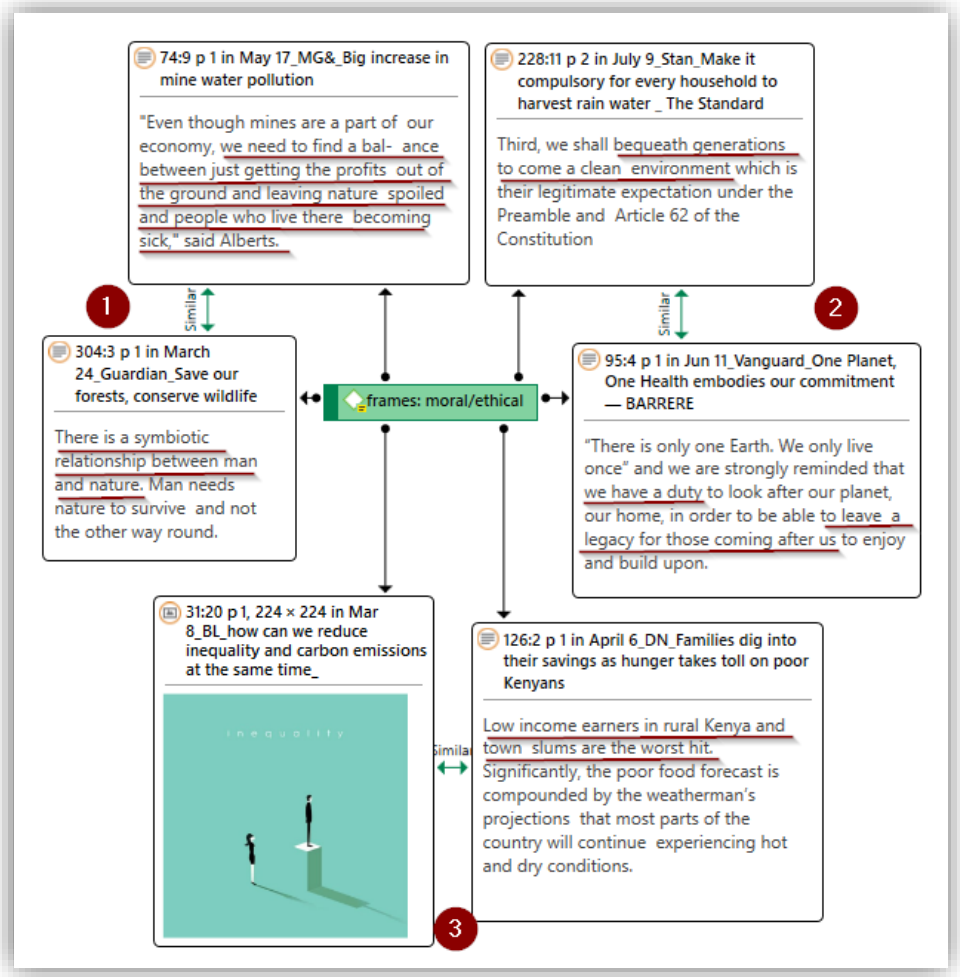

Figure 4.6. A network of selected quotations under 'moral evaluation'

4.4.3.4 Proffer solutions

The frames observed for climate change solutions were grouped into three: those addressing individual action (self-efficacy), actions that governments or businesses can take (external

efficacy), and actions that are generic in an application (midway efficacy). In Figure 4.3 (see page 97)**Error! Reference source not found.** the dominant frame in the category across the titles is the external frame followed by the midway efficacy frame (the exception is *M&G*, where the reverse is the case). The self-efficacy frame was the least amplified across the tittles, with a further less representation in the South African cases.

Looking at Figure 4.7 below, the proposal to the Nigerian government for a "holistic clean-up and remediation of the Nigeria Delta environment" is an example of the external frame (Quotation 101:51) and so too is the urging of a business unit (Bank) in South Africa to act against "exposure" to "climate change risks" (Quotation 1:8). In both cases the referent agents in the framing are institutions rather than individuals. In contrast, both Quotation 170:8 and 263:11 addressed individual agents. The former advocates for "simple actions" to conserve

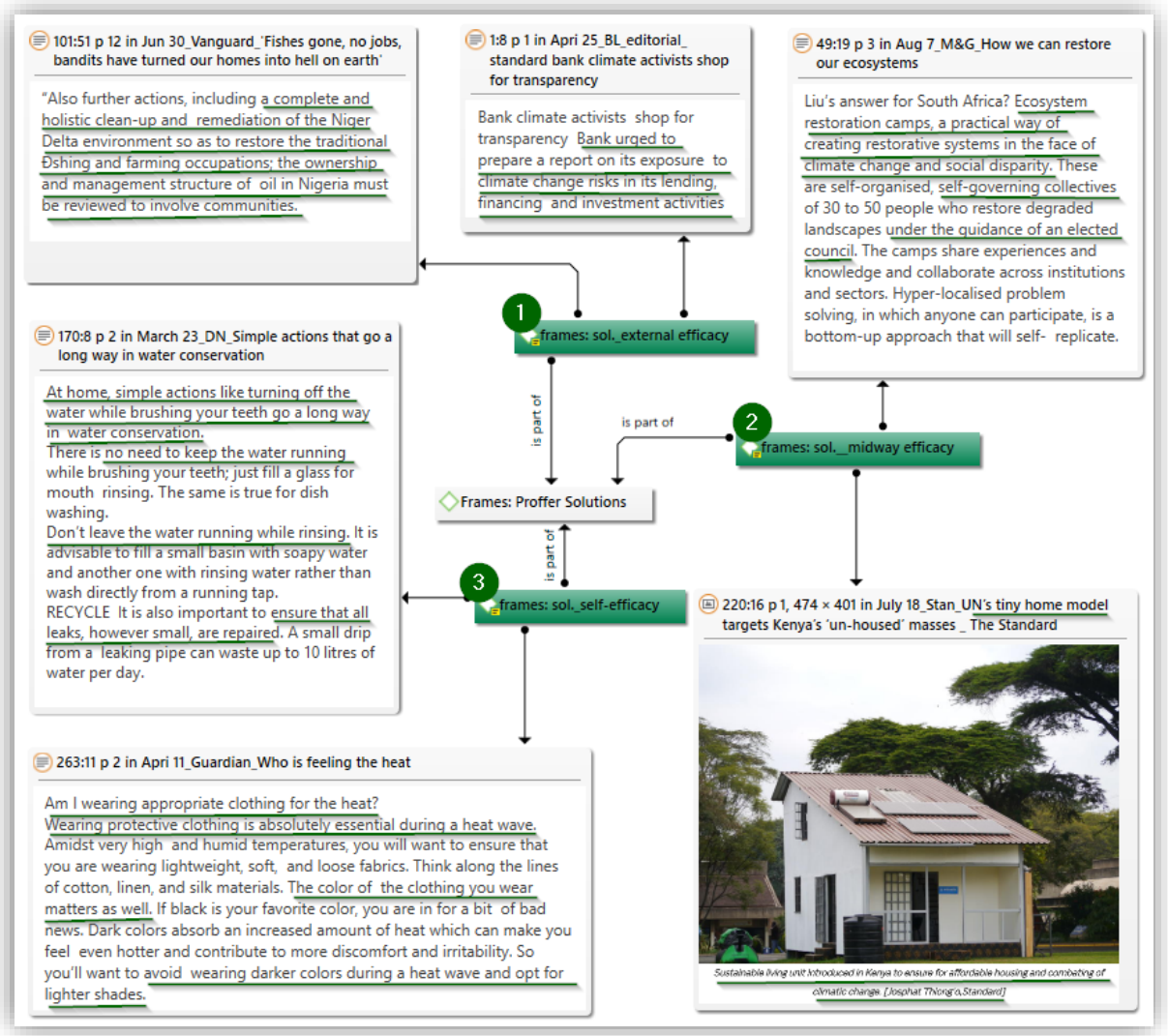

Figure 4.7. A network of selected frames under 'proffer solutions' and their quotations

water, while the latter addresses adaptation measures such as the "wearing of protective clothing" during heatwaves. The other form of responsibility discussed in Quotations 49:19 and 220:16 accommodate both the individual and institutions as agents for "ecosystem restorations" including through sustainable housing.

4.4.4 Actors-to-frames association

Lastly, we sought to identify which of the actor categories were likely to be associated with a particular frame as the originator(s) of and as likely referent(s) in the statements analysed. Figure 4.8 and Figure 4.10 (see below) presents the results for the two actor-type groups and their co-occurrence with the 14 frames.

The results in Figure 4.8 below show that the science/experts and public office actors have more instances of stronger associations with the codes in the column, which demonstrates their dominance as claims-makers in the dataset. Taking into consideration the C-coefficient values, the science/expert actors enjoy stronger representation in the framing of climate change as impacts, agricultural, attribution and midway efficacy. Following them are the public office actors with a stronger relation to the external efficacy, impacts and energy frames. The less prominent claims-makers are the development partners (stronger association with attribution and midway efficacy), the business group (stronger association with economic and external efficacy) and, lastly, the publics (stronger association with agriculture).

Code Co-Occurrence Table

		actors: business 144	actors: civil society 183	actors: develop't partners 200	actors: media* 263	actors: public office 406	actors: publics 147	actors: sciences/experts. 371
frames: define_agriculture	504	10 (0,02)	4 (0,01)	33 (0,05)	6 (0,01)	30 (0,03)	46 (0,08)	71 (0,09)
frames: define_economic	** 350	31 (0,07)	12 (0,02)	17 (0,03)	5 (0,01)	43 (0,06)	8 (0,02)	35 (0,05)
frames: define_energy	* 544	27 (0,04)	24 (0,03)	15 (0,02)	7 (0,01)	58 (0,07)	12 (0,02)	25 (0,03)
frames: define_health	* 147	1 (0,00)	4 (0,01)	18 (0,05)	1 (0,00)	6 (0,01)	3 (0,01)	32 (0,07)
frames: define_impacts	* 774	17 (0,02)	28 (0,03)	58 (0,06)	7 (0,01)	77 (0,07)	45 (0,05)	92 (0,09)
frames: define_security	** 239	3 (0,01)	5 (0,01)	12 (0,03)	7 (0,01)	32 (0,05)	4 (0,01)	20 (0,03)
frames: diag._attribution	564	11 (0,02)	41 (0,06)	47 (0,07)	8 (0,01)	49 (0,05)	17 (0,02)	73 (0,08)
frames: diag._governance	** 135	4 (0,01)	12 (0,04)	5 (0,02)	1 (0,00)	21 (0,04)	4 (0,01)	17 (0,03)
frames: diag._politics	165	2 (0,01)	6 (0,02)	7 (0,02)	3 (0,01)	20 (0,04)	3 (0,01)	6 (0,01)
frames: diag._science	75	1 (0,00)		12 (0,05)	4 (0,01)	6 (0,01)		24 (0,06)
frames: moral/ethical	250	6 (0,02)	16 (0,04)	27 (0,06)	4 (0,01)	15 (0,02)	3 (0,01)	24 (0,04)
frames: sol.__midway efficacy	** 524	7 (0,01)	25 (0,04)	46 (0,07)	7 (0,01)	38 (0,04)	11 (0,02)	71 (0,09)
frames: sol._external efficacy	** 564	48 (0,07)	38 (0,05)	13 (0,02)	5 (0,01)	116 (0,14)	12 (0,02)	26 (0,03)
frames: sol._self-efficacy	* 237	8 (0,02)	38 (0,10)	10 (0,02)	3 (0,01)	13 (0,02)	18 (0,05)	20 (0,03)

Figure 4.8. Frequency and c-coefficient value for co-occurrence of actor (of statements) groups and frames

Note: In ATLAS.ti, the C-coefficient indicates the strength of a relation between two codes (here, frames and actors of statements) with a value range between 0 and 1, where 1 shows stronger association. All differences between groups are stronger at $p < 0{,}07$. * indicates where a single actor group strongly associates with a frame; ** for two actor groups. The actor-categories highlighted show stronger co-occurrence (column relative) than the rest.

For the referents found in the statements analysed, the results in Figure 4.10 below suggest that responsibility for climate change was largely framed in the light of the public office, business, and the publics actors. The C-coefficient distributions in Figure 4.10 (see below) suggest the business group had stronger associations with the economic, energy, attribution, and external efficacy frames, followed by the publics (agriculture, self-efficacy, security, and impacts) and the public office (external efficacy and political). Also, observe that with the attribution frame, businesses had more mentions, indicated by the intensity of the group's association with the frame (0,12) in comparison to the public office (0,06) and the publics (0.05), suggesting that the group was frequently identified as contributing relatively more to climate change problems. Furthermore, the public office and business groups were the likely agents discussed for institutional actions, while the publics were featured with the self-efficacy frames. For issue definition, the business group was likely to be mentioned when energy and economic issues are discussed, while for the publics it is the agricultural frames and, to a lesser degree, the impacts and security frames.

Code Co-Occurrence Table

	mentioned: business 433	mentioned: civil society 100	mentioned: devep't partners 80	mentioned: public office 352	mentioned: publics 339	mentioned: science/experts 88
frames: define_agriculture * 504	27 (0,03)	1 (0,00)	3 (0,01)	23 (0,03)	90 (0,12)	14 (0,02)
frames: define_economic * 350	72 (0,10)	2 (0,00)	4 (0,01)	35 (0,05)	26 (0,04)	3 (0,01)
frames: define_energy * 544	104 (0,12)	11 (0,02)	8 (0,01)	55 (0,07)	29 (0,03)	3 (0,00)
frames: define_health 147	13 (0,02)	2 (0,01)	1 (0,00)	10 (0,02)	19 (0,04)	2 (0,01)
frames: define_impacts * 774	36 (0,03)	2 (0,00)	6 (0,01)	32 (0,03)	81 (0,08)	8 (0,01)
frames: define_security * 239	26 (0,04)	3 (0,01)	5 (0,02)	24 (0,04)	49 (0,09)	3 (0,01)
frames: diag._attribution * 564	106 (0,12)	4 (0,01)	4 (0,01)	53 (0,06)	41 (0,05)	5 (0,01)
frames: diag._governance 135	18 (0,03)	4 (0,02)	2 (0,01)	32 (0,07)	15 (0,03)	4 (0,02)
frames: diag._politics * 165	16 (0,03)	15 (0,06)	7 (0,03)	48 (0,10)	5 (0,01)	
frames: diag._science 75	5 (0,01)	1 (0,01)		2 (0,00)	1 (0,00)	2 (0,01)
frames: sol.__midway efficacy 524	41 (0,04)	11 (0,02)	13 (0,02)	25 (0,03)	49 (0,06)	23 (0,04)
frames: sol._external efficacy ** 564	111 (0,13)	16 (0,02)	17 (0,03)	130 (0,17)	45 (0,05)	10 (0,02)
frames: sol._self-efficacy * 237	11 (0,02)	22 (0,07)	3 (0,01)	14 (0,02)	58 (0,11)	5 (0,02)

Figure 4.10. Frequency and c-coefficient value of co-occurrence for mentioned actor groups and frames.

Note: See the explanations given in Figure 4.8. For the current table, differences between groups are stronger at $p < 0,08$.

4.5 Discussion

This study, guided by a relational theoretical lens, assessed six newspapers' coverage of climate change in three African countries to show how the different mediascapes accommodate a plurality of social actors and their sense-making around climate change issues. The analysis focused on actor constellations within the mediascapes to reveal levels of visibility for the different actors identified and their relations to specific frames. A general picture of results presented suggests that the uptake of the climate change discourse by the African newspapers for the period covered illustrates a modest broadening of interpretive models by which meaning around climate change is structured. Predominant climate issue-frames across the African mediascapes include impacts, energy, attribution, external efficacy, midway efficacy, and agricultural frames in that order. However, regarding actor visibility and their sponsorship of climate issue-frames, the vocality of public office actors is dominant, and is followed by that of the experts. Discussion in this section unpacks the nuances in the results and elaborates on the commonalities and differences within and across countries.

One significant finding from the analysis is the emergence of opinion sections as strongly represented in the Kenyan papers and to a lesser extent in the South African cases. The Nigerian papers had the fewest opinion articles. This may be an indication that the members of the public in Nigeria consider the issues of climate change to be less important than their counterparts in Kenya and South Africa do. In this case, the willingness to contribute to climate change issues by writing an opinion piece is a proxy of how important climate change is by an individual. The argument is similar to that of Kirilenko *et al*. (2015) that the frequency of tweets about climate change can indicate how much attention the public pays to climate issues.

The low representation of op-eds may also point to newsroom agendas in the African settings which have been assessed as downplaying in their publishing spaces the salience of climate issues (Joubert, 2019a). Joubert (2019a) aptly observes that editorial choices continue to treat climate change "as the low-priority" that receive consideration only "after newsroom resources

have been given to the 'serious' issues like politics, economics, and even sport". It is not surprising, then, that observation from the dataset further indicates less editorial coverage. Furthermore, we observed a pattern that seems to support Meribe's (2017) claim that climate coverage in Nigeria is constrained by a culture of competing interests of media owners, editors and reporters. The interests which predispose journalism to follow "brown envelopes" (covering beats that are rewarding in monetary terms) (Meribe, 2017:59) may explain the prevalence of straight news[9] in the Nigerian cohorts (more pronounced in the *Vanguard*).

The other point is that both the sectional and dimensional analyses reported indicate the prevalence of a national focus across the six newspapers. While this is true for all, the South African newspapers framed climate change largely on the national scale and were also more likely to focus on an international scale than the rest of the newspapers. Our finding mirrors the Iberian context, where Areia *et al.* (2019) found the salience of the national framing to be higher than the local and the global scale. Their argument is relevant for the African context as well; by finding a more national angle to the climate change issues, the newspapers help to "diminish the general public's idea that climate change is a distant issue, both geographically and temporally" (Areia *et al.*, 2019:296).

We add that the bias in favour of the national angle appears along with the bias in favour of the authoritative sources (the public office and science/expert groups). Accordingly, the South African newspapers which had fewer articles focusing on the sub-national scale also had fewer non-authoritative sources in their coverage of climate change. This makes sense because, at the national level, the climate governance regime is likely to revolve around individuals and

[9] Straight news story is confined to giving facts with the main aim to pass information. An example from our data is the news story published by *Vanguard* (Nigeria) as "FG begins real-time monitoring of gas flaring, oil spill" (Eboh, Ochayi & Owoh, 2019). The story goes straight to break the news about a new monitoring tool, "the Gas Tracker and Oil Spill Monitor", acquired by a federal government agency (the Nigerian Oil Spill Detection and Response Agency and how it will help the government to monitor emissions associated with the gas sector. As it can be expected in a straight news, voices represented were government officials who discussed the utility of the acquired tool. It is worthy to note that straight news is often a product of public relations (from governments, business and other private organisations); hence, our argument that journalists are likely to settle for straight news when the incentives for scouting for news further afield is less. This point will become clearer in chapter 5 where insights from journalists is provided to shed more light on it.

institutions that wield policymaking powers as against the local sites, where agenthood is more polycentric (Scobie, Benney, Brown & Widerberg, 2020).

A closer reading of Figure 4.3 (see page 97) is apt for consideration considering the above discussion. It suggests that for the South African and Nigerian cases, climate change was largely defined in connection with the energy and economic frames (holding that impacts frame cut across all the titles) as against the dominance of the agricultural frame in Kenya. It appears that the relatively high CO_2 emissions from the energy sector – contributing 73.2% (Ritchie & Roser, 2017) – and the economic ties that accompany energy shifts dominated the media in South Africa. This finding supports earlier work which examined climate change discourse in a four weekly South African news media (Evans, 2019). The study found that the South African media(ted) CCC is strongly connected to the energy discourse, given the prominence of coal energy in the country's economy. Also, Nigeria's oil-driven economy (Günay *et al.*, 2021) drove the media discourse analysed. Further, our result corroborates the finding of Boussalis *et al*. (2016) that newspaper-level factors such as orientation drive coverage of climate change as in the case of *Business Day* (South Africa). The title had higher frequencies of the economic and energy frames and addressed the business audience more than the others. The combined orientation to the national and business angle thus appeared to have predisposed publications in the two countries towards more use of authoritative sources than in the case of the Kenyan examples.

Despite the country differences, the prevalence of the public office followed by the science/expert actors was observed across all six publications. This finding mirrors similar results in the study by Comfort *et al.* (2020) of Asian contexts (China, India, Singapore and Thailand), which identified that government sources and scientists outweigh other actors (activists, business groups and members of the public) in media coverage of climate change. Likewise, in the African context governments, their functionaries and scientists/experts are more likely to have easy media access to negotiate agency in climate debates. This may be a result of journalistic routines that privilege authoritative sources (Wasserman, 2013), but do play into the transmission model of CCC (Nisbet & Scheufele, 2009; Okoliko & de Wit, 2021).

News sourcing practice which construes the elites as more suitable for the definer will lean more on official voices for professionally subsidised information regarding climate change to be delivered to non-authoritative subjects as consumers.

Whether the dynamic would be different for social media discourse on climate change in Africa remains to be seen as there are limited studies that have focused on the media type in the region. Bosch (2012) analysis of news blog and tweets on climate change in South Africa between January to July 2011 is the only empirical work on the subject. The author observed that much of the online activities around climate change were conducted by journalists tweeting about their news stories and by environmental organisations on their campaigns. Individual tweets were observed to be limited. The evidence suggests that while the new media holds the promise of decentring communicative experience for diverse subjects beyond what the traditional media permits, access and usability challenge (social media and technology affordance) (Wasserman, 2018) can be another constraining factor for non-elite actors.

We do not discount the importance of authority actors, given that their representation may positively influence the trustworthiness of claims. Yet a skewed representation can easily mislead the public to believe that climate issues and actions are problems to be dealt with by the political or specialised institutions (e.g., business or academics) alone (Areia *et al.*, 2019). More worrisome is the case where, as is also observed in the current study, the publics are excluded as "active climate agents" "with dignity" and are routinely portrayed as "victims of climate change" or "climate refugees" (Das, 2020:3). As evinced in Figure 4.8 (see page 103), the publics category had stronger co-occurrence with the agricultural (45 times) and the impacts (43 times) frames than the others in the present study. If compared to the next ranking co-occurring frame in the same column, namely self-efficacy (18 times), it becomes clear that the publics' subject representation is more about a victim narrative than an agent positionality. In contrast, the dominant subjectivities (including the business group in a relative sense) were related to diverse topics, which included claims to finding solutions.

It remains to be researched how the observed lop-sidedness predisposes the climate debate in these countries to interrogate the status quo driving climate change and to entertain the needed

mitigation and adaptation policy and action. A starting case can be that the contribution of place-based knowledge relevant for local policy discussions can be overlooked when media focus is skewed away from people living at the local site of climate experience (Reyes-García, Fernández-Llamazares, Guèze, Garcés, Mallo, *et al.*, 2016). Importantly, the contribution of local and placed-based knowledges[10] relating to the observation of changing patterns and resilience practice requires the media to go beyond the traditional model of newsgathering.

4.6 Conclusion

The observations reported in this paper concerning media representation of climate change in South Africa, Nigeria, and Kenya suggest that the choice of scale can influence how the issues are represented in the media. The localisation of the story tends to draw attention to the portrayal of local experience of climate change and offer residents voices in the story more than non-localised coverage can do. Consequently, we did not observe widespread and substantive discussions of local and place-based knowledges, which are gaining traction as valuable inputs in climate debates elsewhere (Belfer *et al.*, 2017). Over-reliance on the authoritative sources observed from the climate change coverage we analysed appears to have drown out the publics' vocality and its potential to contribute local knowledge especially.

Yet the media is supposedly understood "as 'synonymous with democracy' or even, according to the media theorist, James Carey, as 'another name for democracy'" (Wasserman, 2013:73). The African relational framework employed in this paper particularly argues that the media ought to encourage active listening across diverse subjectivities in co-creating meaning around climate change (Metz, 2015b; Okoliko & de Wit, 2021; Tavernaro-Haidarian, 2017). But this supposition is not evident in the cases analysed. Instead, the dominant claims-makers identified are the public office and science/expert actors, while the least featured subjectivities come from the publics and business group (the latter with exception of the South African *Business Day*).

[10] Local knowledges can be broadly defined as "practical, collective and strongly rooted in a particular place" (Taylor & De Loë, 2012:1207). Extending media sourcing practice beyond the usual suspects of relying on official sources can increase the chances of brining into the media's "market place of ideas" (Mufune, 2015:108), diverse local knowledges on climate experience and solution options.

We, however, found climate change issues to be filtered through moderately diverse frames with a prevalence of the impacts, energy, attribution, external efficacy, midway efficacy, and agricultural frames in that order.

We note that the data analysed in this paper were purposively sampled and as such, there is a limit to which results presented can be generalised. However, we believe that the findings have wider relevance, particularly as they relate to understanding the political dynamics behind media(ted) CCC. The triangulation of multiple cases and textual and visual data provide a level of robustness for the claims made. Another limitation of the study concerns the national representative news media sampled from the three countries. This may have excluded underrepresented claims-makers and perspectives. But, if the observation elsewhere that "national newspapers continue to be critical sites for engagement" among diverse actors, including "laypersons and decision-makers" (Ganowski & Rowlands, 2020) is worth considering, this chapter provides evidence to that effect. Further research can explore how the dynamics reported here play out in sub-nationally oriented media, and investigate other media types, including the broadcast and social media. Also, future research could explore the themes examined here by qualitatively studying practitioners (reporters and editors) and newsgathering routines to provide further insights into the factors that (dis)enable the engagement of diverse subjects in media(ted) CCC.

5 Chapter Five: Reflecting on 'the engaged' with climate journalists: Evidence from South Africa, Nigeria, and Kenya

Abstract

This study explores the largely understudied political dimension of media(ted) climate change communication (CCC) – media representation of climate change – and the role of climate journalists in it. The increasing plurality of actors engaged in the media(ted) ways of sense-making around climate change is well described in the literature, with varying emphasis on who gets heard the most. It is less clear how journalists facilitating the engagement between various actors and bounded by the norms and conditions of their practice shape the nature of subjectivities in media coverage of climate change. A semi-structured interview approach was used to provide insights from 11 journalists covering climate change across three selected African countries, a traditionally understudied region. Results show that several interacting factors clustered around journalists' role orientation, application of professional norms and conditions of practice affect how climate journalism is practised in the African settings. The paper contributes to the literature on the social phenomena associated with media representation of climate change, while drawing its theoretical premises from an African relational media framework.

Keywords: media(ted) climate change communication, journalists, claims-makers, relational media framework, Africa

5.1 Introduction

The original motivation for this paper comes from an observational study (see chapter 4) conducted to assess the extent of subject and ideational plurality in how the media represent climate change in three African countries: South Africa, Nigeria, and Kenya. Acknowledging that climate change has become *the* threat of the present age (IPCC, 2014b), the study was premised on the claim that the ways in which climate issues are depicted in the media have a significant bearing on which concerns become prominent in policy and whether citizens are

motivated for action (Moernaut *et al.*, 2018). It also assumed that there are diverse actors that compete to gain "issue ownership" concerning climate change representation in the media and that these actors seek to "prevail in a battle for the scarce resource of public and policy attention" (Robbins, 2017:260).

Growing scholarship in the field of media(ted) climate change communication (CCC) has made important contributions to the identification of the key actors and their role in the media representation of climate change, including government, expert, business, civil society, and media actors as well as ordinary citizens (Areia *et al.*, 2019; Comfort *et al.*, 2020; Dotson *et al.*, 2012; Freeman, 2017; Trumbo, 1996). Important findings from the literature suggest that claims-makers as sources are able to influence news outcomes (Comfort *et al.*, 2020) and a careful analysis of the media contents can help to show their links to particular claims (Freeman, 2017). For instance, an earlier work identified that when scientists led the media debate on climate change, the emphasis was on problems and causes rather than on discussions of evaluations and solutions, as when political and interest groups later emerged on the scene (Trumbo, 1996).

Recent evidence reported in Dotson *et al*. (2012) for Chilean newspapers also concluded that political actors have gained dominance in claims-making regarding climate change discourse. Likewise, the study by Comfort *et al.* (2020) of Asian contexts (China, India, Singapore and Thailand) also found that government, followed by the science sources, outweigh other actors (activists, business groups and members of the public) in media coverage on climate change. The African study which informed the present work built on this literature. It content-analysed 315 articles of six newspapers from selected African countries and used an African (Afro)-relational framework (ARF) (Okoliko & de Wit, 2021) as a theoretical lens to map the nature of climate change claims-makers and their associated claims.

As Leon and Gotangco (2018:188) argue, a theoretical framework and its "assumptions about the nature of reality and knowledge" guide how research is conducted and interpreted. An ARF conception of the sphere of communication draws on the participatory media framework which conceptualises the mediascape as a space of interaction between diverse actors (for details, see

Okoliko & de Wit, 2021). Drawn from a set of relational theories in African political literature, ARF construes subjects (actors) in a communicative space as inter-subjectively related (Metz, 2015a; Okoliko & de Wit, 2021), as contemporaneous (everyone is valued) (Eze, 2008), as sharing a bounded life of solidarity (pursing common good) and identity (belonging with others) (Metz, 2019). Applied to the analysis of media(ted) CCC, the observational study sought to identify how the various selected African news media occasioned subject representation and whether certain subjects were given dominance through discursive strategies.

Findings from the observational study suggest that mediated climate change discourse across the countries analysed was dominated by the authoritative (elite) claims-makers (public office and science/expert actors), while non-authoritative (non-elite) actors (publics, civil society, and business) struggle for media access. More importantly, the former groups enjoy strong associations with a variety of perspectives ranging from issue definition to solution, indicating their strong agency in the media space. In contrast, the latter were reported as being linked to limited frames. The case of the publics (members of the public) particularly shows a leaning towards victim-trope as they were shown to have stronger associations with issue definitions relating to the frames of agriculture and general impacts, and less with diagnoses, evaluation, and solutions. From an ARF perspective, the study problematised the implication of the skewed media(ted) CCC vis-à-vis the enactment of citizens subjectivities and their contributions on diverse topics, including claims on solutions.

The important contribution the study makes is however limited. Like most representation analysis, the study was content-focused (textual and virtual representations of climate change in the media) and this limited the insights it provided to only textual frames. As review studies in mediated CCC have shown consistently, few studies have complemented the media-level insights with rich qualitative data expounding on factors that influence the framing of climate change (Comfort & Park, 2018; Schäfer & Painter, 2020; Schäfer & Schlichting, 2014). Yet when it comes to the use of sources, which is the focus of the current paper, journalists' traditional role as "gatekeepers" is an important element in the production of media content;

they ultimately "select some bits of information and discard others" and in that way influence whose voice is heard in the media (Schäfer, 2011). It is therefore a significant gap that the perspectives of journalists involved in covering climate change has been largely neglected (Robbins 2017; Anderson 2009; Evans 2016).

The African cases presented in this study provide the journalists' perspectives on the behind-the-scenes factors that affect climate change coverage in the media. Africa is of interest because the region remains largely understudied, given the preponderance of research interest in the industrialised and mostly Western nations (Okoliko & de Wit, 2020; Schäfer & Painter, 2020; Schäfer & Schlichting, 2014). Also, predictions and empirical findings have consistently revealed a high level of climate vulnerability relating to problems of economic development (Laajaj & Little, 2008), income convergence (Baarsch, Granadillos, Hare, Knaus, Krapp, *et al.*, 2020), food insecurity (Boansi, Tambo & Müller, 2019; Palazzo, Vervoort, Mason-D'Croz, Rutting, Havlík, *et al.*, 2017), water insecurity (Adam, 2020; Nkhonjera, 2017), forced migration (Berchin, Valduga, Garcia & de Andrade Guerra, 2017; Warren, 2016) and health (Garland, Matooane, Engelbrecht, Bopape, Landman, *et al.*, 2015) in the region. Boansi *et al.* (2018) particularly referenced recent changes in the onset of rains and the duration of the wet season along with extreme weather events as major threats to farming in west Africa, a region that is largely supported by rain-fed agriculture.

Despite these challenges, current policy actions as reflected in the Intended Nationally Determined Contributions (INDCs) of the 54 African countries fall short of meeting the desired inputs to address social inequalities accompanying climate impacts in the region (Nyiwul, 2021). A recent study also shows that voters support for climate policy is weak in Africa (Obradovich & Zimmerman, 2016) – the same continent that is the "most vulnerable to climate change" (Mahl, Guenther, Schäfer, Meyer & Siegen, 2020:803). Given that an encounter with climate change information is media(ted) by traditional news and online media in Africa (Mahl *et al.*, 2020), it is important to explore how the frontline actors help to shape contents intended to impact on knowledge, attitudes and actions directed towards addressing climate change.

This study thus explores how role orientation, norm application, routines and working conditions of journalists in three African countries – South Africa, Nigeria, and Kenya – affect inclusive coverage of climate change. Set within a relationality framework (Seehawer, 2018; Swanson, 2007; Tavernaro-Haidarian, 2018), the study employed semi-structured interviews to co-creatively provide insights in "humble-togetherness" with journalists covering climate change in the selected African countries.

In the next section, the sub-study's theoretical and empirical precedent is discoursed. Next, the methods and materials are described. Subsequent sections provide the results of analysis and discussions and offer a concluding remark.

5.2 Mediated CCC research and the role of climate journalists

The present study adds to the growing scholarship on journalists' contribution to frame building practice (Boykoff & Boykoff, 2004; Brüggemann, 2014, 2019; Brüggemann & Brüggemann, 2017; Brüggemann & Engesser, 2014, 2017; van Eck *et al.*, 2019; Engesser & Brüggemann, 2016; Hiles & Hinnant, 2014; Schmid-Petri, Adam, Schmucki & Häussler, 2017b) as a complement to the well-researched interest in media representation of claims-makers and their perspectives on climate change communication (Comfort *et al.*, 2020; Dotson *et al.*, 2012; Freeman, 2017; Khuhro *et al.*, 2020; Mercado-Sáez *et al.*, 2019; Parks, 2020; Wagner & Payne, 2017; Watts & Maddison, 2014). Journalistic frame building is the process through which frames or "patterns of interpretation" are built into media content (Brüggemann, 2014; Entman, 1993). Badullovich *et al.* (2020) broadly described framing as "the act of sense-making through emphasising certain aspects of a reality over others". Our understanding of the various patterns of interpretation (and their prominence) regarding climate change represented in the media is incomplete without paying attention to the processes through which such patterns are made.

Yet, as synthesis studies on media framing of climate change show, much of the effort in this regard has tended to rely heavily on content analysis (Badullovich *et al.*, 2020; Schäfer & O'Neill, 2017). The content studies have helped us to understand which of the various interpretative schemas on climate change make it into different media types across various

societies, including the economic, scientific, public health, morality/ethics and various solution frames (Bolsen & Shapiro, 2018; Vu *et al.*, 2019). Others have highlighted how the media tend to focus more on the large-scale (national and global), while de-emphasising the local contexts (Ahchong & Dodds, 2012). Important for our consideration is the growing literature on the nature of "[s]ocial actors available to the media […] as *Primary definers"* in the climate change discourse (Antilla, 2005:344). As claims-makers or sources (Comfort *et al.*, 2020), these actors frame, define and set boundaries within which the media discourse on climate change is conducted (Antilla, 2005).

Recent literature on media(ted) CCC assessing the practice of news sourcing problematises the notion of prominence vis-à-vis subjectivity. Subjectivity in this sense refers to "the statuses of and relations between" various actor representations (Carvalho *et al.*, 2017:126). The question of who is heard (the most) is as important as the nature of what is said. As Carlson (2009:527) argues:

> [P]atterns of who gets to be a news source lead to assumptions about who has power and who is powerless, who has authority and who is subjugated, who is to be trusted and who is subject, and who is acceptable and who is deviant. To study news sources is to pry open these assumptions, question their impact, and posit alternative ways of conceiving of sources.

Following this understanding, an emerging research interest now focuses on making evident how the gathering of climate change stories accords degrees of importance to different news sources and to revealing underlying assumptions relating to social dominance and the legitimacy of claims-makers (Anderson, 2017; Wozniak *et al.*, 2017). For instance, the study of media coverage of climate change in China, India, Singapore and Thailand by Comfort *et al.* (2020) indicated that official voices dominate and overshadow other sources, including those of scientists, activists, business actors and members of the public. Also, focusing on the use of expert sources, Takahashi *et al*. (2017) show in their study of the media of the Great Lakes region that non-scientists are more frequently represented in climate stories than the scientists. Controlling for authorship, they further show that reporters who often write on the subject were more likely to use scientists than those who write occasionally. This finding is

significant for understanding the role of climate journalists as "mediators" (Engesser & Brüggemann, 2016).

Climate journalists are key players, not just in the framing of the issues but also in the selection and positioning of claims-makers (Engesser & Brüggemann, 2016). Engesser and Brüggemann's (2016) conceptual distinction between the cognitive frames of the journalists (journalist frames) and news frames (on a textual level) highlights this point. The latter refers to manifest interpretations in the media while the former relates to the contribution to news frames by journalists. They argue that the former influences the latter and the exposure to news frames in turn affect the audience. Although they focused primarily on mapping the cognitive frames of climate journalists across five countries (Germany, India, Switzerland, the UK and USA), their analysis shows that journalists' specialisation, professional aims and political alignments have influence on the delivery of journalists' roles as co-definers of climate change frames along with claims-makers (Nord, 2015:132).

The important contribution on framing in the CCC literature requires further examination beyond content-approach. The current paper builds on previous research into frame-building which acknowledges the range of factors from individual journalists (micro), media organisational level (meso) to society (macro) as important pieces of the puzzle on the occurrences of textual frames (Vu, *et al.*, 2019). For instance, at the micro level, the work of Takahashi *et al*. (2017), and Engesser and Brüggemann (2016) demonstrates that journalists' influence on frame building can be affected by whether they write regularly on climate change or not, as well as on their level of education and ideological commitment. Others looking at the meso level have documented the effect of journalistic norms (Anderson, 2011; Boykoff & Boykoff, 2004) and news routines on editorial decision-making (Brüggemann, 2014). Boykoff and Boykoff"s (2004) early work examining the media portrayal of global warming between 1988 and 2002 in the USA, for instance, concluded that adherence to the norm of balanced reporting by the media contributed to advancing political polarisation by giving undue coverage to climate sceptics (also see Antilla, 2005). The authors assert that the norm condition reportage according to a binary framing of the debate with almost equal attention to "an

unbalanced issue" given the near-universal agreement on human-induced climate change (Boykoff & Boykoff, 2004:134). Their work set the stage for the inclusion of media profession-related variables in the examination of media-climate change nexus.

Subsequent investigations sought to examine whether the practices investigated by Boykoff and Boykoff (2004) prevail outside of the USA. For instance, while Boykoff (2007) reported an end to the influence of "balance" in climate change media coverage in both the USA and UK contexts, Boykoff and Mansfield (2008), and Ruiu (2021) showed its continued influence in the UK news media. In recent times, others have highlighted the shifting role of journalism in the framing of the debate (Brüggemann & Brüggemann, 2017). Climate journalists, it is believed, are increasingly adopting the principle of "weight-of-evidence reporting" – generally conceptualised as "interpretive journalism" – which allows for a more contextualised coverage of dissenting voices when covered alongside the mainstream consensus (Herrick, 2004; Hiles & Hinnant, 2014). The reporting style goes beyond contrasting viewpoints to indicating to the audience "where the bulk of evidence lies" (Dunwoody, 2004:90). Other scholars focus on the interactions between the journalistic profession and the society to understanding frame-building practice. With respect to Africa, Meribe's (2017) qualitative study on "The political economy of climate change reporting in Nigeria" is seminal. The work detailed how climate journalism in a media culture suffering from financial crisis is responsive to various interests, which include advertisers and politicians.

The present work contributes to the literature by combining the three-level analysis to examine frame-building practices regarding inclusive media coverage of climate change (where inclusivity relates to the plurality of subjects and perspectives) in three African countries previously studied textually. The study provides a reflection with journalists covering climate change in Africa in a "humble-togetherness" (Tavernaro-Haidarian, 2018), relying on an African relational approach. Climate journalism requires a mediascape that is inclusive and drawing on ARF (Blankenberg, 1999; Metz, 2015a; Okoliko & de Wit, 2021; Ward & Wasserman, 2015); this reflection enquires from the journalists about the extent and utility of pluralising the engaged subjects in media(ted) CCC for the African context.

ARF proposes a media model that engages diverse subjects as *persons-in-relation* (Okoliko & de Wit, 2021). As other scholars have argued, the success of climate politics depends on the support it can get from a broader spectrum of society at different levels, and particularly at the national and sub-national level (Kleinen-von Königslöw, Post & Schäfer, 2019). ARF differs from the "deficit" media model, which privileges certain social actors as sources of climate information and others as mere recipients of such information (Moser, 2010; Nerlich *et al.*, 2010; Nisbet & Scheufele, 2009). The framework provides a theoretical lens to assess journalists' perceptions about inclusivity because it places value in "active listening" (Dreher, 2009) across subject differences and trusts the embodied experience of individuals as "humanness" (Ewuoso & Hall, 2019), including the "ordinary" voices (Ward & Wasserman, 2015).

5.3 Clarifying area of interest

To assess the factors which may constrain the pluralisation of subjects and perspectives in the African cases, the reflection focused on how role orientation, norm application and routines, and the social conditions of work affect the coverage of climate change by the African journalists.

Journalistic norms are principles which define news values – what makes an item newsworthy.

Table 5.1 below provides a list of such norms identified in the literature as relevant to the coverage of climate change in the media.

Table 5.1. Journalistic norms relevant for examining media(ted) CCC

Norms	Description
Personalisation	Coverage emphasises the human-interest angle with its colours of trials and tribulations, but often at the expense of structural and institutional analyses
Dramatisation and novelty	Focuses on controversy and the excitement that conflict generates as well as on freshness over continuity
Balance and objectivity	Reportage is dispassionate and gives roughly equal weight to oppositional frames (consensus climate change claims and opposing views)
Contextualisation	Coverage is interpretative with sources and claims evaluated based on the "weight-of-evidence"
Authority-order	Coverage turns more to authority figures
Clarity	Reportage emphasises clarity of language and understanding
Decency	Reportage is respectful to others

Sources: Behrman *et al*. (2012), Boykoff and Boykoff (2004), Brüggemann and Engesser (2017), Hiles and Hinnant (2014), Merkley (2020) and Van Eck *et al*. (2019)

In addition to the works already referenced concerning objectivity and balance, the norm of dramatisation which commits journalists to value immediacy and a focus on single discrete events has been shown to influence a preference for episodic rather than thematic framing of climate change in the media (Robbins, 2017). Hence, we examined the reflections provided by the journalists to identify which of these norms matters in their frame-building practices.

Our second interest is in the effect of journalistic role perception in the coverage of climate change in Africa. There is no one standard definition of what ‘journalistic role’ means in the communication literature (Tandoc, Hellmueller & Vos, 2013). As a result, several descriptions have been offered (Belair-Gagnon, Zamith & Holton, 2020), beginning with Cohen's (1963) pioneering exposé to the more recent scholarship on the topic (Hanitzsch, 2017; Hellmueller & Mellado, 2015; Raemy, Beck & Hellmueller, 2019; Tandoc *et al.*, 2013). However, a common understanding is that journalistic roles refer to the identity and locus of journalism in society (Hanitzsch, 2017).

Also, it has been noted that journalists can adhere to many and sometimes conflicting roles (Mellado, 2015). Earlier work theorising journalistic role orientation conceive of it as a spectrum of approaches that journalists adopt in their professional conduct. Cohen (1963), for

instance, thinks of journalists as “neutral” or as “participants” in reportage. In the present study, we adopt a much recent model which constructs journalistic roles in terms of three dimensions measuring journalists’ level of intervention, power distance and audience orientation (see Table 5.2 below). The first dimension corresponds to the passive-active role conception and under it, a detached disseminator adhering to the norm of objectivity and neutrality shows the weakest form of intervention in reportage. This role is regarded as standard “liberal journalistic professionalism” (Zeng, 2018:1406). In contrast, advocates can include judgements, interpretations, and proposals when they create news stories.

Table 5.2. Six types of journalistic roles

Dimension	Role	Description	Common nomenclature
Interventionism	detached disseminator	takes passive stance towards news reportage by emphasising distance between the reporter and "facts"	"gatekeeper", “transmitter”, “neutral”
	advocates	takes active stance towards news reportage and at times, advocate a cause	“participant”, "development” or "solution" journalism
Power distance	adversary (high power distance)	focus on holding institutions of power to account	“Fourth Estate”, "watchdog", "muckraking", "investigative" reporting
	“loyal-facilitator” (low power distance)	focus on defending authority (journalists as government partners) or on social harmony (journalists as nation builders)	"lap-dog", "guard dog"
Audience approach	market-oriented	focus on commercialisation of content and serve what audience "want to know" rather than "what they need to know"	“infotainment”, "tabloid" journalism
	citizens-oriented	mobilises citizens to participate in social, political, and cultural life	"populist mobiliser", "community journalism"

Sources: Mellado (2015), Mellado and Van Dalen (2014), Raemy *et al*. (2019), Skovsgaard *et al*. (2013), and Zeng (2018).

The second dimension relating to power distance splits the journalistic role between whether a journalist maintains a distant (adversary role) or close relationship (“loyal-facilitator” role) with power. Lastly, the third dimension looks at the relationship between journalism and

society. Orientation towards the market is linked to commercialisation of content with a focus on satisfying a rewarding audience. In contrast, citizens-orientated journalism serves to give voice to citizens' plight, often mobilising them for action.

Journalistic roles in media(ted) CCC research have not received as much attention as the norms (Brüggemann & Engesser, 2017; van Eck *et al.*, 2019; Engesser & Brüggemann, 2016). Yet the practice of journalistic logic is embedded in role perception and enactment. With reference to the relation of journalists and sources, it is important to understand how, for instance, the adoption of the three dimensions of role affects social actor-salience in climate change coverage.

Although journalistic role conceptions are regarded as an individual-level influence on news making (Tandoc *et al.*, 2013), it is useful to conceive of them as interactive with non-individual-level elements, including influences from organisational and society levels. This is because the extent to which the enacted roles by the journalists are performed is conditioned by influences arising from the routines of practice, organisational structure and the larger society within which journalists work (van Eck *et al.*, 2019). Hence, we included in our analysis as the third interest the climate journalists' reflections on the routines of their work, their newsrooms settings, organisational orientation, societal expectations (the journalists' gauge of audience expectations and audience feedbacks) and how these affect their coverage of climate change (Hellmueller & Mellado, 2015).

The combined approach is useful because in the literature the interaction of these factors is given as the explanation for role conception-performance gap in journalism (Mellado & Van Dalen, 2014). In Africa, for instance, Siyao and Sife (2020) writing for the Tanzanian and Meribe (2017) for the Nigerian news media, provide evidence for organisational and extra-organisational factors that constrain the coverage of climate change in the media, namely, editors' interests and attitudes (including the newsroom), revenue and financial constraints by media organisations, the time factor and the interests of the news ownership. We extend these findings to collectively investigate the interactive effect of journalistic norms and role

perceptions, and journalists' working routines and conditions in the coverage of climate change for the countries of interest.

5.4 Methodology

5.4.1 Semi-structured interviews

Semi-structured interviews were conducted with climate journalists from South Africa, Nigeria, and Kenya for the purpose of this study. Interviews were considered useful for gathering data for several reasons. From a theoretical perspective, ARF's thrust in knowledge production focuses on a co-creative process (Swanson, 2007). In this case, journalists covering climate change in the selected countries were trusted as embodiments of knowledge who can, together with the researchers, engage in a critical reflection on the art of climate change representation in the African mediascapes. The interviews proceed from the assumption that subjects with the experience of a phenomenon are in a better position to provide a rich description of the phenomenon (Sandelowski, 1986). Furthermore, there is a long history establishing the usefulness of interviews in aiding rich and in-depth understanding of "experience, knowledge, and worldviews" of studied subjects (Hiles & Hinnant, 2014).

The journalists included in the study are professional authors of climate change news items that publish reports in mainstream news outlets. This definition of our study participants includes both the journalistic practice (professionalism) and the context of a newsroom anchored in editorial practice. In this case, scientists, environmentalists, and other regular contributors to CCC (including online bloggers), although important, generally fell outside the scope of this study. The journalists interviewed for the study form a heterogenous group that cover a variety of beats[11] besides the traditional environmental beat under which climate change falls. Although, specialist reporters are becoming fewer globally (Brüggemann & Engesser, 2014;

[11] Beats in journalism refers to thematic division of what journalists are assigned to cover in their practice. The division generally follows subject topics such as politics, sports, environment, science, climate change, etc.

Schäfer & Painter, 2020), in Africa the problem is bigger due to resource constraints that force media organisations to spread their reporters across a variety of beats.

5.4.2 Sample

Twenty-seven journalists were identified using both purposive and snowball sampling. The purposively sampled group were initially identified from a previous study by the authors which analysed climate-related media contents of two leading newspapers from each of the countries included in the present study. Fifteen reporters who published relatively more articles were identified from the previous study and invited to participate in the study through email, Twitter, and LinkedIn messages (see Appendix 5 for a copy of the recruitment material). Seven of the reporters accepted the invitation and were interviewed. A further application of the snowballing strategy yielded an additional 14 climate journalists who fitted the inclusion criteria and were contacted in the same manner. Four more respondents who accepted the second strand of invitation were interviewed. In all, 11 climate journalists from South Africa (4), Nigeria (4) and Kenya (3) were interviewed between December 2020 and February 2021 (see

Table 5.3 below).

Table 5.3. A description of journalists included in the study.

	Journalist	Media	Years	Degree/discipline	Below degree level/discipline	Specialised	Special training
South Africa	S1¥	Media-S1	3*/10	Journalism		√	
	S2	Freelance	14		Journalism		
	S3	Media-S2	15*/21	Journalism		√	
	S4¥#	Media-S2	7*	Journalism		√	
Nigeria	N1¥#	Media-N1	29*	Linguistics		√	√
	N2¥#	Media-N2	15	Mass Comm./English			
	N3#	Media-N3	20	Linguistics		√	√
	N4	Media-N4	1*/8	Philosophy		√	
Kenya	K1¥	Media-K1	15	Journalism			
	K2¥	Media-K2	17*	Journalism/Communication		√	√
	K3¥	Media-K2	8	Communication/Media			

Note: ¥ = participants picked from the (previous) observational study; # = also hold editorial positions; * = years in environmental beat. Each journalist is given a code name to anonymise their identity (e.g., S1 for a journalist from South Africa). The same code format was also applied to the media organisations where they work (e.g., Media-K2 for a Kenyan media organisation where K2 works).

The sample size was considered satisfactory given that both the literature and our findings demonstrates that in Africa there are few climate journalists (Schäfer & Painter, 2020). Also, the literature on methodology suggests that rigour in qualitative research has less to do with sample size than with adequacy, which refers to the ability of participants "to supply all the information needed for comprehensive analysis" (Roberts, Dowell & Nie, 2019; Robinson, 2014:38).

Table 5.3 above provides characteristics of the journalists included in the study. While only seven of the 11 interviewees reported that they cover the environment-related beats (and in most cases, also other beats), the other reporters have extensive embodied experience of covering climate change in their respective media organisations.

5.4.3 Data collection

The semi-interviews were conducted via MS Teams, Zoom and in one case through WhatsApp – all applications that are now readily used in data collection in an "era of social distancing" (Lobe, Morgan & Hoffman, 2020). Additionally, three reporters from South Africa opted to correspond via email owing to schedule constraints. Even with this option, written responses were provided through back-and-forth exchanges between the interviewees and the principal investigator via emails and shared Google documents, thereby mirroring the process followed in one-on-one interviews. The virtual format of our strategy provided the participants the advantage of engaging in the interview in a more relaxed atmosphere of their own space as also reported in Gray *et al.* (2020).

The interviews were semi-structured (Kpanou, Kelsey & Bower, 2020) and conducted with the aid of a topic guide that allowed space for a wider conversation between the principal investigator and the interviewees to explore issues pertinent to the research interest (van Eck *et al.*, 2019). Questions explored three main themes relating to inclusive climate change coverage: 1) journalist's perceptions of their role and that of the media in framing the climate change discourse; 2) how the material conditions of, and 3) the professional norms guiding their practice (see

Table 5.1 on page 122) influence claims-makers' identification and use in climate change coverage. Ethical approval was granted by the Stellenbosch University's REC: SBER (No 14633) was diligently adhered to throughout the research process (see Appendix 4). All participants signed a consent form indicating their willingness to participate in the study (see Appendix 6).

5.4.4 Data analysis

The interview conversations were audio recorded and transcribed following the guidelines set out in Kuckartz and Radiker (2019) using Otter.ai, an automated transcription software that has proved useful in qualitative research (Gray *et al.*, 2020; Grubert, 2020; Jones, 2020; Pathak, 2020; Schneider, Schweiger, Posch & Ridjan, 2020). The primary researcher, who conducted all the interviews, listened to each account several times and made corrections where necessary. As recommended in van Eck *et al.* (2019), all the interviewees were given the opportunity to validate the transcripts of their records and provide feedback (also see Kpanou *et al.*, 2020). Final transcript records were then uploaded into ATLAS.ti (version 9) for analysis. ATLAS.ti is a useful computer-assisted qualitative software that helps researchers to annotate and code data segments, conduct searches and systematically organise data and the analysis (Rowley, 2012).

The analytical process combined both deductive and inductive reasoning to make sense of the data. The deductive approach allowed the researcher to apply categories emanating from the literature as well as from the previous study to applicable sections of the data. Additionally, themes emerging from the data provided further insights into the cases analysed. The emergent themes inductively derived relate to how the journalists described their working environment and conditions. We categorised the themes as "condition of practice" (CoP). Deductive coding was applied to both the journalistic role and norms categories as developed from the literature (see

Table 5.1 and Table 5.2 above). The procedure followed in ATLAS.ti is detailed in Figure 5.1 below and is an adaptation of standardised practices in qualitative research (Babchuk, 2019; see Creswell & Poth, 2018; Friese, 2011). Although the steps are visualised as linear, the actual practice was iterative with several of the previous steps revisited in later stages during the analysis. In addition to the member-checking process mentioned above, the second author, who doubled as the supervisor of the doctoral thesis of which the present study forms a part, audited the analytical processes for “confirmability”, “dependability” and general rigour (Reid & Gough, 2000).

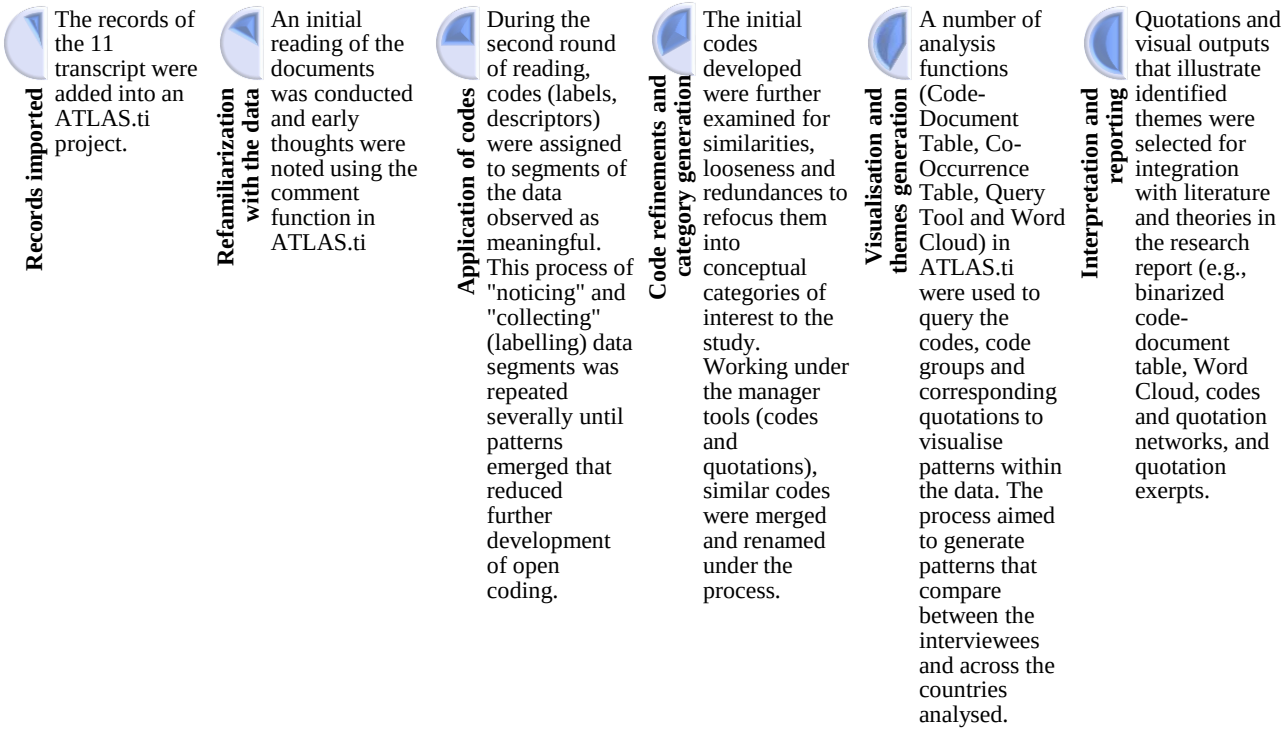

Figure 5.1. Analytical steps and procedure employed for the research.

5.5 Results

5.5.1 Perceptions about inclusive representation

The climate journalists interviewed in this study all emphasised the importance of including diverse voices in the coverage of climate change. In Figure 5.2 below we present four patterns of thoughts that the interviewees associated with inclusivity. Firstly, in cluster 1, the consideration follows from respondents' understanding of who should be concerned about climate change and what communication should look like for the issue. Consider N2 under the cluster 1: "*everybody is a stakeholder*". The respondent's disposition to include diverse voices follows from the understanding that climate change concerns everyone. Asked to discuss what communication means in relation to climate change, K1 (5:19) stated that it should be "*an interconnection between all these players in the world, researchers, policymakers and others*". Echoing a similar understanding of communication as a network of actors, K2 (2:29) also observed that because "*people relate to people*", journalists are *"encouraged to have multiple voices*".

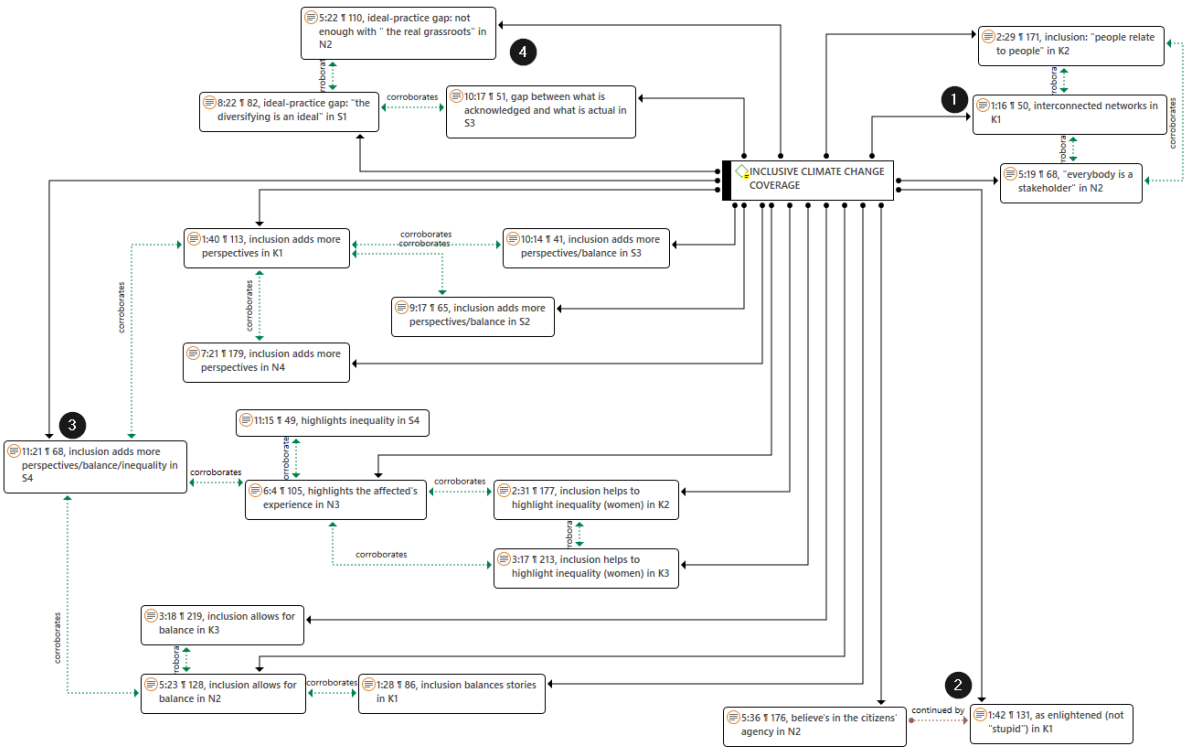

Figure 5.2. A network tree showing quotations associated with inclusive climate change coverage.

Source: Authors' visualisation of data analysis in ATLAS.ti.

Note: To aid visualisation, each quotation was further analysed and labelled with fewer words capturing the essence of its meaning.

Cluster 2 indicates the extent to which the respondents were willing to extend inclusiveness in climate change coverage. All the respondents stated that it should go as far as to the ordinary citizens, although, compared with the frequencies to which authoritative (governments and experts) and organised private actors were mentioned, there was less emphasis on the former. Nonetheless, the ordinary citizens and their views about climate change were considered important by the respondents as indicated by the excerpt from K1 in Figure 5.3 (see below). The respondent reported that the ordinary citizens should not be looked upon as "*people who are stupid, or who cannot offer anything*". This point, also discussed by N2 under the same cluster, supports the active inclusion of voices that have been identified as less visible in CCC (e.g., Comfort *et al.*, 2020).

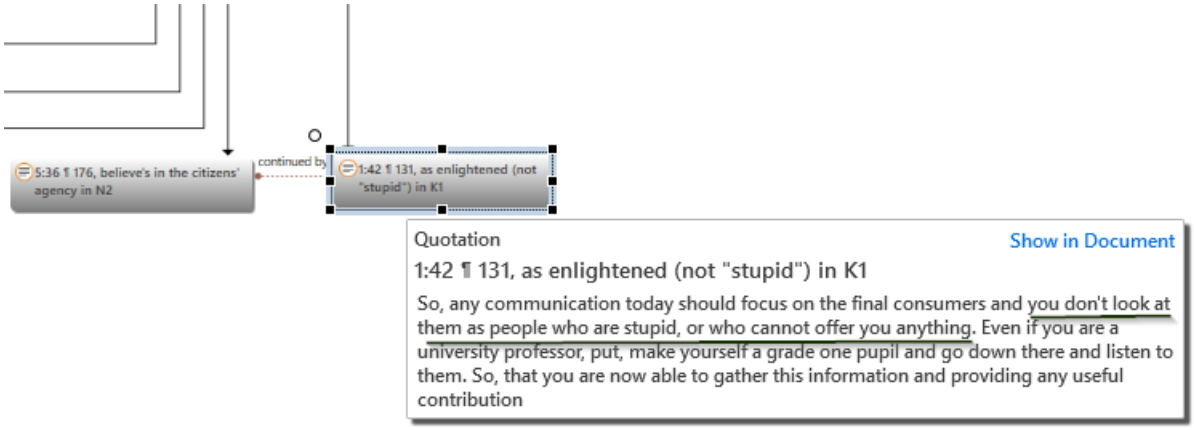

Figure 5.3. A snippet of quotation from K1

Cluster 3 further offers insights into what some of the respondents considered to be the utility of including multiple voices in CCC. K1, S2, S3, S4 and N4 stated that inclusivity allows for the diversification of perspectives. It also allows for "balance" in reporting (K3, N2 and K1). Furthermore, when striven for by reporters, inclusion can reveal differences in how climate change affects different people (N3 and S4) and can highlight the special status of women as the most affected (K2, see Figure 5.4 below).

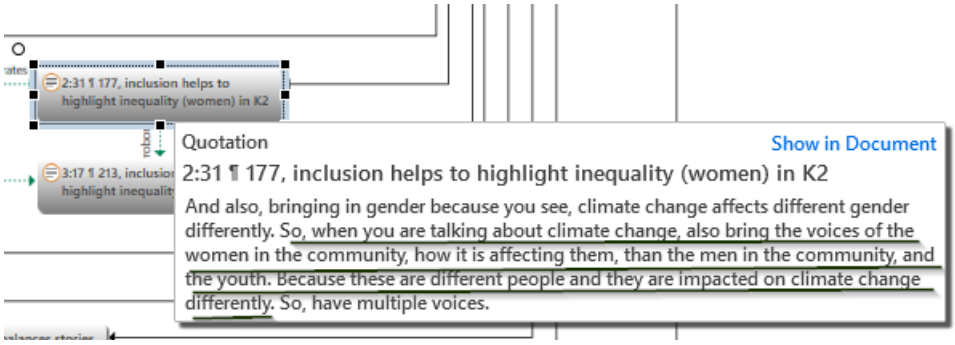

Figure 5.4. A quotation on how inclusion helps to highlight inequality

Probed further about how and the extent to which the respondents include multiple voices in practice, several of them described what can be called an ideal-practice gap. This included the gap between what is acknowledged and what is actualised in the practice of CCC (S3 and S1). Particularly, N2 (5.22) stated that "*the real grassroots […] where the solution should start from*" has not received "*enough*" attention by the media (see Figure 5.2, cluster 4). What

follows attempts to show patterns of factors that the interviewees identified as responsible for the gap between the ideal and practice.

5.5.2 Journalistic role, norms and conditions of practice, and inclusivity

The analysis of the responses from the interviewees identifies the interaction of categories of factors associated with whether and how reporters conduct inclusive climate journalism. As demonstrated in Figure 5.5 below, the factors include journalistic roles and norms and the conditions within which climate journalism is practised. Two general remarks need to be made from the start. First, we observed that none of the factors exclusively affect inclusion or the general coverage of climate change. Instead, while certain factors dispose practice towards a focus on mainstream actors (politicians and experts), others encourage reporters to include voices from the fringes.

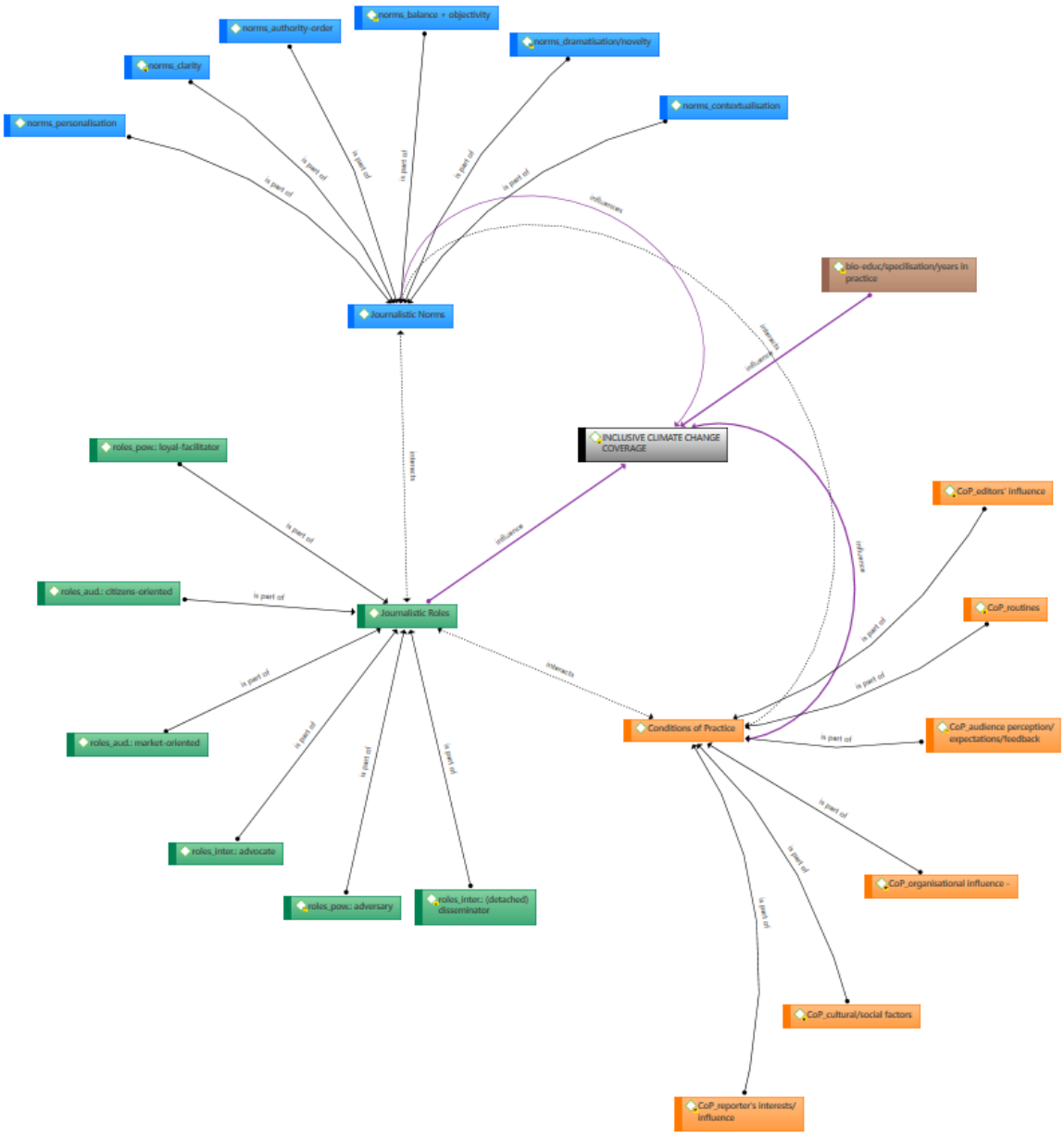

Figure 5.5. A network tree showing codes (factors) associated with inclusive climate change coverage

Secondly, although we did not statistically test the degree to which the factors matter, our reading of the frequencies of codes associated with each of the factors suggests that the respondents referred to conditions of practice more than they did to journalistic norms or role orientation. The prominence of the conditions of practice (CoP) theme is roughly the same for

the three countries analysed (see Table 5.4 below). CoP registered prominently in the conversations with the journalists from Kenya (representing 43.93% of the factors), as well as from Nigeria (46.53%) and South Africa (52.44%) regarding inclusive CCC. We consider each of the themes more closely below before examining their interaction.

Table 5.4. Frequency distribution of factors across the three countries

	Kenyan Journalists 3 124	Nigerian Journalists 4 133	South African Journalists 4 108	Totals
CONDITIONS OF PRACTICE 7 137	43,93%	46,53%	52,44%	47,63%
JOURNALISTIC NORMS 7 83	34,58%	28,71%	20,73%	28,01%
JOURNALISTIC ROLES 7 70	21,50%	24,75%	26,83%	24,36%
Totals	100,00%	100,00%	100,00%	100,00%

Note: Code frequencies (presented in column relative term) were normalised in ATLAS.ti to account for difference in document length (and the depth of interviews).

5.5.3 How the climate journalists perceive their role

In Table 5.5 below we present a binarised role distribution table for the journalists interviewed. As suggested in the literature, it can be observed in this study too that the respondents constructed multiple and sometimes contradictory journalistic roles in relation to their discussion of CCC.

Table 5.5. A binarised journalistic role distribution across respondents

		1: K1 43	2: K2 50	3: K3 31	4: N1 31	5: N2 39	6: N3 40	7: N4 23	8: S1 48	9: S2 18	10: S3 23	11: S4 21	Totals
roles_aud.: citizens-oriented	9			•		•					•		3
roles_aud.: market-oriented	2					•			•				2
roles_inter.: (detached) disseminator	19	•	•	•			•		•		•	•	7
roles_inter.: advocate	29	•	•	•	•	•	•	•		•	•	•	10
roles_pow.: adversary	13	•	•		•		•	•	•		•	•	8
roles_pow.: loyal-facilitator	2			•	•								2
Totals		3	3	4	3	3	3	2	3	1	4	3	32

Note: ATLAS.ti binarise function represents values of 1 or greater (frequencies of code occurrence) by a bullet and an empty cell for values of 0.

The contradiction is clearer in the interventionist dimension of role description by the journalists. Except for S1, all the journalists perceived themselves as "advocates", indicating that they are actively involved in the furtherance of some climate agenda through reportage. Except for N1, N2 and S2, and including S1, the respondents also identified with the traditional disseminator role. In this role, the journalists considered themselves as transmitters of climate information with the purpose of educating audiences or readers. Consistent with their commitment to both roles, we do not consider that the African climate journalists interviewed can be categorised with the strict qualification of "detached" disseminator as used in the literature (Mellado, Humanes & Márquez-Ramírez, 2018). Their strong alignment with the advocate role commits them to engage in various forms of self-positioning in reportage. S1, however, is an exception. Asked to describe her role regarding the coverage of climate change, she stated:

> So, I've tried to remove myself from it, because I'm covering coal. I'm covering, I'm talking to people who still don't believe climate change is real, telling me that carbon is good for the earth and that coal will be here forever. And talking to the new wind industries, talking to NGOs…. I genuinely am not invested either way

> (laughs)…. **I'm not trying to advocate one thing or another** [emphasis added] (S1 8:12).

In this case, the reporter describes a neutral role, but one which appeals to the market segment of her news organisation.

Our analysis of the journalists' distance from power further showed that many of the journalists are committed to the adversarial role when reporting on climate change. Only K3 and N1 indicated a leaning towards power as "loyal-facilitator". The result is rather striking from a theoretical expectation that non-Western media culture tends to lean more closely towards power than away from it (Hanitzsch, Hanusch, Mellado, Anikina, Berganza, *et al.*, 2011). The journalists interviewed in this study tend to perceive themselves as having a "*watch-dog*" role – to use N4's description – and this also included N4, who works with a government-owned media organisation. A quote from S3 captures the essence of this role, which focuses climate journalism on governments' actions and inactions:

> Our job is to […] always trying to shine a spotlight on poor governance behind decisions that worsen the climate crisis in our country (S3 10.5).

Further analysis of the respondents' discussions showed little evidence of how the journalists construct their roles regarding their approach to an audience. As shown in Table 5.5 above, we report that in each country, only one climate journalist identifies with the citizens-oriented role (K3, N2 and S3) and two with market orientation (N2 and S1).

5.5.4 Norms associated with climate journalism practice in the African setting

From the descriptions of journalism practice provided by each of the interviewees, we analysed for the types of journalistic norms that the journalists select as they cover climate change in their various media outlets. From Table 5.6 below, it can be observed that the norms influential in this regard include clarity, authority-order, balance, and objectivity, dramatisation and novelty, personalisation, and contextualisation.

Table 5.6. A code-document table showing binarised norm distribution across respondents.

	1: K1 43	2: K2 50	3: K3 31	4: N1 31	5: N2 39	6: N3 40	7: N4 23	8: S1 48	9: S2 18	10: S3 21	11: S4 21	Totals
norms_authority-order 23	•	•	•	•		•	•	•		•		8
norms_balance + objectivity 15	•	•	•		•		•	•				6
norms_clarity 22	•	•	•	•		•	•		•	•	•	9
norms_contextualisation 3								•				1
norms_dramatisation/novelty 18	•	•		•		•	•				•	6
norms_personalisation 11	•	•	•	•				•	•	•		7
Totals	5	5	4	4	1	3	4	4	2	3	2	37

Note: Comment for Table 5.5 applies.

The need to ensure clarity in reportage was reported by all, except N2 and S1, thereby making it the most important norm guiding climate journalism for the African journalists interviewed. Figure 5.6 below shows a Word Cloud visualisation of statements coded as "clarity" norm. The prominence accorded to the word "understand" highlights that the journalists considered making themselves understood by their audience (denoted by the next ranking word, "people") as a priority.

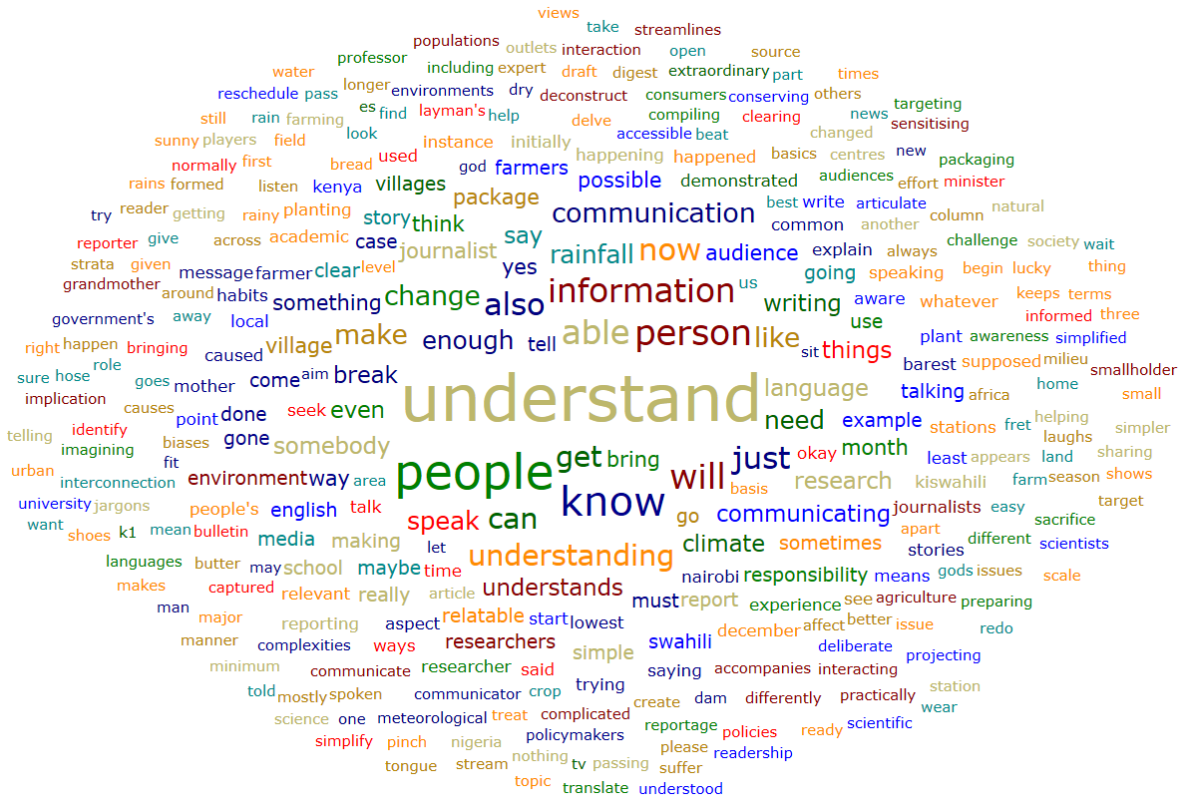

Figure 5.6. Word cloud visualisation for statements coded under 'clarity norm'

A quote from S3 illustrates this concern:

> I think of these people when writing stories, compiling them in ways that are accessible and easy to understand but still delve into the complexities of the reporting that accompanies this beat (S3, 10:13).

S3, in this quote and like the other journalists, strives to make their reportage accessible and comprehensible especially to the "*mwananchi*"[12] (K3, 3:20).

The next norm shared by most of the interviewees (8/11) is 'authority-order'. The norm predisposes the journalists to seek the views of those who possess authority with a broad application to both political (government officials), epistemic (academics and experts) and to a lesser extent, business (corporate actors) authorities. For some, the need to turn to authority

[12] Kiswahili word for 'common humans' or 'citizens'.

sources is also a function of commitments to other journalistic norms such as clarity, objectivity, dramatisation, and novelty. Consider K2's statement:

> When it's something very complicated as maybe science and policies, and you want them to understand, you now, bring an expert, somebody who understands the topic better to break it down (K2, 2:25).

In this case, the use of an expert source is intended to facilitate comprehensibility in reportage. At other times, authorities (especially political actors) and their activities serve to provide dramatic effect in reportage and thus sustain news novelty. K2 (2:24) for instance, alluded to this: "*when there's a scandal in climate change, like maybe some climate change funds have been, you know, stolen by government officials, and it's big money*", as another example of how drama in political corridors attracts attention to authoritative sources.

While commitment to the norm of balance and objectivity allows the climate journalists not to depend on "*what a party says*" but to get "*all sides*" (N2, 5:25), it does not appear to translate into the problem of "balance" identified by Boykoff and Boykoff (2004) and others for the African journalists examined. A case is with S1 who identifies strongly with the disseminator role (see Table 5.5 on page 138). Asked to further explain how her neutrality translates into reportage, S1 says:

> [O]bviously, as you have years of experience, you are **curating** it in a way. So, when I'm on the phone with the climate change denialist who may be very valuable in terms of telling me about export markets and coal quality and things like that. When he tells me, carbon is good for the planet, I ignore him, and I don't put that in my article (laughs). You know, **so, I am curating it. But that's years of me**, I do have a, I have a personal sense of what I can back up as fact (giggles), and which I can use as context throughout my articles. But I would stand by them. I think I can justify everything that I do in that way. And where I don't know, I just reflect other people's views. If they're happy to go on the record, then I'm not censoring them (emphasis added) (S1, 8:13).

Here, S1 mirrors what Brüggemann and Engesser (2017) recently observed about the norm of 'contextualisation', which has a moderating effect on whether and how voices that deny climate consensus get into the media.

Then the norm of personalisation commits the journalists to frame climate stories with a human suffering angle and this appears to favour the inclusion of ordinary citizens more in the media

discourse, albeit that it is a characteristically victim trope. The journalists from Kenya identify more with the norm than those from the other two countries (see Table 5.6 on page 140). An excerpt from K3 puts the victim trope theme well:

> Frankly, I think I covered the ordinary citizens from the victim's perspective (laughs). They are the sufferers. Yeah. And they have the first-hand experience of what goes on. Mostly, it's those two; as the victim and as the witness, who can give more details of the goings-on at the grassroots (K3, 3:26).

The "common citizens", or "*mwananchi*[i]", to use K1 and K3 words, helps the journalists to tell the "*human stories [of climate change] with empathy that focuses on vulnerabilities*" (S3, 10:6).

5.5.5 How conditions of practice interact with journalistic roles and norms to affect inclusivity

The climate journalists interviewed considered certain social, organisational, and personal factors related to their practice as significant influences on whether and how they identify and position claims-makers in climate change coverage. As shown in Table 5.7 below, three of the factors shared by all the interviewees are 1) audience perception, expectations, and feedback; 2) organisational influence; and 3) routines of practice. The other three factors, also shared across the countries were accorded different levels of references by each journalist. Socio-cultural factors were important for all, except for N1, while editorial influence was reported by more than half of each country's cohort. A striking difference was observed for the reporter's interest and influence, however. It appeared more prominently in the conversations with the journalists from Nigeria and South Africa than in the Kenyan cohort.

Table 5.7. Conditions of Practice distribution across respondents

		1: K1 43	2: K2 50	3: K3 31	4: N1 31	5: N2 39	6: N3 40	7: N4 23	8: S1 48	9: S2 18	10: S3 21	11: S4 21	Totals
CoP_audience perception/expectations/feedback	31	•	•	•	•	•	•	•	•	•	•	•	11
CoP_cultural/social factors	18	•	•	•		•	•	•	•	•	•	•	10
CoP_editors' influence	17	•		•		•	•		•		•	•	7
CoP_organisational influence	31	•	•	•	•	•	•	•	•	•	•	•	11
CoP_reporter's interests/influence	13	•			•	•	•		•	•		•	7
CoP_routines	27	•	•	•	•	•	•	•	•	•	•	•	11
Totals		6	4	5	4	6	6	4	6	5	5	6	57

Note: Comment for Table 5.5 applies.

Figure 5.7 below shows the network of themes and associated quotations under CoP. In the African contexts examined, the journalists' perception about audience (including their expectations and feedback) is a critical factor in how claims-makers and general representation of climate change issues take place in the media. One such perception which was frequently mentioned by the journalists interviewed is the low level of awareness, understanding and literacy regarding climate change issues amongst those with whom they engage (see Figure 5.7 below, cluster 1). This perception forms part of how the journalists construct their role regarding climate reportage as that of a disseminator, or as N3 puts it, the journalists "*make the people know*" as they "*don't really understand what climate change is all about*" (N3, 6:7). By the same token, this explains their distrust of the audience's knowledge and expertise, which then disposes the journalists towards certain subjects with the attributes of credibility and expertise on climate change issues (experts and government actors). The tendency then robes on the ideal of inclusive coverage they had earlier professed.

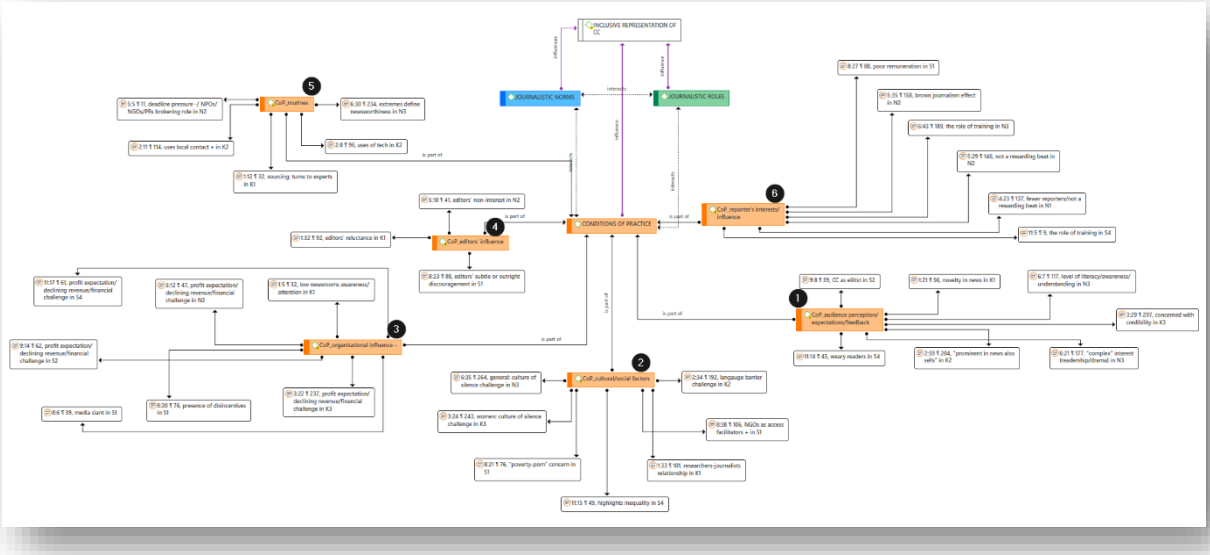

Figure 5.7. A network of themes and their associated quotations under CoP

The credibility criteria are in line with the journalistic norm of authority-order and objectivity. For example, after K3 stated that she often positions "ordinary citizens from the victim's perspective", she was asked to reflect on why citizens' agency is rarely given media attention. Her response was:

> I think sometimes we assume, we **doubt**, okay, we **doubt**, let's say their competence. We **doubt** their schooling or expertise. You know, we know they are not experts. So, in that, we treat everything they say probably with a pinch of salt. Unless something has been done that can prove like if you use ashes to like spray on, let's say, leaves of a plant attacked by a full armyworm, it would probably kill the worm. Unless we can do it practically, then it would be really hard to give them that position of like an expert on a particular thing (emphasis added) (K3, 3:29).

Notice the interviewee's emphasis on the word 'doubt' and how she relates it with the belief in what can be empirically verified. This act of censorship or curating of embodied experiences of non-authoritative actors explains why victim tropes were ascribed to these actors in the media more than they were given space to articulate their agency. In contrast, the experts, government actors and corporatists, given their legitimacy in the public's view, tend to enjoy more agency positionality.

It was also understood that the journalists equally filter their expectations of their audience through the consideration that climate change issues are elitist, and that fresh news, drama and "prominent in news" (popular face) have a higher appeal amongst readers (K2). This perception in turn acts to further slant climate change coverage towards more elite representation.

Socio-cultural factors such as the culture of silence (among ordinary citizens and especially women), inequality in the society, the concern to avoid "poverty-porn" (S1) in reportage, the language barrier and the traditional researcher-public gap were equally considered to negatively affect inclusivity in media(ted) CCC (see cluster 2 in Figure 5.7 above). The interviewees reported that at times, citizens are reluctant to talk to the press when they fear being victimised (N3), when "*they don't know who you are*" (and what your agenda is) (S1), when they are not incentivised (N3 and S1), when they are spoken to in a language different from their own (K21, K2 and K3), and when they are women culturally expected to be reserved and avoid public speaking (K2 and K3).

The other aspect of socio-cultural factors relates to how the journalists navigate their relationship with sources within an unequal society, and this was particularly a concern for the South African cohort. S2 (9:13) reported a struggle to reach out "*to people of diverse income, social and cultural background*" in a country that is regarded as having high levels of inequality. The second layer of the challenge is what S4 (11:15) identified as "*environment journalism in South Africa*" that is white and slanted towards the "*middle to upper-class*". The socio-cultural differences between the journalists and the majority of South Africans in the rural settlements explains why S1 expressed the concern to avoid "*poverty-porn*" in reportage. S1 explained poverty-porn as stories which exploit vulnerable people's condition to sell news. The reporter appears to be concerned about being branded as promoting poverty-porn and such reflexivity explains why engaging certain clusters in the rural settlement might be avoided altogether.

The meso-level factors identified from the interviews included expectations of profit by news organisation and financial constraints (identified by most of the interviewees), minimal newsroom attention to climate change (by most), the presence of disincentives for field

reportage (S1, K2, K3, and N3) and the type of media slant of a news organisation (S1) (see cluster 3, Figure 5.7 on page 145). These factors were discussed in ways that suggest they actively inform editorial dispositions and news routine practices regarding the coverage of climate change. For example, editorial awareness of declining revenue and the profit expectations of a news organisation were discussed in ways that suggest they dispose newsroom practice to manifest less interest in general coverage of climate change or discourage inclusivity (cluster 4, Figure 5.7). S4, who is now an Editor-in-Chief of a major South African newspaper, tells the story in clearer terms:

> Practising environment and climate journalists tend to be white, and even here retrenchments have hit hard. New opportunities are scarce because newsrooms, as a rule, are not interested in investing in environment or climate journalism. Broken business models mean media tend to chase sensation and things that bring traffic or sell print newspapers — in South Africa this means investing in political reporting and investigations that talk to political corruption (S4, 11:17).

By broken "business models", the interviewee referenced the declining revenue of media, and this was a challenge identified for all the news organisations examined. For N2's media organisation, it is "*fixing a dire economic situation*" and for K3, her organisation is "*doing badly financially*". The financial situation then translates to dispose news organisations to having fewer or no dedicated reporters for the environment beat (cluster 6, Figure 5.7), to being uninterested in putting limited resources into fieldwork (cluster 4) and to focusing newsroom practice on what would (in S4 words above) "*sell print newspapers*" the most.

The interviewees, regardless of the organisational type or country, agreed that climate change and environmental news do not have much profit value. In practice then, resources, including editorial dispositions are favourably inclined to sensational news. Under the general newsroom routine of meeting tight deadlines, the competition of climate change news against other beats is thus fierce (cluster 5). For most of the interviewees, it is extreme occurrences that often define climate change newsworthiness (cluster 5). K1's reflection on the interlaced factors summarises this point:

> Let us start from a point of saying that most newsrooms or most media organisations in Africa have not fully embraced the coverage of climate change

> and environment. They will only send a reporter to the field, for example, if floods have swept away houses, floods have swept away animals. People have died, then they tell you to rush and go through the scene and report how many people have died, how many houses have been swept away (K1, 1:5).

The other dimension in inclusive climate change coverage in the African context relates to the micro-level factors indicated under cluster 7 of Figure 5.7 (see page 145). The role of adequate remuneration for reporters, as well as their training and specialisation, was identified by the interviewees as important. N2 particularly highlights how poor working conditions reduce reporters to practising what is dubbed in the literature as "brown journalism" (Kasoma, 2009; Meribe, 2017). In Figure 5.8 below, N2 describes brown journalism as a situation where reporters pursue news for which they can receive monetary rewards, given sometimes in a brown envelope (hence, the name).

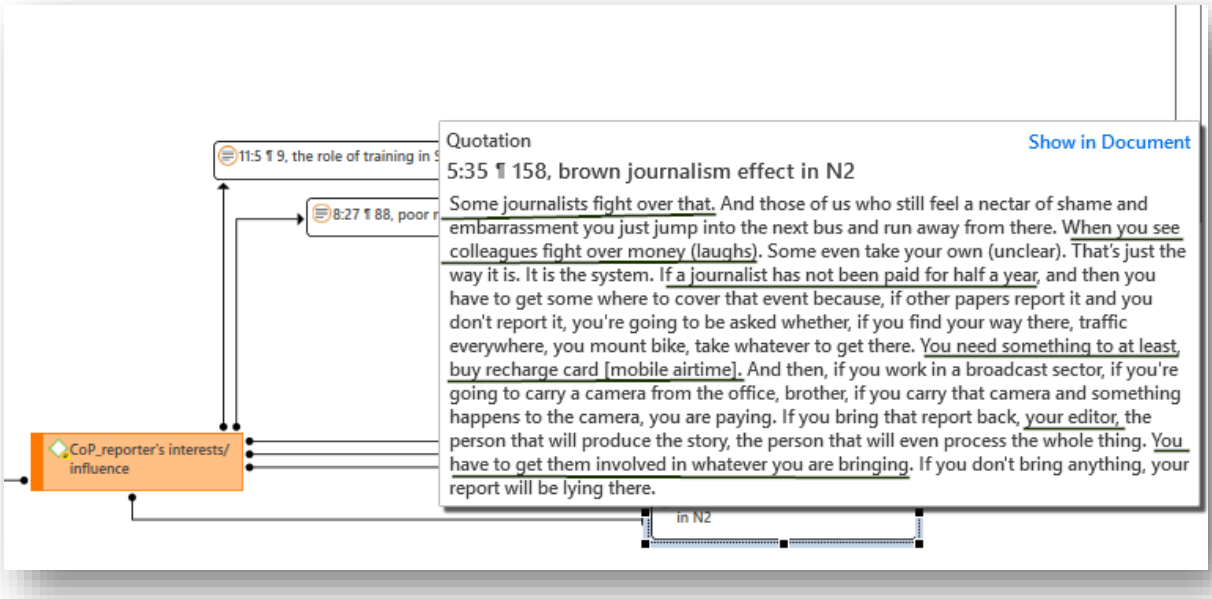

Figure 5.8. A quotation describing "brown journalism"

The discussion emphasises how the drive to chase news that rewards individual reporters can detract from reporters' interest in environment/climate change beat and from putting in an effort to include voices that may be unable to provide such reward for coverage.

Lastly, on the positive side, some interviewees expressed that civil societies (non-profit organisations) are important barrier brokers when it comes to accessing sources often ignored in the media. They facilitate access both in terms of providing resources that are not available to reporters from news organisations and by mobilising non-mainstream voices for media visibility.

5.6 Discussion

This article begins with the assumption that knowledge about critical policy issues such as climate change is not a pre-given order, but a product of a discursive enterprise of which the media is a prime example. Set within a "deliberative epistemology" (Tavernaro-Haidarian, 2018), the media were pictured as a space of relationships between diverse actors engaged in the co-creation of meaning around climate change and with a special interest in "*local* geographies of knowledge" (Mahony & Hulme, 2018). The task undertaken in this paper was to unmask what features of the journalistic profession inhibit or facilitate meaningful engagement with diverse publics in the media(ted) climate change discourse. This focus led us to examine how 11 journalists covering climate change across three African countries describe their work. Our analyses of their self-report on their practice of climate journalism mapped the effects of the journalists' role orientation, norm application and the material of the journalists' workspace on inclusive coverage of climate change, *viz*., the pluralisation of voices and perspectives on climate change in the media.

Firstly, the result indicates that the African journalists interviewed show overwhelming support for inclusive climate change reporting (see Figure 5.2 on page 133). They rationalise their support on the basis that they work in a relational setting – "people relate to people" (K2) – and that addressing climate change is an all-encompassing policy issue that requires wider input. However, reflecting further on how this ideal orientation plays out in their work life, it became clear that there are grounds where the ideal does not translate to real practice. The analysis of their self-reports indicates that there are gaps relating to the general coverage of climate change and to the issue of voice diversification in the various media organisations

where the journalists practise. The gaps point to a mismatch between value orientations that support a type of journalism that allows for inclusive climate change coverage and the journalists' professional orientation and conditions within which they currently work. The former can be supported under a relationally driven normative paradigm which has had a nudging among African media theorists in recent times.

Several African scholars have sketched a reimagining of media logic in the African setting to accommodate the relational and collectivist sociality in the region (Christians, 2004; Metz, 2015a; Okoliko & de Wit, 2021; Tavernaro-Haidarian, 2017, 2019; Ward & Wasserman, 2015; Wasserman, 2013). These works identify the far-reaching effect of globalisation on the African mediascapes and contest the bracketed application of liberal normative frameworks outside its origin in the global West as problematic (Christians, 2004; Wasserman, 2006, 2013). For instance, Nyamnjoh (2015:1) argues that the universalising precepts of the liberal media "are deaf-and-dumb to the particularities of journalism in and on Africa". The contradiction is that liberal media project the media as a hallmark of democracy which promotes freedom of speech for citizens. In practice however, little evidence has been provided to illustrate how its practice in Africa accommodates "multifarious subjectivities and identities" (Wasserman, 2006:72).

The reflections provided in "humble-togetherness" (Tavernaro-Haidarian, 2018) with the African journalists covering climate change provide illuminating insights and corroborate the results from the observational study that motivated the current work. Two overarching themes can be deduced from the results presented in the preceding section. The first concerns whether journalism in African gives the necessary attention to climate change as a collective problem issue requiring comprehensive and collective input. Evidence adduced by the interviewees suggests it does not, at least, for the respective media organisations and societies within which the journalists practice. Most of the journalists reported that climate change receives minimal newsroom attention, a claim which N2 aptly captured:

> (Laughs) First of all, I want to state that, maybe gap is a conservative word. **What we have is a gully between what is happening out there and what should be done**. […] Because, in editorial meetings, […] In my organisation, for example, […] I can't recall the last time I heard a discussion, a discussion

> about a story on climate change. To tell you how deep and wide that gully is. So, it should be happening every day. At least an item, an article, a piece or a news story, no matter how short, should be there daily (emphasis added) (N2, 5:9)

The "gully" further widens when the nature of the subjectivities that the media engage is considered. As found in several international contexts (Comfort *et al.*, 2020; Das, 2020; Dotson *et al.*, 2012; Freeman, 2017; Khuhro *et al.*, 2020; Mercado-Sáez *et al.*, 2019; Parks, 2020; Wagner & Payne, 2017; Watts & Maddison, 2014), the African cases examined also reflect a predisposition to draw on elite sources. We argue that this arises from the globalised liberal media logic upon which current climate journalism thrives. The logic, as Nyamnjoh (2015) argues, "privileges a hierarchy of humanity and human creativity" such that certain subjectivities are canonical claims-makers and prescriptors (e.g., experts). In the African setting, those outside the canonical umbrella (existing in the form of political, epistemic and economic powers) are "othered" (Okoliko & de Wit, 2021) in media representations of climate change as either "witnesses" or "victims" of a changing climate (K2). Notice how K3 alluded to subjecting the non-elite categories to "doubt" and S1 to a "curating" profiling. The challenge is whether such orientation can "activate the polis" (Metz, 2015a:83) required to mobilise a collective response to climate change.

This brings us to the second theme: that an alternative media paradigm must be imagined for climate journalism if the media is to drive inclusive engagement going forward. Previous studies have documented the effect of news values such as balance and dramatisation (Anderson, 2011; Boykoff & Boykoff, 2004), the political leaning of news media (Brüggemann, 2014; Schmid-Petri *et al.*, 2017b) and other contextual factors (Brüggemann, 2014) as explanations for journalistic framing practices. Our findings from the African cases considered here support the literature and locate a mixture of factors clustered around role orientation, norm application and other meso and macro elements as significant influences on journalistic frame formation regarding climate change. We note that these factors interact in several ways, which means that they are not in themselves sufficient explanations for how climate journalists are able to exert influence on news frames.

The first of these factors is journalistic roles; we observed conflictual role orientation for the journalists interviewed, especially on interventionism. Most of the journalists who admitted a high interventionist orientation (advocacy role) also discussed their works in ways that show they are committed to the traditional journalistic role of a "disseminator". One explanation might be that the reporters are firstly journalists who continue to see value in news neutrality, but as it relates to the speciality of the climate beat, they are increasingly adopting an interpretative approach (Engesser & Brüggemann, 2016; Hiles & Hinnant, 2014) as against outright objectivity. In this case, we do not observe the debilitating effect of "balance as bias" observed in Boykoff and Boykoff (2004). Instead, as S1 submitted, with "years of experience", most of the journalists are now able to critically curate the information they receive from sources in their framing practices.

The other explanation is that it is possible that the conflictual role orientation makes manifest the gap between role conception and enactment (actual role performance) for the interviewees. Although our data were derived from the journalists' narratives about their experience of covering climate change in their various settings, we nonetheless asked them to reflect on their actual role performance. In the literature it is suggested that where professional ideals and implementation are in conflict, it "is always resolved in favour of the media organisations" (Roses & Humanes-Humanes, 2019:65). Our results support this assertion, as illustrated in the following excerpt:

> I came from Media-S2, so it was a bit of a difficult adjustment for me to angle a story on the corporate interest. So, with Solobeni, you know, there's a lot of community unrest there and my editor wanted a business angle. He didn't want a human rights angle. And that was hard for me to adjust to. And so that publication doesn't seek out (...) (sighed). It doesn't seek out the voices that I would normally have sought after with Media-S2 (S1, 8:15).

In this case, S1 had transitioned to a new organisation that has a business slant and found herself in a role conflict which is ultimately resolved in favour of her new media organisation's interest. The finding on editorial influence illustrates that most of the journalists interviewed work in newsrooms with low levels of autonomy and, as Brüggemann (2014) suggests, there is a connection between editorial freedom and journalists' frame-building practices.

Consequently, while the interviewees hold as an ideal the need to cover climate change and represent multiple voices, wherever and whenever the ideal clashes with editorial interests, it is suppressed.

Another point to note from our findings is the influence of audiences on the journalists' frame-building regarding inclusive climate change coverage. The journalists are responsive to audience feedback and expectations in many ways (Belair-Gagnon *et al.*, 2020; Brüggemann, 2014). In one aspect (excluding N4 who works for a government-owned media organisation) the interviewees described their audiences as readers with preferences for political and entertainment news. With increasing financial pressure, then, it is not unexpected that other beats competing against climate change coverage often win. In another aspect, the expectation of this preference nudges climate change coverage towards conflict, drama or personalities that can clothe it with the news elements characteristic of coverage of politics or entertainment. Consider the insight provided by K2:

> So, what we try to do is maybe sometimes you politicise. When climate change is politicised, then now it has that bearing. Or when there's a scandal in climate change, like maybe some climate change funds have been, you know, stolen by government officials, and it's big money. Now, it becomes a big story. Or maybe there's serious floods in... you know. Unless it bleeds. You know, they say, **what bleeds leads. Unless it's a bleeding climate change story, it's not going to sell**" (emphasis added) (K2, 2:40).

In order words, the interviewee is here describing how they negotiate audience expectations by embellishing climate stories through discursive strategies such as "argumentation by authority" (using authority sources) (Dahl & Fløttum, 2014), and use of conflict and negativity as news pegs. This way, the profit expectation of the news organisation is satisfied by serving perceived audience expectations, and this invariably sets the tone for editorial policy.

Lastly, the journalists' frame-building on inclusive climate change coverage is also affected by certain elements particular to the journalists themselves: years of experience and specialisation, training, and welfare. The Kenyan cohort deserves a special mention under experience and specialisation. In the previous study that motivated the present chapter, Kenyan news media (*Daily Nation* and *Standard*) were found to have more sub-national focus in coverage and

performed better regarding the inclusion of non-elite voices. It is instructive to note that all the journalists interviewed from Kenya authored articles analysed in the previous study.[13] Although only K2 indicated he specialises in the environment (with science journalism training), the other two reported that they have extensive years of covering the environment and climate change and are often designated by their media organisations to cover high-powered climate change political events. The combined effect of years of covering environmental issues may have favourably disposed the journalists towards inclusive coverage of climate change.

It is important to draw attention to the welfare of journalists and how it affects availability of reporters and their ability to cover climate change. In addition to the "dire economic situations" (N2) which has affected the remuneration of news workers, as evinced in our findings, there is an additional disincentive for journalists to go beyond standard news practice, which the special character of climate change requires. S1 aptly puts it:

> At the end of the day, as an overworked, potentially underpaid journalist, maybe not everyone sees the value in doing it at the end of the day. Because you can produce a perfectly fine story sitting at your desk (S1, 8:27).

In this case, any intervention to reposition climate journalism in the African contexts would have to factor in how to address the drivers of pecuniary interests which limit news practice to "brown journalism" (Kasoma, 2009).

5.7 Conclusion

This paper postulates that climate journalism is better served under a relational and participatory media framework (Okoliko & de Wit, 2021). The complexity of systems affected by climate change warrant that the means through which associated challenges are discursively framed accommodate diverse peoples and their various contexts. Yet, as a growing research body observing the content of media representation of climate change in Africa and elsewhere

[13] No investigation of the statistical relationship between the individual reporter and the articles was conducted in this case. It was not immediately clear as to how that could be done in a way that would avoid revealing the identities of the reporters, which was not permitted under the ethical guidelines given for the present work.

illustrates (e.g., Freeman, 2017; Khuhro *et al.*, 2020; Parks, 2020a; Wagner & Payne, 2017), current practice has tended to skew coverage towards elite actors with the potential for limiting public engagement. The objective of the present paper then was to qualitatively explore, with the African journalists involved in the coverage of climate change, the understanding of factors that influence the engagement of diverse subjectivities in the African contexts.

Our findings affirm that the idea of inclusive climate change coverage in the media is largely shared by the practitioners of climate journalism. They recognise the importance of the interconnections of actors as well as the interlinks between the complex systems affected by climate change and emphasise the utility of broadening voices as a pathway to achieving 'balance' in reportage and unearthing differences in climate impacts. However, they equally acknowledge that there is a gap between the ideal and practice on the ground, which is informed by the interaction of factors pertaining to how the journalists perform their role orientation, apply journalistic norms and function in their work environment.

The paper contributes to the literature on the "re-politicisation" (Carvalho *et al.*, 2017; Matthews, 2017) of climate change, but does so from an African perspective. Politicisation in this sense relate to the accommodation of diverse politics in sense-making around climate change. Note that politics involve interest seeking and the use of power by various actors. As Isopp (2018) argues, it follows then that when actors and networks involved in media(ted) climate change expand, then, politicisation get realised by means of including a broader array of actors. The process can defuse ideological contests (claims and counter-claims regarding values, norms and programmes of action relating to climate change) in the media beyond a singular or binary positioning (Carvalho, 2007). Importantly, ARF problematises the exclusion of certain subjectivities for its far-reaching impacts on what it means to live as persons-in-relationship, given that problem-solving discussions ought to involve co-creative process that involves listening across differences (Okoliko & de Wit, 2021).

The paper, however, must be understood within the context of its methodology as a qualitative exploration of influences on frame-building processes in media(ted) CCC. In this sense, the findings reported are not generalisable but rather provide in-depth descriptions of the lifeworld

of the agents behind climate journalism. As Brüggemann (2014:76) suggests, "drawing on the journalists' own perceptions of their work's context" is a useful way to gain insights into journalistic framing practice – "that is, journalists' contributions to news frames". Nevertheless, we suggest that the exploration conducted regarding the African contexts can be taken further. Future work can, for instance, quantitatively examine the degree of influence that each of the factors exerts on the frame-building process. Beyond establishing degrees of relevance for the factors, such an investigation can help to further shed light on the significance of their interactions. The insights would be useful in directing policy interventions on climate change media campaigns towards the area that matter the most.

The policy implication of our findings is that media communication campaigns on climate change require a concerted effort to expand options and subjectivities on sense-making around the issue. We recommend a reimagination of the mediascape for this purpose, given that the media remains a veritable tool to reach wider audiences. The treatment of climate change by the media must be given a special status different from the way that everyday news items (e.g., politics, sports) are treated. One important aspect of the challenge is the need for resource investment in the architecture of mass media for CCC, especially in Africa where resource constraints have constraining influences on climate journalism, as shown in this paper. Such proactive intervention could reduce the burden on media organisations and professionals struggling to allocate scarce resources to address climate change issues.

6 Chapter Six: General conclusion

6.1 Introduction

Climate change is one of the defining problems of our times. As the global community grapples with mitigation concerns, for communities in poorer regions such as Africa, the disruptive impacts from rising global temperature raise critical questions about resilience. Resilient systems (e.g., community, city or an ecological system) can persist, adapt, transform, and function when faced with disruption and uncertainty (Demiroz & Haase, 2019). The African continent, largely made up of developing countries, faces a variety of climate-induced challenges for which they are ill-prepared to manage (Graham, 2020). As Steynor and Pasquini (2019:8) note, climate change as a phenomenon is "psychologically close", imminent, and its impacts already felt for many in the region. For instance, agriculture, the largest employer of labour on the continent, is undergoing systemic changes that are affecting food security (Fanzo *et al.*, 2018; Molua *et al.*, 2010). There is also a heightened occurrence of climate-induced population displacement arising from habitat changes (Graham, 2020) and a growing concern over biodiversity loss (Failler *et al.*, 2020), water crises (Adam, 2020; Steynor & Pasquini, 2019), climate-induced health risks (Pasquini, van Aardenne, Godsmark, Lee & Jack, 2020; Wright *et al.*, 2021), and recurring large-scale disasters such as witnessed in the Southern African countries of Mozambique, Zimbabwe and Malawi in 2019 (Eckstein *et al.*, 2021).

The need to build climate resilience in Africa is therefore important from both policy and research perspectives. One such policy response, dubbed the "New Green Revolution for Africa", aims to produce a "triple win", including the target to increase crop productivity, support climate resilience and bring about emission mitigation in the region (Clay & Zimmerer, 2020). Together with global development goals such as the SDGs, the ambition requires cooperation and coordination from various levels of the society: governments, international development partners, businesses, civil society, and citizens.

Mass media (TV, radio, newspapers and online media) is looked upon as a tool for raising awareness and motivating wide support for climate change (Pearce *et al.*, 2015; Schäfer, 2015).

Individual exposure to media representation of climate change, albeit with other moderating factors, has been shown to increase climate awareness and knowledge (Akter & Bennett, 2011; Dong *et al.*, 2018; Huang, 2016; Liao *et al.*, 2016), including in Africa (Selormey *et al.*, 2019). While there are other important avenues through which people exchange information about climate change (e.g., one-on-one conversations), the ability of mass media to reach wider audiences make them a standalone means of climate change communication (CCC). Evidence also suggests that in Africa, the majority of citizens access information about climate through the media (Bakuwa, 2015; Oluoch *et al.*, 2020; Selormey *et al.*, 2019).

Given the important role of the media in this regard, there has been a significant rise in scholarly interest in media(ted) CCC that focuses on the representation of climate change in the media (for recent reviews, see Agin & Karlsson, 2021; Comfort & Park, 2018; Okoliko & de Wit, 2020; Schäfer, 2012; Schäfer & Painter, 2020; Schäfer & Schlichting, 2014). Considered as a cross-sectional issue, the subject of CCC draws scholars from a wide range of fields to shed light on how societies engage in communicative acts about climate change (Agin & Karlsson, 2021). Following this development, the subject area is seen as "a crisis discipline seeking 'to enhance the ability of society to respond appropriately to environmental signals relevant to the well-being of both human civilisation and natural biological systems'" (Akerlof *et al.*, 2021:2). However, as demonstrated in the range of literature sampled in this study (see Chapter I), our understanding of how societies in the Global South engage in sense-making around climate change through the media is limited due to the paucity of research interest in the region. While various global review studies have consistently made this point (e.g., Agin & Karlsson, 2021; Schäfer & Schlichting, 2014), the researcher is not aware that there has been any attempt in the past to demonstrate the depth of the problem and to point out directions for interventions. Therefore, the first major contribution of the present research responds directly to this challenge. Chapter II presented the results of a systematic synthesis of the current empirical literature that analysed media representation of climate change in the region leading up to April 2019, when the study was conducted.

This sub-study which analysed 34 publications, established when the studies in Africa were published, the years analysed, the media types analysed, methodologies employed, and the theoretical lenses applied. The other three sub-studies in this dissertation fill in gaps identified through the review study (Okoliko & de Wit, 2020) and those in the global reviews (e.g., Agin & Karlsson, 2021; Schäfer & Schlichting, 2014). They include a need for theoretical contributions based on non-Western paradigms, a need for more comparative analysis of understudied contexts, and a need for research that prioritises the analysis of the social character of climate change representation in the media.

This concluding chapter presents a synthesis of the general study and its key contributions, makes recommendations and highlights areas for further research. It begins with a summary of key findings from each of the sub-studies and then discusses the key contributions of the research. The Chapter then looks at policy recommendation and ends with an indication of the limitations of this study and recommended directions for future research.

6.2 Summary of key findings

6.2.1 Paper I: Media(ted) climate change communication in Africa and public engagement: A systematic review of relevant literature

The objective of Paper I (presented in chapter 2) was to systematically review and describe the extent of the growth and diversity, the theoretical and analytical commitments, and the use of African perspectives in the body of literature that empirically examined media(ted) CCC in Africa. The first part of the analysis focused on trends (year of publication and years analysed), and diversity (countries and media types analysed, and methods and authorship characterisation).

Key findings relating to trends are that between 2008, when the first publication appeared and 2018, which marked the last year of publication in the dataset, media(ted) CCC research growth in Africa was erratic. Compared to what is reported in Schäfer and Schlichting (2014), the African growth curve deviated from the global trend as research interest in CCC on the

continent declined immediately after it peaked in 2013. The study also found that an important attention grabber for scholarship in the sub-field (Africa) is international climate events, including the UNFCC COP17 that was held in Durban, South Africa, in 2011 (the year which recorded the highest number of publications in our dataset) and COP21 in Paris, France in 2015 (e.g., Johannessen, 2013). Beyond the inconsistency in the number of publications per year, the analysis also showed that the sub-field is much younger compared to the global picture both in terms of year of first publication and years analysed. While scholarship in the global field emerged in the 1990s (Schäfer & Schlichting, 2014), interest in the African region only manifested almost two decades later. The earliest year analysed in the sub-field was 1996, again, about three decades later than the earliest year analysed in the Schäfer and Schlichting (2014) dataset.

Looking at the countries analysed in the dataset, only nine African countries were covered, with South Africa and Nigeria appearing most often in the publications. The two countries also hosted most of the institutions the respective authors are associated with, although there were several collaborations with institutions outside Africa. In general, the limited analyses on many of the African societies means that not enough information is available about the means and mode through which citizens in the region are affected by mediated climate change discourse.

In terms of diversity in the field, the African sub-field resembles the global trend in some ways and differed in others. As reported in Schäfer and Schlichting (2014), print media (newspapers) is the dominant media type analysed, and while there are diverse disciplinary representations in the African sub-field, the dominance of media and communication discipline observed resembles what Agin and Karlsson (2021) reported for the global trend. The African sub-field is different in terms of the acute need for research focusing on the broadcast and new media (blogs and social media) given their thin representation in the dataset analysed. Also, fewer representations of qualitative methods, and of comparative and longitudinal study designs were observed for the sub-field compared to the global trend (Schäfer & Schlichting, 2014).

Lastly, the second part of the analysis reported in chapter 2 dealt with evidence of theoretical diversity and an interest in African theoretical application in the publications analysed. The

study showed that scholars are more likely to apply theories particular to their discipline in research. Consequently, as the media and communication discipline had higher representation there were more theoretical contributions from the discipline (framing, agenda setting, discourse analysis, reception, etc.). Theoretical contributions from other disciplines observed in the dataset included the sociology of media, political economy, accountability, and governance. Except for Meiring (2013), no publications applied an African theory as a lens with which to research the African experience of media(ted) CCC. Although, Meiring's (2013) study was set within the framing theories, it nevertheless used "Ubuntu-ism" to describe one ethical way in which climate change is framed in the media. The less attention given to contextualising research into CCC in Africa was then problematised and highlighted as a research gap.

6.2.2 Paper II: From 'communicating' to 'engagement': Afro-relationality as a conceptual framework for climate change communication in Africa

Paper II presented in chapter 3 addressed the second objective of this research, which was to develop a conceptual framework for understanding CCC that draws from and reflects on African worldviews and lifeworld. The objective was deduced from the literature reviewed and from the results of Paper I, which showed a need for non-Western paradigms in the analysis of CCC (Okoliko & de Wit, 2020; Olausson, 2011).

One of the key arguments advanced in chapter 3 is that CCC research in the African sub-field have tended towards the analysis of salience (volume of coverage) as exemplified by the over-reliance on the theoretical commitment to agenda-setting and framing. The paper argues that the preoccupation with analysing whether climate change is getting enough attention on the continent is driven by an assumption reminiscent of the "transmission" model of communication, which aim to feed the "deficits" in laypeople's (climate) literacy. The assumption ultimately splits communication between source and audience and attributes an active disposition to the former and passive receptiveness to the latter. The analysis further locates the assumption in the construct of a social setting that construe constituents as discrete individuals and devoid of relational attributes. Arguing that such a model of communication is

problematic for the African setting, the chapter went on to trace a (re)construct of a media framework that can accommodate the worldviews and social settings reflective of African thought. The importance of the exercise is that "failing to construct the space of positions leaves you no chance of seeing the point from which you see what you see" (Bourdieu, 2013:19). In other words, it is important to first reflect on the lens, and identify and position it in a space from which it can be used to view the African mediascape of CCC.

The (re)construction looked at a range of literature that discusses the concepts of 'persons', 'community' and 'communication' primarily in the light of the African political theories of Afro-communitarianism and Ubuntu, but also in cross-cultural "conversations" with non-African theories. The exercise focused on understanding what we mean by 'the public' that is the subject of engagement through CCC. The African (Afro)-relational framework (ARF) developed construes personhood differently from a view according to which essentialist attributes such as rationality are taken as the definiens.[14] Instead, the African view imagines the self as "persons-in-relationship" (Okoliko & de Wit, 2021), one in which the self is bounded by a capacity to share a life of "solidarity" and "identity" (Metz, 2007, 2016).

Next, the meanings of ARF for CCC were teased out. It advocated for a mediascape that promotes engagement of diverse social actors as "contemporaneous" (respect for persons following from shared humanness) (Eze, 2008). In practice, it resolves, the split implicit in the transmission model and permit that various actors ought to enjoy equal respect in their need to speak and be heard through "active listening" (Ward & Wasserman, 2015). From the ontology of a shared "humanness" that foregrounds the equality of all persons deserving respect (the contemporaneous principle), sense-making, including within a communicative framework, is engineered through "deliberative epistemology" (Tavernaro-Haidarian, 2018). In this way ARF models media(ted) CCC to accommodate pluralised subjectivities (social actors) who variously add "their own voice and subjectivity" (Tavernaro-Haidarian, 2018:230) to

[14] Examples can be found in various individualistic accounts of personhood associated with Western traditions, including those of René Descartes, Immanuel Kant, and John Rawls.

discussing the problem of climate change and multiplying alternatives while contextualising experiences.

6.2.3 Paper III: Media(ted) climate change and public engagement in South Africa, Nigeria, and Kenya: An Afro-relationality informed content analysis

The framework (ARF) developed in chapter 3 was deployed as a theoretical lens which guided the design and conduct of studying the character of climate change reportage presented in both chapter 4and 5. It is important to state that ARF as used in this study is not an analytical tool but a set of "assumptions about the nature of reality and knowledge" (Leon & Gotangco, 2018:188) to facilitate our understanding of the interlaces that underpin how climate change is represented in the media within the cases of interest. This explanation fits into what in methodological texts is described as a conceptual framework, which foregrounds the purpose of a research, provides explanations for related variables and guides the construction of problems, questions, data collection, analysis and findings (Crawford, 2020). In the case of this study, ARF, by (re)focusing interest on the social relations embedded in communicative acts, directed analyses towards unmasking what makes up the relations and what factors influence them. Consistent with practice in social science research, then, the available analytical tools which serve this purpose were employed.

In chapter 4, framing analysis was employed to identify the nature of claims about climate change (frames) in the dataset. Frames are "clusters of assumptions that underpin positions on policy issues" (Baumer *et al.*, 2017:293). Interlinking this with ARF, it is helpful to think of frames as having sponsors, the claims-makers (Pan & Opgenhaffen, 2019; Schäfer & O'Neill, 2017), and because these social actors differ in character, beliefs and values (Anderson, 2011; Comfort *et al.*, 2020), there can be multiple perspectives (Baumer *et al.*, 2017) co-existing for a particular issue where and whenever the media adopt a relational and deliberative model. The chapter thus analysed for the extent of pluralities of perspectives (frames) and actors, as well as the relationship between actors and frames.

The multi-modal framing analyses incorporated both the textual and still-image contents of six newspapers coverage of climate change from South Africa (*Mail and Guardian* and *Business Day*), Nigeria (*Guardian* and *Vanguard*), and Kenya (*Daily Nations* and *Standard*) between March and August 2019. The first set of results illustrates whether framing by the media contextualises climate change as a local, national, regional (African) or global issue, and whether climate change coverage is spread across the different genres of news sections. Across the newspapers, climate change was predominantly framed on the national scale. Significant differences were recorded between the countries regarding the sub-national focus. The issue of climate change was less featured as sub-national in South Africa but more often in Kenya. For the news sections where climate stories were featured, while climate change articles appeared in diverse sections of the news for all the newspapers, there was a difference in terms of the number of opinion articles, which the two Nigerian newspapers featured the least.

The second part of the results focused on the characters of claims-makers' representations. While the results illustrate a widened accommodation of social actors covering public officials, scientists/experts, development partners, media professionals, business and civil actors, and members of the public, access to media space was not evenly available for all. For the actors of statements category, the first two social actors (public officials, scientists/experts) were likely to be given a voice twice as much as the civil society and development actors, and even more than the business and publics' groups. Although the representation of the publics' group was the least evident across the titles, their absence was more pronounced in the South African newspapers.

The analyses also accounted for the objects of statements (individuals referred to in claims) category. Across the dataset, the result inverted the picture above as the least categories of "definers" (business, then, the publics) were the most mentioned in claims. Observed differences aligned with publication slants, with *Business Day* communicating more to the business group. Also, the publications with the least sub-national focus (South African newspapers) reflected less of the publics in comparison to the Kenyan and Nigerian newspapers. The overall results of the social actor analyses suggest that the block prevalence

of the authoritative actors as active definers, and the publics group (also, the business group to a lesser extent) as passive actors, indicate a unidirectional flow of communication reminiscent of the transmission model of communication.

The third part of the results focused on the typology of frames and their prevalence in the coverage. Taken together, impacts, energy, attribution, external efficacy, midway efficacy, and agricultural frames (in that order) were the most significant frames represented in the dataset. When the aggregates of Entman's (1993) four frame elements is considered, the result demonstrates that the African media devoted more attention to defining climate issues (e.g., impacts or energy or agriculture), followed by solutions frames than they do to diagnosing causes or making moral evaluations. A key difference concerns the attention to the agricultural frames. The papers with sub-national focus (Kenyan newspapers and *Guardian* from Nigeria) covered agricultural frames the most compared to the South African newspapers which focused less on the sub-national scale. Also, regarding solution frames, while all the titles covered institutional climate actions widely, the Kenyan *Daily Nation* represented self-efficacy frames which essentially discussed individual climate initiatives.

The fourth aspect of the results was to demonstrate relations of actors and frames, first vis-à-vis claims-makers, and then with the actors mentioned. This was illustrated through the visualisation of the number of times an actor group co-occurs with a particular frame articulation. Higher frequency of co-occurrence was taken to indicate association of the actor group with a frame. The findings suggest that the elite sponsor more frames than the non-elites. Both the experts and the public officials have strong links with frames that define, diagnose and proffer solutions (excluding the self-efficacy). Variations were observed based on the different interests of the social actors. The public officials were the most likely actors to be associated with political frames, while the experts were more likely to be associated with the science frame. The publics' voice was associated with the agricultural and the self-efficacy frames, while the business group had connections with the economic and external efficacy frames.

The passive voice association with frames in the dataset, again, inverted the picture with claims-makers-frames associations. Here, three actor groups were the most 'talked to' in the coverage of climate change analysed; they are the public officials, business groups and the members of the public. Other variations mirror the individual character of the groups. The business groups were mentioned more in the economic, energy, attribution and external efficacy frames; the public officials in external efficacy and politics frames; and the publics in agricultural, impacts and security frames.

Together, the actor-frame analyses suggest that the appearance of a particular frame in a media report follows from the character of the social actor that is given a voice. Given the prevalence of elite voices, it is not surprising that frames diversity was skewed towards discourses that have less to do with citizens and more to do with government and business actions (energy and economy).

6.2.4 Paper IV: Reflecting on 'the engaged' with climate journalists: Evidence from South Africa, Nigeria, and Kenya

Paper IV presented in chapter 5 takes the findings reported in the previous subsection further. It argues that to understand media frames requires probing the behind-the-scenes processes in their production. One useful way to approach the task is to draw attention to the journalists involved in the production of climate journalism (Brüggemann, 2014). This is important because "the choice of a particular source, quote and its placement in the news story are ultimately in the hands of the media producer – i.e. the journalist" (Dimitrova & Strömbäck, 2012:609). The conceptual guide for the sub-study was the ARF directing analyses towards the exploration of how role orientation, norm application, routines and working conditions of journalists in the three African countries – South Africa, Nigeria, and Kenya – affect inclusive coverage of climate change, i.e., allowing for subject and ideational plurality. Eleven journalists from the three countries provided their reflections in "humble-togetherness" (Swanson, 2007) with the primary investigator.

Analyses showed that all the interviewees acknowledged the importance of including diverse voices in the coverage of climate change and offered a variety of reasons for this perception, including the understanding that "everybody is a stakeholder" and that inclusive voices make room for 'balanced' reporting. When it comes to how their practice illustrates inclusive climate change coverage, however, the interviewees' responses showed a disconnect from the ideal they articulated. It was found that the journalists' frame-building process is influenced by conflictual role orientations, the application of certain journalistic norms and limiting conditions of practice (CoP), and that these factors interact to affect climate change coverage in the African settings analysed. All the journalists interviewed referred to CoP most in their discussion, hence suggesting that it may be the most influential factor that affects frame-building around climate change.

Turning to the important nuances concerning the effect of the tripartite factors above, it must be pointed out that most of the journalists interviewed (10 of the 11) showed overwhelming support for advocacy climate journalism by which, in K1's words, they are committed to some "sort of solution-based journalism, rather than just reporting what has happened" (K1, 11). At the same time, a majority also see the need for non-interventionist reporting and consider it vital that climate journalism should "educate" people. The conflictual role description was explained based on the perception of the audience that the journalists hold (a factor accounted for under CoP). Several of the interviewees hold that "people don't really understand what climate change is all about" (N3, 10:07). This perception of the members of the public who are regarded as "the main consumers of the information [on climate change]" (K1, 35:03) then drives reportage towards information dissemination. It is for this reason that the norm of "clarity" appeared the most in the journalists' reflection on their practice. When the journalists write about climate change, they worry about being understood; in S3's words: "[they] think of these people when writing stories, compiling them in ways that are accessible and easy to *understand*" (S3, 10:13) (emphasis added). It therefore appears that whereas standard understanding makes a conceptual distinction between the advocacy and non-interventionist role (Mellado *et al.*, 2018), certain CoPs such as perception of the nature of an audience can moderate how journalists approach role enactment and norm application.

The interaction of the three clustered factors also explains the dominance of elite sources observed in the media-content based study (see Chapter Four). On the one hand, the perception holding that members of the public lack understanding of climate issues makes the journalists "doubt" (K3) the contribution of this group to climate change discourse. On the other hand, the same perception makes the journalists to turn to other actors perceived to be knowledgeable about the issues. These actors who are experts (academics/researchers) and government functionaries are sought after to help explain complexities to the "*mwananchi*" (K3, 3:20). The dynamics make a case for the application of the authority-order norm among the journalists (the norm is the second most referenced). When coverage gives attention to the ordinary people's voices, they are represented in ways that align with victim tropes and in this case the journalists apply the norm of personalisation to humanise climate impacts.

While the dynamics are not peculiar to the African context, it must be noted that the widespread bias for elite sourcing observed for many mediascapes across the world reflects the universalising liberal logic upon which current climate journalism is conducted. This study has made several references to empirical evidence on climate journalism and orientation towards elite sources in other contexts (e.g., Comfort *et al.*, 2020; Das, 2020; Dotson *et al.*, 2012b; Freeman, 2017; Khuhro *et al.*, 2020; Mercado-Sáez *et al.*, 2019; Parks, 2020a; Wagner & Payne, 2017; Watts & Maddison, 2014). By reflecting on the motivations behind journalists' practice, the present study laid bare the liberal media (normative) logic underpinning the dynamics. The logic "privileges a hierarchy of humanity and human creativity" in ways that run contrary to "dominant ideas of personhood and agency […] shared by communities across the [the African] continent" (Nyamnjoh, 2015). Under liberal democracy, Myburg (2009:121) argues, politics is resolved into "an activity of specialists and experts" and the role of the media often becomes that of a passive disseminator in which the voices of the elites get better projection. Regarding sense-making around the complex climate change problems, the practice then reduces citizens' agency and minimises their contributions to driving alternative futures through deliberation.

Another limitation to attaining inclusive climate change coverage found from the cases analysed concern the profit model of media organisations. All the interviewees described the effect of shrinking revenues on journalism practice, including on journalists' welfare. Under conditions of financial crisis, editorial dispositions have tended to favour contents that draw advertisement and sales. The journalists described climate change news as a hard fit for the news convention, hence it receives minimal newsroom attention and journalists as well as editors struggle to spare scarce resources for it. In the case of Nigeria, the phenomenon appears to have evolved into what Kasoma (2009:19) described for the Ghanaian and Zambian mediascapes, namely, "brown envelope journalism" – "a practice that involves news sources granting monetary incentives to journalists or media outlets" in return for coverage. N2 described it as a common practice and one that reporters and even editors benefit from to compensate for poor remuneration. In South Africa, the practice takes on a public relations format in which, S1 described, has a better command of reducing the costs of news sourcing compared to the journalists. The practice further leads reporters' to abdicate role as intermediaries between diverse social actors, including the citizens (Myburg, 2009). Hence, as Meribe (2017) suggests, understanding the political economy of news production is integral to our understanding of frame-building processes around climate change. Findings in the present study particularly demonstrate that the political economy of media organisations in developing countries is susceptible to the vicissitudes of changing or even conflicting interests (including the profit interest of media owners) and this reflects in the weak autonomy of reporters in following through with the ideals to which they have a cognitive commitment – i.e., inclusive climate change coverage.

6.3 The study's key contributions

The main contribution of this study concerns the reimagination of the public space where sense-making around climate change is negotiated and bounded, and where alternative futures are debated. While acknowledging that the public space is diverse, the role of the media and how it advances sense-making around climate change governance (CCG) was the prime focus of this study. The thrust of the argument lies in the potential that collective deliberation holds to

delivering sustainable futures and addressing the existential risks of today's world, and that a relational reimagination of the space of interactions is needed to support such a co-creative deliberative process.

Climate change as a cross-sectoral crises provides an opportunity to reimagine how societies organise to address common problems. It has been suggested elsewhere that the proliferation of crises (e.g., the financial crisis of 2008/2009, climate change as a "risk multiplier", and the COVID-19 global pandemic) whose nature and impacts transcend social boundaries in recent times warrants a rethink of governance (David & Okoliko, 2020). These crises have a way of discriminating by following existing and protracted patterns of inequities. For instance, with the COVID-19 crisis, evidence points to the direction that "those who [we]re already vulnerable – for example, the unstably housed, people on a low income, those with poorer education, and individuals with less access to reliable nutritious food" have been hit the most by the pandemic (Galea, 2020:1897). Similar disproportionality in climate change impacts have been described earlier in this work (see 1.4.4 and 1.5.1.1). Suffice to say that the reality calls for governance that inverts the traditional top-down approach to accommodate not only the perspectives of the vulnerable poor and those in societies' peripheries on what the issues are but also their agency in devising solutions.

The argument is not to obliterate the state as the focal point of governance. Rather, since in practice, responses to crises take place in varied sites, it is useful to conceptualise CCG as "'the processes that create the conditions for ordered rule and collective action within the political realm,' processes which fall within the ambit of formalised governance but also on the informal means through which social mobilisation for climate action take place" (Okoliko & David, 2020:1). This allows for a recognition of the importance of state-actors but also, of the myriad non-state actors fronting climate protection and devising means to improve community resilience against already happening impacts in the poorer societies.

An important aspect of governance is coming together to form cohesive front on which to solve problems. But as Gaztambide-Fernández (2020) aptly argues, "[w]hether we are confronting a pandemic, global warming, income inequality, racism or gender-based violence, solidarity

depends on how we come together". The process through which cooperation and solidarity is fashioned is as important as is the space of discursive interactions within it. This study has laboured to tease out how such a process taking place within the mediascape[15] of Africa can be reimagined to adequately facilitate the accommodation of subjectivities beyond the usual culprits of formal top-down governance.

Therefore, taking reimagining to mean "to imagine again or anew" (Merriam-Webster, n.d.), the contributions in this study looked backward but also forward. In the case of the former, the study reflected on what conceptions of the mediascape underpins media(ted) CCC as it is practiced, taking on cases from Africa. It further interrogated the extent to which such imagination of the mediascape stimulates collective deliberation and accommodates diverse subjectivities in the public sense-making around climate change. The conclusion was that there is a limitation arising from the influence of liberal media logic which fails to take the relational conception of persons as a fundamental category for organising communication. As a result, the mediascape as a space of relation is largely reduced to unidirectional flow of information in which certain actors are considered more deserving of the "definer" and others, of the "receiver" role in climate change sense-making.

The little appreciation for an expanded participatory mediascape supporting sense-making around climate change is not only illustrated in occasions of media(ted) discourse on climate change but is given less consideration in CCC scholarship too. Today, literature on CCC is no longer in short supply given the extensive growth witnessed in the last three decades (Schäfer & Schlichting, 2014), yet, as Carvalho *et al.* (2017) argued, not much consideration has been given to problematising "public engagement" as a concept in the field. The case of the sub-field reported in Paper I (see Chapter Two) (Okoliko & de Wit, 2020) is illustrative. A text-mining[16] of the 34 publications included in the study for whether and how authors

[15] It should be borne in mind that the media is one example of space where intersubjectivity can be realised. Other forums exist which support the interaction of peoples and where deliberative sense-making take place. One can think of the family, religious, educational and political circles as cases of meeting point and as potential grounds where meaning around climate change can be created.

[16] A text search was conducted in ATLAS.ti combining the word "public" and "engagement" within a paragraph and including all the 34 articles analysed.

conceptualised "public engagement" showed that only a limited number of studies explicitly mentioned the term (see Atieno & Njoroge, 2014b; Batta *et al.*, 2013; Evans & Musvipwa, 2016; Johannessen, 2013; Meiring, 2013; Nwabueze & Egbra, 2016). None attempted to define the concept beyond a mere mention. In two of the identified publications, the term appeared only in the abstract (Adelekan, 2009; Atieno & Njoroge, 2014b). The general understanding offered in the publications suggests that 'public engagement' is something to be expected only after appropriate communicative practices have taken place. In Evans and Musvipwa (2016:200-201) for instance, the term appeared in the following text:

> It has been argued that the public receives much of its scientific information from the mass media. Media representations are an important factor in the **public's** understanding of and **engagement** with climate science (emphasis added).

The text suggests that the role that media ought to play in relation to climate change is one of disseminating "climate science" information. While this is the case with the media role as a source of information and education, the authors stopped from considering how such a construct limits the media to considering the "public" as ignorant constituents who only needs to be fed information.

Similar readings were picked from the other publications that referred to public engagement where the possibility for the "engagement" of the public is rather construed as an aftermath or effect of media(ted) CCC. The exception is Atieno and Njoroge's (2014:7) reference to the concept. In the abstract, they write that:

> [a]t the forefront of this process [adapting and mitigating climate change], are news media which facilitate critical **public engagement** in alternative discourse concerning climate change controversies (emphasis added).

The authors appear to construe public engagement vis-à-vis the media as a process where actors engage in an interactive space on the meaning-making process to create an "alternative discourse concerning climate change" issues. Apart from this account, the common assumption prevalent in the literature underscores the transmission model of science communication, suggesting that the African field shows slow signs of transition to the much advocated public engagement model (Carvalho, 2010; Carvalho *et al.*, 2017; Nisbet & Scheufele, 2009).

It will be repetitive to recount what has been said about the deficit model given that it has been treated fairly well in Chapter Three of this dissertation (also see Nisbet & Scheufele, 2009; Okoliko, 2018). Suffice to say that strategies driven on the assumption and which adopt a top-down approach misses an ethical consideration that values the co-creative character that accompanies social transformation. Stirling (2014:iii) describes the consideration of the more relational sense-making as "effective modes for radical change" entailing "spontaneous collective bottom-up 'culturings' of knowing and doing" which in essence is plural and emergent". This study draws attention to the modes of engagements via communication that support such a bottom-up process by critically engaging the concept of 'public engagement' in the context of media(ted) CCC.

As a way of looking forward then, the intervention pointed out in this study proposes a relational mediascape that takes the agency of diverse actors seriously and considers citizens' participation in public sense-making as an important input to CCG. The proposal is couched on a conception of humanness that inherently lay confidence in the agential potential of persons. As argued in Chapter Three (Okoliko & de Wit, 2021), the distrust in the lay people's capacity for engagement follows an assumption that neglect incorporeality, i.e., the spheres of experiences common to humanity (also see Davies, 2013). The negligence is reminiscent of a certain view of human nature characteristic of the forebearers of modernism. Consider the Hobbesian notion of human nature for example. Hobbes' state of nature describes a pre-social state of human, one which views the being as brute and fundamentally anti-social (Lloyd & Sreedhar, 2018). Then came a post-contractual phase where necessity forced humans to enter cooperative union and sublet agenthood to selected representatives. The view begins with a negative conception of human nature which, it can be argued, directs a distrust for collective agency and the placement of governance in the hands of selected few.

In contrast, relational philosophy (the kind advanced in this study) takes on a positive stand about human nature, an example of which it will be useful to briefly look at the account of *nmandu* (the human) from the Igbo worldview. Edeh (1985) offers that *nmadu* (*nma-di*) is the good (*nma*) that is (*di*). Given that *di* is a derivative of *idi* which means "to be" or "to exist"

(Edeh, 1985:100), human ontology viewed from the Igbo worldview is not negative or anti-social. *Ab initio*, it grants that *nmadu* is a good life capacitated for social participation (Chimakonam & Ogbonnaya, 2021), an idea that the Akan[17] proverb succinctly illustrates: "when a man (sic) descends from heaven, he descends into a human society" (Obioha, 2014:14). For Menkiti (2002), it is this idea of 'belonging' that should define citizenship as used in modern state which in many instances (Africa included) is not homogenous. The conception of persons as citizens, he argues, can foreground respects across differences, hold back state excesses and permit the "enpeoplement"[18] of citizens within pluralists state (Menkiti, 2002). The argument can be extended to CCG where a site of action is multifaceted and include the state level, actions required of business entities, the role of civil societies, religious entities, celebrities but ultimately, the citizens.

One could argue that the elites possess the qualities that make them amenable to media attentions, qualities such as perception about legitimacy and literacy, and that these things make them trustworthy relative to the non-elite sources. These reasons are supported by the evidence presented in chapter 5. Reporters look towards authorities to authenticate news items and to provide a sense of credibility for news report. However, the suggestion in this study does not argue for the replacement of the authority sources. Rather, it critically questioned the assumptions that support why the media pander authority sources as a way of pointing out alternatives which include the expansion of the mediascape. This has become important given that elite dominance of public debate can erode critical voices as Poberezhskaya (2015) pointed out regarding media(ted) CCC in the case of Russian mediascape. Also, in America where it has been shown that elite cues determine perception and support for climate change, the leadership of public discourse by the elite has been shown to polarise perception and support for climate action (Tesler, 2018). And in Africa, Nyiwul's (2021) examination of whether water-related climate change adaptation technological developments reflect local needs and

[17] Akan people are in the present-day Ghana.

[18] Menkiti (2002), in discussing the managerial state, used the concept to describe the formation of political people within a state who feel a tie and loyalty to the state (abstracted) mediated by the enjoyment of justice and equity regarding their relation within it.

vulnerability is telling regarding elite-led policy discourse. Nyiwul (2021:1–2) concluded that African climate change policy appears to be largely driven by "wealth, rather than need" and that "rather than helping [to] reduce or prevent inequalities, mitigation and adaptation are exacerbating them".

In addition to these submissions, the argument advanced in this study is to the interest of expanding the mediascape to accommodate voices outside the usual media source suspects. In this case, the proposition agrees with what Hochachka (2021) suggested; "that better integration of the plurality of individual and collective meaning-making is needed in public engagement strategies, which […] in turn support processes of effective and ethical transformations to sustainability". To appreciate the potential that such expanded media(ted) sense-making around climate change can add to CCG, let us consider the emergence of the "Friday For Future" (FFF) global movement in recent time. Largely made up of younger population that are mostly school-aged, the movement sparked by a Swedish teen activist, Greta Thunberg, is revolutionary from the point of view of governance. In March 2019 alone, about 1.6 million school-aged young people joined in demonstrations across cities and towns in 125 countries (Wu, Snell & Samji, 2020) to demand for "climate protection" (Sharma, Panigrahi, Sarmah & Dubey, 2019). The force of attraction for the cause is an anxiety about the collective future and perceived political failures of global leaders. Wu *et al.* (2020) called it "eco-anxiety" or "climate distress", a feeling of distress that the younger population face greater risks from climate impacts in their adult life than the adults of today if nothing changes. They are also weary of perceived weak climate leadership provided by today's adults. Thunberg (2021)recently called the style of leadership as "role-playing" and "playing with words, playing with our future".

Beyond the FFF activism which has jacked up public interests and debate about climate change around the world (including in Africa), a striking point to note is how they have contributed to sense-making around climate change. Often, the younger population are constrained to the consumer role within environmental governance discourse (Sharma *et al.*, 2019). Through exposure and parental influence, it is believed that their consumption routines can be more

aligned with pro-environmental consideration. They are rarely thought of as a force of agency who could deliberate and motivate on policy issues. The emergence of FFF and its accommodation in mediascapes around the world, challenge this thinking and demonstrates that "ordinary" teens can have seats around the policy table. Their persistent voicing of intergenerational justice has had a significant influence in policy corridors in the last three years. Importantly, it is to FFF credit that we now talk about "climate emergency", a term they have persistently used to voice their demand for urgent climate actions from political elites (Laville, Taylor & Hurst, 2019). The remarkable activities of FFF and the attention they have received highlight a shift in perception about young people, a segment of voices that are often relegated in political deliberation.

The rising demand by the citizenry to take part in the governance of social problems as seen in Thunberg's case provides the ground to push boundaries beyond the "canonical view" on CCC (Carvalho & Burgess, 2005). It provides reason to see policy influencers beyond the 'specialists' angle by pluralising the sites for making and reproducing climate knowledge. The media provides such a space where differentially empowered actors can engage in (re)defining climate change related problems (Carvalho *et al.*, 2017). It appears that while the point is well understood in policy environments[19], when it comes to communication, 'public engagement' is considered an end to political communication. The understanding then, directs both campaign efforts and communication processes to consider a unidirectional mode of 'informing' the public while paying less attention to how and what the citizens can contribute to sense-making about a problem that concerns them directly. In this study, the case of selected mediascapes within Africa was presented to illustrate how less inclusive deliberation around climate change through the media is socially structured.

To conclude this section, it should be noted that the contribution to the conceptualisation of 'public engagement' through CCC advanced in this study can be regarded as an offshoot from one of the "epistemologies of the South" (Chimakonam, 2019b; Le Grange, 2018; Santos,

[19] For example, United Nations Environment Programme (UNEP) in defining "green economy" referred to "social inclusivity" as a hallmark of a shift from orthodox economy that is oriented toward reduced carbon emission as well as demonstrated efficiency (Teelucksingh, 2019).

2014; Ward & Wasserman, 2015). "Epistemologies of the South", Santos (2016) argues, is not a reference to the geographical delineation of the term Global South, although it forms a large part of that. It is more about the ways of knowing that are often "excluded, silenced and marginalised" in global knowledge processes (Santos, 2016:19). The marginalisation which is described elsewhere as a form of "epistemicide"[20] (Chimakonam, 2017b; Dunford, 2017; Le Grange, 2018; Le Grange & Aikenhead, 2017), happens when knowledge is universalised in ways that ignore the corporeality of knowledge (Santos, 2016). Consider the claim to the effect that "the Western self-image of the journalist" is constructed as "detached observer" (Brüggemann & Brüggemann, 2017:3). Environmental journalism is not unaffected by this construct. For instance, the Sachsman and Valenti (2015) study of environmental reporters in the USA reveal that journalists conceive of their role along the line of objective journalism that avoids advocacy, including helping communities to find solutions. In developing countries where sites of environmental (and climate) actions are often at the peripheries, universalising the construct without qualification in this case can be problematic. Hence, in response to the call to decentre the art of researching media(ted) CCC (Olausson, 2011), this study makes important contributions by utilising African paradigms to refocus attention on "the engaged" within CCC as a key element.

The contribution interrogated what 'the public' could mean especially for CCC in the African mediascape. The interrogation looked at the concept of 'personhood', 'community' and 'communication', and makes an important submission regarding reimagining the mediascape as a space of relations of inter-subjectivities. The relation of inter-subjectivities or "persons-in-relations" is characterised by interdependency and interconnectedness (Nyamnjoh, 2015; Okoliko & David, 2020; Ramose, 2015), contemporaneity (everyone is valued and hence, deserves respect) (Chimakonam, 2016, 2018; Eze, 2008), a life of sharing and solidarity (Metz, 2015b, 2017b, 2020) and a "deliberative epistemology" (Tavernaro-Haidarian, 2017, 2018, 2019, 2020). The conceptual model of CCC resulting from the exercise coalescences around

[20] The concept describes the historical destruction of knowledge and cultures of populations and the continued effort to keep such knowledge forgotten.

the notion that, when it comes to including the members of the public, who are often relegated to being passive agents in CCC, the corporeality of knowledge requires that we consider diverse social actors and ways of knowing within sense-making around climate change. This conceptual paper thus advances literature advocating for a participatory media model of CCC (e.g., Pearce *et al.*, 2015) from an African perspective.

Furthermore, Paper III (see Chapter 4) contributes to knowledge beyond the literature on media attention to climate change as an issue of importance. Attention (salience) studies have helped to establish whether and how climate change attracts media attention across various societies, including in Africa (e.g., Evans & Musvipwa, 2016; Tagbo, 2010). The analysis of newspaper representations of climate change in three Africa countries reflected on the diversity of social actors and their sponsored manifest frames, and this way it advances recent works that focus on the character of climate reportage (e.g., Comfort *et al.*, 2020; Das, 2020; Khuhro *et al.*, 2020; Semujju, 2013; Takahashi *et al.*, 2017). The contribution from the African cases examined makes evident which groups of social actors are likely to have an advantage as definers and which groups are less represented. It also mapped the link between claims-makers and their perspectives, and in this way contributes to our understanding of how media "privilege" (and its absence) can potentially limit alternative discourses on climate change. The contribution has useful insights for communicators and policymakers on the future direction for CCC, especially in Africa, where local and place-based knowledge often built on corporeality (embodied experience), can contribute to building community climate resilience.

Lastly, Paper IV (see Chapter 5) contributes to our understanding of how and why certain claims-makers make it past the media gatekeepers to sponsor frames, while others do not or are less successful at it. The qualitative reflections with African journalists covering climate change (drawn from three African countries) suggest conclusions on how the liberal media logic, which remains the dominant driver of modern media, universalises and resolves ways of knowing into a singular mode and in that way excludes not only other epistemologies but also of persons bracketed out into social peripheries. The contribution adds to the literature on frame building (Brüggemann, 2014; Brüggemann & Brüggemann, 2017; Brüggemann & Engesser,

2017; van Eck *et al.*, 2019; Elia, 2019a, 2021; Engesser & Brüggemann, 2016; Evans, 2016; Hiles & Hinnant, 2014; Meribe, 2017; Schäfer & Painter, 2020; Van Witsen, 2020) and draws attention to journalists' role orientation, professional norm applications and the conditions which define journalists' workspace as important factors that influence whether and how inclusive climate change is covered in the media.

6.4 Recommendations

The findings from the first sub-study point out relevant areas that need intervention, including the need to extend the analyses to several African countries that are yet to be explored. Together with the findings related to authors' institutional affiliation and location, the pointers direct funders to support African research institutions and their interventions to broaden our knowledge of how African societies engage in sense-making around climate change through media affordance. As shown elsewhere, African researchers are challenged by access to resources that facilitate knowledge production and sharing (Medie & Kang, 2018). Hence, it is important that conscious effort is directed to resolving this for the continent.

Also, the model of CCC proposed in Paper II (Chapter Three) has policy implications for communication campaigns in Africa. Firstly, it calls for a rethink of how communication is viewed and approached regarding the climate change issue. If, as it is commonly acknowledged, climate change is a cross-sectional and transboundary phenomenon that involves or affects everyone (Schäfer, 2015), it should bother us that hitherto attempts at sense-making through communication have done little to accommodate the diversity of persons and ways of knowing. ARF and its filtering of the three-country cases of CCC examined here illustrate how the media with its universalised liberal logic (Ward & Wasserman, 2015) limits access and in that way influences the extent to which social transformation can benefit from political deliberation.

Meanwhile, management discussions around climate change often involve the concept of "multilevel governance". Multilevel governance goes beyond the traditional state-centric idea of public affairs management. It specifically refers to the interfaces between governments

(various levels) and public institutions, academics, businesses, civil society and private actors in a cooperative venture to address collective problems (Corfee-Morlot, Kamal-Chaoui, Donovan, Cochran, Robert, *et al.*, 2009). Its emergence occurred against the backdrop of consternation about the inadequacies of state-centric national and international policymaking to sufficiently address climate change in recent decades (Filho, 2019). However, the success of such a multilevel governance structure depends to a large extent on the fruitfulness of an engaged deliberative process that carries everyone along. Hence, a critical recommendation in this study draws the attention of communication stakeholders in the climate change policy arena to the need for widening the scope of participation in deliberative processes.

The focus on the elite sources, as illustrated in the cases examined, fundamentally assumes a distrust of certain ways of knowing that do not fit into mainstream 'science' understood in a particular way. But this reasoning ignores emerging ways of thinking about sense-making that holds the potential to unlock robust discussions about alternative futures. Brüggemann and Rödder (2020) argue that "[t]here is no simple link between scientific literacy, climate-change awareness, and a sustainable lifestyle, but complex entanglements of transnational and local discourses and of scientific and other (religious, moral, etc.) ways of making sense of climate change". Simply conveying facts while ignoring the localisation of climate discourse through the experience of peoples affected by the impacts of climate change is not enough.

Also, this study holds relevance for the discussion on reimagining development. The renewed interest in decoupling world economies from carbon-dependence has taken greater urgency. Motivated by the immanence of climate crisis but also the lessons of the 2007-2008 market failures, green economy is the new development buzzword. UNEP (2011:2) defines green economy as a form of development which "improve[s] human well-being and social equity, while significantly reducing environmental risks and ecological scarcities". The concept of green economy considers reduced carbon effect, resource efficiency and social inclusivity in economic systems (Loiseau, Saikku, Antikainen, Droste, Hansjürgens, *et al.*, 2016).

Yet, there are diverse ways in which green economy is constructed and enacted as a policy front across the world (Death, 2015; Loiseau *et al.*, 2016). On the one hand is a strain which

subsume green economy discourse under the "passive revolution" aimed at refining the dominant capitalist hegemony to account for the protection of global environment and drive development. Wanner (2015:21) dubbed this trend, the "neoliberalising of nature" where the values of privatisation, marketisation and commodification is emphasised. On the other hand, is a countermovement that contends the mere redressing of the economy with green while paying little attention to deep social and environmental justice.

Paying close attention to how development is discursively constituted can help to unmasks this tension especially in non-industrialised nations where the conversation on development occupies a central place in the public sphere. The observations provided in this study is a start. The study raises question regarding the lopsided constitution of the public sphere where African future developmental path is being charted. As shown in this study, the media(ted) debate on climate change appears reduced to a discussion by the elites who are generally constituted by managers, technocrats, and business actors. This begs the question: Who will benefit from the future pathways charted through an elite-driven conversation in Africa? To what extent would such a conversation permit critical evaluation of the root causes of the twin crises of ecology and economics for the continent?

The answer to the questions can be gleaned from Wanner's (2015:32) critical comment:

> The technocratic, economic and managerialist approach of the green economy/growth discourse with the prioritisation of economic sustainability over ecological sustainability can at best achieve weak ecological sustainability.

The addition from the present study is that moving beyond the neoliberal capitalist "greening", requires refocusing on the political where the importance of relationality is elevated[21]. Relational approach values democratised engagement on problem definitions and devising of solutions. The approach holds promise for incorporating local and place-based knowledges which are often critical of top-down approaches and can provide critical interrogation of hegemonic development views.

[21] See Metz's (2017b) article on "Replacing development: An Afro-Communal approach to global justice" for better insights on the contributions that afro-relational theory makes to reconceptualising development.

Therefore, a corollary to the call for a widened participation relates to the special status of the grassroots in African communities. It is here that the level of vulnerability is high, but also persons in the remote communities of Africa embody knowledge through the corporeality of their living through the changes that their environment experiences. Our collective sense-making around climate change would be incomplete if local experience and knowledge continues to be discounted, based on a universalised epistemology that discredits the plurality of ways of knowing (and the "knowers"). Hence, efforts should be directed at drawing from local knowledges about resilience in our public discourse of climate change. The uneasiness with such knowledges may have something to do with their location specificity, yet it is this character that makes them useful as inputs into local policies. Local knowledges are context-specific and learned "*in situ* through gradual and progressive study of how communities relate with the environment and orally transferred both within and between generations" (Chen, Suzuki, Seiner & Lackner, 2018:5). The media can contribute to archiving such community wisdom by their coverage and help in their transferability across communities.

Further action is also needed concerning the media architectures that drive current media(ted) climate discourse, especially in Africa. The advocacy for the redefinition of the mediascape in Africa to address Africa's peculiarities is not new. However, the reality of climate change and its exacerbating effects on Africa's developmental challenges arguably makes the call fresh and urgent. While other means of communication such as online, person-to-person and public forum (e.g., church and mosque) conversations are important for sense-making, the traditional media's wider coverage and their central role in agenda setting for public discourse set them apart for special interest. A concerted effort should be made to increase their availability to diverse subjects to express themselves. On this note, the training of the communication professionals (journalists) would benefit greatly from integrating African ontologies and epistemologies into curriculums that look at media ethics.

The African humanism expounded in this study (see Chapter Three) offers a relational ethic that values respect built on the capacity of humans to share in life and stand in solidarity. A media model inspired by a relational framework is more attuned to the experience of all

persons, not just this person, and not just that person. The participatory mediascape it advocates is against the binary approach that appears dominant in the global knowledge economy (e.g., scientific knowledge vs local and indigenous knowledge). But as Santos (2016:21) cautions, in the face of complex threats that climate change pose, "there is no place or legitimacy for vanguards today, we have to listen to the voice of the movements, of the people. Not to 'give' them voice, but to 'share' voice with them". Such a sharing of voices can be possible where inter-subjectivities are recognised, where the *I* and the *you* find mutual complementarity. In this form, the temptation to 'communicate' some immutable truths about climate change from one set of individuals to another in a linear way would give way to engaging various peoples and their experience.

6.5 Limitations of the study and directions for future research

This study is limited in several ways. First, the scope of data collected for Paper I (see chapter 2) is limited to English publications, whereas several African countries use other languages such as French and Portuguese for research and learning. Therefore, it is important to acknowledge that there could be publications in these languages which cover media(ted) CCC in Africa but were not included. This certainly limits the extent to which the findings can be extended as a reflection of CCC knowledge synthesis in Africa. The findings of this study should be considered with caution in this regard. It also means that as the African sub-field of CCC matures, it will be important to build on the current study to capture the nuances of analyses occurring in non-English fora.

Secondly, this study derives its thrust from the qualitative research tradition. By implication, the selection of cases followed theoretical consideration rather than some randomised methods that typically select a representation of the sample population (Africa). Also, the analyses employed relied on qualitative analytical toolkits, even though simple descriptive statistics were employed to present the findings. Consequently, the extent to which the findings can be generalised to the entire African mediascape is limited. Nevertheless, the study offers dense descriptions but also explanations of the character of climate change representations in the

contexts examined. As Schäfer *et al.* (2016:4) point out, "[q]ualitative research can produce 'dense descriptions,' but can also explain the nature of cases by reconstructing how they came about using process tracing or systematic comparisons between cases". The present study describes how the examined cases illustrate inclusive climate change coverage, but also traced the processes (journalists' frame-building efforts) that construct the coverage.

Finally, while the conceptual framework presented in this study helped to focus the analyses on the political character of climate change representation in the media, taking on the concept of plurality (of subjectivity and ideation), the utility of such inclusive climate change coverage was not demonstrated beyond theoretical postulation. This work requires experimental testing of the frame effect which is beyond the scope of the present study. Future research can take up this challenge. Corbett and Durfee's (2004) experiment offer a useful guide in this direction. Their experiment randomly treated four groups of participants to four versions of texts adapted from media representation of claims about the effects of climate change on the Antarctic. They found that receptivity of the claims was positively related with exposure to the text that had the most context (referencing diverse studies, related issues, alternative interpretations, and policy responses). In contrast, texts simply conveying "just facts", or describing "experts in conflict", or a combination of conflict and context had little effect on audience receptivity (Corbett & Durfee, 2004). The African context can benefit from such an experimental study design. Research of that sort would help to establish whether and how inclusive media coverage of climate change have effect on audience perception, attitude, and willingness to support climate policy.

Another point to consider for future research is the contributions that various publics make towards climate change frame building. For the African case, the present research is a starting point as it only focused on manifest representation and on the perspectives of the central actors within the media sphere of interaction. Future research can extend this work to explore as an example, the attitude and experience of segments of the public on media participation and access in relation to climate change debate.

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Appendixes

Appendix 1. First page of Paper I as published in African Journalism Studies

AFRICAN JOURNALISM STUDIES
2020, VOL. 41, NO. 1, 65–83
https://doi.org/10.1080/23743670.2020.1770114

Check for updates

Media(ted) Climate Change in Africa and Public Engagement: A Systematic Review of Relevant Literature

Dominic Ayegba Okoliko and Martinus Petrus de Wit

School of Public Leadership, Stellenbosch University, Stellenbosch, Western Cape, ZA

ABSTRACT
In Africa and elsewhere, climate change is a socio-political challenge. The required changes linked to addressing climate change risks in terms of mitigation and adaptation measures relate to decision-making processes as found in socio-political systems where debate and discourse are unavoidable. There is a burgeoning literature on media representation of climate change documenting how various societies are making sense of climate change issues via public discourse. However, global reviews suggest a dearth of such studies on Africa. Importantly, there is no empirical information on the extent of the research paucity and the dynamics of research on public discourse on climate change in the region. This paper presents a systematic review of literature on media(ted) climate change communication in Africa and describes the extent of growth and diversity in the field. It also probes whether the emerging field is paying attention to any contribution from Africa's theoretical lenses. Results suggest there is a pale picture of the understanding of what communication effort is underway to get Africans to engage with climate change issues via the media. The study's report is useful to policymakers, researchers, climate change communicators and organisations interested in bridging the value-gap in climate change governance.

KEYWORDS
Climate change; media; communication; public engagement; Africa; systematic review

Introduction

In Africa and elsewhere, climate change is an environmental, social, economic and political challenge. The manifold climate change impacts in the form of severe droughts, floods, sea-level rise and temperature variability threaten both the social and natural systems (IPCC 2014). These may be geological phenomena, but the kind of required changes linked to addressing climate change risks in terms of mitigation and adaptation measures relate to decision-making processes as found in socio-political systems where debate is unavoidable (Carvalho, van Wessel, and Maeseele 2017). The transformations—for example, in transport, energy, buildings, lands, industry, emergence and security management—involved have significant implications for lifestyles and all individuals, thereby warranting careful considerations. However, with a growing literature on media representation of climate change documenting how various societies are making sense

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Supplemental data for this article can be accessed at https://doi.org/10.1080/23743670.2020.1770114

Appendix 2. First page of Paper II as published in Journal of Media Ethics

JOURNAL OF MEDIA ETHICS
2021, VOL. 36, NO. 1, 36–50
https://doi.org/10.1080/23736992.2020.1856666

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From "Communicating" to "Engagement": Afro-Relationality as a Conceptual Framework for Climate Change Communication in Africa

Dominic Ayegba Okoliko and Martinus Petrus de Wit

School of Public Leadership, Stellenbosch University, South Africa

ABSTRACT
This study interrogates the conventional understanding of and practice within mediated climate change communication (CCC) as a forum where transformative ideas on sustainability practices are shaped. Besides the dominance of non-African contexts and epistemologies in literature analyzing the media-climate change and public nexus, there is little attention given to problematizing public engagement. Common assumption pitches "the public" on the one side and "the communicator" on the other side. This bifurcated model of "communicating" climate change has import for the forms of subjectivity in climate (in)action, including a weakened citizenship representation in climate discourse and the de-pluralization of ideas. This study argues that for people to be actually engaged in climate campaigns, it is important to draw attention to what understanding of "person" and "community" undergird current CCC practice. The work draws insights from African political theories and communication studies to position CCC toward inclusive public engagement.

ARTICLE HISTORY
Received 10 February 2020
Accepted 23 November 2020

This paper presents a report of a conceptual reflection on media(ted) climate change communication (CCC) – media representation of climate change – with a focus on the African context. The reflection is guided by two questions: 1) What assumptions about sociality and understanding of the concept of personhood underpin the conventional practice of CCC in Africa? 2) How might reflecting on the concept of "person-community relations" shape the understanding of (mediated) CCC to enhance public engagement in Africa? Sociality, as used in this paper, refers to our understanding about the organization of society and the relations of individuals in it.

The reason for focusing on Africa is twofold. First, Africa is highly susceptible to climate change impacts due to multiple interactions of biophysical, political, and socioeconomic stressors (Connolly-Boutin & Smit, 2016). The linkage between the environment and livelihood practices such as agriculture, which is dominant in many African societies (Schlenker & Lobell, 2010), particularly exemplifies the vulnerability of peoples and communities to physical stressors amplified by the increasing food security challenge – the lack of availability, access and utilization of food – on the continent (Mbow et al., 2014; Thompson, Berrang-Ford, & Ford, 2010). Despite the acknowledgment of Africa's peculiarities, public awareness and engagement on climate change remain problematic in the region (Selormey, Dome, Osse, & Logan, 2019). Thus, it is important to interrogate both current practice and understanding of mediated CCC as a forum where transformative ideas are shaped in the region (Schäfer, Scheffran, & Penniket, 2016).

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This article has been republished with minor changes. These changes do not impact the academic content of the article.

Appendix 3. Receipt of submission for Paper III received from *Geoforum*

Gmail Dominic Okoliko <okolikoda@gmail.com>

A manuscript number has been assigned: GEOFORUM-D-21-00059
2 messages

Geoforum <em@editorialmanager.com> 28 January 2021 at 11:43
Reply-To: Geoforum <geoforum@elsevier.com>
To: Dominic Ayegba Okoliko <okolikoda@gmail.com>

Ms. Ref. No.: GEOFORUM-D-21-00059
Title: Media(ted) climate change and public engagement in South Africa, Nigeria and Kenya: An Afro-relationality informed content analysis
Geoforum

Dear Dominic,

Your submission "Media(ted) climate change and public engagement in South Africa, Nigeria and Kenya: An Afro-relationality informed content analysis" has been assigned manuscript number GEOFORUM-D-21-00059.

To track the status of your paper, please do the following:

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Kind regards,

Revathi Murugan
Administrative Support Agent
Geoforum

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Appendix 4. Notice of approval from the Ethics Committee

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NOTICE OF APPROVAL

REC: Social, Behavioural and Education Research (SBER) - Initial Application Form

15 September 2020

Project number: 14633

Project Title: Media(ted) climate change in South Africa, Nigeria and Kenya: Reimagining the public for engagement

Dear Mr Dominic Okoliko

Your REC: Social, Behavioural and Education Research (SBER) - Initial Application Form submitted on 26 August 2020 was reviewed and approved by the REC: Social, Behavioural and Education Research (REC: SBE).

Please note below expiration date of this approved submission:

Ethics approval period:

Protocol approval date (Humanities)	Protocol expiration date (Humanities)
15 September 2020	14 September 2023

SUSPENSION OF PHYSICAL CONTACT RESEARCH DURING THE COVID-19 PANDEMIC

Due to the Covid-19 pandemic and resulting lockdown measures, all research activities requiring physical contact or being in undue physical proximity to human participants has been suspended by Stellenbosch University. Please refer to a formal statement issued by the REC: SBE on 20 March for more information on this.

This suspension will remain in force until such time as the social distancing requirements are relaxed by the national authorities to such an extent that in-person data collection from participants will be allowed. This will be confirmed by a new statement from the REC: SBE on the university's dedicated Covid-19 webpage.

Until such time online or virtual data collection activities, individual or group interviews conducted via online meeting or web conferencing tools, such as Skype or Microsoft Teams are strongly encouraged in all SU research environments.

If you are required to amend your research methods due to this suspension, please submit an amendment to the REC: SBE as soon as possible. The instructions on how to submit an amendment to the REC can be found on this webpage: [instructions], or you can contact the REC Helpdesk for instructions on how to submit an amendment: applyethics@sun.ac.za.

GENERAL REC COMMENTS PERTAINING TO THIS PROJECT:

INVESTIGATOR RESPONSIBILITIES

Please take note of the General Investigator Responsibilities attached to this letter. You may commence with your research after complying fully with these guidelines.

If the researcher deviates in any way from the proposal approved by the REC: SBE, the researcher must notify the REC of these changes.

Please use your SU project number (14633) on any documents or correspondence with the REC concerning your project.

Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

CONTINUATION OF PROJECTS AFTER REC APPROVAL PERIOD

You are required to submit a progress report to the REC: SBE before the approval period has expired if a continuation of ethics approval is required. The Committee will then consider the continuation of the project for a further year (if necessary).

Once you have completed your research, you are required to submit a final report to the REC: SBE for review.

Page 1 of 3

Included Documents:

Document Type	File Name	Date	Version
Investigator CV (PI)	OkolikoDA_CV_ethical_clearance	25/02/2020	PDF
Research Protocol/Proposal	Proposal as defended_OkolikoDA	21/04/2020	Updated
Budget	Budget plan_updated	21/04/2020	Updated
Informed Consent Form	Consent form_revised_OkolikoDA	25/08/2020	PDF
Recruitment material	Email invitation_revised_OkolikoDA	26/08/2020	Revised
Data collection tool	Interview Protocol revised_OkolikoDa	26/08/2020	Revised
Default	Response letter_OkolikoDA	26/08/2020	New

If you have any questions or need further help, please contact the REC office at cgraham@sun.ac.za.

Sincerely,

Clarissa Graham

REC Coordinator: Research Ethics Committee: Social, Behavioral and Education Research

National Health Research Ethics Committee (NHREC) registration number: REC-050411-032.
The Research Ethics Committee: Social, Behavioural and Education Research complies with the SA National Health Act No.61 2003 as it pertains to health research. In addition, this committee abides by the ethical norms and principles for research established by the Declaration of Helsinki (2013) and the Department of Health Guidelines for Ethical Research: Principles Structures and Processes (2nd Ed.) 2015. Annually a number of projects may be selected randomly for an external audit.

Principal Investigator Responsibilities

Protection of Human Research Participants

As soon as Research Ethics Committee approval is confirmed by the REC, the principal investigator (PI) is responsible for the following:

Conducting the Research: The PI is responsible for making sure that the research is conducted according to the REC-approved research protocol. The PI is jointly responsible for the conduct of co-investigators and any research staff involved with this research. The PI must ensure that the research is conducted according to the recognised standards of their research field/discipline and according to the principles and standards of ethical research and responsible research conduct.

Participant Enrolment: The PI may not recruit or enrol participants unless the protocol for recruitment is approved by the REC. Recruitment and data collection activities must cease after the expiration date of REC approval. All recruitment materials must be approved by the REC prior to their use.

Informed Consent: The PI is responsible for obtaining and documenting affirmative informed consent using **only** the REC-approved consent documents/process, and for ensuring that no participants are involved in research prior to obtaining their affirmative informed consent. The PI must give all participants copies of the signed informed consent documents, where required. The PI must keep the originals in a secured, REC-approved location for at least five (5) years after the research is complete.

Continuing Review: The REC must review and approve all REC-approved research proposals at intervals appropriate to the degree of risk but not less than once per year. There is **no grace period.** Prior to the date on which the REC approval of the research expires, **it is the PI's responsibility to submit the progress report in a timely fashion to ensure a lapse in REC approval does not occur.** Once REC approval of your research lapses, all research activities must cease, and contact must be made with the REC immediately.

Amendments and Changes: Any planned changes to any aspect of the research (such as research design, procedures, participant population, informed consent document, instruments, surveys or recruiting material, etc.), must be submitted to the REC for review and approval before implementation. Amendments may not be initiated without first obtaining written REC approval. The **only exception** is when it is necessary to eliminate apparent immediate hazards to participants and the REC should be immediately informed of this necessity.

Adverse or Unanticipated Events: Any serious adverse events, participant complaints, and all unanticipated problems that involve risks to participants or others, as well as any research-related injuries, occurring at this institution or at other performance sites must be reported to the REC within **five (5) days** of discovery of the incident. The PI must also report any instances of serious or continuing problems, or non-compliance with the RECs requirements for protecting human research participants.

Research Record Keeping: The PI must keep the following research-related records, at a minimum, in a secure location for a minimum of five years: the REC approved research proposal and all amendments; all informed consent documents; recruiting materials; continuing review reports; adverse or unanticipated events; and all correspondence and approvals from the REC.

Provision of Counselling or emergency support: When a dedicated counsellor or a psychologist provides support to a participant without prior REC review and approval, to the extent permitted by law, such activities will not be recognised as research nor the data used in support of research. Such cases should be indicated in the progress report or final report.

Final reports: When the research is completed (no further participant enrolment, interactions or interventions), the PI must submit a Final Report to the REC to close the study.

On-Site Evaluations, Inspections, or Audits: If the researcher is notified that the research will be reviewed or audited by the sponsor or any other external agency or any internal group, the PI must inform the REC immediately of the impending audit/evaluation.

Appendix 5. A copy of recruitment material

Email subject: Invitation to participate in a research project on Media representation of climate change in South Africa, Nigeria, and Kenya

Dear [*name of potential participant*],

We are conducting interviews as part of a doctoral research study to increase our understanding of how climate change issues are represented in the media in South Africa, Nigeria and Kenya. As a journalist/reporter covering climate change issues in one of these countries, you are in an ideal position to give us valuable information from your experience.

The interview takes around 45 to 60-minutes and will be conducted via any virtual platform (MS Teams, Skype, WhatsApp, or any similar app that provides end-to-end encryption) of your choice. Rest assured that your participation in the study will be confidential, and your anonymity will be ensured, meaning, that all identifying information concerning you will be omitted from the data for your protection.

If you would like to participate in this research project or have any questions, please contact me by email at okolikoda@gmail.com (simply reply this email) and/or my supervisor Prof. Martin de Wit at mdewit@sun.ac.za.

Kind regards,
Dominic

Appendix 6. A copy of the consent form given to participants

UNIVERSITEIT·STELLENBOSCH·UNIVERSITY
jou kennisvennoot • your knowledge partner

STELLENBOSCH UNIVERSITY
CONSENT TO PARTICIPATE IN RESEARCH

You are invited to take part in a study conducted by Dominic Ayegba Okoliko, from the School of Public Leadership at Stellenbosch University. You were approached as a possible participant because of your role as journalist/reporter/media personnel that represents climate change issues in the media in South Africa, Nigeria or Kenya.

1. PURPOSE OF THE STUDY

The interview is part of a doctoral study to increase our understanding of how climate change issues are represented in the media in South Africa, Nigeria and Kenya. Particularly, it seeks to understand how the practice of medialisation of climate change issues position public engagement by examining the concepts of representation of subjectivities and ideas in ways that include rather than exclude persons in these African contexts. The results of the study will contribute to a research project in order to complete Okoliko's doctoral degree in Public Leadership and Management Sciences at the School of Public Leadership of the University of Stellenbosch in South Africa.

2. WHAT WILL BE ASKED OF ME?

If you agree to take part in this study, you will be asked to grant me an interview time. This may be held at a time and via virtual medium (MS Teams, Skype, WhatsApp or any similar app that provides end-to-end encryption) convenient for you. The interview will be semi-structured, meaning that it will have open-ended questions that will allow you to freely express your thoughts on the subject of interest for the study. It will last for about 45 to 60 minutes with room for flexibility depending on your availability and willingness. Your participation in this study is voluntary. You may choose to withdraw from participating in the study at any point or choose not to answer any question that you feel discomforts you. Any of such action will not be held against you in any form. The information that will be gathered from this study will be used in my thesis writing, academic journals and oral presentations. However, your identity will be protected at all times. In any report that shall come out of the study, the researcher commits to use only non-identifying terms when discussing the information that you shall provide.

3. POSSIBLE RISKS AND DISCOMFORTS

There is no potential risk for taking part in the study as it only involves interviewing you on a subject, it is believed, you are knowledgeable about. No emotionally evoking questions will be asked. However, at any point during which you feel troubled by a question or feel exhausted to carry on with the interview, you may choose not to answer the question, postpone the interview or withdraw from participating in the study without any repercussion. Your identity shall be kept anonymous throughout the study and the information you provide shall be held confidential.

4. POSSIBLE BENEFITS TO PARTICIPANTS AND/OR TO THE SOCIETY

Written consent template. REC: Humanities (Stellenbosch University) 2017

Your participation in this study is voluntary. No payment is to be expected from the participation. However, as a participant, you stand to gain indirectly from the shared knowledge that shall come out of the research. The study aims to inform future practice of climate change communication in the media in ways that incorporate inclusivity concern. The overall goal is to contribute to enriching ways of social meaning-making process as it concerns addressing climate change risks especially in African society. It is believed that this end is sufficient as a motivation for participation.

5. PAYMENT FOR PARTICIPATION

Unfortunately, no payment shall be expected from participating in this study. It shall be voluntary. However, your participation shall be invaluably appreciated.

6. PROTECTION OF YOUR INFORMATION, CONFIDENTIALITY AND IDENTITY

Any information you share with me during this study and that could possibly identify you as a participant will be protected. This will be done by ensuring your identity is anonymised by the use of markers (e.g., letter) rather than your name or any pseudonym.

The interview will be recorded with your permission. This is to ensure that the interviewer captures your views correctly as the recorded interview will be transcribed for analysis later. The record interview shall not be used for any other purpose except for the purpose of the study. Upon the completion of the study, the audio-record shall be erased.

The information you will provide shall be used in thesis, publications and oral presentations to be undertaken by the researcher. In any report generated from the study, your identity shall be protected as stated above.

7. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you agree to take part in this study, you may withdraw at any time without any consequence. You may also refuse to answer any question you do not want to answer and still remain in the study. If you choose to withdraw and equally seek the withdrawal of the information you provide up to the point before the analysis of collated data, you share of information will be destroyed and not included in the study. Please, also note that the researcher may withdraw you from this study if under threat of harm or abuse.

8. RESEARCHERS' CONTACT INFORMATION

If you have any questions or concerns about this study, please feel free to contact Dominic Ayegba Okoliko at the School of Public Leadership, Stellenbosch University, A. I. Perold Building, Private Bag X1, Matieland, 7602 or okolikoda@gmail.com, and/or the supervisor Prof. Martin de Wit at School of Public Leadership, Stellenbosch University, A. I. Perold Building, Private Bag X1, Matieland, 7602 or mdewit@sun.ac.za .

9. RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research

study. If you have questions regarding your rights as a research participant, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

DECLARATION OF CONSENT BY THE PARTICIPANT

As the participant I confirm that:

- I have read the above information and it is written in a language that I am comfortable with.
- I have had a chance to ask questions and all my questions have been answered.
- All issues related to privacy, and the confidentiality and use of the information I provide, have been explained.

By signing below, I _____agree to take part in this research study, as conducted by _Dominic Ayegba Okoliko_

_____ _____

Signature of Participant **Date**

DECLARATION BY THE PRINCIPAL INVESTIGATOR

As the **principal investigator,** I hereby declare that the information contained in this document has been thoroughly explained to the participant. I also declare that the participant has been encouraged (and has been given ample time) to ask any questions. In addition, I would like to select the following option:

	The conversation with the participant was conducted in a language in which the participant is fluent.
	The conversation with the participant was conducted with the assistance of a translator (who has signed a non-disclosure agreement), and this "Consent Form" is available to the participant in a language in which the participant is fluent.

_____ _____

Signature of Principal Investigator **Date**

Written consent template. REC: Humanities (Stellenbosch University) 2017

Appendix 7. Turnitin digital receipt

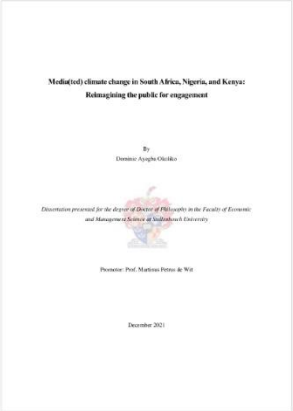
turnitin

Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author:	DOMINIC AYEGBA Okoliko
Assignment title:	Turnitin sandbox Part 1 (Moodle TT)
Submission title:	Media(ted) climate change in South Africa, Nigeria, and Keny...
File name:	134251_DOMINIC_AYEGBA_Okoliko_Media_ted__climate_chan...
File size:	9.87M
Page count:	261
Word count:	77,044
Character count:	447,552
Submission date:	23-Jul-2021 07:59PM (UTC+0200)
Submission ID:	1623182840


Media(ted) climate change in South Africa, Nigeria, and Kenya:
Reimagining the public for engagement

By
Dominic Ayegba Okoliko

Dissertation presented for the degree of Doctor of Philosophy in the Faculty of Economic and Management Sciences at Stellenbosch University

Promotor: Prof. Martinus Petrus de Wit

December 2021

Appendix 8. Copyright permission obtained for Paper I

Gmail

Dominic Okoliko <okolikoda@gmail.com>

RE: recq21:Media(ted) Climate Change in Africa and Public Engagement: A Systematic Review of Relevant Literature

1 message

Academic UK Non Rightslink <permissionrequest@tandf.co.uk> 21 July 2021 at 09:33
To: Dominic Ayegba Okoliko <okolikoda@gmail.com>

Dear Dominic Ayegba Okoliko

1. Dominic Ayegba Okoliko & Martinus Petrus de Wit (2020) Media(ted) Climate Change in Africa and Public Engagement: A Systematic Review of Relevant Literature, African Journalism Studies, 41:1, 65-83, DOI: 10.1080/23743670.2020.1770114

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Appendix 9. Copyright permission obtained for Paper II

Gmail Dominic Okoliko <okolikoda@gmail.com>

RE: hmme21:From "Communicating" to "Engagement": Afro-Relationality as a Conceptual Framework for Climate Change Communication in Africa

1 message

Academic UK Non Rightslink <permissionrequest@tandf.co.uk> 21 July 2021 at 10:45
To: Dominic Ayegba Okoliko <okolikoda@gmail.com>

Dear Dominic Ayegba Okoliko

Dominic Ayegba Okoliko & Martinus Petrus de Wit (2021) From "Communicating" to "Engagement": Afro-Relationality as a Conceptual Framework for Climate Change Communication in Africa, Journal of Media Ethics, 36:1, 36-50, DOI: 10.1080/23736992.2020.1856666

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Appendix 10. Supplementary material for Paper III

Paper III title– Media(ted) climate change and public engagement in South Africa, Nigeria, and Kenya: An Afro-relationality informed content analysis

This supplementary document presents further relevant discussions concerning the methods employed. It also provides the details of the newspaper articles included in the analysis.

7 Article characterisation

7.1 Month

The six months coded were March, April, May, June, July, and August 2019. The number of articles appearing per month was averaged and compared across the dataset.

7.2 Sections

In coding for the section-placement of articles across the publications, we acknowledge that a clear classification system for genres of newspaper articles is not uniform across publications (Dahl & Fløttum, 2014). Our attempt accommodates the diverse layout options we found in the dataset; hence, the coding approach was inductive (Saldaña, 2013). Beyond the well-known broad categorization into two basic forms, namely hard news, and commentary, we recognize that different news outlets also sectionalize their texts layouts according to themes/genre. In the dataset analysed, we identified the traditional genres of hard news reports was coded as 'news', editorials (positional articles authored by a media's editorial team) and opinion articles (contributed by non-reporters/journalists in the columns of newspapers). The last two regarded as op-eds (opinions and editorials) were included because they have been shown to "frame personalities, events, and issues in the same way that reporters" do (Vu, Liu, *et al.*, 2019).

We also coded for texts classified by the titles according to themes, including science and environment (in some titles, it was given as science and technology), business (including agro-business for the *Daily Nation*, and others included companies and market, business-energy,

property and economies), health (clearly indicated by all the publications), politics (also bearing the same name across the papers), education (only appearing in the *Standard*) and culture (including sections designated as lifestyle, sports and entertainment). We also identified usage of geolocational scale in section framing across the titles which we coded as 'geopolitical'. Coded under this category were articles which appeared in sections designated as "World", "Africa", "National" (*Business Day* and *Mail & Guardian*), counties - "Coast" (*Standard*), and "Metros" (*Guardian*).

7.3 Geo-focus

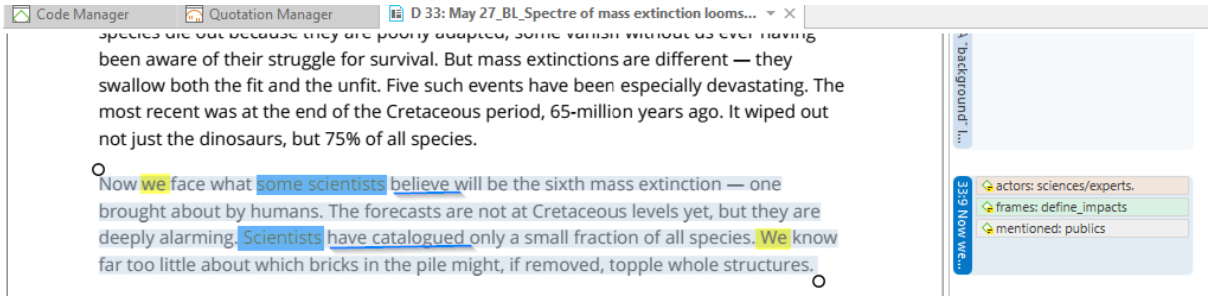
To code for the geo-focus of the articles, we read the title of each article in the dataset inter-textually with the body-texts to assess whether an article focused on Africa (e.g., *Business* Day D 15 "Africa's oil and gas players prepare for world of lower demand"), or generic/global (e.g., *Guardian* D 287, "UN report demonstrates growing climate action"), or 'national' (e.g., *Daily Nation* D 182 "Clean energy use key to industrial growth"), or sub-national (e.g., *Guardian*, D 278 "Ayade declares July 30 public holiday for tree planting") scale.

In all, we treated individual articles as a unit of analysis under article characterisation so that n=315. No article received a code more than once. Other than the code, 'month', analysis visualization in various outputs from ATLAS.ti were presented in percentage. In all cases, the percentage (and average for the number of articles in a month) computation is relative to each newspaper and not across the titles. This way, we moderated comparing unequal sample sizes as the Kenyan publications had higher article shares than both South Africa's and Nigeria's publications. The same computation pattern was applied to the codes under pluralization which we now turn to describe.

Pluralisation

Coding for the various actors of statements or actors mentioned

We employed both textual and extra-textual means to identify and categorise subjects with statement attribution or those mentioned as a referent in the data. The latter was applied where the text or visual representation did not provide identifiers. The extra-textual contexts involved extracting clues like given name in the text and/or affiliation to conduct personal profile search on the internet (triangulating Google sources with LinkedIn and Twitter profiles). In some instances, the subjects signified by a representation is an individual while in other cases, they appeared as institutions or a collective. An example is given in the extract shown in Supp. Figure III 1 below.



Supp. Figure III 1. A snapshot of a group of texts coded in ATLAS.ti

The texts in blue highlight the subjects to which the coded statement is attributed, and in this case, it is the collective given as "some scientists" and "scientist". The underlined verbs "believe" and "have catalogued" give them away as the sources of information contained in the statement. Also, another group of actors given away implicitly in the statement is designated in the texts highlighted in yellow, the "we". The statement is presented as addressing the collective humans with no particular individual in mind, hence, the application of the code, "mentioned: publics". With this illustration, we further describe each code as applied under the actors of statements category.

Business: During the "first cycle coding" (Saldaña, 2013) within ATLAS.ti, we coded for diverse business and industry players implicitly or explicitly identified as sources of statements and they included actors from agribusiness, automobile, built environment, finance, food/drink, energy, ICT/AI, manufacturing, mining/extractive, oil and gas, tourism/hospitality, timber, transport and others. Where a generic term business (also SMMEs) was used or where it was not clear to indicate under which industry a subject belonged, a code name, "business" was applied. This initial coding process is called first cycle coding in Saldana (2013). In the later stage, the codes were combined using the merging tool in ATLAS.ti resulting in a new category code with the tag "business" to capture all actors of statements affiliated with the business group.

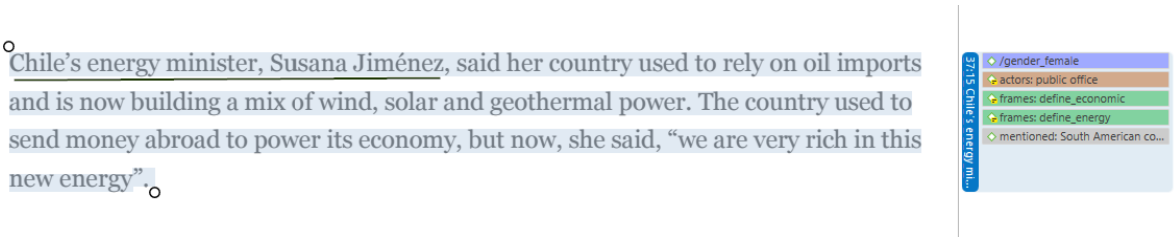
The process described above was repeated for all subject groups and included:

- *Science/expert*: actors belonging to the academic community, formal sciences (included diverse disciplines) and research institutions.
- *Public office*: public institutions and persons working in them, including government agencies/agents (executive, legislative and judicial actors).
- *Civil societies/actors*: organised collectives, including non-profit organisations, activists and other institutions working outside government and the business sector (included are NGOs, conservationists, religious actors, and actors from traditional institutions).
- *Development actors*: International, regional, and transnational organisations involved in development advocacy and supports across national boundaries and they included intergovernmental organisation (e.g., United Nation and its organs), international financial institutions (African Development Bank) and international/regional institutions (e.g., the Global Bureau of Safety, Emergency and Disaster).
- *Media*: media organisations and individuals working thereof.
- *Publics*: various subjects that fall outside the above categories and which form parts of the general public. Included were subjects designated as residents, farmers, fishers,

herders/pastoralists, consumers, students, community members (including youths), children, entertainment professionals, workers, traders/vendors, and others in the dataset.

7.4 Frames

For frames, their description, and examples are provided in Supp. Table III 1 below. The unit of analysis under this category was statements. This approach was considered more relevant than the approach which takes articles as unit of analysis because of our interest to illustrate how each frame co-occur with identified actor. For example, consider the coding illustrated in Supp. Figure III 2 below. On the righthand side to the text are codes applied to the text. The underlined words indicate the actor of the statement and in the text. The text reveals a statement by the Chilean energy minister discussing energy. The minister framed energy transition in relation to the economic benefits that renewable energy brings to her country; hence, both energy and economic frame were applied to the text.



Supp. Figure III 2. An example of frame coding co-occurring with actor code

Supp. Table III 1. The 14 frames, their description, and examples

Frame	Description	Example
Agriculture	where climate change is discussed in relation to agriculture	*Guardian* D 298 "Ironically, agriculture as a cause is also a victim of the climate change. Crops need suitable soil, adequate water through rainfalls or irrigation, sunlight, and heat to grow. The natural patterns of these variables are fluctuated, altered and negatively influenced by climate change."
Economic	claims about both microeconomic and macroeconomic implications and solutions relating to climate change	*M&G* D 37 "Chile's energy minister, Susana Jiménez, said her country used to rely on oil imports and is now building a mix of wind, solar and geothermal power. The country used to send money abroad to power its economy, but now, she said, 'we are very rich in this new energy'".
Energy	focus on energy production, need, and use in relation to climate change and include claims about renewable energy, energy transition, gas flaring, etc.	*Business Day* D 2 "In the ruling, the court pointed out that policymakers have long recognised that coal has a significant detrimental impact both on the environment and on the health of South Africans and that there is a need to diversify the source of supply"
Health	claims relating to the health implication of climate change and ecological disturbance	*M&G* D 60 "A hotter Earth will affect how we eat, how we live, what makes us sick and how we heal. But is South Africa ready?"
Impacts	claims about the direct or indirect effects of climate change, including environmental effects such as sea rise, melting glaciers, desertification and natural disaster and extreme weather conditions like rising temperature	Daily Nation D 127 "At the start of last year, the National Museums of Kenya (NMK) raised an alarm that Fort Jesus, a recognised UNESCO World Heritage site, is being washed away by rising sea waves."
Security	discuss climate change issues broadly in light of security (human, food, water, job, energy security included)	*Guardian* D 303 "This herder is forced to move south naturally, either by the drift of the cattle or deliberately to look for green pasture. He is forced to move by climate impacts and so there is already an agitation caused by climate change. This man does not recognize climate change as responsible for his troubles. That makes it harder and he is determined to weather the impact. He is living his former grazing environment without a structured alternative and he is facing the impending malnutrition of his cattle which represents his investment and prized procession."

Attribution	claims identifying drivers of climate change and attributing blame	*Daily Nation* D 135 "About 30 to 50 per cent of nitrogen applied to soils leaches into rivers and the air, suffocating aquatic life, worsening climate change and shortening lives through contamination."
Governance	focus on issues of governance, regulations and policies or their absence or fragility manifested through misallocation, mismanagement of resources, corruption, weak enforcement mechanism, etc.	*Standard* D 228 "Gachanja blames corruption, a wavering political will and abuse of office as the key contributors to forest loss in the country. Kenya currently has less than the 10 per cent recommended forest cover."
Political	focus on conflict among actors and stating the political strategy behind policies, the winners/losers, and nature of political debates	*Guardian* D 269 "The governor has also been accused of abandoning the yearly Climate Change Summit, which Fashola embarked on since 2007. Political pundits believe that the incumbent, despite the massive gains recorded by the summit in regards to the environment, looked the other way, either with the aim to spite his predecessor or erase some of his (Fashola) achievements. The same insinuation goes for how Ambode replaced the effective Lagos Waste Management Authority (LAWMA) with his own, Visionscape, a foreign waste management company."
Scientific	describes basic concepts and ideas about the science of climate change, including the description of the greenhouse effect	*M&G* D 41 "Thanks to human carbon emissions trapping heat in the atmosphere, thereby driving global warming, the seas around the Bramble Cay have started to rise and become more violent. This has eaten away at the only known habitat where the rodent"
Morality/Ethics	focus on the ethical/moral consideration related to action on climate change and express a sense of responsibility/stewardship tied to the notion of interconnectedness, intergeneration and solidarity	*Vanguard* D 95 "'There is only one Earth. We only live once' and we are strongly reminded that we have a duty to look after our planet, our home, in order to be able to leave a legacy for those coming after us to enjoy and build upon."
External Efficacy	focus on the responsiveness of public institutions, industry actors and elites in taking action	*Business Day* D 12 "'As government, we will not allow our agricultural sector to collapse because farmers are the lifeblood of our economy. That is why as part of our response to these challenges we have set aside a package of financial assistance to affected farmers in various provinces,' he [Deputy President, SA] said."
Midway Efficacy	focus on the potential for success from policy action to address climate change	*Business Day* D 4 "In the real world, renewable energy is not “intermittent”. It is variable but predictable, and can be harnessed in a flexible grid, supported by flexible generation capacity."

Self-efficacy	focus on the personal responsiveness and the behavioural changes of individuals to address climate change: individuals' actions will likely make a difference	*Daily Nation* D 152 '"I have three greenhouses. I grow my crops without using any inorganic inputs," explained Karanja, a retired teacher.'

Sources: Badullovich et al. (2020), Bolsen & Shapiro (2018), Vu et al. (2019) and own dataset.

Materials in the dataset

In Supp. Table III 2. List of materials included in the analysis, details of the materials analysed are provided. The first column provides the series according to which the articles were arranged and analysed in ATLAS.ti. Consequently, the references given in the various quotations sampled within the main article texts reflect this numbering.

Supp. Table III 2. List of materials included in the analysis

Doc. series	Newspaper	Date	Title	Author
1	*Business Day*	25/04/2019	Standard Bank activists shop for transparency	Editorial
2	*Business Day*	08/04/2019	SA can't afford to be left behind in the energy transition, but it must be managed	Brenda Martin
3	*Business Day*	09/04/2019	SA must act urgently to exit group of climate-change pariahs	Neil Overy
4	*Business Day*	14/04/2019	Coal is now the emperor with no clothes	Bobby Peek, Makoma Lekalakala and Mellissa Fourie
5	*Business Day*	01/08/2019	Greener economy good for small business and climate change	Gaylor Montmasson-clair
6	*Business Day*	26/08/2019	Government in talks to start local production of electric vehicles	Bakesale Phakathi
7	*Business Day*	28/08/2019	Land degradation, biomass loss and climate change are intertwined, whether in the Amazon or a savannah	Andrea Burgener
8	*Business Day*	29/08/2019	A green taxi industry makes good business sense for everyone	Vincent Raseroka
9	*Business Day*	30/08/2019	Natural disasters becoming a thorn in insurer Santam's side	Londiwe Buthelezi
10	*Business Day*	12/07/2019	Innovative solar plus storage a boost for renewables domination	Colin Wood

11	*Business Day*	25/07/2019	Carbon tax must bring real change in behaviour related to climate change	n/a
12	*Business Day*	31/03/2019	Expropriation without compensation law likely to be finalised in 2020	Bakesale Phakathi
13	*Business Day*	25/07/2019	Ismail Momoniat says SA miners have bigger worries than carbon tax	Lisa Steyn
14	*Business Day*	30/07/2019	Income Tax Act amendments proposed for energy saving	Linda Ensor
15	*Business Day*	31/07/2019	Africa's oil and gas players prepare for world of lower demand	Jon Clark
16	*Business Day*	31/07/2019	Standard Bank adopts policy on funding coal-fired power projects	Nick Hedley
17	*Business Day*	04/07/2019	Glencore finds cleaner, cheaper alternative to Eskom	Lisa Steyn
18	*Business Day*	08/07/2019	Transport department to use advanced technologies to enforce law and order	Luyolo Mkentane
19	*Business Day*	12/06/2019	SA needs to diversify source-water supply to secure the future	Shafick Adams
20	*Business Day*	13/06/2019	Sasol take note: climate change issues are gaining traction	n/a
21	*Business Day*	14/06/2019	UK is keen to support innovation in Africa	Emma Wade-Smith
22	*Business Day*	19/06/2019	Scientists call for global action on air pollution	Tamar Kahn
23	*Business Day*	20/06/2019	SA's green bonds show there are massive opportunities for growth	Nomhle Ngwenya
24	*Business Day*	25/06/2019	African farmers increase yields and income with their smartphones	Bakesale Phakathi
25	*Business Day*	26/06/2019	Regaining confidence in multinational trading system an urgent task for G20	Norio Maruwama
26	*Business Day*	04/06/2019	Absa puts climate change on the agenda	Warren Thompson
27	*Business Day*	04/06/2019	Chernobyl horror has nuclear lessons for SA	Kate Brown
28	*Business Day*	05/06/2019	Green bonds a proven way to mobilise funds for development	Bruce Stewart and Arvana Singh
29	*Business Day*	26/03/2019	Court blocks coal truckers' bid to stop green power	Lisa Steyn
30	*Business Day*	06/05/2019	Which political parties can lead SA out of our coal-fed climate mess?	Alex Lenferna

31	*Business Day*	08/03/2019	How can we reduce inequality and carbon emissions at the same time?	Harald Winkler
32	*Business Day*	17/05/2019	The Carbon Tax Bill will cut emissions in SA from June	Tina Costas and James Ross
33	*Business Day*	27/05/2019	Spectre of mass extinction looms as animals and plants vanish	Camilla Cavendish
34	*Business Day*	30/05/2019	Climate change resolution voted down at Standard Bank AGM	Lisa Steyn
35	*Business Day*	30/05/2019	Greens to Standard Bank: we'll be back	Lisa Steyn
36	*Business Day*	09/05/2019	Lobby group to fight state on doubling allowed emissions of sulphur dioxide	Mellissa Reiz
37	*M&G*	12/04/2019	Elemental power is fuelling a new world order	n/a
38	*M&G*	12/04/2019	South Africa needs a Green New Deal	Co-pierre Georg
39	*M&G*	18/05/2019	No plan as coal jobs go extinct	Sipho Kings
40	*M&G*	18/04/2019	Privilege flares in Notre Dame fire	Editorial
41	*M&G*	24/04/2019	Climate costs South Africa 10% of its GDP	Sipho Kings
42	*M&G*	26/04/2019	Grim portent of what's to come	Paddy Harper
43	*M&G*	26/04/2019	With no life, there are no voters	Editorial
44	*M&G*	26/04/2019	Wake up, there is no Planet B	Richard Kozul Wright and Kevin Gallagher
45	*M&G*	04/04/2019	CSIR committed to enviro research	
46	*M&G*	23/08/2019	To deny climate change makes perfect sense	Sipho Kings
47	*M&G*	02/08/2019	Survive the climate crisis	Sipho Kings
48	*M&G*	30/08/2019	Cyril talks climate but plan to cut CO2 still in the bin	Sipho Kings
49	*M&G*	07/08/2019	How we can restore our ecosystems	Scone Malone
50	*M&G*	08/08/2019	Face it, climate crisis is here	Sipho Kings
51	*M&G*	12/07/2019	Outa wants to fix green tax	
52	*M&G*	12/07/2019	Space cadets high on their own orbit	Christopher McMichael
53	*M&G*	19/07/2019	Africans must wake up and act	Jakaya Kikwete
54	*M&G*	26/07/2019	Day Zero: Lessons for cities in Global South	Gina Ziervogel and Leonie Joubert
55	*M&G*	14/06/2019	Cyclone Idai left a costly repair bill	Tigere Chagutah
56	*M&G*	14/06/2019	Norway says no to fossil fuels	n/a

57	*M&G*	22/03/2019	Job losses threatens the CSIR's reputation	Jacques Coetzee
58	*M&G*	15/03/2019	Carbon tax gets a muted welcome	Tshegofatso Mathe
59	*M&G*	15/03/2019	Pollution kills nine million a year	
60	*M&G*	15/03/2019	When climate change and health collide	Garret Barnwell
61	*M&G*	01/03/2019	Climate change claims its first mammal extinction	Sipho Kings
62	*M&G*	01/03/2019	Looking the Brulpadda in the mouth	Jannet Solomon
63	*M&G*	01/03/2019	More power to greenfield thinking	Kevin Davie
64	*M&G*	22/03/2019	Cyclone Idai: After the floods, the famine. And then	Simon Allison
65	*M&G*	22/03/2019	The destruction of Thuma Mina	n/a
66	*M&G*	22/03/2019	Three countries endanger world	Sipho Kings
67	*M&G*	29/03/2019	SA defence in 'critical decline'	Sipho Kings
68	*M&G*	06/06/2019	Africa's disappearing forests	Simon Allison
69	*M&G*	08/03/2019	Bedrock of food security destroyed	Sipho Kings
70	*M&G*	08/03/2019	We desperately need to change course	Joyse Msuya
71	*M&G*	10/06/2019	Can Eskom keep lights on in a low-carbon economy?	Kevin Davie
72	*M&G*	10/06/2019	Climate crisis demands a global tax	Mats Persson
73	*M&G*	10/06/2019	Elections ignored climate change	Sipho Kings
74	*M&G*	17/06/2019	Big increase in mine water pollution	Mark Olalde and Andiswa Matikinca
75	*M&G*	24/06/2019	Change for climate a risky business	Kevin Davie
76	*Vanguard*	16/04/2019	FG begins real-time monitoring of gas flaring, oil spill	Michael Eboh, Chris Ochayi and Princess Owoh
77	*Vanguard*	05/04/2019	Contending with extreme heat wave	Tayo Ogunbiyi
78	*Vanguard*	08/04/2019	3 Nigerians, others each get $391,500 research grant to develop Africa	Chioma Obinna
79	*Vanguard*	09/04/2019	Nigeria, 14 ECOWAS states to benefit from $8m forest protection project	n/a
80	*Vanguard*	15/04/2019	Girls' school in Abia generates electricity from wastes	n/a
81	*Vanguard*	12/04/2019	Coal deposit: Nasarawa to generate 100mw electricity- Gov. Sule	David Odama

82	*Vanguard*	01/08/2019	Deadly feud between two federal agencies	Kayode Ojewale
83	*Vanguard*	24/08/2019	Lagos at risk of grave flood – Scientists	n/a
84	*Vanguard*	16/07/2019	Nigerians need to be wary of danger of climate change — Stakeholders	Gabriel Olawale
85	*Vanguard*	17/07/2019	Afforestation very important in combating climate change effect, global warming – Sanwo-Olu, others	Elizabeth Uwandu
86	*Vanguard*	18/07/2019	NiMet DG faults calls for creation of climate change agency	n/a
87	*Vanguard*	18/07/2019	Ruga project, a threat to Nigeria's existence, cancel it — Ortom	Peter Duru
88	*Vanguard*	24/07/2019	Gas flare out programme to revive oil industry fortunes – FG	Michael
89	*Vanguard*	27/07/2019	Climate change requires global co-operation, says Nazanin Alakija	n/a
90	*Vanguard*	02/07/2019	Urban degeneration: How erosion, flood threaten lives, property in Lagos Island, NGO raises alarm	Olasunkanmi Akoni
91	*Vanguard*	04/07/2019	Dr. Wayas becomes International Ecolinguistics Association representative	Ikechukwu Odu
92	*Vanguard*	05/07/2019	PAC Foundation launch: Lagos ready to support, environmentally friendly technology solutions – Sanwo-Olu	n/a
93	*Vanguard*	07/07/2019	Ruga and Fulanization	Obi Nwakanma
94	*Vanguard*	10/07/2019	Wikimedia Nigeria unveils 2019 eco-friendly photo contest	n/a
95	*Vanguard*	11/07/2019	One Planet, One Health embodies our commitment — BARRERE	Gabriel Olawale
96	*Vanguard*	12/06/2019	NIMASA deploying technology, partnership to protect marine environment	Maryam Shagaya
97	*Vanguard*	18/06/2019	Anambra teenagers, medical students, others protest global warming in Nigeria	n/a
98	*Vanguard*	26/06/2019	Rensource clinches IFC, FT award for affordable solar power solutions	n/a
99	*Vanguard*	27/06/2019	Edo govt assesses impact of flooding, assures victims of relief materials	n/a
100	*Vanguard*	28/06/2019	CNBC Africa's Nazanin Alakija's SAGE Innovation Centre to combat climate change	n/a
101	*Vanguard*	30/06/2019	'Fishes gone, no jobs, bandits have turned our homes into hell on earth'	n/a
102	*Vanguard*	07/06/2019	After UN win, Nigeria should return to work	Owei Lakemfa

103	*Vanguard*	11/06/2019	Nigeria's marine resources can sustain, develop the economy — NIMASA DG	Godwin Oritse
104	*Vanguard*	15/03/2019	Delegates to Africa Climate Week urged to reject 'false' solutions to climate change	Agbonkhese Oboh
105	*Vanguard*	24/03/2019	NGO holds conference on climate change, honours entrepreneur, Sanusi	Ephraim Oseji
106	*Vanguard*	21/05/2019	Scientists tackle climate change challenges in $100, 000 Nigeria prize for science	Kingsley Adegboye
107	*Vanguard*	31/05/2019	Shell, Chevron tackle gas flaring climate change	Hugo Odiogor
108	*Vanguard*	07/05/2019	Nigeria's quest for UN Security Council slot: No consensus yet - UNGA President	Johnbosco Agbakwuru
109	*Vanguard*	09/05/2019	Axis of looming disaster: How trucks, failed roads have turned Ajegunle, Satellite Town, others into hell for residents	Theodore Opara, Godfrey Bivbere, Godwin Oritse and Bose Adelaja
110	*Vanguard*	09/05/2019	UN appoints Emir of Kano, Sanusi, 16 others SDG advocates	n/a
111	*Vanguard*	15/05/2019	Renewable energy as a sustainable energy alternative for SMEs in Nigeria	Akunna OĐli
112	*Daily Nation*	13/03/2019	Young women trailblazers steal the limelight	Njoki Chege
113	*Daily Nation*	15/04/2019	Catholic clerics back graft war as church marks Palm Sunday	Diana Mutheu
114	*Daily Nation*	16/04/2019	Another fire destroys over 100 acres of Mt Kenya forest	Alex Njeru
115	*Daily Nation*	16/04/2019	Grim days await Kenyans as long rains fail	Pauline Kairu
116	*Daily Nation*	18/04/2019	Food insecurity sheds spotlight on State policies	Julius Sigei and Gakuu Mathenge
117	*Daily Nation*	20/04/2019	We need smart policies to give maize a long, prosperous future	Gilber Arap Bor
118	*Daily Nation*	21/04/2019	Baringo, WFP in Sh2bn deal to fight hunger	Flora Koech
119	*Daily Nation*	22/04/2019	Kenya begins early campaign in bid to win seat on UN Security Council	Aggrey Mutambo
120	*Daily Nation*	23/04/2019	Food prices in Taita Taveta rise as long rains fail	Lucy Mkanyika
121	*Daily Nation*	26/04/2019	Feedback: Crickets, flies, poultry farming	n/a
122	*Daily Nation*	27/04/2019	Agronomist's notebook: Telephone farmers' ideal enterprise	Ann Macharia

123	*Daily Nation*	27/04/2019	Why funding is key in unlocking farming potential	Anthony Kitimo
124	*Daily Nation*	29/04/2019	'How Syngenta has made me succeed as a farmer'	Millicent Mwololo
125	*Daily Nation*	04/04/2019	Kenyans should adopt resilient construction methods, experts say	Lukorito W. Jones
126	*Daily Nation*	06/04/2019	Families dig into their savings as hunger takes toll on poor Kenyans	n/a
127	*Daily Nation*	06/04/2019	Rising sea level slowly drowning coastal beaches	Allan Olingo and Diana Mutheu
128	*Daily Nation*	06/04/2019	Yes, you can trade in carbon credits	Leopold Obi
129	*Daily Nation*	09/04/2019	Innovators take climate change matter head-on	Leopold Obi
130	*Daily Nation*	30/04/2019	For big harvest, we must fund agro-research well	Anita Chepkoech
131	*Daily Nation*	11/08/2019	Ministry to step up awareness on safe pesticide usage	n/a
132	*Daily Nation*	21/08/2019	Steep decline in lion numbers worries wildlife players	Leopold Obi
133	*Daily Nation*	22/08/2019	Bee aware: Beetles put pollination at risk	Verah Okeyo
134	*Daily Nation*	25/08/2019	Help people grasp complex messages, journalists told	Julius Sigei
135	*Daily Nation*	26/08/2019	Clean water vital to economic growth: World Bank	Paul Wafula
136	*Daily Nation*	26/08/2019	Nema shuts down four firms for polluting Nairobi River	Leonard Onyango
137	*Daily Nation*	29/08/2019	Lack of proper urban planning costs Kenya dearly, experts say	Peter Musa
138	*Daily Nation*	31/08/2019	A quest to make agribusiness pay	Nelson Maina
139	*Daily Nation*	31/08/2019	Big harvest, no market: Pain of Turkana growers	Isaiah Esipisu
140	*Daily Nation*	31/08/2019	Look out for better fish species in coming months	Rachel Kibui
141	*Daily Nation*	31/08/2019	We must embrace agro-technology for sustainable farming	Brian Okinda
142	*Daily Nation*	19/08/2019	Our sorry state of affairs is down to clueless leaders	Mutuma Mathiu
143	*Daily Nation*	11/07/2019	Leave wholesome planet better than you found it for our successors	Azim Lakhani

144	*Daily Nation*	16/07/2019	Conservationists call for action against ecological degradation	Magdalene Wanja
145	*Daily Nation*	23/07/2019	Isiolo residents to get Sh350m food aid after crops fail	Waweru Wairimu
146	*Daily Nation*	26/07/2019	Nyandarua in race to end drop in Irish potato	Waikwa Maina and Leopold Obi
147	*Daily Nation*	26/07/2019	Why cockroaches could be the next super food, saviour of humanity	Obed Nyangena
148	*Daily Nation*	28/07/2019	The epic marketing failure of climate change	Adema Sangale
149	*Daily Nation*	09/07/2019	Kenya's low investment in Big Data may deny us digital fruits	Paul Oanda
150	*Daily Nation*	16/06/2019	Nakuru leaders say zero timber import duty blow to saw millers	Eric Matara
151	*Daily Nation*	17/06/2019	Nakuru water firms plant trees at the source of River Rongai	Phyllis Musasia
152	*Daily Nation*	17/06/2019	Organic growers share tips on farming without chemical fertilisers and pesticides	Leopold Obi
153	*Daily Nation*	22/06/2019	Villagers find formula to keep farms greener amid dry spell	Isaiah Esipisu
154	*Daily Nation*	23/06/2019	Sustainable solutions needed for forests that save timber industry	Lee Kinyanjui
155	*Daily Nation*	25/06/2019	World faces 'climate apartheid': UN expert	n/a
156	*Daily Nation*	26/06/2019	Lake Elementaita: A vast ecosystem threatened by pollution	Margaret W. Maina
157	*Daily Nation*	27/06/2019	Juice sucking insects attack crops in 3 Mt Kenya counties	Alex Njeru
158	*Daily Nation*	27/06/2019	Tribunal cancels Lamu coal power project licence	Abiud Ochieng
159	*Daily Nation*	02/06/2019	Four girls who jumped into the deep sea, and loved it	Winnie Atieno and Siago Cece
160	*Daily Nation*	06/06/2019	Climate-smart housing technologies for urban dwellers	Leopold Obi
161	*Daily Nation*	12/03/2019	Attention on marine conservation	Leopold Obi
162	*Daily Nation*	14/03/2019	Climate activists criticise Kenya's coal mining plans	Kitavi Mutua
163	*Daily Nation*	17/03/2019	Poor soil health making Kenyans hungry and testing it key to better yields	Wanjiru Kamau
164	*Daily Nation*	18/03/2019	Nanok says harsh weather to blame for Turkana hunger	Valentine Obara

165	*Daily Nation*	21/03/2019	Drought, Turkana deaths: West African 'miracles can end it all	Charles Onyango-Obbo
166	*Daily Nation*	21/03/2019	End of the pride? Lions face extinction within 20 years	Bernardine Mutanu
167	*Daily Nation*	21/03/2019	Kenyan climate change activist gets global recognition	Kitavi Mutua
168	*Daily Nation*	21/03/2019	Lake Region counties vow to work closely with national govt	Gaitano Pessa
169	*Daily Nation*	23/03/2019	OUT&ABOUT: Discovering Kenya's mysterious lake	Rubi Mangat
170	*Daily Nation*	23/03/2019	Simple actions that go a long way in water conservation	Judy Nwangi
171	*Daily Nation*	24/03/2019	Reasons given by Kenya Railways MD for diesel trains ring hollow	Mithika Mwenda,
172	*Daily Nation*	25/03/2019	Cereals are no 'food' for starving Turkana, help them get own food	Isaiah Esipisu
173	*Daily Nation*	27/03/2019	Major boost for Eldoret City Marathon	Dennis Lubanga
174	*Daily Nation*	06/03/2019	Responsible tourism can curb plastic hazard	Hasnain Noorani
175	*Daily Nation*	11/05/2019	Bodaboda operator uses bike to increase his farm yields	Irene Mugo
176	*Daily Nation*	11/05/2019	It's time to make PhD holders demonstrate what they studied	Gabriel Oguda
177	*Daily Nation*	11/05/2019	Smart agriculture key to fighting climate change effects	Alex Chamwada
178	*Daily Nation*	14/05/2019	Radical proposals to save Kenya's ailing agriculture	Julius Sigei and Anita Chepkoech
179	*Daily Nation*	15/05/2019	Does warmer world spell doom for health?	Verah Okeyo
180	*Daily Nation*	15/05/2019	Hunger threatens families as climate change persists	Siddharth Chatterjee
181	*Daily Nation*	15/05/2019	Tea factories switch to greener energy to cut costs	Leopold Obi
182	*Daily Nation*	21/05/2019	Clean energy use key to industrial growth	Wanja Mwangi
183	*Daily Nation*	21/05/2019	Under threat: Lakes being driven to deathbed by human activities	n/a
184	*Daily Nation*	23/05/2019	Hungry children a human, economic crisis	Graca Machel
185	*Daily Nation*	24/05/2019	Time to reflect as fossil fuels run amok	Landry Ninteretse
186	*Daily Nation*	25/05/2019	You will soon be able to buy queen bees	Leopold Obi

187	*Daily Nation*	27/05/2019	Kenya offers UN-Habitat Sh3m more	Leopold Obi and Anita Chepkoech
188	*Daily Nation*	28/05/2019	Sustainability goes beyond sponsorships	Justin Apsey
189	*Daily Nation*	28/05/2019	We have a responsibility to undo the harm we've done the world	Kaddu Sebunya
190	*Daily Nation*	09/05/2019	Scale up climate-smart farming for food security, higher incomes	Peter Warutere
191	*Daily Nation*	31/05/2019	This is what it takes to become an atmospheric chemist	n/a
192	*Daily Nation*	03/05/2019	To survive, we need to conserve our environment	Peter Musa
193	*Standard*	11/04/2019	Why a green and clean Kenya is the best gift for our future generations	Miriam Wayu
194	*Standard*	13/04/2019	Anxiety as Meteorological Department forecasts falter	Jeckonia Otieno
195	*Standard*	14/04/2019	Why a united Africa offers great prospects for an emerging Kenya	Kizito Temba
196	*Standard*	16/04/2019	Fight for water by oil firms may fuel conflict in Turkana	Macharia Kamau
197	*Standard*	18/04/2019	Researchers roots for use of insects as livestock feeds	Caroline Chebet
198	*Standard*	26/04/2019	Why Kenya's bet for real progress is in being food secure	Maoka Maore
199	*Standard*	28/04/2019	Lack of regulatory standards for digital jobs makes the future of work more dangerous	n/a
200	*Standard*	28/04/2019	Locals stare at dry rivers as power generation dips	Amos Kareithi
201	*Standard*	29/04/2019	World Heritage sites in danger of collapse owing to climate change	Philip Mwakio
202	*Standard*	06/04/2019	'Eighth wonder' at risk as Mara River dries up	Jeckonia Otieno
203	*Standard*	06/04/2019	Mau Forest politics: Chicken coming home to roost	Steve Mkawale and Robert Kiplagat
204	*Standard*	14/04/2019	Kenya to gain from satellite data	Frankline Sunday
205	*Standard*	05/08/2019	Capital Markets Authority approves Kenya's first green bond	Fredrick Obura
206	*Standard*	21/08/2018	Safaricom gives economy Sh600b boost in a year	Frankline Sunday

207	*Standard*	23/08/2019	Save Mau, but also save evictees from misery	n/a
208	*Standard*	23/08/2019	Why counties missed out on State funding	Dominic Omondi
209	*Standard*	26/08/201	Kenya has potential to become the largest green energy exporter	Kizito Temba
210	*Standard*	28/08/2019	There is every reason to rethink land use for posterity's sake	Elias Mokua
211	*Standard*	30/08/2019	Fix climate change crisis or perish, Africa warned	Lynet Otieno
212	*Standard*	05/08/2019	Kiambu politics: Nyoro's solution	n/a
213	*Standard*	06/08/2019	Key issues that could mar our nuclear energy quest	Stephen Ndegwa
214	*Standard*	07/08/2019	EABL invests Sh22b in clean energy	Macharia Kamau
215	*Standard*	09/08/2019	Nuclear energy will spur Kenya's economic growth	Erick Maklago
216	*Standard*	10/07/2019	Ongwae issues 90 days for locals to cut down eucalyptus along rivers	Eric Abuga
217	*Standard*	11/07/2019	Genetic researcher eyes heat stress-resistant birds	Agnes Aineah
218	*Standard*	12/07/2019	KFS boss warns against illegal logging in Mbooni forest	Fredrick Obura
219	*Standard*	13/07/2019	Residents hail Tetu water projects as boost for economy	Lydiah Nyawira
220	*Standard*	18/07/2019	UN-Habitat 'Tiny' House: Solution to Kenya's housing problems?	Josphat Thiong'o
221	*Standard*	19/07/2019	Kenya Forest Service interdicts four officers in Makueni County	Fredrick Obura
222	*Standard*	01/07/2019	Kenyan feted for climate policy activism	Lynet Otieno
223	*Standard*	20/07/2019	Fight against fake seeds bearing fruit, says Kephis official	Joseph Muchiri
224	*Standard*	02/07/2019	As the world swelters in heat, Kenya is enjoying the cold	Jael Mboga
225	*Standard*	30/07/2019	The forest maker: Catching up with right livelihood laureate Tony Rinaudo	n/a
226	*Standard*	03/07/2019	Corruption biggest threat to Kenya's food security dream	Editorial
227	*Standard*	09/07/2019	SMEs to benefit from African Guarantee Fund, KAM pact	n/a

228	*Standard*	09/07/2019	Make it compulsory for every household to harvest rain water	Timothy Mwangi
229	*Standard*	10/06/2019	Wildlife biggest loser in real estate craze	Joyce Msuya
230	*Standard*	12/06/2019	Chuka University acquires soil kit to boost farmers	Phares Mutembei
231	*Standard*	12/06/2019	Proposed Lamu Coal Plant the wrong choice for Kenya	Protus Onyango
232	*Standard*	17/06/2019	Danish economist named new Unep boss	Protus Onyango
233	*Standard*	18/06/2019	Kenyan youths targeted in coral reefs restoration at the coast	n/a
234	*Standard*	01/06/2019	Plastic bags ban changing environment	Silvana Kaparo
235	*Standard*	21/06/2019	Dazzling array of inventions premier at technical fete	Fred Kibor
236	*Standard*	23/06/2019	Ludicrous Lamu coal deal is as dirty as the energy it will generate	Gabriel Dolan
237	*Standard*	25/06/2019	Coral reef restoration project to boost coast fish stocks	ames Wanzala
238	*Standard*	26/06/2019	Issues around shared water resources should be addressed urgently	Elias Mokua
239	*Standard*	30/06/2019	Green energy has put Kenya on its way to universal clean power access	Miriam Wayu
240	*Standard*	03/06/2019	Report: Dirty air killing millions around world	Protus Onyango
241	*Standard*	04/06/2019	SMEs trained on their role in green climate	Linet Otieno
242	*Standard*	09/06/2019	First Lady Margaret Kenyatta warns on climate change	Jeckonia Otieno
243	*Standard*	12/03/2019	Building of Fort Jesus seawall back on track after funding	Philip Mwaki
244	*Standard*	14/03/2019	Impacts of plastics on planet, ecosystems, people	Protus Onyango
245	*Standard*	18/03/2019	Why an efficient rural distribution network is essential to attaining food security	John Ohaga
246	*Standard*	22/03/2019	Water a crucial agent in fighting climate change	Francis Musinguzi
247	*Standard*	24/03/2019	Firm leases greenhouses to agribusiness investors in pilot project	Moses Omusolo
248	*Standard*	24/03/2019	Insecurity, land grab, pastoralists neglect root of Turkana woes	Gabriel Dolan
249	*Standard*	25/03/2019	Kenya rattled by evening earth tremor amid fears of climate change	Paul M Karanja

250	*Standard*	28/03/2019	What goes into putting up a green building	Ferdinand Mwongela
251	*Standard*	30/03/2019	Energy Security: Is Kenya ready for Nuclear power?	Albert Mbaka
252	*Standard*	03/03/2019	We should not shun oil due to climate change	NJ Ayuk
253	*Standard*	06/03/2019	Precision agriculture for Africa's food security	Adhere Cavince
254	*Standard*	14/05/2019	Tech firm secures innovation grant from Microsoft	n/a
255	*Standard*	15/03/2019	Host of the one planet summit, has been the beating heart of climate action	Raomy Rioux
256	*Standard*	21/05/2019	Defining moment as Kenyans await Cabinet's GMO verdict	Dominic Omondi
257	*Standard*	26/05/2019	Why preserving forests should be given priority	Chris Diaz
258	*Standard*	28/03/2019	How the built environment fuels climate change	Peter Muiruri
259	*Standard*	28/05/2019	The untold story of Turkana power line	Neville Otuki
260	*Standard*	30/05/2019	Presidents, Prime Ministers promise action for the New Urban Agenda	Protus Onyango
261	*Standard*	06/04/2019	42 counties not ready to fight climate change	Caroline Chebet
262	*Standard*	08/05/2019	Act now, Mara-Serengeti must live forever	Peter Muiruri
263	*Guardian*	11/04/2019	Who is feeling the heat?	Nesochi Okeke-Igbokwe
264	*Guardian*	15/04/2019	NCF inspires nature awareness, action with Earth Hour	Editorial
265	*Guardian*	17/04/2019	Mosquito, tick-borne diseases set to flourish in warmer climes	Chukwuma Muanya
266	*Guardian*	29/04/2019	'How World Banks' green building certification can benefit Nigerian investors'	Victor Gbonegun
267	*Guardian*	30/04/2019	Access Bank, stakeholders seek improved approach to SDGs	Dennis Erezi
268	*Guardian*	08/04/2019	Experts offer strategies for NDC implementation	Chinedum Uwaegbulam
269	*Guardian*	24/04/2019	Politics of Lagos projects' commissioning by Buhari	Seye Olumide
270	*Guardian*	29/04/2019	Tackling basic challenges in Nigeria's food production industry	Femi Ibirogba,
271	*Guardian*	13/08/2019	Why fish meals have become more toxic than ever	Chukwuma Muanya

272	*Guardian*	29/08/2019	APC governors not ganging up against Oshiomhole, says Ganduje	Adamu Abuh
273	*Guardian*	29/08/2019	Exploring catastrophic events that could wipe out humans	Chukwuma Muanya
274	*Guardian*	10/07/2019	Nigeria, other global higher institutions declare climate emergency	n/a
275	*Guardian*	12/07/2019	World Population Day: Nigeria and the world	Ibukun Ogunkolade
276	*Guardian*	14/07/2019	'Plant a tree to celebrate memorable events', Sanwo-Olu urges residents	n/a
277	*Guardian*	15/07/2019	Lagos moves to check quackery in assisted reproductive technology practice	Gbenga Salau
278	*Guardian*	17/07/2019	Ayade declares July 30 public holiday for tree planting	Akpan
279	*Guardian*	18/07/2019	Nigeria may not survive post-oil economy – SBM report	Solomon Fowowe
280	*Guardian*	02/07/2019	How climate change, conflicts threaten food security in Northeast, by FAO	Njadvara Musa
281	*Guardian*	05/07/2019	Promoting social enterprise is a developmental advantage	Emmanuel Akinbobola
282	*Guardian*	08/07/2019	How to manage stress in poultry, livestock production	Femi Ibirogba
283	*Guardian*	08/07/2019	New urban development policy underway	Chinedum Uwaegbulam
285	*Guardian*	10/06/2019	Nigeria turns spotlight on air pollution at World Environment Day	Bertram Nwannekanma, Cornelius Essen and Oluwatosin Areo
286	*Guardian*	17/06/2019	Denmark's Inger Andersen to head UNEP	n/a
287	*Guardian*	17/06/2019	'UN report demonstrates growing climate action'	n/a
288	*Guardian*	18/06/2019	NSIA moves to reduce gas flaring	Clara Nwachukwu
289	*Guardian*	24/06/2019	We will spend our last kobo to eliminate Boko Haram – Zulum	n/a
290	*Guardian*	25/06/2019	Nigerian renewable energy solutions provider Arnergy closes Series A financing	n/a
291	*Guardian*	25/06/2019	Osinbajo highlights investment opportunities in Nigeria's development challenges	n/a

292	*Guardian*	06/06/2019	Activists seek declaration of Nigeria as environmental disaster nation	Bertram Nwannekanma, Osiberoha Osibe and Charles Coffie Gyamfi
293	*Guardian*	08/06/2019	Foundation warns students, youths against drug abuse	Maria Diamond
294	*Guardian*	09/06/2019	Huge losses, as Ojumole oil well fire enters day 54	Oluwaseun Akingboye
295	*Guardian*	20/03/2019	Buhari declines assent to Digital Rights and Freedom Bill, four others	Solomon Fowowe
296	*Guardian*	20/03/2019	Pollution: Agency decries increasing use of generators	n/a
297	*Guardian*	20/03/2019	U.S. ex-ambassador, Campbell, says Nigeria's presidential election bad news for democracy	Kehinde Olatunji
298	*Guardian*	21/03/2019	Farmland clearing, livestock production, others aggravate climate change	Femi Ibirogba
299	*Guardian*	22/03/2019	Agric output may decline to 25%, don warns	Nnamdi Akpa
300	*Guardian*	30/03/2019	FAO committed to Climate Smart Agriculture in North East – Official	n/a
301	*Guardian*	03/03/2019	Don advocates exposure of children to natural resources management	Gbenga Akinfenwa
302	*Guardian*	04/03/2019	Green climate fund board approves Nigeria's $100million solar programme	Chinedum Uwaegbulam
303	*Guardian*	04/03/2019	'Dealing with climate change impact requires huge financing'	Chinedum Uwaegbulam
304	*Guardian*	24/03/2019	Save our forests, conserve wildlife	Editorial
305	*Guardian*	04/03/2019	Growing money in the backyard	Femi Ibirogba
306	*Guardian*	13/05/2019	Carbon dioxide level in atmosphere hits record high	n/a
307	*Guardian*	20/05/2019	Scientists proffer solutions to climate change in $100,000 LNG prize	Chinedum Uwaegbulam
308	*Guardian*	20/05/2019	'Nigeria needs sustainable environmental structures'	Victor Gbonegun
309	*Guardian*	21/05/2019	How Lagos downpour wreaked havoc, gridlock	Tope Templer Olaiya and Gbenga Salau
310	*Guardian*	20/05/2019	Chronic kidney disease associated with high heat, toxins, infections	Chukwuma Muanya
311	*Guardian*	23/05/2019	The hanging of Ben Murray-Bruce	Tony Ademiluyi

312	*Guardian*	24/05/2019	Why people who work in poorly ventilated buildings are worse at their jobs	Chukwuma Muanya
313	*Guardian*	27/05/2019	FG seeks integrated states' action plan on climate change	Chinedum Uwaegbulam
314	*Guardian*	28/05/2019	LBS, Nestlé Nigeria train journalists on sustainable development	Benjamin Alade
315	*Daily Nation*	18/03/2019	Climate change driving oil-rich Turkana to the brink	Leopold Obi

Appendix 11. Supplementary material for Paper IV

Paper IV Title– Reflecting on 'the engaged' with climate journalists: Evidence from South Africa, Nigeria, and Kenya

Interview Protocol

Project tittle:

Media(ted) climate change in South Africa, Nigeria and Kenya: Reimagining the public for engagement

Time of interview:
Date:
Medium of interview:
Interviewer:
Interviewee:

(Name, practicing country, years of practice, specialisation & educational background)

Introducing the study and the participant

This study which you have offered to participate in seeks to draw insights from practitioners in the media on the representation of climate change issues in the media in Africa. During this interview, we shall be exploring your views on the science and art of representing climate change in your country along with concepts such as 'communication', 'persons', and 'diversity and inclusion'.

I understand that you read and understood the consent form and that you voluntarily offer to participate in this interview. Be rest assured that your participation in the study will be confidential and your anonymity will be ensured, meaning, that all identifying information concerning you will be omitted from the data for your protection.

Semi-structured questions to guide the interview

1) I understand that you write articles on climate change issues for the media. Could you mention some of the media platforms your works have been featured in, please?
2) How would you describe your routine about writing for these media?
3) The call to action regarding climate change is increasing today. How would you describe your role as a journalist interested in the issue in relation to broadening climate change governance?
4) What would you say is your understanding of communication as a concept?
5) What, in your opinion, is the place of the media in general with regards to public opinion formation on key social issues like climate change?
6) If you were to think about the understanding of communication you described earlier, what would you say is your view of the human person? In other words, how would you describe the human persons that your media communication targets?
7) There is an increasing emphasis on the issue of representation in relation to diversity in our society today. What is your view on broadening voices in the coverage of climate change?
8) What steps do you take to consider diverse voices and perspectives when you write about climate change for your newspaper/media?
9) What would you consider to be challenging to diversifying representations in media coverage of climate change in your country?
10) One last question, do you consider it relevant to represent ordinary citizens (e.g. farmers) and their views about climate change issues in your own media coverage of climate change?

Supp. IV Figure 1

Supp. IV Table 1. Codebook for the interview analysis

Theme	Code	Description	Example
Journalistic role	detached disseminator	Takes passive stance towards news reportage by emphasising distance between the reporter and "facts"	S1, 8:12 "So, I've tried to remove myself from it, because I'm covering coal. I'm covering, I'm talking to people who still don't believe climate change is real, telling me that carbon is good for the earth and that coal will be here forever. And talking to the new wind industries, talking to NGOs. So, I think it's unrealistic to be unbiased. I think that's not a reality in life, but I genuinely am not invested either way (laughs). Like, I'm just trying to report what I hear and see in a level-headed way with as much context as possible. And so, I really just see my role as information gathering and packaging, and in an insightful way"
	advocates	takes active stance towards news reportage and at times, advocate a cause	K1, 1:11 "other than just reporting and saying the rivers are drying. … So, I use those stories to educate people and say it is not just natural that this is happening. Human beings have a hand this. So, what should we do? So, sort of solution-based journalism, rather than just reporting what has happened in today and tomorrow you're going to love the story."
	adversary (high power distance)	focus on holding institutions of power to account	S4, 11:8 "Regardless of the beat, journalism is about holding those in power to account".
	“loyal-facilitator” (low power distance)	focus on defending authority (journalists as government partners) or on social harmony (journalists as nation builders)	N1, 4:14 "… And they have already removed some of the hindrances on the way for renewable energy, you know, and have come up with a policy that was never there before. So, in these aspects, they [government] are trying to make people buy into all these, and that's how it goes"
	market-oriented	focus on commercialisation of content and serve what audience "want to know" rather than "what they need to know"	S1, 8:16 "… so, the Media-S1 and Media-S1b; the first two words in both of those will tell you who the audience is. … And I said you guys have spoken to everyone except the workers. Why is that? And to them, it was like, Oh, well, we didn't think about it. Yeah, you're right. But it's just so not in their mind

			because it's just about corporates and the business impact."
	citizens-oriented	mobilizes citizens to participate in social, political, and cultural life	K3, 3:9 "And whenever.. and on the other side, I seek to speak.. to bring out the aspects in the society, in the communities, so that the people in power can get to know what affects the people regarding the environment and climate and all that."
Journalistic norms	Personalization	Coverage emphasises the human-interest angle with its colours of trials and tribulations, but often at the expense of structural and institutional analyses	K2, 2:28 "Because people always want to, people relate to people. So, when you use people's faces, the story becomes more weighty. And it has that confidence that is not being told from one-point perspective."
	Dramatization and novelty	Focuses on controversy and the excitement that conflict generates as well as on freshness over continuity	N 3, 6:30 "Except it is a disaster of a monumental what I say now. You know, except it is a huge disaster, it might not make the coverage. You know what you read every day in the paper. You understand. Maybe the economy and entertainment, politics. It [climate change] is not the kind of story read every day. It's not the kind of story you read everything".
	Balance and objectivity	Reportage is dispassionate and gives roughly equal weight to oppositional frames (consensus climate change claims and opposing views)	K2, 2:30 "Yeah. So, now you bring in these voices; so, the story becomes rich, and then now the reader decides on now the path to choose because our responsibility as a journalist is not to promote this technology; it is but to give information. So, now the reader has a choice on whether to adopt this or that".
	Contextualisation	Coverage is interpretative with sources and claims evaluated based on the "weight-of-evidence"	S1, 8:39 "obviously, as you have years of experience, you are curating it in a way. So, when I'm on the phone with the climate change denialist who may be very valuable in terms of telling me about export markets and coal quality and things like that. When he tells me, carbon is good for the planet, I ignore him, and I don't put that in my article

			(laughs). You know, so, I am curating it. But that's years of me..."
	Authority-order	Coverage turns more to authority figures	K2, 2:59 "And when it involves, you see, prominent in news also sells. When you're talking about maybe a villager in Turkana, nobody knows them. So, they are not movers. But when you are talking about US, you know, the United States pulling out of the Paris Accord or the Paris Agreement, and the climate change agreement, now it becomes; it is a big story."
	Clarity	Reportage emphasises clarity of language and understanding	N3, 6:15 "It must be demonstrated in a layman's language, you know, to the lowest strata of the society, for them to understand that some of the things they are going through is not a deliberate government's effort to make people suffer but people's habits, formed habits over a year."
Condition of practice	Routines	Focus on patterns of activities that a reporter engages during his work hours	K2, 2:9 "So, I actually came across that story on Twitter. And we moved in there with my photographers. And we did the story. Yeah, so, normally, when you come up across a story on maybe on Twitter, let's say, you look for a local, you know, somebody to liaise with me and give you the exact location and what is happening. They can maybe help you towards the area..."
	Editors' influence	Focus on the editorial team and how they affect journalistic decision-making	K1, 1:32 " once they do that when they get to the newsroom, the editors are a bit reluctant to get these stories to run through."
	Reporter's interest/influence	Focus on the interest that reporters have and include their welfare, training and other incentives.	S4, 11:5 "I had no formal training as an environment and climate reporter as this training does not exist in South African newsrooms"
	Organisational influence	Focus on the media organisation, it's interests, expectations and the bearing it has on journalism	N2, 5:14 " The point I'm making is this, it is still basically hardcopy they are pushing out. So, if the pages have reduced, because there's not enough finances, and they are no sufficient finances to sponsor reporters to do work; then, there will not be enough space for such UNNECESSORY

			STORIES. So, the first problem we have is finance, and which, unawareness, which makes finance an issue."
	Audience perception/expectations/feedback	Focus on the reporters' perception about audience, what they think the audience like to see in the media as well as the kind of feedback they receive from audience.	N3 6:7 "People don't really understand what climate change is all about. So, you put the government on the spot and also make the people know, make the farmers, you know, get them to really understand what they're going through."
	Culture/social factors	Focus on the interface between the reporter and the wider society and include socio-cultural materials that mediate the relationship.	K2, 33: So, you cannot find the right voices to balance your story because you only find men or there are communities where women are not allowed to talk. Yeah, so, you know, they need clearance from their old man. So, unless they get approval, they will not talk to you. They'll say go and find information from my husband, who is not even there (laughs), who has gone maybe with the livestock. So, there're those challenges in rural Africa. Yeah. "
	Interviewee's demographic profile	Include basic information such as education, country of practice, number of years spent practicing journalism and if specialised in environment/climate change, the number of years spent in the special beat.	K1, 1:2 " I have a university degree in journalism and a diploma in journalism, from institutions in Kenya."
	Inclusive climate change coverage	Focus on including diverse social actors and perspective and the justification for such inclusive coverage	K2, 2:31 "And also, bringing in gender because you see, climate change affects different gender differently. So, when you are talking about climate change, also bring the voices of the women in the community, how it is affecting them, than the men in the community, and the youth. Because these are different people, and they are impacted on climate change differently. So, have multiple voices."