

12. Some aspects of climate change communication and effectiveness in PNG

Abstract: This article examines some aspects of climate change communication in Papua New Guinea (PNG), particularly the use of Tok Pisin language. To place the issue in a broader, global context, the article compares the situation in PNG with that of the use of Pidgin English in Nigeria. The article argues that a major project needs to be undertaken to determine the effectiveness of this communication. It suggests drawing on the experience of both the Bougainville Audience Study and the BBC Trusts' examination of climate change in Nigeria.

Keywords: BBC, climate change, Climate Change Development Authority, communication, Nigeria, Office of Climate Change and Development, Pidgin English, Radio Australia, Tok Pisin, *Wantok*

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. . . . tude ol pipel i pilim bikpela hevi tru ol i luksave tu long ol bagarap klaimet senis i ken kamapim.

Today everybody is sad. They understand the damage climate change can cause. (Solomon, 2019b)

Introduction

LIKE the rest of the Pacific, Papua New Guinea (PNG) faces sea level rises, increased ocean acidification, more intense cyclones and periods of heavy rainfall as a result of global warming (Pacific-Australia Climate Change Science, 2016; de Jong, 2019). For many Papua New Guineans global warming is a reality they are unlikely to debate.

For them, changes in climate, the increasing frequency of cyclones, erosion and the loss of habitats are visible every day. The PNG government appears set on a broad path of environmental and resource management and adaptation, but people, especially the *grassroots*, need to know what to do and how seriously to take the changing climate. This article sets out to sketch the range of messages being communicated to the people by different actors and asks how we can

determine whether those messages are getting through and being understood.

Climate change as a specific topic is of comparatively recent origin. The ABC-commissioned report *Citizens Access to Information in Papua New Guinea* (2012), for example, used the word environment, but not climate change. The report, produced by Intermedia Europe, found that more women than men regarded the environment as an important topic, but nearly half those surveyed said they did not know much about it. The report found information on the environment was of most concern to the residents of the Papua region, where almost a fifth of all respondents named it as one of the three important information issues for them personally (Intermedia Europe, 2012).

This article can only look at a small part of climate change communication in PNG. Many websites appear to be out of date or only intermittently updated, online archives empty and there is often more evidence that a particular communications project was intended than that it was ever completed. Assessments of how successful those communication projects have been almost non-existent because different parties appear to run their own projects with little co-ordination.

However, a number of models exist which could be used as the basis of a detailed province-by-province examination of a range of associated issues, including language, the trustworthiness of sources and the effectiveness and accessibility of different media. These range from single country projects such as the BBC World Trust's report on climate change in Nigeria to multi-national reports such as Di Gregorio et al's (2014) analysis of REDD+ stories in the national media of seven countries, including Papua New Guinea.

Of perhaps more direct benefit as a template for a provincial-level survey of communication effectiveness is Thomas et al.'s (2019) second Bougainville Audience Study. This was undertaken to gauge the response of 1,000 Bougainvilleans to information on the Bougainville Peace Agreement and related issues. These will be discussed in detail in the recommendations.

The government body originally charged with overseeing PNG's response to climate change, the Office of Climate Change and Development (OCCD) undertook an intensive period of consultation with a broad range of stakeholders, including government, NGOs and villagers and visiting 19 of the 22 provinces in the country. This was described as 'an overwhelming achievement for the organisation which still has a mammoth task ahead in reaching the local people in the remote areas of the country' (PNG Second Communication, 2014).

The OCCD acknowledged that introducing concepts of sustainable development as part of an overall plan of climate change mitigation and adaptation measures would require a continuing campaign to change people's minds about land use and persuading them to think in the long term. Methods involved or proposed included a cartoon competition for University of Papua New Guinea (UPNG) students. The OCCD also held workshops on climate change for UPNG

students with the idea that they would go back to their villages and help their communities (PNG Second Communication, 2014).

Also proposed was a 10-episode radio drama in Tok Pisin to make climate change topics easier to understand. Radio dramas have worked well in other countries, including the Caribbean and West and Central Africa with reports of a marked increase in people’s knowledge of climate change (Robbins, 2011; Perez-Teran et al, 2015).

Other, more traditional methods, have included the setting up of a billboard by the Madang Climate Change Committee. While it is in Tok Pisin and English, it is hidden behind a fence and bushes. This may have been done to prevent it being covered in *buai* (betel nut) spit or vandalised, but the text may be too small for some people to read at a distance (EMTV, 2016).

A climate change resource book proposed for schools by the OCCD, containing activities, quizzes and information, was delivered after a collaboration with the Wildlife Conservancy Society and the United Nations Development Programme (UNDP). The books appear to have been distributed to schools in stages over several years (Kisselpar, 2015; *Post-Courier*, 2017).

One of the mainstays of PNG’s sustainability programme has been the REDD+ process for reducing deforestation and forest degradation and promote sustainable use of forest resources. In contrast to the very broadly aimed intentions of the original OCCD communication programme, the REDD+ mechanism is more carefully targeted and declares that ‘Technical terminology about climate change and REDD+ should be explained in simple language and appropriate. All communication materials should be translated into Tok Pisin and English at a minimum’ (REDD+, 2017).

EMTV NEWS



Figure 1: A Madang Climate Change Committee billboard IN 2016.

The REDD+ policy document talks about the importance of social media, but as we shall see later on in this article, the evidence from the Bougainville Audience Study (Thomas et al, 2019) shows that this may not be the case outside urban areas. It is also curious that while emphasising the role of Tok Pisin, the REDD+ communications policy does not mention *Wantok*, PNG's only Tok Pisin language newspaper (REDD+, 2017). As a newspaper with a strong history of developmental journalism, *Wantok* provides regular coverage of climate change and environmental issues. On May 2019, for instance, the newspaper carried a story by veteran journalist and former *Wantok* editor Anna Solomon explaining REDD+:

REDD+ i tok save long yumi no ken bagarapim nabaut ol bus na diwai bilong yumi. Yumi mas mekim ol wok bilong lukautim gut bus na planim bek ol diwai long kisim ples bilong ol dispela yumi katim, Sapos yumi mekim olsem bai graun i no inap sot long ol diwai na kabon stok. (Solomon, 2019a)

REDD+ explains how we should not damage the bush or trees. We must look after the bush and replant any trees we cut down. If we do this we won't be short of trees that absorb carbon.

The same page also carried a report on how a combination of tidal erosion and heavy rain—symptoms of climate change—destroyed coastal roads and poisoned freshwater supplies in West New Britain:

Solwara na tait wara bilong ren i kam daun long maunten i wok long bagarapim rot bilong ol I kam inap tude we namba tri rot arere long ples i bagarap pinis na ol i yusim namba foa rot nau we ol strongpela kar olsem ol foa wil draiv kar i ken ran gut long en. (Solomon, 2019b)

Waves and floodwater brought about by rain in the mountains have destroyed a third road. A fourth road is passable using four wheel drive vehicles.

Despite the array of communications programmes and the number of actors involved, Bosip (2012) expressed concern about the fate of climate change mitigation projects, saying that people in different parts of PNG needed information on what worked elsewhere in the country. Writing almost a decade later, Jacobs et al. (2020) have expressed equal concerns about the viability of climate change related programmes due to a lack of infrastructure and poor governance:

Issues of governance, such as a lack of funding or funding delays, leadership and administrative instability and communication weaknesses to other layers of government were identified as obstacles to effective action

Solwara i daunim namba tri rot nau long Makasili



stori na ol poto: Anna Solomon

Ol pikinini bilong Makasili.



Solwara i bagarapim tru dispela rot long Makasili i go long Galilo na ol arapela viles.



Rot are long Makasili i bruk i go daun.

PLES Makasili i stap long Hoskins, samting olsem 1 na hap aua au-bait long Kimbe taun long Wes Nu Briten provins. Dispela ples i stap are long nambis na tude ol pipel i pilim bikpela hevi tru long solwara i katim rot bilong ol. Na ol i luksave tu long ol bagarap klaimet senis i ken kamapim.

Solwara na bait wara bilong ren i kam daun long maunten i wok long bagarapim rot bilong ol i kam inap tude we namba tri rot are long ples i bagarapim pisin na ol i yusim namba fosa rot nau we ol strongpela kar olsem ol fosa wil draiv kar i ken ran gut long en. Long sampela hap graun bruk klostu tumas long rot na i no longtaim bai i no seif tumas long ol hevi kar i yusim dispela rot. Ol mus ripota husati i bin go stap long wanpela

woksup long Kimbe em opis bilong Climate Change Development Authority (CCDA) wantaim Yunaitet Nesens Di velomen Program (UNDP) na warpela de ol i raun i go olsem long Makasili. Vavus na Pokii Wail Laip Menesmen eria. Long taim mipela i kamap long ples Makasili, ol pipel bilong ples na komiti wantaim tisa bilong elementeri skul i bin stap long toktok wantaim mipela. Ol i soim bikpela bagarapim long rot bilong ol. Elementeri skul tisa, Tito Wesley i tok mun Desemba em i taim bilong bikpela win na ren, na moa graun i save bruk i go daun. Tude, nambis bilong ol i stap daunblo tru na i no isi long go daun long ples we ol i save putim ol karu.

Lawrence Lama, i tok, "Sampela taim mipela i mas holim rap na go daun long nambis."

Elementeri skul tu long ples i kisim taim. Long taim bilong ren, wara i save go insait olsem na nau ol i wokim ol rupela klasrum i sanap long pos na i gat wara tenk tu bilong kisim kimpela wara bilong dring.

Ol mama i tok ol i save wokabaut longwe long painim kimpela wara bikos solwara i bagarapim ol hulwara are long nambis long ples. Ol pipel bilong ples i planim welpam na groim kaikai long gaden. Tasol ol i tok bikos rot i bagarapim ol bikpela kar bilong New Britain Palm Oil (NBPO) i no inap kam arere long ples long kisim welpam bilong ol.

Ol pipel i askim mipela long tok save long provinsal gamvan long helpim ol long stretim dispela rot bilong ol.

Provinsal administreta Williamson Hosea i bin toktok wantaim ol ripota

bihain long dispela lukluk raun na em i bekim sampela askim long dispela Hoskins-Koitomoto rot.

Mista Hosea i tok provinsal gamvan i luksave long dispela hevi tasol em i wanpela bikpela salens tru na i mas gat bikpela ensinria wok i kamap long stretim dispela rot. Em i tok tu olsem provinsal gamvan i putim samting olsem Kismien bilong stretim ol rot na bai ol i yusim sampela bilong dispela long stretim dispela rot long seksen bilong Makasili. Tasol Mista Hosea i tok tu olsem ol pipel i mas tingling long bihain taim bilong ol tu na muvim rot i go insait moa we i longwe long nambis.

Neks wik: Pasin West - Lukluk raun long Pokii Wail Laip Menesmen eria.

REDD+ em i wanem samting



Ol ripota i go lukluk raun long Pokii Wail Laip Menesmen eria. Dispela bus i gat ol wailpaal na ol hot spring i stap long en.

LONG mun Epril, opis bilong Climate Change Development Authority (CCDA) wantaim Yunaitet Nesens Development Program (UNDP) i bin holim wanpela trening woksup bilong ol mus ripota long Kimbe, Wes Nu Briten provins.

As bilong dispela woksup em long skulim ol ripota long luksave long REDD+ na ratim ol stori bilong REDD+ na olsem wanem em i tasim laip bilong ol pipel bilong PNG na long ol arapela kantri long wol tu.

Sapos ol ripota i klia long REDD+ program bilong nesenel gamvan, bai ol i ken ratim ol stori bilong skulim ol pipel long wotpe REDD+ em i lim-poten, na wanem samting long Papua Niugini i mekim nau long strongim dispela inspelan program bilong gamvan.

Insait long dispela wan wik trening, ol ripota i bin gat sans tu long go lukim tripele ples aussait long Hoskins we ol pipel i pilim bagarapim bilong klaimet

senis, na wanem samting wanpela lain ples i mekim long luklukim gut bus na ol diwai na ol wail paal pisin i stap long Pokii Wail Laip Menesmen eria. Em eria tu em i wanpela ples tambu bilong ol. Bikpela wok bilong REDD+ em long helpim ol kantri i wok long di-velop yet, long lukautim gut ol fores o bus bilong ol, wan kain olsem ol arapela kantri long wol tu i mekim, long stopim klaimet senis, aninit long Yunaitet Nesens Frem-wok Konvensen long Klaimet Senis (UN-FCCC).

Gavman bilong Papua Niugini i mekim ol wok bilong REDD+ olsem kartribusen bilong en long stopim klaimet senis aninit long Paris Agrimen. REDD+ bai helpim Papua Niugini long winim dirman bilong en long kamapim divelopmen, tasol long wankain taim tu, bai i no inap long bagarapim enwaioimen bilong en.

REDD+ em ol wok bilong Redusim Emissin long Diforesesen na Fores Degridesen na dispela mak (+) i toktok long konsevim fores long kabon stok, sastenabel menesmen bilong fores na strongim ol fores kabon stok (REDD+).

REDD+ i tok save long yumi no ken bagarapim nabaut ol bus na diwai bilong yumi. Yumi mas mekim ol wok bilong lukautim gut bus na planim bek ol diwai long kisim ples bilong ol dispela mekim olsem bai graun i no inap sol long ol diwai na kabon stok.



Figure 2: A page from Wantok newspaper, 2 May 2019.

and must be resolved for successful adaptation to climate change. (Jacobs et al., 2020)

The OCCD's successor body, the Climate Change Development Authority (CCDA) (CCDA About Us, n.d.) has as its stated objective 'to build a climate resilient and carbon neutral pathway for climate compatible development in Papua New Guinea.' (CCDA National Communication, n.d.). Its communication strategy appears to mirror that of the OCCD and to be just as diffuse, including:

Competitions (quiz, essays, debate), National and international events such as World Environment Day and International Natural Disaster Reduction Day, a university student-led awareness initiative, resource material development for primary and secondary schools, school visits and national consultations. (CCDA National Communication, n.d.)

One noticeable theme in reports on climate change communication in the Pacific and other parts of the world – see, for instance, Nosk-Turner (2014)—is that local people do not understand the science of climate change. However, all the evidence is that the local people being reported on appear to be perfectly well aware that climate change is happening and are adapting to it—or in the case of the New Guinea Highlands, finding new opportunities in it (Barnett-Nagshineh, 2015). This indicates that in a part of the world where the effects of climate change are so obvious, we have moved well beyond the point where people need to understand why it is happening and that concerns about whether or not the science has been communicated is perhaps misplaced. Emphasis on mitigation and survival, the key focus of the PNG's government, appears to be more important.

While the role of the news media in reporting on climate change and fulfilling a development role cannot be underestimated, neither can the use of Tok Pisin to convey climate change communication, something that has been acknowledged by many actors. However, changes to PNG's media landscape are mirrored in the changing nature of Tok Pisin and this may pose challenges to effective communication.

The current state of PNG media and Tok Pisin

According to the 2013 Pacmas report (Tacchi et al, 2013), Papua New Guinea's mainstream media, including radio, television and print, is the most vibrant and diverse in the region. Media penetration is highest in urban areas where the English-speaking population is found. The rapidly increasing mobile telecommunications sector and emergence of online media were significant factors. According to the latest figures available, which are for 2014, mobile phone subscriptions were 44.9 per 100 people, with 9.4 percent of the population using the internet (UN Statistics, n.d.). However, mobile phone use, while significant, faced challenges of poor reception and reliable electricity supplies to re-charge batteries.

Despite this, for many people mobile phones are their chief method of communication. People may still buy a copy of *Wantok* and read it out to their illiterate friends in the village, but many younger people in the village will have received their news from sources of varying reliability and using non-standard Tok Pisin on their mobile phone.

Research by Intermedia Europe (2012) found that while radio has traditionally been the dominant platform, more households now had access to mobiles than to radio. Many people were using their mobile devices to listen to radio programmes (Cave, 2011). Intermedia Europe also found that in PNG, mobiles were a common way to access the internet, particularly Facebook (Nosk-Turner et al, 2014).

The Intermedia Report made the important point that in Papua New Guinea whether people have access to the media is largely determined by geography rather than other factors, such as age, gender and education (Disaster report). It argued that regions could be termed 'media-rich' or 'media dark' (Intermedia Europe, 2012).

In PNG, media dark areas are predominantly located in the islands. TV and newspapers are mainly accessed in urban areas, so that radio and word of mouth remain a significant source of information, especially via family members and friends who travel between provinces in PNG. (Intermedia Europe, 2012)

Literacy rates in Papua New Guinea remain generally low, with the latest available UNESCO figures showing 67.9 percent for people between 15-24 years (UNESCO Country Statistics, n.d.) and the distribution of print media appears to remain confined largely to urban areas, as does television. The one regular print medium in Tok Pisin remains *Wantok niuspepa*, which was started by Father Francis Mihalic in 1970. While Mihalic said explicitly that he never intended *Wantok* to become the standard of Tok Pisin usage it has always been regarded as that, since journalists and subeditors are expected to use his dictionary as their guide. (Cass, 2011; 2014)

However, the version of Tok Pisin that is heard on the radio may be significantly different and the versions that are used in digital platforms, streaming services and text services may be even more different. While Tok Pisin was often lambasted, wrongly, as being a broken or baby English, it in fact had quite complicated linguistic rules and a small, but highly flexible vocabulary based around English and German (Cass, 2011; 2014).

Current developments may mean that *Wantok* remains an island of relative linguistic solidity in the changing fortunes of Tok Pisin, something similar, perhaps to Bokmål and Nynorsk in Norway, which are standardised written versions, but where there is no official spoken version of Norwegian. A similar

situation applies to the official written and spoken version of Fijian, which was created by Methodist missionaries from the Bauan dialect. A variety of regional dialects, often mutually incomprehensible, remain.

Tok Pisin appears to be experiencing a period of de-creolisation in which the variant of Tok Pisin spoken varies quite markedly from region to region. This was already noticeable in the 1990s when there were quite easily detectable differences between Tok Pisin as spoken in Rabaul (which my Tolai interlocutors described as ‘real’ Tok Pisin), the heavily Anglicised version spoken in Port Moresby (which I dubbed Waigani Pisin—as in ‘dispela five yia development plan’) and the machine gun fast Highlands variety (Cass, 2000).

Anybody contemplating using Tok Pisin as a medium for communicating climate change information has to make a choice about which version to use, and where. The standard Mihalic/Wantok version is the easiest to use since it has a set orthography. It may not, however, be immediately comprehensible to a person used to reading Tok Pisin as text messages or in very different forms online, or illiterate audiences who may hear different versions of Tok Pisin on the National Broadcasting Corporation (NBC) and commercial networks.

Zimmerman (2010) reports a complaint that many radio announcers mixed too much English into their Tok Pisin and were therefore hard to comprehend. She argues that the language in Wantok must have changed, saying:

One cannot expect a medium reporting on current events in a creole language to use a variety of over 30 years ago Addressing contemporary issues therefore necessitates the ‘invention’ of new words, although at least they are largely adapted to conform to Tok Pisin pronunciation and spelling. (Zimmerman, 2010)

Wanamp and Wakei (2014) on the other hand, say that Tok Pisin is influencing English. They speak of a need to re-standardise Tok Pisin, but admit that the creation of new words and new forms of Tok Pisin are attractive to younger users.

With the onslaught of modern technology, global changes and English, young people are coining new words and creating ‘short cuts’ which drastically affect their English proficiency skills. It is difficult to stop these influences that Tok Pisin has upon English and local vernacular. (Wanap & Wakei, 2014)

Radio Australia also broadcasts to Papua New Guinea, Vanuatu and Solomon Islands, in Tok Pisin, despite the fact that the neighbouring countries have their own variants, Bislama and Solomon Islands Pidgin. This means that PNG listeners can receive climate change news about PNG but also about their neighbouring states. This can range from general stories such as a report on former Kiribati President

Anoto Tong's address to the Intergovernmental Panel on Climate Change (Radio Australia, 2018) to country-specific reports, such as one on Vanuatu joining the international climate change strike (Graue, 2018).

Nigeria

Pidgin languages, whether creolised or in a state of flux, exist as *lingua franca* in many countries. Among the regions where English-based Pidgins are found is West Africa, particularly in Nigeria, but spreading to Mauritania in the north and Cameroon in the south.

Nigeria provides a mirror image of Papua New Guinea as a country where a substantial part of the population speaks Nigerian Pidgin English (hereinafter NPE) but where the language is despised and discounted by the English speaking elite and where historical circumstances and the lack of a champion—as Tok Pisin had with Father Mihalic—means that it has no set rules and appears to remain unregarded as a language in which climate change communication information could be transmitted.

That West African Pidgins are effective has been shown by research done on radio broadcasts used to communicate climate change information in West and Central Africa, a medium suggested by the PNG's OCCD . Among the countries targeted was Cameroon, which has an estimated two million speakers of a Pidgin closely related to NPE. As in PNG, it was noted that mobile phones are being used as radio receivers in the target area (Ojedele, 2016).

The official language of Nigeria is effectively English, which is mainly spoken in urban areas and is described by Olusola (2007) as being seen by the masses as an elite language. The three main language groups in Nigeria are Yoruba, Ibo (also spelt Igbo) and Hausa, while another 400 languages are also spoken in the country. NPE is widely used by the population and the media, but because it is looked down on, its full potential is not realised. Put into a PNG context, it would be like deciding that all climate change communication had to be done in Engan, Huli and Melpa (Hopwood, 2018).

According to Akinnaso (1990) Nigerian Pidgin is stigmatised because it is viewed as a corrupt form of English and is linked to illiterate 'uneducated' people. It is also seen as a threat to standard Nigerian English which is taught in schools and used in formal communication. Akinnaso describes post-colonial language policies in Nigeria as dominated by politics and identity, clashes between regionalism and federalism and other considerations. While most of these battles were dealt with long ago, they meant that NPE was never considered in education planning.

Olusola (2007) argues that the perspective of English as an urban/elite language makes it ineffective in communication environmental material. Akande and Salami (2010) argue that while Nigerian Pidgin is actually spoken by people

of all education standards and professionals, it is regarded with some horror by members of the professional and government classes:

... it has been observed that a large number of people across various sectors of the society including particularly those parents who are highly placed government officials, teachers, students in the universities tend to express disgust at its use by youths at home and school premises. This is because they see Nigerian Pidgin English as an inferior language meant for the semi-illiterates and low status members of the society ... In place of NPE, they have extolled the use of English and the three officially recognised indigenous languages (i.e. Hausa, Igbo and Yoruba) for communication. (Akande & Salami, 2010)

Following an examination of the situation in Nigeria, Olusola (2007) argued that indigenous languages were the most effective way of communicating environmental messages. It is noteworthy, however, that he does not recommend the use of NPE. He argues that coverage of environmental issues in indigenous language newspapers is quite low and appears to favour radio as the most effective form of communication.

An examination of environmental messages shows an alienation of most of the people who the messages are meant for. The reason is that the messages are packaged in the language that most people do not understand—English. The newspaper contents, and most radio and television programmes are designed in English. Not only does the language of packaging make the messages foreign and elite-oriented, it results in the ex-communication of the people who the messages are meant for. Even the indigenous language newspapers give very low coverage to development issues. Salawu's (2002) study on development content of Yoruba newspapers shows that all the development issues combined take 27.39 percent of editorial contents of issues of newspapers analysed. (Olusola, 2007)

Olusola, Oyesomi et al. (2018) argue that climate change information must be tailored to each community's economic, social and cultural situation: 'People's indigenous languages exert a lot of influence on the reception of development messages.' They advocate using indigenous languages to better communicate climate change information, but do not advocate—or even mention—NPE. It would appear that if the government, media or aid agencies were to communicate using indigenous languages then they would have to use hundreds of languages. Even using just the three main languages would either risk missing significant parts of the population or having to triplicate the work necessary. Using NPE would appear to be the most logical method of reaching everybody.

The question remains, however, why those proposing climate change education in Nigeria continue to ignore it as a medium for communication. On the evidence, the answer would appear to lie in a desire to concentrate on the three main language

groups, possibly for political reasons, and accept the risk of missing the speakers of the 400 other languages. It also appears likely that NPE is ignored because of the dismissive attitude to the language by those most likely to be making decisions about climate change communication.

The BBC

In 2010, the BBC World Trust programme Africa Talks Climate: Nigeria, reported that

. . . . in Africa, climate change is far from abstract—it is already determining the course of people's lives. Extreme weather events and greater unpredictability in weather patterns are having serious consequences for people who rely on land, lakes and seas to feed themselves and to earn a living. As a result, Africa's engagement with the issue is evolving rapidly, presenting an opportunity to leapfrog the slow evolution of Western public opinion and political action. (Cooke & Mohhamed, 2010)

The research focused on four key questions:

1. What changes have Nigerian citizens experienced in their climate and environment over time?
2. How do they explain and respond to these changes?
3. What do they know and understand about global climate change?
4. What do Nigerian opinion leaders know and understand about climate change and what are their views on Nigeria's response to climate change (Cooke & Mohhamed, 2010)

The report went on to say that it appeared that while most Nigerians had experienced the effects of climate change, they did not understand the causes. The report quoted one media worker as saying that 'Nigerians still look at it as one of those white scientific ideas that has nothing to do with us as a country' (Cooke & Mohhamed, 2010). The media worker went on to say climate change terminology could be better explained using Pidgin in TV drama and said it was like talking about HIV/AIDS.

Seven years after the report was written, the BBC World Service began providing an online Pidgin service to West Africa, just as Radio Australia broadcasts to PNG, Vanuatu and Solomon Islands in Tok Pisin. The BBC uses a mixture of the national variants in order to create a regional standard and the BBC's choices are creating a standardised language with rules governing usage, something that Tok Pisin has had since the 1960s (de Freytas-Tamura, 2017). Just as Radio Australia provides climate change news, so does the BBC's Pidgin service. The BBC appears to be creating rules for NPE usage. Examples of climate change stories include:

- Scientists for Cambridge dey plan to set up one research centre to develop new ways to repair di Earth climate.
- E go investigate radical method (approach) like refreezing di Earth poles and removing CO₂ from di atmosphere. (BBC News Pidgin, 2019)
- Di temperature for Antarctica—di coldest place for world—don pass 20C for di first time, afta researchers record temperature of 20.7C for one island wey dey di coast of di continent.
- Brazilian scientist Carlos Schaefer tell AFP say ‘dem neva see dis kain high temperature for Antarctica’. (BBC News Pidgin, 2020)

However, the catch for reaching a wider audience is that it is an online service aimed at the younger audience, which means many rural dwellers, precisely the audience that could probably benefit most from having climate change news provided in NPE, may miss out.

Recommendations and conclusion

From the foregoing information, it appears that it would be appropriate to investigate a number of areas of climate change communication in PNG. Questions that immediately come to mind in PNG are how and where people are gaining their information, in what language, in what variety of Tok Pisin and how effective the information is. Because a range of methods have been proposed or implemented by different actors, from billboards to radio broadcast to school books and especially because of different experiences of climate change in different provinces, any research will have to be multi-faceted and draw on a range of expertise and speakers of several languages.

The BBC Trust report is an example of large scale investigation, involving interviews in several languages, including NPE, with audience members, media workers and government officials. The research consisted of 24 focus-group discussions with citizens and 31 indepth interviews with opinion leaders across four states in Nigeria. In each location, focus groups explored one key environmental issue which has been linked to climate change, or may be exacerbated by climate change in the future. Importantly, the report identified the media and schools are people’s main sources of information. (Cooke & Mohhamed, 2010)

At the other end of the scale, Di Gregorio et al’s (2014) analysis of REDD+ stories in the national media of Brazil, Peru, Cameroon, Indonesia, Vietnam, Nepal and Papua New Guinea provides a valuable example of a desktop-based analysis of discourse around climate change mitigation. Analysing the opinions of policy actors, it spanned the period from 2005-2010 and looked at stories from three newspapers in each country.

It could provide a useful template for an analysis of how audiences have

reacted to or comprehended climate change information through letters to the editor at *Wantok* or in online fora around specific issues.

A more recent survey of communication effectiveness is the second Bougainville Audience Study (Thomas et al., 2019), which was designed to assess the response of 1000 Bougainvilleans to information on the Bougainville Peace Agreement, the Autonomous Bougainville Government and referendum preparations. It was intended to provide a guide for members of the government, the media and NGOs preparing public awareness campaigns for the Bougainville independence campaigns. (Thomas et al, 2019)

An earlier report demonstrated low levels of awareness due to poor access to media and government. More than 583 people took part in the research on Bougainville itself and about 250 semi-structured interviews were conducted to find out how people had received information and their opinion of it (Thomas et al., 2019).

In line with trends already noted (Nosk-Turner et al., 2014; Tacchi et al., 2013) mobile phones were the dominant communication medium. Two thirds of respondents said there was mobile coverage in their area. The main challenge with mobile phones was coverage and reception. Also in line with earlier parts of this article, the report noted a request that information be provided in Tok Pisin.

Of especial interest were the report's findings on audience perceptions of the trustworthiness of sources. These showed that clergy were the most trusted and that in general community leaders were considered the most reliable, with newspapers ranking in the middle and internet, Facebook and other social media coming last (Thomas et al., 2019).

The thoroughness and size of the survey were noteworthy, especially given that it was restricted to one province. Given that Bougainville is already suffering from the effects of climate change and has become a new home for people moving from the Carteret Islands, which have had to be abandoned, it would seem to be the ideal site for a survey of the effectiveness of climate change communication (de Jong, 2019; Rakova, 2014, Box, 2009).

Papua New Guinea faces huge problems with climate change. Educating the *grassroots*, finding ways for them to share information on best practice and engaging with communities across the country on this issue will remain an enormous challenge. A stocktaking of the communication processes used to share information about climate change can only help to prepare Papua New Guinea for the future.

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