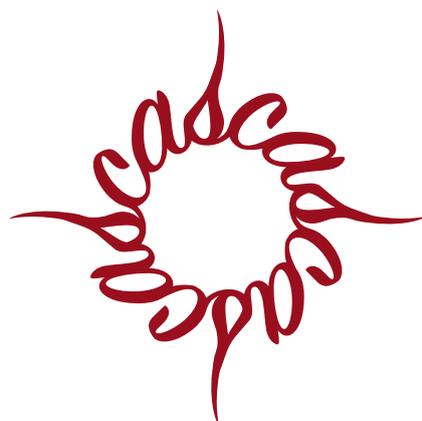# ASC–TUFS Working Papers

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# The 2015 Presidential Elections and Religion in Nigeria:
# A Comparative Study, from the Jonathan to Buhari Administration

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**Abstract**

A simplistic representation of Nigeria characterises the African giant as a country with northern Muslim and southern Christian sections. This regional and religious dichotomy hides ancient ethnic tensions rooted in Nigeria's colonial past. Since 1999, Nigeria's democratisation process has exacerbated national divisions during the presidential elections. Thereafter, the zoning system—a mechanism to manage the political tensions among northerners and southerners, between Muslims and Christians, and among the Yoruba, the Ibo and the Hausa-Fulani—was adopted, soon becoming a key characteristic of Nigeria's political landscape. Additionally, Goodluck Jonathan, as Musa Yaradua's vice-president, rose to the presidency after the latter's death. Jonathan's association with the Christian Association of Nigeria promoted a Christian agenda to fight against what they perceived to be Muslims' 'evil' plans for Nigeria. Through a comparative analysis of the period ranging from the 1999 presidential elections to date, the present study analyses the impact of presidents' religious affiliation on democracy, development and corruption in Nigeria.

**Keywords**: religion, region, ethnicity, democratisation, presidential elections, Nigeria

## 1. Introduction

Electoral conflict and political violence have characterised Nigeria's democratisation process, revealing weaknesses in the management of its elections and rules for healthy political competition, as well as the absence of an impartial judiciary that can interpret and adjudicate electoral disputes. The challenges posed by electoral violence underscore the country's initial transitional problems in managing elections and establishing institutions to manage competition in a way that its results will be widely accepted by both winners and losers. In Nigeria, political and electoral violence may express ethnic and/or religious contestations that justify the reactions of groups that feel disenfranchised because of their origin and identity. During the 2015 elections, incumbent president Goodluck Jonathan warned that if his opponent, Mohmamadou Buhari, won, the latter would Islamise Nigeria. This campaign platform transformed the electoral process, thereby emphasising religious identity rather than political programmes as the determinant of the country's development. Violent acts occurred at various stages of the electoral process, which led to large-scale extremist violence in north-eastern Nigeria. The fact that the elections led to such violence, in addition to the loss of life and destruction of property, raises questions not only about the organisation and management of the country's elections, but also about their long-term impact on the consolidation of political competition.

One of the key aspects of Nigeria's decolonisation was the transition of authority, from the hands of white settlers to those of Nigerian nationals. However, the country's independence did nothing to reduce the influence of religion and ethnicity in the management of state affairs, even though political leaders tended to portray Nigeria as nation-state, despite the complexity of its regional, religious, and ethnic diversity (Solomon and Leith 2001).

The aim of this paper is to understand the implications of ethno-religious identity in Nigeria's socio-political context, particularly vis-à-vis democracy. Indeed, the functional character of Muslim policies inherited from colonisation led to ethno-religious differentiation, which conditioned social promotion, access to high office positions, and even wealth. Consequently, ethno-religious markers have become the source of legitimacy for all unconstitutional power (Okpanachi, 2012). Thus, the inequalities that determine the national's recruitment to high office positions of different ethnic groups have been the subject of several studies (Dresang 1974, Mustapha 2002; 2004). However, it remains unclear how religion and ethnicity exacerbate socio-political differentiation in Nigeria. Therefore, our study analyses the instrumentalisation of ethno-religious identities in Nigeria's presidential elections. Considering the religious markers on the political ideologies that emerged ahead of Nigeria's 2015 elections and exacerbated that year, many people feared that the country's unity would be tested. The elections saw a Christian presidential candidate from the south, Goodluck Jonathan, facing stiff competition from Muhammadu Buhari, a Muslim candidate from the north. The extent to which candidates' religious identity captured voters' attention is the main concern of this paper.

## 2. Conceptual and theoretical justifications

Ideology and religion play a significant role in Nigerian public life, not only in discourse but also in strategic alignments (which are crucial in 'strength in numbers'-type power struggles). Nevertheless, the religious question has been largely ignored in Nigeria's past. British colonialists ensured that pre-existing economic and cultural divisions were maintained. Today, even though the majority of authors prefer to study Nigeria from an economic perspective, the theological axis remains highly relevant. The richness of the symbolic and religious spheres in Nigeria deserves to be studied from a secular perspective. Religion is an inescapable element if one is interested in studying African political societies in general, and the processes of democratisation in particular.

The Nigerian constitution provides that the government should not adopt any religion as the state religion. Section 38 of the constitution 'guarantees that every Nigerian citizen shall have the right to freedom of thought, conscience and religion, including freedom to change [their] religion or belief and freedom to manifest and propagate [their] religious belief.

Nigeria has secular jurisdictions at the federal level. However, twelve of the thirty-six federal states apply *Sharia* (*i.e.* Islamic) law. These two legal systems operate concurrently, with recurring compatibility problems. Out of 225 million Nigerian people, 53.5% are Muslims and 45.9% are Christians, of whom about 74% are Protestants or Evangelicals and 25% are Catholics (Mwangi 2015).

Furthermore, in some cases, elections and campaigns are rooted in religious sentiment. In this case, religion can be used to either canvass support for a candidate or dissuade the electorate from voting for them. This is why some Christians do not support Muslim candidates and vice versa. In 2003, Major General Buhari of the All Nigeria Peoples Party was criticised for his stand on religious matters, which indubitably affected his political prospects (Magbadelo 2003). As a perceived advocate of Sharia law and a fundamentalist, he was quoted to have said that Muslims should not vote for Christian candidates. This may explain his defeat in the 2011 presidential election in Nigeria. From the foregoing, it can be inferred that religion could be a dangerous factor in the electoral process (Umeanolue 2019).

There may still be some reluctance on the part of the scientific community to apprehend Nigeria's religious identities not as a fact but as a total social phenomenon. The phenomenology of religion concerns the experiential aspect of religion, describing religious phenomena in terms consistent with the orientation of worshippers. It views religion as made up of different components, and studies these components across religious traditions in order to gain some understanding of them. Religion is indeed a precious object of sociological and anthropological interest for understanding any society. The most apparent oppositions in Nigeria (non-native/indigenous, Christian/Muslim and inter-ethnic) underscore the generic and symbolic nature of the 'community' or 'ethno-religious' labels that categorise them. In Nigeria, freedom of the press and that of association have never been stifled; additionally, its electoral tradition is strong, while multi-party elections are a well-practiced affair. The centrality of the federal

state fuels tension between northerners and southerners (and between the southwest and east). Within this geographical division, there are also ethnic and religious divisions: Hausa-Fulani, Ibo and Yoruba (the 'Big Three'), as well as Muslim and Christian. A simplistic characterisation often presents Nigeria as a country in which the north is Muslim, while the south is Christian. However, this does not reflect the reality on the ground, as Yoruba people, who are mostly Muslim, do not feel that they are northerners, which distorts the dichotomy between the Muslim north and Christian south. For this reason, ethnic and religious identity is strongly attached to the ancestral territory of Hausaland, Yorubaland and Iboland, which are concepts that exclude other ethnic nationals but are not religious (Nicolas 2002). This type of process has led to strategic manipulation by identity-based entrepreneurs who are attached, in their search of political power, to the affirmation of this identity—sometimes ethnic, sometimes religious—by local aristocracies and the leaders of political formations who covet control of sources of enrichment or local or federal power, and who do not hesitate, depending on the circumstances, to make provisions for either one or both identities to achieve their ends.

The centralisation of 80% of oil revenues at the federal level makes the conquest of political power at this level a major issue in the country. Ethnic identifications have also developed from the opposition and reification of the categories of non-native and native.

The political management of the differences that existed before Nigeria's independence has continued and intensified with the democratisation of the country since 1999; it has become a legal framework for dissociating natives and non-natives and for establishing quotas in public services, to access certain jobs and gain admission into university (Bach 1997). This management of ethnic and religious differences, still characterised as an apparent opposition, is challenged by Adam Higazi, who argues instead for an entangled opposition (Loimeier 1997). Ethno-religious differentiation was, for the most part, localised to each federated state. However, religious confrontations have always had a national dimension. At the heart of the opposition between Christians and Muslims is the syndrome of encirclement, where each faction perceives itself to be under siege by the other. This suspicion dating back to the pre-independence period was exacerbated by democratisation because of a combination of recurrent controversies (debates on Sharia law in 1976–1978 and 1986, Nigeria's entry into the Organization of the Islamic Conference in 1983, and the contestation over the transfer of the capital to Abuja from 1976 to 1991), the perception in the North that Christianity is progressing in its traditional zone of influence (especially in the Middle Belt region) and the development of radical religious movements (Evangelicals, Pentecostals, pro-Wahhabi and pro-Iranian reformists), especially among student associations, youth and the wealthy and urban strata (Peel 1996, Loimeier 1997). These ambivalent movements do not hesitate to demonise the other, especially through the intensive use of the media (Marshall-Fratani 1998).

Politics and religion in Nigeria have an inextricable relationship. The common idea in Western democracies of a clear separation between religion and politics amounts to relegating the religious pole to the private domain, while political power is assumed to reign, in all autonomy, in public spaces. When one affirms that there would be, on one side, 'the government of myth' and 'rational behaviours' on the other, one may impose a watertight partition between the two domains. Such a Western conception of clear and legal differentiation between the 'temporal' (*i.e.* secular) and 'spiritual,' when analysing democracy in Nigeria, should be questioned using a critical approach, inciting to redefine and reposition the interdependence of the 'politics-religion' dyad (Isaac 2014). This is because religion can be used for state management in a multi-faith society such as Nigeria.

> Like exclusivist clubs, cliques, or cults, members offer each other unmerited help, favors, and considerations. This is what makes the politicization of religion most objectionable in a multi-faith society like Nigeria because the objectivity of 'brothers' in public offices is likely to be blurred by religious considerations in serving a heterogeneous community (Takaya 1992).

Accordingly, there is simultaneously coexistence between these two terms—thereby defining a 'theological-political' approach—and an opposition; further, these fundamental notions constitute a dyad linked by a long history. This history sheds light on the multiplicity of this relationship's forms and transformations. In addition, the relations between political and religious authorities are constantly modelled to compose new social landscapes.

There are some fundamental principles underlying religious factors in Nigeria's electoral process. One of these is how religion often determines the choice of flag bearer/running mate for the posts of presidents and governors in some states. This is done to ensure that the interests of the adherents are protected. When this principle is adopted, there is usually a Muslim/Christian or Christian/Muslim ticket. Thus, in 1979, the National Party of Nigeria adopted a Muslim/Christian ticket, whereas the Unity Party of Nigeria did not take religion into account, which led to its adoption of a Christian/Christian ticket (Ayantayo 2009). Perhaps Chief Awolowo identified this as one of the reasons for his defeat in his presidential bid, as he later chose a Muslim from the North as his running mate in 1983.

Some military regimes have even recognised religion as a factor in governance. For instance, the Murtala/Obasanjo era was a Muslim/Christian ticket, while Obasanjo, upon becoming the Head of State, chose a Muslim as his deputy. Both Abacha and Abubakar maintained the status quo, as they picked Diya and Akhigbe (Christians) as their second-in-command, respectively. During the civilian regime, the Obasanjo/Atiku regime was Christian/Muslim. Yar'dua/Jonathan was a Muslim/Christian ticket, while Jonathan/Sambo was Christian/Muslim. Similarly, the current regime of Buhari/Osibanjo is

Muslim/Christian. In subsequent political dispensations, religion has been a sensitive factor in choosing principal officers at the two levels of the National Assembly. These instances show that political parties and administrations have recognised religion as a key factor in governance in Nigeria (Umeanolue 2019).

Nigerian society is characterised by great heterogeneity in almost all areas of social life. While this may appear to be a source of conflict, such diversity is also enriching. While many differences can be found among Nigerians from one end of the country to the other, at least one commonality must be noted: they have an omnipresent religious fervour. However, today, this faith in God is becoming the privileged instrument of a handful of individuals who are affected by the *vis dominandi* (*i.e.* the desire for power). These religious effervescences both stimulate and slow down political reconstructions, as religious cults can alternatively be the instrument of power or the weapon of socio-political contestation. We would like to highlight the apparent domination of the temporal on the spiritual by emphasising the true interdependence that exists between these two powers in the context of democratisation in Nigeria. As politics work on religion, religion works on society.

## 3. Ethno-regional and religious identity fault lines at the federal level

Muslim politics in post-independence Nigeria seems to have replaced the political exploitation of the Uthmaniyya (Njeuma 1994). The Uthmaniyya system can be understood as a set of spiritual and institutional guidelines governing the actions of Usman Dan Fodio's followers. These instructions—which amount to a constitution for the administration of Sokoto and Adamawa—can be described as a 'memorandum for the jihad in Adamawa' (Aminu 1992). Usman Dan Fodio advocated the pragmatic application of Islamic law and tradition as the best means of maintaining the trust and confidence of Adamawa's citizens. This treatise and the many other publications of Usman Dan Fodio and the other Sokoto writers were greeted with considerable interest, while attempts to apply their recommendations and instructions became the basis of public administration by Muslims in Nigeria (Last 1967).

The advent of political parties, combined with Amadou Bello's desire to unite the entire North under his own banner, crystallised identities at the federal level. The ordination of the Uthmaniyya to Tafawa Balewa (the then-Prime Minister) by Amadou Bello, for the purpose of strengthening unity in the North, completed the religious dimension of the federal government and invited Islam into the national political game. The fear of non-Muslim populations of expansionism at the higher state level sustained separatist and revolutionary discourses in Nigeria's political life at different stages of its evolution. It should be noted that the notion of the republic in Nigeria, is determined by constitutional changes. While the first republic inherited the 1951 Constitution, the second republic owed its existence to the promulgation of a new constitution in 1979. The latter was put on hold by military regimes, thus giving rise to a third republic. Despite these various socio-political changes, we must bear in mind the instrumentalisation of

Islam and ethnicity in Nigeria's post-independence politics. This constitutional instability is indicative of a vast ethno-regional and religious divide in Nigerian civil society.

The first line of fragmentation is ethnic diversity (Anonymous 1960): Nigeria is a country with over 250 ethnic groups. The three dominant groups are the Hausa-Fulani, Yoruba and Ibo. The second line of fragmentation is region: Nigeria is also divided into rival groups based on region. The North and South argue over the national scene. The third line is religion, which is represents a deadlock between ethnic groups. All these fragmentation lines operate in a complex tangle.

The Hausa-Fulani or Muslim northerners are considered followers of the Dan Fodio heritage in public affairs in Nigeria. Therefore, the tangle of opposition that Higazi (Nicolas 2002) referred to must be put into perspective. The Muslim north embodies the specific identity markers of 'northernism' that the Uthmaniyya system referred to: the legacy of the nineteenth-century Islamic jihad, Muslim sultanates and emirates, the reign of a rigid Islam, isolationism (illustrated periodically by xenophobic pogroms against southern citizens) and the hegemonic rule of the political class at the local and national levels.

The Yoruba population is concentrated in the southwest. In fact, Yorubaland is a region divided into former kingdoms that were often hostile. The region is divided into a more islamicised northern area that is partially open to the northern Hausa-Fulani influence (corresponding to the former continental Oyo empire) (Encyclopedia Britannica n.d.) and a maritime south, dominated by a regional bourgeoisie born out of the cocoa trade and carrying an ideology that is both tribalist and progressive.The Ibo are mainly anchored to the southeast, although they are found in urban centres across the country—they are predominantly Christian. Their region, which failed to gain independence in 1967–1970 under the name of Biafra, is also divided into two areas: one continental and one maritime. Contrary to the perspective of the secessionists, who presented it as a coherent nation, the Biafran project was, above all, a continental Ibo formation whose hegemony was rejected by coastal minorities. Coastal minorities refused to accept continental hegemony, and a large part of them joined the federal system, thereby obtaining two Ibo states in 1967. Further complicating this ethno-religious and politico-ethnic tension is the wide dispersion of small ethnic groups within the preferred areas of the dominant groups. This poses an administrative challenge to both local and federal governments.

Nigeria balances an ineffective and corrupt civilian government and a repressive and corrupt military government. Political instability, economic recession, Muslim politics, regionalism, and divisions are among the problems that exacerbate ethnic tensions to the extent that the nation's survival is threatened (Gordon 2003: 15).

Frequently, ethnicity is more important than national identity, loyalty or class consciousness. Yet, we must keep in mind that ethnicity is neither the only nor the primary identity of Nigerian individuals. Indeed, from the late 1960s onwards, the use of 'identity strategies' emerged on several fronts in

Nigeria's political history. Various sub-trends co-exist within this rather vague category, the common ground of which is the idea that political leaders actively and continuously construct a religious identity based on Hausa/Fulani relationships with other southern ethnic groups. Thus, there is some inspiration from such interethnic relation in this approach. Broadly speaking, the interethnic relationship underpinnings that can be detected include the situationist, interest-group, and power conquest's strategy, as understood in praxeological theory (Yengo 1997).

In other words, strategies are conceived as conscious and purposeful (referring to purposes that are usually economic and/or political). The identity strategy based on religion—in this case Islam—from this point of view, mobilises and (re)constructs a set of symbols and practices in a continuous movement of redefinition in relation to other ethnic groups in the South and the Federal State. This is certainly not a theological strategy, although the temptation to Islamise, while always present, is of no interest to successive Nigerian political leaders in the Muslim north. We examined the impact of regional and religious differentiation on national unity in Nigeria through the implementation of a non-constitutional Muslim policy.

In addition to the existing north/south and Muslim/Christian divide, there is an economic disparity that dominates Nigeria's regional relationships. The country's oil reserves are all located in the south, specifically in the Oil Rivers region of the Delta State. The North, which has long demanded a share of these oil profits, built a massive pipeline (with the approval of the federal government) across most the country to transport oil directly from its extraction point in the south to its distribution point in the north.

Another key factor in interregional relationships is competition for agricultural land. Both nomadic and sedentary herders, mainly Fulani, were forced to change their routes or relocate because of the climatic crisis in West Africa during in the 1980s. This has caused the relocation of pastoralism towards the south. This relocation has been the source of many local conflicts, not only for religious reasons, as mentioned above, but also because of lax regulations on transhumance corridors, which has led roaming of herds to damage farmers' fields. This opposition between sedentary farmers and nomadic herders has become one of the main sources of conflict and has taken on a religious dimension in the media, where it has been characterised as a conflict between Muslims (herders) and Christians (farmers). However, the main issue in these confrontations remains that of land, the key to self-sufficiency and food survival.

The British were satisfied with the division of the country (centred on the 'Y' formed by the Niger and Benue rivers) into three large groups called the 'Big Three' (World Culture Encyclopedia 2022)—*i.e.* the Hausa-Fulani, Ibo and Yoruba. Each of these groups was thought to comprise millions of individuals; however, in reality, these three giants are surrounded by more than 200 ethnic minorities that were obscured by their colonisers to simplify a purely political spatial configuration. After Nigeria's independence, these groups' exclusion only amplified the discontent of these minorities, who stood up against the hegemony of the Big Three. United by the same cause and, above all, not wanting to continue

to be disenfranchised, they have constantly tried to take over the tactical positions of public administration, the first of which is the national army (Adetoye 2016).

Even today, individuals belonging to ethnic minorities comprise the majority of federal police personnel, which stirs up jealousy in some and a superiority complex in others. As a fourth force, they believe they are the guarantors of national unity, which is threatened by constant confrontations between the Big Three (Sanda 1976). With such strategic positions at their disposal, ethnic minorities have gradually succeeded in obtaining from successive military regimes the constitution of an increasing number of states. However, this division into federated states has not proved to be an ideal solution, since even today these groups, which were very closely linked at the time, are also competing for land, jobs, subsidies and power.

Nigeria's geopolitical field is also marked by a third divide, based on religious affiliation. This opposition seems the most apparent today. Each group previously had its own socio-political functioning, which stemmed directly from its customs and traditions. Until then, the large dominant ethnic groups had scarce contact with each other, as they lived mostly self-sufficiently.

Thus, attention must be focused on the role played by the military and civilian elites in post-independence Nigeria to understand the instrumental impact of ethnic and religious identities on the administration of the country. The ruling class is divided between ethnic, regional and religious affiliations. These affiliations are, in turn, crossed by alliances likely to promote the interests of the elites, from the perspective of the monopoly of political power and the accumulation of wealth. Indeed, we observe that ethnic, religious and regional identities do not reinforce monolithic solidarities among ordinary Nigerians. In other words, there is a strong tendency for competition and conflict across ethnicities, religions and regions.

Among the elites, the purpose of any positioning struggle is the maximisation of resources and wealth for individual well-being and the creation of patronage networks through government control, especially at the federal level. The rest of the population is impoverished and oppressed by the succession of the military regime. Under these conditions, any attempt to challenge the governments that would threaten the interests of the elites leads the latter to appeal to ethnic, religious and/or regional divisions to pit communities against each other. These manoeuvres can be observed from the first republic to the later military regimes, as they wrestled for access to the state and social promotion.

## 4. Post-independence pluralism between politisation and religionisation

Theoretically, independence gives rise to general euphoria among its supporters. This is because independence not only opens the way to 'modernisation' but also to political stability and democratic freedom. Political leaders and intellectuals conceived of the post-colonial state as beneficial to collective welfare and not as a political institution that could be hijacked by certain social forces to pursue their

own prejudicial interests. The concept of 'nation-building' has become the key word for both politicians and intellectuals in Nigeria:

> Theoretical prebendalism refers to patterns of political behavior that reflect as their justifying principle that the offices of the existing state may be then completed for and then utilized for the personal benefit of office-holders as well as that of their reference or support group. To a significant extent, state in such context is perceived as congeries of office susceptible to individual and communal appropriation (Joseph 1983: 24).

National unity and integration were to take root in the political system while the economy became extroverted, dependent and underdeveloped. The euphoria of post-independence development gave way to the constraining realities of dependence and underdevelopment. Instead of political stability, democracy and development, Nigeria is plagued by political disintegration due to ethnic, regional and religious rivalries. In a political system where politics is reduced to zero, while cultural pluralism based on ethnicity, regionalism and religion prevails, political instability becomes the norm rather than the exception.

In fact, in Nigeria, the term 'zero politics' refers to an economic concept applied to democratic governance. It encapsulates the concept of the zero-sum game, where the winner takes over all resources. Looking at the practice of politics in Nigeria, the zero game was initially based on the politics of sharing allocation, yet it is now a zero-sum game (Vanguard 2013). Today, political actors in Nigeria are involved in the game to benefit themselves. It is a situation in which one politician's gain comes only at the expense of another politician's loss. The net balance in total wealth allocation is now zero, meaning that the resources that should have been used to develop the nation are taken over by political actors for their use (Ashindorbe 2022).

James O'Connell (1967) emphasised the 'inevitability of instability' in Nigeria. Ethnic groups on the fringes of power—whether civilian or military—were fighting to supplant the regime that was deemed to be failing to take power. The failure of successive governments to improve socioeconomic conditions has led civil society to believe that religion is a panacea for both individual and collective problems. Religious communities have formed important channels for the expression of frustration. In other words, this has led to the politisation of religion and the 'religionisation' of politics by political and religious leaders. The quest for political power relies on religion to reinforce ethnic and regional antagonisms.

Thus, religious identities at both the individual and collective levels oppose other ethnic and regionalist solidarities to the extent that they exacerbate the polarity between Islam and Christianity and the conquest of political power in Nigeria. Thus, Nigeria's independence has reinforced ethnic and religious rivalries over the control of political power. The rise of this phenomenon has been perceptible

since the early days of the First Republic. Umara describes this intertwining of religion, region and ethnicity in Nigerian politics as follows:

> An increase in concern of the part of ostensibly religious collectivities with governmental issues and, secondly, an inflation of interest among those with declared religious communities in coordinating the latter with secular-ideological perspectives and programmes… Politisation and religionisation are mutually amplifying processes, in that the more religious the state becomes, the more it provokes expansion of the activities of ostensibly religious actors along political lines (Ibrahim Umara 2014).

Thus, the role of religion in regional and national politics is demonstrated in Nigeria's post-independence events. To understand the evolution and complexity between ethnicity, religion and power, it would be interesting to analyse the historical trajectories of suspicion, recrimination and agitation to show their impact on Nigeria's politics. The political crisis during the first republic led by Tafawa Balewa originated from religious considerations. The northern leader, Sir Ahmadou Bello, who was Sardauna of Sokoto, embarked on religious expansionism, which became the cornerstone of the Muslim politics of the nascent nation. Southerners accused northerners of prioritising Islam to expand the Sokoto caliphate.

Ahmadou Bello was actively engaged with traditional authorities in the Middle Belt through alliances openly formed based on religion. Indeed, when Nigeria became a member of the Commonwealth as a republic on October 1, 1963, with Azikwe as its first president, the Nigerian federation maintained governors in each of its four regions.

In the North, Prime Minister Ahmadou, a Fulani from Sokoto, and Governor Kashim Ibrahim, a Kanuri from Borno Maiduguri, hold reins of power. In the East, Prime Minister Okpara is from Umuadia, while the Governor is a national from Abakaliki province. In the West, Akintola is an Ijebu and the Governor is from Oyo. In the Central West, Osadebay is from Benin Province, while Governor Mariere is an Urhoho from the Delta. At the federal level, Prime Minister Tafawa Balewa is from the North (Hausa-Fulani) and President Azikwe is from the East. Thus, the first republic was defined on purely regional and ethnic lines. The North is dominated by the Hausa/Fulani, the West by the Yoruba and the East by the Ibo. All three regions and ethnic groups aspire to superior federal state control. However, there is no cordial agreement among them regarding the methods of distribution of national revenues and key positions[1].

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[1] Interview with Deputy governor of Borno State, Maiduguri, 7 September 2008.

In 1966, with the elimination of the Action Group (AG), the Northern People Congress (NPC) and the National Council of Nigeria and the Cameroons (NCNC) can no longer hide their internal dissension over census figures, which give the North a majority of 29.8 million people compared to 25.76 million for the three southern regions. Fearing northern hegemony (with 168 seats in the assembly), the AG and NCNC announced that they would campaign together in the upcoming elections. In response, Ahmadou Bello's NPC formed the Nigerian National Alliance, which included a few small parties in the south (Chike Obi's Dynamic Party, Harold Dappa Birye's Niger Delta Congress, and James Otobo's Midwest Democratic Front) and, above all, the Nigerian National Democratic Party, which Akintolo formed from his faction and NCNC elected officials from the western region, led by Chief Remi Fani-Kayode.

The AG and NCNC, convinced that Muslims were hindering their candidacy in the North, decided to boycott the federal elections. The boycott was widely distributed in the East and West. This led Azikwe to deny Prime Minister Tafawa Balewa the authority to form a government. Faced with threats of secession and an army uprising, Azikwe bowed to the pressure and agreed to form a government of national unity without AG. Disorder spread in the West, following the victory of the United Progressive Great Alliance. Thus, the main feature of politics in the first republic was not only the ethnic identity of the political parties but also their strong regionalist and religious tendencies.

Under these conditions, the first republic was not only shaped by the centrifugal forces of ethnicity and regionalism, but also by electoral malpractice and communal violence. The Tiv uprising, which had been contained since 1960, broke out in 1964. This uprising was indicative of the reaction of a minority, repressed and oppressed by a regional government determined to maintain its hegemony. The failure of the police to maintain the law and order led the army to come to the rescue.

The existence of communal identities that can mobilise citizens in divergent ways challenges national unity, especially since it is conditioned by political unity. Thus, to avoid social division in Nigeria, researchers such as Nnoli (1978), Nwosu (1978) and Achike (1978) suggest that regionalist, ethnic or sectarian alternatives are possible. However, such alternatives are often reductive because they are inspired by binary models that fetishise the identities in question. For example, the idea of adopting the American political system, a two-party presidential system, does not seem to solve the Nigerian enigma because it limits the country's politics to a bipolar distribution that is not representative of its complexity. Conversely, this complexity seems to be perfectly suited to a multiparty system. Nigeria, a country subject to a dynamic game of variable polarisations, is thus abusively reduced to a game of opposition between the state and a centrifugal current with a regionalist, 'tribal' or confessional base.

The impact of the First Republic's 1951 Constitution on the country's instability can be seen at three levels. First, with the regionalisation of the government, the state weakened any possibility of national unity and integration, as there was no national forum where the emerging Nigerian elite could discuss the future of the country. Second, it gave rise to an ascendancy of ethnicity and regionalism in the

political process. The political parties that emerged to contest political power were crowded exclusively through ethnic mobilisation within their respective jurisdictions, which is contrary to national sentiment, but their goal was to win political power. Coleman stated that:

> There is little doubt that the implementation of the constitution of 1951 accelerated the drift towards sub-group nationalism and tribalism. Educated Nigerians who aspired to fill the new positions of power and status opened up to Nigerians by the Constitution realized that their most secure base of support would be the people of their own groups. The indirect electoral system strengthened this realization (Coleman 1960: 74).

Nigerian opposition should not be based solely on a confrontation between Muslims and Christians, nor should it stop at a simple regional confrontation between two poles—North and South. The proportions have probably changed since 1963 in favour of the two imported religions. However, the 70% rate put forward by the Muslim authorities seems largely exaggerated. The voluntarist strategy of certain political-Muslim circles, which tries to unite the Muslim electorate with the national whole comes up against divergent positions opposing the southern Muslims to their northern co-religionists. The former are reluctant to politicise their religion, while the latter, strongly supported by the local Muslim monarchies, are sensitive to the calls for mobilisation launched by various radical Islamist currents that refer to the models disseminated by their Arab, Pakistani, Iranian or black-American counterparts, as well as to the writings of the leaders of the local jihad in the 19th century. Amadou Bello is a political figure situated between the medieval Islam of who he claims is his grandfather, Uthman dan Fodio, and the Islamic reformism he encountered during his travels in the Arab world[2].

While claiming to be a Dan Fodian, Northern Prime Minister Amadou Bello (1954–1966) worked tirelessly in the shadows of power for the unity of his region and to strengthen the influence of Muslims in the Nigerian federation. He argued that political unity had to be achieved through religious unity. His assassination during the first coup d'état led Muslims to find another charismatic leader who embodied the North in the federation: 'The coup leaders justified the coup with the need to eradicate tribalism. The coup d'état came when the southeast region, dominated by the Ibos, was virtually excluded from the coalition that governs the country. Most perpetrators of the coup are Ibos (among the eight officers, seven are Ibos and one Yoruba)' (Kane 2002).

Islam is closely linked to power in Nigeria. What is interesting to note here is that the search for the purification of religion has become a search for the political foundation of the state. Since religion is the foundation of the Sokoto Caliphate, Hausa/Fulani hegemony is de facto not detachable from Islamic

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[2] Interview with Adam Asjiri, Maiduguri, 7 September 2008.

religion. Thus, Islam is the focal alibi for the legitimacy of the ruling class in northern Nigeria, and political leaders from this region present themselves as defenders of this faith. Thus, since the Jihad, the proclamation of the fear of Allah, the consideration of Dan Fodio as the Bawan Allah (servant of God), and the trust in the will of Allah (Ikon Allah) are prerequisites and persistent political-economic aspects among the northerners (Falola 2009, Waziri 2020).

Therefore, northern Nigerian Muslims have not abandoned their quest for an Islamic state. Civil war gave them the opportunity to conquer, convert, or humiliate the infidel and subjugate them once and for all. Northerners have found unwavering support in Arab countries as they fight for the cause of Islam[3]. Therefore, Christians believe they are fighting against Islamic expansionism, while their warlords are implicitly supported by the Pope, who stated that his 'beloved people are suffering in Biafra' (Udoidem 1997: 159).

Thus, politics became a zero-sum game (Omoh 2013); no impersonal rules were sufficient to regulate resource allocation and the access to office and its spoils. Because the state itself was the major source of money and opportunities, it could neither remain outside these conflicts nor effectively assert its regulative functions. In effect, it was unable to maintain cohesion, which facilitated the establishment of stable bourgeois domination and hegemony (Ashindorbe 2022).

The interweaving of religion, ethnicity, and especially region plays a crucial role in Nigerian politics. The race for power and control is rooted in Nigeria's political and religious history. Competition for divergent worldviews, embodied by religious and ethnic leaders who aspire to political office, distorts the political game and fuels the ambitions of the military. We have attempted to identify the components and manifestations of the Muslim polity in Nigeria, which posits that, if not an Islamic state, at least one Muslim must lead the nation in order to perpetuate the Dan Fodian legacy. However, this aspiration is difficult to implement because of the complex diversity of Nigeria today. The problem of establishing an Islamic state must be understood in conjunction with the nature of national politics, ethnic composition and the competition between Islam and Christianity. The failures of a biased state that is unable to extensively develop the country have opened the way for the radicalisation of political Islam. The dynamism of fundamentalists of all stripes must first be understood in light of the Nigerian elites' failures to formulate a coherent societal project oriented towards the satisfaction of the general interest. These political settings have imposed upon the country the adoption of an unconstitutional arrangement between northerners and southerners, as well as between Muslims and Christians, for the sake of the country's development.

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[3] Interview with Kiary Tidjani, Maiduguri, 5 September 2008. Refer also to Miles (2000).

**5. Zoning system**

The principle of zoning and rotation of power is a philosophy of power-sharing adapted in Nigerian political competition. It is widely known that this system was practiced in Athens and Sparta. The Roman Empire used it to great effect, thereby increasing its profits. Zoning and rotation principles are part of a democratic culture used to address the problems inherent to a polyglot society. It counters the negative impulse and tendency of a group of people to remain in office for as long as possible and uses the resources of the nation to service its narrow and parochial interests. It also offers itself as an antidote to a practice that engenders nepotism, promotes corruption and breeds inefficiency, which in turn stultifies growth and sustainable development. The Nigerian constitution provided that there must be a national spread and balance in such a way that a particular ethnic group or tribe is not seen as dominating.

> The composition of the Government of the Federation, or any of its agencies and the conduct of its affairs shall be carried out in such a manner as to reflect the federal character of Nigeria and the need to promote national unity, and also to command national loyalty, thereby ensuring that there shall be no predominance of persons from a few states or from a few ethnic or other sectional groups in that Government or in any of its agencies[4].

The constitutions of the dominant political forces in Nigeria—the All Progressives Congress (APC) and the Peoples Democratic Party (PDP)—have supported the principles of zoning and power rotation since 1999. Nigeria adopted a democratic system on May 29, 1999, after 16 years of military rule. Partial agreement on power rotation is not yet recognised in the deferral constitution. Therefore, power rotation in Nigeria has remained an unconstitutional agreement between northern Muslims and southern Christians via the zoning system. The zoning system is a mechanism that manages the problem of presidency among the majority religious and ethnic groups in Nigeria. This provision gave the southerners a sense of belonging after the North produced the nation's President/Head of State in quick succession. The PDP decided to zone the presidency to the South to compensate the Southwest due to the annulment of the June 12 presidential elections in 1993.

Article 7 subsection 2 (c) of the PDP constitution states how elective and party offices should be shared or zoned. The party constitution states poignantly that in pursuance of the principles of equity, justice and fairness, the party shall adhere to the policy of rotation and zoning of party and public elective

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[4] 1999 Constitution of the Federal Republic of Nigeria in Section 13 (3) and (4).

offices, which shall be enforced by the appropriate executive committee at all levels (PDP Constitution 1999).

In essence, the section that is not yet prescribed in the federal constitution but clearly stipulated in the 2009 PDP Constitution states that power must rotate between the North and South every eight years. Based on this, some proponents of zoning contend that former President Olusegun Obasanjo won the presidency in 1999 and was re-elected in 2003. The late Umaru Yar'Adua took over in 2007 to take the turn of the north for another eight years but died in office after protracted illness on May 5th, 2010. His death paved the way for Goodluck Jonathan to emerge as president, a development that has led some to request him to jettison the zoning arrangement and contest the 2011 presidential election (Oguntola 2010).

Since the demise of Umaru Musa Yar'Adua, there has been debate regarding the politics of zoning among PDP members. Some strongly believe that power should remain in the North, while others believe that zoning is no longer relevant and that it should be jettisoned. The provision of the 1999 constitution allows President Goodluck Jonathan to contest the 2011 election, irrespective of his tribe.

Before the 2011 presidential election, President Jonathan met the Northern Political Leaders Forum (NPLF) for support. This forum consisted of northern power stalwarts and brokers, led by Mallan Adamu Ciroma. The talks between President Jonathan and the NPLF collapsed because the NPLF gave him two demands to meet. The demands included that he should only spend one term in office and ensure that power shifts to the north in 2015 (Alli 2011: 2). As a result of not reaching a consensus on the matter, President Jonathan rebuffed the NPLP leaders over these demands and decided to get fresh inroads into the North through alternative power brokers and northern groups. To stop President Jonathan, there were also plots by opposition parties and the northern power stalwart to defeat the PDP in the election. The plot was designed in such a way that the PDP would not get the required number of votes in the Northwest, which had 18.9 million voters, which would make it difficult for Jonathan to obtain the required number of votes in 24 states (two-thirds).

The 2011 presidential election, which was held on April 19, 2011, showed that northern Nigeria wanted the power to shift back to that region. Muhammadu Buhari, a northern Muslim from the Congress for Progressive Change party, faced the incumbent Goodluck Jonathan, a Christian from the Niger Delta in the south and a candidate for the ruling PDP. The influence of the PDP was highly undermined by the growing influence and assertion of the Congress for Progressive Change in the states of Kano, Kaduna, Katsina, Gombe, Borno, Bauchi, Jigawa, Niger, Sokoto, Yobe and Zamfara (Oluwashakin, Awopeju, and Adelusi 2012).

The presidential election divided the country along ethnic and religious lines. As election results trickled on April 17, and it became clear that Buhari had lost, his supporters took to the streets of northern towns and cities to protest what they alleged to be the rigging of the results. The violence began with

widespread protests by supporters of the main opposition candidate. Various protests degenerated into violent riots or sectarian killings in the northern states of Adamawa, Bauchi, Borno, Gombe, Jigawa, Kaduna, Kano, Katsina, Niger, Sokoto, Yobe and Zamfara. Relief officials estimate that more than 65,000 people were displaced and more than 800 were killed. These murderous riots, according to Akinola, 'bespeak deep-seated divisions in the Nigerian polity (Neuman 2015).

Muslim rioters targeted and killed Christians and members of ethnic groups from southern Nigeria, who were perceived to have supported the ruling party, burning their churches, shops, and homes. The rioters also attacked police stations, ruling parties, and electoral commission offices. In predominately Christian communities in Kaduna State, mobs of Christians retaliated by killing Muslims and burning their mosques and properties.

Buhari's supporters stated that the riots in the days after the April 16 election—in which homes, shops, churches, and mosques were burned down—were spontaneous, but Jonathan's ruling PDP blamed its opponents: 'The orchestrated violence that greeted the election especially in areas where the APC won overwhelmingly was a direct fallout of inciting comments and directives made by their leaders even before the conclusion of elections' (Afolabi and Avasiloae 2015).

President Jonathan's decision to run for president in 2011, in disregard of the PDP's zoning arrangement that brought him to office as vice-president in 2007, was among the reasons mentioned by riot leaders (Aonduna 2011). Indeed, for many people in the North, President Jonathan had violated the tacit zoning agreement, according to which the president and vice-president should be one Muslim and one Christian. To maintain balance in a country with more than 250 ethnic groups and where tensions between communities are frequent, Nigeria also practices zoning by alternating every two terms between a candidate from the north and a candidate from the south. Therefore, President Jonathan had indeed broken the PDP's tacit agreement, according to which the party should have nominated a candidate from the North for the presidency. The northerners expected to retaliate during the 2015 Nigerian presidential election and return to the supreme office.

## 6. The 2015 presidential elections, religious competition and discussion

In the 2015 presidential election in Nigeria, the incumbent President Jonathan would run for re-election, as despite declining approval ratings, he was still thought to be popular and had several high-profile supporters (Diwomo 2014). Jonathan officially confirmed his candidacy on November 11 at a rally in Abuja and selected Mohammed Namadi Sambo, a Muslim from Kaduna as vice president: 'After seeking the face of God, and in the quiet of my family, and after listening to the clarion call of Nigerians, I have accepted to present myself to serve a second term' (Thomson Reuters 2014).

Jonathan and his running mate received the party's PDP nomination. However, this was against the unwritten zoning agreement, and opposition to Jonathan's candidacy led to the defection of dozens of PDP members of parliament in the House of Representatives (Monica 2014).

Desperate for second-term office, although Jonathan succeeded in arranging the top four country representatives from his party, he did not appreciate the speaker of parliament's transfusion to the APC.

Even though Jonathan considered presenting a more inclusive ticket rather than playing with divisive agendas that favoured only a portion of the population, he must have also understood that for peace to exist, it was necessary to compete while adopting a state of mind that sees Nigerians as equal regardless of creed or religion, and add that the aspect of equality calls for sensitivity in the dissemination of political positions without compromising competence (Owen and Usman 2015).

Ordinarily, there would have been nothing wrong with a Muslim-Muslim or Christian-Christian ticket in a democratic dispensation if there were mutual trust and respect for the human person and if the overriding desire for the pursuit of political office was the promotion of the common good. Referring to certain past events, the Catholic Church leaders explained that unity was fostered by a balance between religious and regional interests. They asserted that the country's despotic military eras in the past, including most juntas, ensured a balance of religious architecture in their regimes as a means of ensuring unity (Famave 2019).

When Jonathan said that the APC would Islamise Nigeria if Buhari was elected, he was supported by some religious leaders like Pastor Bosun Emmanuel in his wake-up call. A constitutional conference was held in Abuja in late 2014. An audio message released by Pastor Bosun Emmanuel, who represented the Christian Association of Nigeria (CAN), began to make the rounds within and outside Nigeria. The audio message described General Buhari as an Islamic fundamentalist who, if elected, would *shariarise* Nigeria; it also stated that Christianity in Nigeria was on its way to obliteration through Jihad. Bosun claimed that Christians and Christianity were in trouble because Muslims were strategising to Islamise Nigeria and that Christians should be vigilant. Bosun's message reverberated throughout Nigeria after the message received massive amounts of listening and distribution.

Bosun mentioned the Murtala-Obasanjo, Obasanjo-Yar'adua, Babangida-Ebitu Ukiwe, and Abacha-Diya presidential tickets in the past, emphasising that there was a need to adopt a similar approach in the country at that time. CBCN members stated that the former presidential bills also applied to the heads of the various military formations and parastatals of the government (such as customs, immigration and finance institutions), with the aim of promoting unity.

Bosun argued that regardless of whether Jonathan was doing well and whether people were dying during his term, since Jonathan was a Christian, he had to remain in the presidency. If not, the APC would convert all Nigerians into Muslims. In fact, instead of focussing on evangelism, Pastor Bosun tried to impose his candidate on listeners by stating that 'G. Jonathan was 100% successful in the sight

of God even if he was not successful in the sight of men' (The Herald 2014). This should be considered as the pastor's personal opinion. It cannot be painted as God's opinion for that God is not a wicked God. For the APC, 'the pastor's allegations [were] flash' (Sociallogia Team 2019).

However, Bosun's statements require close scrutiny. If Jonathan had been 100% successful, why did commodities and fuel prices double overnight during his first term? Further, more than 13,000 people were killed by Boko Haram, which marked a rate of fatalities unheard of since the Biafra war. Additionally, the employment rate fell to 7% among graduates, the naira's value dropped on a nearly daily basis, unemployment became rampant in the agricultural sector, railway constructions are abandonned, the country's health infrastructure remains inadequate, while roads remain highly unsafe. How could Jonathan be successful in the sight of either God or human beings? The Bible states that 'when the righteous is in authority, people rejoice' (*New King James Version,* Prov 29.2). It should be noted that the Bible says 'the righteous'; it does not say 'the Christian'. People are not supposed to experience mourning. Further, during Jonathan's term, more than 200 girls (most of whom were Christians) were kidnapped by Boko Haram; however, Jonathan addressed this issue 100 days after the fact. This begs the question, when security and water are still an issue, how can people enjoy them?

Furthermore, in what appeared to be a belated reaction to an allegation by a Borno-based pastor, Kallamu Musa Dikwa revealed that the money given by President Jonathan to the CAN pastors was actually seven billion naira. Dikwa reiterated that the CAN leadership received funds on 21st January 2015 and gave three million to each of its state chapel. However, the pastor alleged that the CAN leadership distributed only a small fraction of what it received to its national membership, keeping to itself well over six billion naria (Sahara Reporters 2015).

The bribery's alleged objective was to instruct the pastors to preach against Buhari, in addition to derailing the Independent National Electoral Commission's (INEC) plan to use card readers. The PDP's Presidential Campaign Organization emphasised the party's concern for the INEC's use of electronic card readers in the forthcoming elections. Femi Fani-Kayode, Director of Media and Publicity of the Organization, raised this concern at a news conference in Abuja on Wednesday. 'Our position on the card reader remains that the machine has not been tested in any election' (PM News 2015). However, there is, in fact, a difference between using a permanent voting card (PVC) and a temporary voting card. While the latter was vulnerable to tampering, the former was not. The APC sustained the INEC's decision to use the PVC in the general election in Nigeria, while the PDP sided with Jonathan and refused the PVC to be implemented. They succeeded in obtaining lawmakers' backing regarding their opposition to the PVC, stating that the Nigerian law prohibited electronic voting. They assumed that a poor electoral system is a major cause of insalubrious political competition among power contenders, which consequently leads to electoral violence (LeVan and Ukata 2012).

Further, President Jonathan sought to postpone the election. In an interview, the former president Olusegun Obansandjo said: 'Jonathan is trying to play Gbagbo. He has a hidden agenda that can ensure, by any means, that he wins the elections. It looks to me that the President is trying to play Gbagbo' (Kayode-Adedeji 2015). Gbagbo is the former President of Cote d'Ivoire, who postponed the national elections until he was sure he would win. However, the election was inconclusive in the first ballot, and I (Olusegun Obansandjo) believe this is the sort of thing Nigeria may fall into, if I am right in what I observed as the grand plan and then in the run-off. Gbagbo lost 8% behind Ouattara and then refused to cede power (SaharaTV 2015). The former president's concern regarding the Nigerian poll delay turned out to be well founded, as the INEC President, Adhahiru Jega, told senators that he could not guarantee that presidential elections would be held in March 2015 (Premium Times 2015). Jega confirmed that he was ready on his end, but he could not offer guarantees regarding various security aspects that were beyond his control. He stated that he had no power over the military, as President Jonathan was the commander-in-chief of the armed forces. In January, the army chief stated that they were ready for the elections (Agbakwuru et al. 2015). However, in mid-February, the army stated they were busy fighting Boko Haram. Therefore, the Gbagbo scenario was becoming a reality. States where the PDP is suspected to lose elections, voters PVC happened to be stolen from INEC offices. Additionally, the Police in Delta State stated it had recovered 7,565 stolen PVCs in the state (NAN 2015).

In addition, Patience Jonathan, the then-first lady, stated publicly that the opposition party (*i.e.* the APC) would never hold a rally in her territory. Rotimi Amaechi, governor of the Rivers state, accused Mrs. Patience Jonathan and Nyesom Wike, the PDP gubernatorial candidate in the state, of instigating an attack on supporters of the APC in Okrika on Tuesday. Clearly, Mrs. Jonathan did not want the APC to campaign in Okrika, her local government area (The Cable 2014). No press release by the President condemned the violence in his wife's hometown. From that day, APC rallies were interrupted by violence against their candidates. Kaduna bomb explosion (Ibanga 2014):

> The Presidency yesterday expressed thanks to God that the perpetrators of Wednesday's twin bomb blasts targeted at both the former Head of State, General Muhammadu Buhari, and an Islamic cleric, Sheik Dahiru Bauchi, in Kaduna State did not achieve their evil motives of killing these two prominent Nigerians, saying that the country would have been set on fire if they had succeeded (Umoru 2014).

The violence escalation convinced President Jonathan to extend the state of emergency in the northeast of the country. These different persecutions and allegations made PDP seekers turn into the APC.

Coming back to the  the wakeup call, Pastor Bosun mentioned that 'in the Jonathan fear of Buhari policy to Islamise Nigeria, if he happens to be elected, because all APC executives' members are Muslims'. However, this argument was not true. In response to this assertion, the APC released a list of their interim officers who were Christians, to contest the Pastor's allegations. The following Committee officers were identified as Christians: Otunba Niyi Adebayo, ACN, Ekiti State, APC National Vice Chairman (Southwest); Chief (Knight) Tom Ikimi, ACN, Edo State, APC National Vice Chairman, South/South; Mr. Uzo Igbonwa, ACN, Anambra State, APC; Youth Chief Kenneth Kobani, ACN, Rivers APC National Ex-Officio (South/South); (…) (Nairaland 2013).

Pastor Bosun warned Nigerians against voting for the APC even though they produced a Christian candidate. This pretention shows that, to his eyes, only the PDP was sanctioned by God. However, this begs the question, does a political party matter to God? Obansandjo and Jonathan were Christian presidents, but did they evangelise the country? The Pastor stated that whether Obasandjo did the right thing did not matter as long as he was "a convenient child "because he is Christian. This is an insensitive opinion influencing presidential elections. Following the burning of churches and Christians deaths in Nigeria, if Jonathan had been a Muslim, the CAN would have been on his neck. It seemed as if Pastor Bosun had forgotten to mention that the so-called Christian president had failed Nigerians, and that even the CAN itself had failed Christians. For the Pastor, Nigeria's main problem was not corruption but rather a dwelled ideology within the Nigerian constitution.

However, all researchers of the Nigerian socio-political landscape acknowledge that the main problem of Nigeria is its corrupt leaders, both Muslim and Christian (Yagboyaju 2017). To what extent is Islam more strongly represented in the Nigerian constitution, compared with other religions? If we assumed that Islam was indeed more strongly represented, the CAN surely would have attacked such unbalanced religious representativity in the Nigerian constitution. No matter how many times Christianity is mentioned in the Nigerian constitution, this representativity makes no difference to the lives of common citizens if corruption is not addressed. How many governors in Nigeria are promoting the Kingdom's agenda (Sokoto)? How can Christian governors be considered incorruptible? Obasandjo was a Christian president, but it was under his authority that Sharia law was implemented in Zanfara and approximately ten different northern states. All that Obasandjo said at that time was that: 'Sharia [would] die a natural death' (Diala 2019).

Pastor Bosun stated that 'the 2015 elections should provide Lagos state with a Christian governor' (Akinnola 2014). However, the pastor failed to mention that the Muslim governor of Lagos state built a new eco-Atlantic city, constructed new railways, and cleaned up the city. This produces several questions: Had any Lagosians complained that the governor was Islamising them? Did the Pastor note

how Babatunde Fashola[5] curbed Ebola? What does the development of a country have to do with a person's religion? Fashola's wife is a Christian and has been one for years; however, Fashola did not try to convert her, even though the Pastor assured the public that Muslims would convert all of Nigeria into Islam. Therefore, the Pastor's discourse encapsulates how religion and ethnicity are blocking Nigeria's path to progress.

As tensions escalated ahead of the 2015 elections in Nigeria, some feared that the country's unity would be tested and that divisions would be exacerbated by an election that pitted a Christian candidate from the south (*i.e.* Jonathan) against a Muslim candidate from the north (*i.e.* Buhari). The elections would not be these candidates' first faceoff, but they were likely to be, by far, the most closely contested. However, the extent to which voters would consider the religion of the candidates was yet to be determined.

You can never divorce the religious sentiment from a typical Nigerian Khadijah Hawaja Gambo said: 'If a Christian leader does not have what it takes to provide good leadership, I will not vote for him merely because he is a Christian'[6].

'However, I will make a choice between that Christian leader and a Muslim leader who may not guarantee freedom of religion… so to that extent I may lead to the Christian leader but that is not how it should be'. Many Christians feared that Mr. Buhari had a hard-line Islamist agenda seeking stricter implementation of Sharia, as Islamic law is already in place across the north. However, Buhari believed strongly in the secular nature of Nigeria: he was not a religious bigot. He was not a fundamentalist[7].

## 7. Conclusion

The 2015 presidential elections in Nigeria allowed us to illustrate the material and symbolic violence resulting from the radicalisation of identities. A deeper analysis showed that the relationship between Nigeria's two key political and religious powers can be both unilateral and bilateral. More than manipulation, a domination of one over the other, there is a true interdependence that links politics and religion in Nigeria. If the temporal (*i.e.* secular) uses the spiritual to achieve its own objectives, the religious also has a strong influence on politics and contributes significantly to its production.

Since Nigeria's independence in 1960, the presence of strong ethno-religious identities has hindered the development of a truly pan-Nigerian identity. Politically, Nigeria is a federation of 36 states. Ethnically, it has 250 different ethnic groups, although 68% of the population belongs to one of the Big Three (the Hausa-Fulani, Yoruba and Igbo). Religiously, Nigeria is divided into two sections along its central belt, which separates the predominantly Muslim north and the predominantly Christian south.

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[5] He served two terms as Governor of Lagos State from 29 May 2007 to 29 May 2015.
[6] Interview with Khadijah Hawaja Gambo, Muslim resident of Jos, May 2014.
[7] Interview with Lai Mohammed, a spokesman for his All Progressive Congress (APC) party, June 2014.

How people choose to identify themselves is not necessarily a problem; however, in order to manage the plurality of identities, government authorities must create a national framework that everyone can identify with, regardless of ethnicity, tribe or religion. Since most Nigerians derive their sense of belonging from their ethno-religious background or from an affiliation attributed to them (*e.g.* native or non-native), the lack of a common citizenship among Nigerians reinforces polarities in ethnic, religious, regional and legal status. In Nigeria, identity-based conflicts mask deeper systemic issues at the heart, which include the relationships between political power and the access to resources and economic opportunities. Ethnic thinking and mobilisation are a result of this struggle for power, wealth and resources.

Since 1999, Nigeria has been governed under democratic systems by way of the zoning system as a power-sharing formula. The federal constitution's requirement for equal representation of all communities in key political and administrative positions to reflect the federal nature of Nigeria and the need to promote national unity must be a reality on the ground. However, gradually, this political party's governance arrangement has evolved into a system of patronage, a peace-making system of distribution and allocation of benefits. Instead of promoting a sense of belonging and equality, this political patronage, often based on ethno-religious factors, has contributed to marginalisation and corruption, leading to problems of integrity and legitimacy for the government. The government's inability to provide an effective electoral system for the equitable distribution of resources, to manage ethno-religious relations, respect the principles of responsible governance, and assume responsibility for protecting its population must be addressed, regardless of the ethno-religious identities of the leaders.

By studying the Nigerian conflict, it is evident that two main logics overlap: on the one hand, a vicious spiral of violence, and on the other, continuous and combined social mutations of the actors. The opening of the North to Islamic law has crystallised the passions already present. There remains a fear of the other, because of their difference at first sight, combined with a competition for power, which has constantly deepened antagonism, a privileged crucible for the emergence of fundamentalism on all sides. The multiplication of allegiances and reinforcement of identities, some pitted against others, are partly responsible for the economic crisis, which is responsible for the diffraction of society.

In a society that is becoming disorganised while facing a concretely non-existent state, the population needs to recognise itself in charismatic 'guides' and puts its hopes in these 'holy men' or 'supermen'. The sacred aspect conferred by religion significantly facilitates this recognition. Not finding itself in the system that governs it, society seeks a means of redemption. In such a theoretical framework, a so-called modern state is limited to a purely religious identity and divided entities that offer no reference, neither conscious nor unconscious, to society. It is necessary to renew three distinct but complementary dialogues: religious, political and politico-religious discussions. Only this resumption of communication or negotiation can provide hope for the pacification of Nigerian society and politics. Politics must reflect

society and vice versa. The simultaneous reorganisation of the relations between the top of the pyramid and its base is therefore necessary in Nigeria to find a common value for all: development.

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# Decoding Political Discourse on Digital Platforms in Africa:
# Rumour Networks among Rural Populace in Kenya's 2022 Elections

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**Abstract**

Rumour, a basic feature of rural livelihoods, has often been utilised to dispel fears and elaborate events deemed complicated. As ordinary people continue to adopt digital platforms to engage with the state and markets, rumours prominently feature on digital platforms, thus becoming definitive agents for political and social change. This study provides an in-depth analysis of how rumour was leveraged as a tool for political messaging on digital platforms in rural Kenya during the 2022 general elections. We argue that political actors made normative policy claims that were weaponised by the two dominant coalitions' supporters at the grassroots level through dynamic networks that spread campaign information. The weaponisation of policy statements transformed normative claims into age-old rumours that have aided political discourse in contemporary Kenya. As the rumours spread, the networks informed the recipience of political messages and their popularity. To build this thesis, this study uses empirical evidence gathered through fieldwork in an ethnography of the residents of rural central Kenya. We use social network analysis (SNA) to analyse the subject matter by picking key spreaders of information on digital platforms to show the networks on which they relied to spread their information.

**Keywords**: Kenya's 2022 elections, digital platforms, rumours, rural populace, social networks

## 1. Introduction

The appearance of ordinary people's stories on media platforms is common in Kenya's media history. Since the liberalisation of the airwaves in the late 1990s[1], there has been a proliferation of programmes that emphasise the plight of ordinary people on the airwaves[2]. To their listeners, these stories are sometimes breath-taking, especially because they can easily fall into the 'private' category. However, the storytellers are often willing to sacrifice their privacy for the favours (either fiscal or award of opportunities) they gain from the listeners from telling their stories. There are interesting parallels, in terms of what a storyteller gains, between radio-based stories and how stories are dispensed on the emerging digital media platforms such as Facebook and WhatsApp. For the purpose of our present interest, the loci of the storytelling in digital spaces are to establish the 'truth' of a specified matter, exploit the digital media's capacity to reach a large commune, solicit help from newly found commune/expatriate agencies, and re-affirm the 'controversial' lifestyles adopted by certain members of society. We see these loci as catalysts for the proliferation of storytelling in digital spaces by the ordinary masses in rural Kenya.

The prominence of these stories thrives on rural people's pre-existing desires to feature on radio and have their own stories heard through that medium. This desire has been a theatre for proving what is true and how that truth is gauged or measured, with stories that appear on media platforms seen as authentic, appealing, beyond reproach, and truthful. Because not all people have been fortunate to have their stories featured on media platforms, two key strands have emerged: On the one hand, Kenyans have solicited means to dispute some of the media-led discourses. To dispute prominent discourses on the conventional media, rumour has been the key tool that has been adopted by the rural populace to create alternative narratives and discourses that aid them in especially making sense of what they may regard as misleading political discourse promoted by the media. On the other hand, especially with the rise of various digital platforms, 'all stories' seem to matter. Therefore, the truth does not exclusively hinge on the appearance of the stories on the media because the emergence and prominence of the use of smart phones has advertently affected the influence of radio and television as most rural residents turn to digital spaces as alternatives. This attitude seems to be re-inventing the place of rumour in the

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[1] In the period from 1990 to 2000, Kenya's state-owned station, the Kenya Broadcasting Cooperation (KBC), predominantly controlled the national media landscape. The introduction of the 1998 telecommunications policy and law allowed the privatisation and liberalisation of the telecommunication sector (EPZ and International Research Network 2005). This led to a proliferation of vernacular stations across Kenya. By the year 2010, there were 372 FM frequencies that had been allocated to radio stations. From these, 233 were active and 139 dormant. Similarly, there were 109 television frequencies issued by the regulatory authorities, of which 71 were active and 38 dormant (see Githaiga 2013).

[2] Examples of such programmes are Kameme FM's *muiguithania* (reconciler, and Milele FM's *patanisho* (bringing together) breakfast radio shows. These stories are used by media houses as bait to expand their listeners' bases. One of their main characteristics is that people seem to participate in them through phone calls, as if they were in a therapy session or seeking solutions to their own private or family-based issues. Examples of such stories include a man complaining on Radio Jambo by Maina 2022 that his wife does not cook for him. <https://radiojambo.co.ke/vipindi/patanisho/2022-08-03-patanisho-tunalala-kama-kondoo-jamaa-amlalamikia-mkewe-kwa-kutompikia-omena/, Accessed on 4 September 2022>

society. In an election season, which is the focus of the present study, the number of stories that are told increases. Again, the capacitation of these stories to spread faster via digital spaces has meant that 'truth' is more diverse. Therefore, since an electoral season also demands the absorption and dispersion of vast pieces of information, the spread of rumours in electoral seasons has increased.

Before the spread of vernacular media (radio, to be specific), which widened the participation of local discourses and livelihoods, the attempts to establish the 'truth' of a matter was not entirely absent. A highly secretive *serikali* (state)[3] often forced ordinary people to seek alternatives to explain issues that they felt were not fathomable based on the official state discourse. Musila (2015) has offered examples such as politically motivated assassinations during the reigns of Presidents Jomo Kenyatta and Daniel Arap Moi. As a highly guarded secret, explanations of political assassinations did not make sense to ordinary Kenyans, who sought alternative sources to account for them in their own versions. Alternative accounts appeared in 'gossip' printed on the grapevine because the state media[4] were highly controlled. Therefore, the liberalisation of the airwaves in the late 1990s opened up the space for alternative political discourse. The various media-related reforms after the fall of President Moi's dictatorial regime precipitated changes that have complicated political discourse in the media spaces. These reforms, which resulted from disruptive technologies (Arthur *et al.* 2020), included the mobile money revolution called M-Pesa in 2007 and emergence of digital democracy[5]. These reforms not only complicated the nature of political discourse, but their increased adoption also complicated media ownership, which brought new actors into media spaces. To an extent, our present inquiry concerns the question of the identity of the actors on these new platforms. We propose that one way to approach this question is through investigating rumour as an agency for understanding political discourse in Kenya's contemporary political history as practised in digital spaces.

Rumour, although rarely discussed, has been central to political discourse in Kenya's contemporary political history (Musila 2015). The uses of rumour in political discourse have been diverse, ranging from critical issues of national concern to political competition. The 2013 and 2017 presidential campaigns by President Uhuru Kenyatta heavily relied on rumours fashioned against the key opposition leader, Raila Odinga, to mobilise voters. Key among these rumours were that Raila facilitated the persecution of the two leading candidates in 2013 that led to their implication with the accusations of crimes against humanity at the international criminal court (ICC)[6]. Others that spilt over into 2017 and

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[3] The local reference to the state in Swahili is *Serikali*; however, locals may twist this and replace the '*e*' with an '*i*', so that it reads as a highly secretive organisation, that is, combining *siri* (secret) and *kali* (high level).
[4] Before the liberalisation of airwaves, the Kenya Broadcasting Corporation dominated both television and radio networks in English, Swahili, and select local languages (see Githaiga 2013).
[5] For studies exploring the nexus between mobile money revolutionary usage and digital democracy, see Cheeseman *et al.* (2018), Nyabola (2018), Maurer (2012a; 2012b).
[6] An account of Kenya's 2007 elections and the conflict in the aftermath that led to ICC cases was reported by Verini J. 2016 <https://www.nytimes.com/2016/06/26/magazine/international-criminal-court-moreno-ocampo-the-prosecutor-and-the-president.html, Accessed on 8 August 2022>

2022 painted Raila as a *mganga* (literally meaning a traditional healer, but used in this context to mean a witchdoctor or an anti-Christ in a Christian worldview). In 2017, the Jubilee campaign also capitalised on Raila as 'uncircumcised', a rite of passage that is pertinent to the Gikuyu norms for ascending into leadership roles[7]. Although the former two sets of rumours were targeted at a nation-wide audience, the latter was notoriously amplified in the central Kenya region as it resonated with the cultural expressions of the Agikuyu.

In 2018, the fall out between Uhuru Kenyatta and his deputy, now President William Ruto, precipitated 'handshake' politics where informal agreement was reached to pave a way for Kenyatta to support Raila in the 2022 general elections. Thus, one of Kenyatta's main tasks was to undo the damage caused over the years to the person of Raila as a presidential candidate and re-shape 'Railaphobia' in central Kenya. Kenyatta's supporters in central Kenya seemed to understand well the magnitude of the effects of previous rumours about Raila on the central Kenya region, openly confessing that 'we [sold] rumours about him, and we will now embark on telling the people that we lied to them to win elections'[8]. This has proven to be a difficult task for the political class in the 2022 elections as the opposing side (Kenya Kwanza coalition) took advantage of the pre-existing 'Railaphobia' in central Kenya to mobilise support for Ruto's presidency, bringing about a political contest that has further complicated what many have historically described as an 'ethnic' mobilisation of votes[9]. As Nyabola (2018) rightly claims, online politics is usually a reflection of plug-off realities; the unfounded fears used in the previous elections in central Kenya to reject Raila's candidature were viciously used on the ground. The digital spaces amplified these realities by spreading the same fears to both on the ground and online audiences, at times leading to fierce exchanges in these spaces.

The 'handshake' politics had an enormous impact on different social media platforms as 'keyboard warriors', largely also referred to as 'bloggers' in the local setting[10], crafted messaging about the two

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[7] Uhuru Kenyatta was quoted by KTN News on 5 November 2015 as stating that the Gikuyu community could not elect a *kihii* (uncircumcised) as a president. See <https://www.youtube.com/watch?v=cJPOzxrTXKY, Accessed on 29 August 2022>. These same sentiments were repeated by Moses Kuria, the party leader of *Chama cha Kazi* (loosely translated as workers party) during the August 2022 campaign. Circumcision is an important rite of passage among the central Kenyan communities as it is regarded as a key component to qualify for leadership.

[8] These sentiments are associated with Uhuru Kenyatta's two key supporters in his bid to support Raila Odinga's campaign for presidency in 2022: former Starehe M.P., Maina Kamanda, and the Jubilee Party chairperson, Mr David Murathe.

[9] Ethnic mobilisation in Kenya has widely been studied as a phenomenon whereby ethnic groups in Kenya rally behind their own to negotiate for power (see Lynch 2015, Bates 1974, Cohen 1993, Gellner 2006). In 2022, this strategy was overturned as Ruto rallied the Gikuyu community against their own kingpin, Uhuru Kenyatta, who opted to support the long-time opposition leader, Raila Odinga. Ruto variously used the pre-existing fears from Raila's presidency that were dominant among the Gikuyu and new strategies that capitalised on Uhuru's shortcomings while in power by placing himself as an outsider, although he served a complete term as a deputy president.

[10] This study uses 'keyboard warriors' and 'bloggers' interchangeably. These two terms refer to active individuals on social media platforms who seem to be replacing the classic patron-client roles in Kenya's political competition. In Kenya, classical patronism used tribal kingpins as representatives of a constituency while promising rewards to powerful individuals who manipulated the voting bloc (Berman *et. al.* 2009). In digital spaces, keyboard warriors have been replacing the classic patrons speaking on their behalf. The keyboard warriors are vibrant people committed to creating content with an intent to manipulate votes in a given constituency. The keyboard warriors have been conducting their carefully strategised campaign with eyes on reward from politicians, and therefore their influence cannot be interpreted as representative of the aspirations of the ordinary people.

candidates at the frontline of political competition, some of whom were strong antagonists of these candidates. Key 'bloggers' included Dennis Itumbi for Ruto and Pauline Njoroge, a former anti-Raila campaigner-turned-key ally due to her connections with Kenyatta. These two 'bloggers' and others like them informed the discourse that characterised the 9 August 2022 election and official campaign period that started from 29 May 2022 to 6 August 2022. The debates about the elections and candidates were highly characterised by rumours and sentiments authored by 'keyboard warriors', that were aided, to spread like bushfire through the digital platforms. Using this context, this study seeks to analyse the kind of networks that such rumours shaped and utilised to facilitate the spread of political messaging in Kenya's 2022 electoral competition on digital platforms, focusing mainly on Facebook and WhatsApp as channels of distribution.

We explore rumour as a tool for political messaging in the 2022 elections by using research methods in social network analysis (SNA) combined with ethnographic data collected in two counties of central Kenya (Embu and Kirinyaga) during the official campaign period (29 May to 6 August 2022). We aim to analyse the kind of networks that spreaders of rumours exploited to succeed in political messaging. Embu and Kirinyaga are adjacent, and are among the larger central Kenyan counties. Kirinyaga's total population is 610,411, whereas Embu's is 608,599, according to the 2019 census (KNBS 2020). The residents of these two counties rely on agriculture for daily survival. They also engage in small-sized businesses to complement their incomes from the farms. These two counties' landscapes cover both arid and semi-arid areas, and many areas have emerged as urban spaces hosting a significant number of literate youths.

The paper is organised as follows: First, we begin by clarifying the terms and theoretical underpinnings of this study, and discuss how rumours were used in the 2022 political competition. We then explore the methodology adopted in the study, the final part of which section provides a description of the four strands of rumours that we used as empirical examples for this study. In the discussion section, we show the networks that rumours formed and exploited as they spread, before explaining their outcome and purpose. We then discuss our findings, and conclude with a discussion of the usability of similar studies and their centrality and potential to advance democratic progress in sub-Saharan Africa.

## 2. Definitions and theoretical underpinnings

The communities in this study are predominantly from central Kenya, and use Gikuyu, English, and Swahili languages to communicate in day-to-day conversations. This defines the choice of the concept of this study, which uses both rumours and gossip as connoting a singular meaning. In Gikuyu, rumour and gossip are best described by the word, *muchene*, connoting any kind of recent, unverified news or information about someone known to a subject. Similar to the views and claims of sociologists and psychologists (Bloom 2004, Dunbar 2004, Gluckman 1963, Foster 2004), *muchene* in the central Kenya

setting is not necessarily about falsehood. Just as Shibutani (1966) claims that the character of rumour is defined by the intensity with which it spreads, so it is with *muchene*. Depending on who tells *muchene*, the more widespread and widely told, the more plausible it becomes. The mediators of *muchene* are often women, who operate in a setting that is usually enabled by traditional networks of social gatherings. These social gatherings have been complicated by the emergence of digital spaces that have become pertinent to rural people's daily lives. The rumours analysed here thus feature on Facebook pages and WhatsApp as topics about other people or institutions packaged as narratives to mobilise for political victory. However, they are also stories with unverified 'truths' when they mention or imply specific people or institutions.

Although *muchene* is ubiquitous across the livelihoods of the central Kenyan communities, there has hardly been a systematic study that has focused on *muchene* in both cultural and political life. This is prevalent even though the mushrooming and ease of access to digital platforms has mediated a wide-ranging feature of rumour and gossip among the Kenyan public. Therefore, this study contributes to the literature stream that views peripheral communities as key to political discourse through a discussion of the networks of rumours that aid political decision making for the ordinary people. In his canonical studies, Scott (1985) notes that gossip is never 'disinterested' when made available in the social realm. He asserts that 'it is a partisan effort (by class, faction, or family) to advance its claims and interests against those of others' (Scott 1985: 282). As a 'partisan effort', gossip and rumours can serve an emancipatory purpose when used by the subaltern as a form of resistance seeking inclusion into hegemonic public discourse. This is achieved by allowing the emergence of subversive, alternative, and insurgent counter publics. As a form of resistance, 'gossip is a kind of democratic voice in conditions where power and possible regression make open acts of disrespect dangerous' (Scott 1985: 282). For the ordinary masses in Kenya, however, during the critical season when people are required to decide on whom to vote for, this Scotian view remains elusive. This is despite a candid discussion of its applicability in the Kenyan context by Musila (2015), who sees the possibility of rumours as a weapon of the weak against an all-powerful state. We take steps to complement Musila's (2015) work in this study by underscoring that, compared to the malicious gossip or character assassination used in hegemonic political structures, gossip and rumour in rural central Kenya do not necessarily frame or discredit an individual's reputation with a repressive disciplinary intent. Rather, they are broad and inherently ambiguous.

Following the insights from Musila's work, efforts that aim to analyse how rumours and gossip are used on digital platforms among the rural communities of Kenya are not only necessary, but are also important tools to unlock the complexities of expressing African rural livelihoods. We extend this analysis by underscoring how mushrooming digital platforms have given rumours and gossip a context to thrive, thus becoming relevant as a tool for asserting rights, claiming those rights, and political

contestation. This is as a result of these digital platforms' influence on rumours. Thus, the larger and unintended consequence of the rumours and gossip featuring on digital platforms has been that rural communities are being creative with the avenues of leveraging digital platforms beyond traditional purposes to seek interaction with the ordinary people and the state.

## 3. Methods in SNA

To understand the kinds of social networks that were created by rumours and what made them thrive in rural central Kenya, facilitated by digital platforms, SNA is applied to unravel how the networks of rumours were structured and used. We collected data on more than 100 participants from two neighbouring counties: Embu and Kirinyaga. Although the participants came from a rural area, they were identified as being familiar with urban life. We clustered the survey responses based on four key narratives that were popularised through Facebook and WhatsApp posts during the official campaign period in Kenya's 2022 general election. The author created the networks that formed around these discourses as the news spread. These narratives appeared at different intervals from the moment when they were kick-started by either the presidential candidates from the two leading opposite camps or significant actors during the campaigns. The narratives usually formed when the topics were at their peaks and, notably, the news peaked within a few days after embarkment. Using the four discourses, we targeted a maximum of approximately 50 people for each discourse to establish where they had obtained their sources of information. For analysis, we focused on participants whose mutual mentions exceeded two[11]. Each network was created in its own specific location in the area of research; thus, the participants were well familiar with one another. The study was conducted in the towns of Kirinyaga, Manyatta, Runyenjes, and Kirimari in Embu and Kirinyaga counties, among residents who were small-scale farmers and business vendors, young people in colleges and universities, and those in waged labour.

A network contains a collection of actors, such as individuals, groups, and organisations, who are represented as nodes in SNA, identified here as sets of rumour spreaders and ties between them (Wasserman and Faust 1994). In this study, ties are flows of information to the grassroots populace. The respondents are represented by nodes with two sets: men by circles and women by triangles. Among the nodes, both men and women who are referred to as 'keyboard warriors' appear as important central individuals in the social networks that were created. Centrality measurements in networks describe the levels of sending and receiving in relationships in which PageRank is used for measurement (see Gould 1987, Newman 2010). Central nodes mean that they have more ties to other nodes (Brin and Page 1998) thus revealing which individuals are critical as sources of information (Wasserman and Faust 1994,

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[11] To maintain and satisfy the target for the number of participants, the sociogram included some nodes that did not have mutual mentions, such as Watugi, Njogu, and Wanyaga in Figure 1, among others. However, the analyses depended only on the participants with mutual mentions, and their inclusion did not affect the overall structure of the sociogram.

Newman 2010, Prell 2011) and trust as they structure the networks. Central women are represented by diamonds, whereas hexagons represent central men. An arrow that connects nodes indicates the direction from the source of information. Some respondents claimed to have received news from two sources, and these are shown as bi-directional. Respondents who claimed to have had deeper prior knowledge of and relationships with one another, among whom it was therefore easy to trust information that was passed on, are represented in the same colour. As this question was followed by one on the kind of relationship that the participants had (the answer was usually based on the kind of relationship they had), thick margins denote seniority in age, medium margins denote a common understanding based on social status, and thin ones denote a junior status or no relationship at all. Using the participants' responses, we identified ties that showed the sources of information on the rumours that they spread (based on specified topics) or held onto during the campaigning period. For those who could, we asked them to identify the 'blogger' from whom the information originated. The outcome is illustrated in sociograms 1, 2, 3, and 4, based on the responses in the networks created by the respondents. These networks are connected by dense ties based on rural people's livelihoods, family ties, neighbourliness, or friendships (see Table 1).

Table 1: Relationships between rumour spreaders and receivers in the social-network graph for the sociogram in Figure 1

| No. | Relationship between the rumour spreaders and receivers | Number of ties in the social-network graph |
|---|---|---|
| 1 | Women group | 42 |
| 2 | Church group | 54 |
| 3 | Campaign team | 28 |
| 4 | *Nyumba kumi* (Ten-fold households)[12] | 22 |
| 5 | Table banking | 18 |
| 6 | School/ work colleague | 9 |
| 7 | Others | 72 |
| | Total | 245 |

Created by the author.

During the official campaign period (29 May 2022 to 6 August 2022), we created a social network survey using four key topics as they gained prominence towards the election date. From 29 May 2022 to early July, these conversations were tracked online. From 19 July 2022, the interviews were conducted mainly in person with the local people of the two counties in rural central Kenya that were selected for this study, which included participatory observations during travel trips to various parts of the counties.

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[12] Nyumba kumi (literally translated as 'ten-fold') is a state-led informal stratification of neighbours into small groups of ten households. It was initiated in the aftermath of the several cases of insecurity and terror attacks in 2013. Therefore, the main purpose of this initiative was to improve security by incorporating neighbours to survey on each other. Nyumba kumi strategises on concepts of communal livelihoods that have thrived in Africa, such as Ubuntu, Harambee, and Ujamaa. For additional studies on these concepts, see Kioko (2017), Mark (2017), and Muchangi (2016).

The four rumours selected for this study are an intriguing representation of how information and misinformation spread, forming specific networks in rural Kenya during the elections.

The four narratives were chosen based on their uniqueness in terms of the target and categories of the stories in which people engaged. Furthermore, they seemed effective in an election season. Thus, in themselves, the narratives were considered relevant and significant by the respondents. The responses were used to profile networks based on the four rumours. The responses to the set questions depended entirely on the interviewees' judgements of who the sources were. We then conducted an ethnographic survey using a select few. The narratives from our respondents appeared to form intersections that helped us decipher how the participants in these channels related to one another and the perceived sources of information. In each case, we tried to verify the connections as much as possible by establishing the relationships between the participants and those that they mentioned. The four networks that were created based on the select participants' responses might not necessarily have been representative of the thousands of other similar activities that have emerged on digital platforms in Kenya. Nevertheless, they provided a solid examination of the aspects of the networks created through the peoples' transfer of stories among one another on the digital platforms.

## 4. The four campaign items: from normative policy statements to campaign rumours

During campaigns, political aspirants are keen to articulate their intended policies to enhance people's livelihoods. This 'issue-based approach' to politics was amplified during the 2022 elections, when political mobilisation in Kenya was seen to be shifting from the client-patron ethnic-based strategies (see Kanyiga *et al*. 2022, Cheeseman 2022). The 2022 political mobilisation was particularly unique as the candidates made economy and gender the main issues of their campaigns. There were four contestants who were cleared to run by the national independent electoral commission (IEBC). Nevertheless, only two camps had a nation-wide appeal. The Azimio la Umoja One Kenya coalition (henceforth referred to as Azimio), led by Raila Odinga, radically committed to the gender agenda by appointing Martha Karua, a prominent human rights activist, as the running mate. The Kenya Kwanza coalition, led by William Ruto, manifested itself as an anti-establishment coalition championing the plight of those at the bottom of the pyramid with a 'hustler nation' rallying call that popularised the 'bottom up' economic approach. The seriousness of these issues was evident as each group countered the other with almost equal strategies. For instance, the Kenya Kwanza coalition offered to fill half of the cabinet positions with women, while Azimio offered the 'one county one product industrialisation plan'. Despite these being core issues, the usual, ugly, name-calling, propaganda-based mobilisation also thrived in equal measures. We chose some of these schemes and classified them as rumours.

The first set of rumours that we used claimed that Raila had purported to say that '*mitumba ni nguo*

*za maiti'* (second-hand clothes are for the dead). In what was largely considered as a slip of the tongue or misrepresentation of what the Azimio candidate meant during his manifesto launch on 7 June 2022, depending on which side of the coalition one enquired from, Raila, while outlining his policy to revamp the once lucrative local textile industry, alluded that the potential of Kenyan own-made textiles was inhibited by Kenya's continued importation of *mitumba* (second-hand) clothes. Millions of Kenyans depend on cheap, second-hand clothes imported into the country from the major developed countries. Raila's statement therefore became an easy tool to market his opponent's rhetoric of 'bottom up' economic model that had, since the start of the campaigns, been appealing to those at the bottom of the pyramid. News spread rapidly, with the political class ridiculing Raila as being out of touch with the lives of the ordinary people. Those opposed to Raila's candidature capitalised on the news castigating Raila's stance as insensitive. Politicians went to Gikomba, the biggest second-hand shopping centre in Nairobi, to show solidarity with the *mitumba* businesses vendors. Having spent thousands of shillings buying goods from poor traders, they ensured that the message made it to the top of the news articles using a hashtag, *'nguo za maiti'*[13]. As the political class went shopping in shanty kiosks around the city to show solidarity with the downtrodden, the messages about Raila's utterances about mitumba clothes spread like a bushfire in digital spaces, while those in the village received the message from those around them and the networks they had built over the years[14].

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[13] See the British Broadcasting Cooperation's (BBC's) Swahili story on this issue on 8 June 2022, available at <https://www.bbc.com/swahili/habari-61730561, Accessed on 9 August 2022>.
[14] Interview with Kimani Ndegwa, a *Nyumba Kumi* (tenfold) leader, at Manyatta on 10 June 2022, who narrated how his people became restless about Raila's statement on *mitumba*, asserting that *'huyu mzee kweli hajui shinda za mahustlers'* (this old man does not actually understand hustlers' struggles).

Figure 1:Raila's administration will ban the importation of second-hand clothes. Digital spaces network – created by the author.

*This sociogram was drawn based on the 'nguo za mitumba' rumour that started to spread on 7 June 2022. It is centred on Njeri[15], a 42-year-old blogger, who passes her messaging on Facebook and frequently visits the plug-off spaces on the ground. Wanjira is a leader of several chama (see definition in section 6) that meet on weekly and monthly rotations. She is active in digital spaces, and thus uses her time in chama to pass on news that spread in the digital spaces. Before the start of the chama activities during the slated meeting days, as many participants are usually late and there are no strict measures against time keeping, Wanjira would use the time to discuss current events on the campaign trails. Wanjira mostly claimed to rely on Wambeti, who described herself as a blogger and was active on Facebook and WhatsApp. Wambeti carefully managed to craft success on the mostly male-dominated campaign teams. She relied on the local representatives' inner circles to convey campaign messages as part of the presidential campaign team at the local level. The other two influential nodes were Nyaga and Gitonga, whose target audiences were mostly in digital spaces.*

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[15] All the names used here are pseudonyms derived from the local naming patterns of the Kirinyaga and Embu communities representing the participants.

On Sunday evening, 24 July 2022, local daily newspapers reported that at least 30 people had been killed in a grisly road accident when a bus travelling from Meru to Mombasa swerved off the notorious killer Nithi Bridge black spot[16]. The accident was said to have been caused by brake failure that had caused the driver to fail to control the bus at the sharp corner near the bridge. Several similar accidents have happened on the same spot in the past, eventually causing it to be assigned the 'black spot' status and leading to various people's uproar urging the government to change the design of the bridge[17]. Thus, Nithi bridge has carried the gory stories of horrific accidents for many years, such as one that occurred in 2000, killing 45 people[18]. A day before the fateful accident, the Azimio presidential candidate had just departed from Meru, a town near the scene of accident. As absurd as it may sound, rumours spread in plug-off spaces asserting that Raila had 'killed' the passengers[19]. These sentiments were shared in the online spaces but seemed to be prevalent in the plug-off spaces. Those who shared, however, were at a loss to explain what informed that kind of conclusion[20].



Figure 2: Nithi bridge accident. Digital and plug-off spaces network – created by the author.

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[16] See the news report by the EastAfrican on 25 July 2022 on <https://www.theeastafrican.co.ke/tea/news/east-africa/34-dead-as-kenya-bus-plunges-into-river-3891456, Accessed on 25 August 2022>.

[17] The two leading candidates also committed to redesign the bridge if they took over power. See the story appearing on the Star on 26 July 2022 on <https://www.the-star.co.ke/news/2022-07-26-i-will-re-build-nithi-bridge-once-elected-raila/, Accessed on 27 August 2022>.

[18] See the news item by F. Naliaka on Citizen digital on 25 July 2022 at <https://www.citizen.digital/news/the-history-of-killer-nithi-bridge-n302800, Accessed on 1 September 2022>.

[19] While on board the matatu to Embu town, a candid conversation started about the accident. A middle-aged woman, without mincing her words, blamed Raila for the accident, asserting that *'yule mganga akikuja huku lazima kitu mbaya ifanyike'* (whenever that 'witch' comes over here, something terrible is bound to happen; he is a bad omen).

[20] For this particular rumour, due to its bizarre character, I conducted several face-to-face conversations with those behind it. There was no coherent explanation for their convictions and utterances besides that they portrayed a hatred for Raila.

*Following the news of the Nithi bridge accident, rumours raged in plug-off spaces attempting to explain what had happened. This sociogram was drawn from a matatu (public van) conversation started off by Muthee, who seemed to closely agree with Nungari. We identified several passengers in the matatu; however, there were other names that emerged from people who did not travel in the same matatu. The rest of the nodes represent responses of people who were fairly familiar with one another as they travelled in the same matatu en route to the Kianjokoma location of Embu County. Matatu is a public space that offers a platform for random conversations that need no substantiation. The passengers share stories during the journey, although these stories may persist beyond the journey. Gachara, Michuki, Kawira, and Karimi are among the nodes that received the news a few days after the matatu conversation, from such nodes as Muriuki, Mathenge, Muthee, and Muthoni, who engaged in the conversation inside the matatu. The number of nodes that claimed to have news sources from digital spaces was limited, due to the choice of participants in the matatu; however, Mukami claimed to have obtained her news from a Facebook page that she did not identify.*

Around 28 July 2022, a short clip of Raila Odinga making a statement about his possible approach to mitigating the religious divide between Christians and Muslims, mostly by according favours to often marginalised Muslims while seeking state services, started to trend in various digital spaces. In the video, Raila states that he will address the historical favouritism towards Christians over all other religious groups in Kenya when he ascends to the presidency. In an election period during which one of the major coalitions had made religion a key mobilising factor[21], religious leaders and followers did not take the sentiments lightly. John W. Nguuh stated, 'this is a call for spiritual warfare and action for every serious Christian. As much as Kenya is a secular state, trying to equate Christianity with other religions will be a major setback to evangelism, church planting, and discipleship. A serious impediment to the fulfilment of great commission. This statement is based on communism. So, help us LORD[22]'. Those disappointed by Raila's comment also pointed to similarities between his sentiments and those of his wife, Ida Odinga, which she had raised three months earlier. Ida Odinga had suggested that the mushrooming of small churches with little or no theological foundations needed to be stemmed or regulated[23]. Thus, many anti-Raila followers were convinced that his candidature was against the church. Despite efforts by Raila to clarify his stance, it was too late as the message had spread like a wildfire on the social media and in the villages, claiming that Raila was an anti-church candidate, and that any sober Christian should not vote

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[21] The Kenya Kwanza coalition presented itself as pious, religiously committed leaders who often offered themselves to be prayed for in public rallies.

[22] Facebook post by John Wesley Nguuh, an Evangelical pastor and leader in Nairobi church on 28 July 2022, <https://www.facebook.com/john.nguuh/posts/pfbid036QgyVgJWW2HukjXSkWS7SsajXUvFYMUJ7ThQFr1U nmxomg4eQpqZRGsuYUbmgJZrl, Accessed on 1 August 2022>.

[23] On 30 January 2022, Ida Odinga called on the National Council of Churches (NCCK) to regulate churches by abolishing mushrooming, small churches and to focus on training church leaders to ensure that quality sermons in the churches were the standard. She later apologised and withdrew the comments after a public uproar. See the news on 31 January 2022 from Tuko at <https://www.tuko.co.ke/kenya/441786-ida-odinga-apologises-withdraws-remarks-church-regulation-i-meant-no-harm/, Accessed on 22 August 2022>.

for him.



Figure 3: Raila is the anti-Christ. Digital and plug-off spaces network – created by the author.

*Three local pastors, Ndegwa, Njomo, and Mumbi, were vocal in warning their followers about the dangers of Raila's 'kasumba ya ukristo' (dominance of Christianity) sentiments. The messaging was highly concentrated among the church goers, such as Njiru and Wanjuki. Kimani and Mumbi used their pages on Facebook to fiercely state that Raila's message was harmful to their faith. Kendi stood out as one who used her WhatsApp group to pass on the same message. There were other notable spreaders of information beyond the digital spaces, such as Kendi and Waithera, who said that they actively influenced their chama members using the same message.*

The day before the general election was calm as the campaigns had already officially concluded. The candidates were supposed to be resting, to allow the election officials time to prepare the venues, awaiting the official voting hours on 9 August 2022. There were tensions in central Kenya about the possibility of rigging in favour of President Uhuru's favourite candidate. In response to this, various candidates representing the Kenya Kwanza coalition were keen to report any suspicious occurrences. Since it was not a holiday, work in all public offices was supposed to continue normally, despite many people fearing that uncertainties might not allow them to go to work as usual. One group that had to work was the *kazi mtaani* (work at the grassroots), a group of youths that were offered casual jobs by

the state. Thus, the day prior to the election had been announced as a usual working day by the chiefs, who were responsible for the youth. When the youths were seen reporting to work, alarm was raised. It was said that the chiefs had been instructed to collect the youths' identification documents in an effort to negatively influence voters' turnout. Information from digital platforms, which featured prominent politicians in the region, such as Cecily Mbarire, the then candidate for governor of Embu, and Moses Kuria, the candidate for Kiambu governor position, had different versions of events. On the ground, politicians had physical confrontations with the chiefs on this matter, although calm was reported at last[24]. In this context, the rumour spread about 'Uhuru Kenyatta using his Chiefs to rig elections'.



Figure 4: Chief's plotting to rig the election using Kazi Mtaani (state program for youth employment). Digital and plug-off spaces network - created by the author.

*Munene was a candidate for member of county assembly. He was among the first on the scene at the polling centre after reading the news that there were possible rigging schemes around Kithimu from a Facebook post by Nduta. This sociogram is based on various altercations and exchanges regarding whence those who went to counter chiefs got their information.*

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[24] We could not establish whether these allegations were founded on fact; however, as it is the norm, they were highly characterised by rumours. We witnessed altercations between the Kenya Kwanza coalition, a member of county assembly (MCA) aspirant, and the area chief at Kithimu polling centre in Embu.

## 5. Networks of rumours

The dispensing of information among the rural populace involves relatively small and often meaningless and frequent topics in plug-off spaces. Such talks are structured around daily events. They rely on face-to-face networks that thrive on the social gatherings of various groups of people. Women-saturated networks are the most common occurrence as women have also assumed strategic roles in community development and wellbeing in organising and mobilising circles such as *chama* (self-help groups)[25]. This kind of use and uptake of information in plug-off spaces has spilled over into digital spaces, creating networks that are highly identical to those at the village level-based, face-to-face conversations. In the sample used in this study, seven out of ten respondents reported to have texted at least three times a day when they were online. The reasons for the texts were variously offered as having been *'kujuliana hali'* (literally, getting to know how one is fairing) and to obtain the current or trending news for the day[26]. There are also categories of respondents who assert that they use digital spaces to respond to specific issues, crises, and emergencies (sickness, school fees, stranded relatives, etc). Thus, cyclical relationships based on digital exchanges are already common in rural central Kenya. The debates in and coordination of these conversations at times account for the spread of news and current issues. As some topics create channels of support, they also act as leads to news that help locals make critical decisions such as for whom to vote. Rumours exploit these relations, but also bear potential to form new ones.

Almost all of the four sets of sociograms drawn from the sample in this study show a dominance of reciprocal ties. Reciprocal ties comprise stories that revolve around the participants, and are therefore said to be bidirectional. Reciprocal ties imply that individuals are both senders and receivers (Kusimba *et al.* 2016). However, key individuals at the highest level dominate as 'sources' of information. Therefore, we can describe them as sending information to a circulating pool. The circulating pool is described as such since individuals are not specific on how they wish to use information, rather focusing only on spreading it. In the circulating pool, individuals are highly connected to their peers. This dense connection of support is not only crucial for spreading rumours, but is also key to benefiting the source (giver), who usually harbours political ambitions.

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[25] Social organisations similar to chama are prevalent in most parts of Africa and are often leveraged to mitigate the absence of the state's provision of social safety nets in harsh economic environments. In other parts of Africa, associations similar to chama include *susu* in Ghana (Gugerty 2007, Osei-Assibey 2015). *Chama* are largely associated with women, as they are the most active participants, although recent trends suggest that men are also increasingly adopting the *chama* model. The primary purpose of *chama* is to enable its members to save money through revolving funds, and sometimes to provide access to credit. Thus, the emphasis is on the entrepreneurial proclivity of its members; however, they also act as a redeeming quality for the most vulnerable families in rural and urban poor populations (Mwatha 1996). *Chama* have been vigorously penetrating Kenya's rural regions and changing the local people's livelihoods. Some of the data on *chama* sampled in Kenya suggests that there are approximately 400,000 registered and 900,000 non-registered groups that identify as *chama*. It is also estimated that at the national level, six out of ten Kenyan adults are said to belong to such groups (see Central Bank of Kenya (CBK) *et al.* 2016). *Chama*, as observed during the fieldwork, have overarching characteristics, such as the holding of regular meetings on weekly, fortnight, or monthly bases. For more information on *chama*, see Nyangau (2014), Kinyanjui (2014), Kinyanjui and Khayesi (2005), and Mwatha (1996).
[26] Interview with community leader, Muthoni Nyaga, a resident of Manyatta, on 5 August 2022.

The networks formed are highly characterised by three main issues. The first is dense ties among people belonging to *chama*. The second category involves regular attendees to religious places of worship, mainly churches. Both categories are highly dominated by women, since women tend to be more likely to participate in local *chama*. The third most prevalent issue regarding these networks is that they prominently feature individuals who harbour political ambitions and are at a stage of mobilising specific candidates that they support. These individuals had formed campaign teams to mobilise votes in the 2022 elections, and thus their networks can be described as temporal. Table 1 shows the density of ties and relationships among women and church groups, campaign teams, table banking, *Nyumba kumi*, and work colleagues, which shows that networks are formed by dense ties of family, friendships, neighbourliness, and where they derive livelihoods.

## 6. Strength of women ties and its centrality

Individuals of varying age, gender, and socio-economic status have proved to be central in these networks; that is, they have more connections among themselves and/or connections to other well-connected nodes (Newman 2010, Prell 2011). These individuals, depicted as central nodes, were designated as having larger nodes in the sociogram. For example, and perhaps an obvious case, those individuals who sought elective posts were easy targets or were consulted as sources of news; thus, they were well connected among the group leaders and general public. As a result of their connectivity, they easily created paths for returning to public life that assured them of resources, a level of stability, and a voice in the community.

The sample of the four social networks, however, singled out women actors, who were seen to be dominating, by sets of actors identified in similar colours on the sociograms. These sets of women groups have striking similarities, and may often be connected to one another through the activities in which they engaged. The strength of women leaders (shown by larger nodes) can be seen in that they have more connections and are often targeted by 'bloggers'. Although 'bloggers' have a stronger influence on digital platforms, they rely on women group leaders' influence to assert their presence to plug-off audiences. The sociogram in Figure 4 shows two nodes that represent central individuals (with hexagons and diamonds). These nodes represent active individuals in digital spaces (Munene and Nduati) who described themselves as bloggers. Although their popularity is rife on digital platforms, it is not the case in plug-off spaces[27]. To reach out to people in plug-off spaces, who were crucial in determining the outcomes of the elections, Munene and Nduati had to build stronger connections with the most connected nodes in plug-off spaces. Munene's target was Makena, who described herself as

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[27] Conversations during the focused group discussion on 7 August 2022 revealed that individuals in plug-off spaces had not heard of, nor were they familiar with the most popular individuals on digital platforms, including Munene and Nduati.

the chairperson of the local women group, a church choir leader, and stated that she was an active member of three *chama*. This shows that women's strength surpasses the hierarchies that seem to consolidate men's centrality, which is based on age or leadership position. Central women could be the youngest; however, they assert their influence on the *chama* they lead, and these *chama* help them to increase their ties.

## 7. 'Bloggers' ['Keyboard warriors'] as brokers

Brokerage is a state in which actors connect interconnected actors, thus bridging the gap in a social structure. Brokers can facilitate a transfer of knowledge, and are therefore involved with coordinating efforts across networks. It is considered as advantageous, elemental, and crucial to social networks (Stovel and Shaw 2012, Burt 2005). A broker is an individual who acts as a unique tie between two groups of nodes, who can control the flow of resources from part of a network to another and bring crucial new resources to that group (Granovetter 1983). In sociograms 1, 2, 3, and 4, brokers are identified as key people whose networks cut across several respondents and are represented by diamonds (women) and hexagons (male) to show that they have unique ties as brokers between information and digital and plug-off spaces. Various people in plug-off spaces depend on these brokers to circulate news. Brokerage is common in these networks because even in plug-off spaces, authenticity is built through heed to take charge of stories and gain reputation as an 'informed citizen'.

All the nodes that were identified as brokers represent individuals with clear aspirations for political positions, both in the present and in the future, and are active 'bloggers' spreading their own information that varies in categories such as motivational stories and spiritual nourishment. They also often appear to share statements in support of their preferred political candidates in national or local-level political battlegrounds. Thus, they are a unique tie between the different sets of networked nodes and, using their 'blogging', they control the flow of stories from one network to another. The ethnographic evidence revealed at least three 'bloggers' who brokered a set of networked nodes. Munene, an aspiring senator, has active messaging called 'Pastor's Desk' in sociogram 4 and regulates messaging on a WhatsApp group called Embu Leadership Forum (ELF)[28] as an administrator. In another example, in sociogram 1, Njeri combines active messaging on her Facebook page with frequent visits to various women-focused *chama* and funeral vigils across Embu.

## 8. Conclusion

This study is concerned with the key question of the kind of networks that facilitate the spread of rumours during elections in Kenya. We conducted SNA on ethnographic data collected in central Kenya

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[28] The ELF was initially created as a youth-leadership forum initiative. It has transformed into an open portal for various information, including job search and advertisements.

during the 2022 general elections. Using this dataset, we examine four key rumours, aiming at the networks they forged during the campaigns and considering the different sets of networks that were formed by these rumours in digital and plug-off spaces. Rumour networks on digital platforms were based mostly on the popularity of the 'blogger', followed by the status they held in the society.

A key finding in this study is that youthful women seem to be the key central nodes in the networks of rumours since they bear larger connections to other nodes. This is an outcome of the vigorous involvement of women in community-level activities, to which *chama* seems to be central. Meanwhile, prospective candidates (aspiring) appeared as brokers across the various groups in digital and plug-off spaces.

Rumours were found to flow within specific, digital-based groups (in this study, we focused on Facebook groups, although our interviewees mentioned the use of WhatsApp groups), and at times through sets of individuals on private walls, posts, and people connected to them. Ties to the aspiring leaders were critical pathways to the success and spread of messaging packaged as rumours.

The potential for transformations (socially, politically, and economically) by the networking individuals underscores the broader role of information communication technologies (ICTs) and capacity of online engagements to shape networks (Ilahiane and Sherry 2008). It further highlights that ICT has the capabilities to shape groups' sociability (Ling and Stald 2010). This study uses SNA to capture the various possibilities of ICT as an agency for transformation in rural Africa by accounting for the network structures that were formed as individuals participated in election-related rumours. Through these rumours, the social cohesion within groups was enhanced and sometimes amplified through calls to participate in the voting exercise.

This study shows that rumours that appear on digital platforms have a capacity to circulate along dense and reciprocal pathways, entwining specific actors more than others. As these rumours spread, they create bonds or re-create bonds of reciprocity based on vernacular, face-to-face, network patterns in people's lifeworlds. Thus, enduring practices of reciprocity within society's sense of belonging, obligation, and exclusion inspires these networks to thrive. There are several similarities between how these rumours are shaped on digital platforms and how they spread face-to-face. Rather than simplified attempts to identify 'fake news', this study underscores how rural populations assert their voices on digital platforms with the intent for an equal space for contestation. We do this by following Musila's (2017) thoughts, which we consider as centring on an emphasis on the particularity of local epistemes and their interactions with the universal discourses in digital spaces. We claim that this underscores the overarching importance of furthering research and practices that promote diverse comprehensions of rural livelihoods, especially those emerging from the contemporary youthful populace of rural Africa.

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# African Trade Ties and Networks

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**Abstract**

This study examines existing trade networks in African countries. Using bilateral trade statistics, a regression analysis examining colonial legacy, geographical relationships, and existing subregional agreements in the gravity model is conducted. The results suggest that existing regional agreements are associated with more trade to some extent, but with exceptions. Moreover, using network analysis, the African trade ties and their historical changes are considered. Visualization of African trade networks clearly revealed that the importance of Western trade counterparts was overshadowed by emerging Asian and other countries. Moreover, the importance of intra-African trade is confirmed. While African intra-regional trade is often described as minimal, network analysis also suggests that African countries are indeed connected through trade ties even though trade volume may be low.

**Keywords**: Africa, trade, regional agreement, network analysis, geography

## 1. Background

Since 1995, the number of regional trade agreements and preferential trade agreements has increased in parallel with the shift from the GATT to the WTO (Frankel 1997, Freund and Ornelas 2010). While several mega-regional trade agreements entered force, African countries also formed regional free trade areas. Unifying Africa in any form began as early as the 1960s (Ismail 2017). However, the African Continent Free Trade Area (AfCFTA) and its movement constituted an abrupt change. Since the African Union's 10th Extraordinary Session of the Assembly on AfCFTA on March 21, 2018, the movement toward ratification of AfCFTA gained speed, and the agreement was entered into force on May 30, 2019. A report suggested that all African countries except for Eritrea have signed the AfCFTA, and 43 countries have deposited ratification instruments to Chairpersons of the AU Commission (tralac 2022).

The World Bank (2020a) classifies the formation of a regional unified market in Africa as a large economic impact and forecasts an increase in employment and wages and decrease in poverty. Conversely, a realistic perspective of African trade raises questions about the AfCFTA. The small volume of African trade, especially among African countries, can hinder the effectiveness of the AfCFTA. Moreover, the effectiveness of the number of existing subregional agreements in Africa is unclear. If subregional agreements with limited member countries already face challenges, formation of continental free trade agreements may be too ambitious.

This study aims to consider these issues based on trade statistics. This analysis focuses on three points. The first point is on the effectiveness of the existing subregional agreements. Using simple econometric analysis, the effectiveness of existing subregional agreements on enhancing intra-regional trade is examined. The second point regards to the trade partners to African countries. Important trade partners and their historical shifts should reflect the characteristics of African trade. A general picture of African trade is difficult to capture owing to small volumes of intra-African trade, relatively small economic sizes of African countries, and number of countries in the continent. Moreover, small-volume transactions are often masked by high-valued commodity trade. This point is addressed using network analysis and visualization. The third point regards to the sparsity (or tightness) of African trade ties, both intra-regional and international. This point is also addressed using the idea of network analysis. By examining these points, this study reveals the strengths and weaknesses of the current African economic networks. A tightly knit trade network necessitates freer trade conditions; conversely, a weak trade network reflects local economic activities, which would need something different from free trade agreements.

To understand the above points, this study combines econometric and social network analyses using bilateral trade data provided by the *Direction of Trade Statistics* (DOTS) of the International Monetary Fund (IMF). The remainder of this paper is organized as follows. Section 2 briefly discusses African trade characteristics and regional and international trade agreements. Section 3 explains and discusses

the data set and econometric analysis, followed by a network analysis of the same data set. Section 5 concludes this study.

## 2. Characteristics of intra- and international African trade

Promotion and diversification of trade have been the top agenda for African economies. Stylized facts about African trade are the small size of trade volumes (Foroutan and Pritchett 1993) and dependence on commodity exports, which is equivalent to the issues of mining and low-value-added exports (World Bank 2020b, Abreha *et al*. 2020). In terms of economic geography, African trade is considered to be influenced by colonial ties (Rauch 1999). On the other hand, China became a key African economic partner in the 2000s. Related to the discussion of colonial legacy, the influence of historical conventions such as Yaoundé, Lomé, Cotonou, and, recently, the Economic Partnership Agreements (EPA) with European Union (EU) are discussed in terms of economic growth and development assistance (Gruhn 1976, Hurt 2003). In the new millennium, the United States also enacted the preferential trade treatment for African export under the African Growth Opportunity Act (AGOA).

Furthermore, 'trade not aid' has been the slogan of the United Nations Conference on Trade and Development (UNCTAD) in 1968. However, trade requires certain institutions and environment such as infrastructure for transportation (Limão and Venables 1999). Poor infrastructure of African countries are considered as the bottleneck of intra-regional trade, and 'aid for trade' emerged as one of the international agenda in economic cooperation for Africa.

Given these facts about African trade, the current analysis aims to understand the importance of external ties for Africa, with conditions of African geographic characteristics. In the next section, historical changes in African trade ties are addressed.

### 2.1. Data

Analyzing trade ties among countries requires observations based on each trade pair. Bilateral international trade statistics are provided by the IMF (DOTS), and the Commodity Trade Statistics are provided by the United Nations Statistics Division (UN Comtrade). While the UN Comtrade provides more detailed trade statistics based on categories, this study used DOTS data set to obtain an overview of African trade, as DOTS has wider country coverage. This study's data set is limited to goods trade, as the trade statistics on services still have limited coverage of countries, especially for Africa. Focus on goods trade may become a big restriction in this analysis, considering the recent surge in the importance of service trade in African countries (UNCTAD 2022). However, for African countries, goods trade remains the core of trade. In the following, 'trade' refers goods trade.

The data set used in this study is constructed using trade statistics reported by African countries (including North Africa). Hence, information on non-African countries is included only as a counterpart

of African countries. This asymmetry is necessary to avoid dwarfing small volumes of African trade and inadvertently excluding them from the analysis. Omitting small island countries, the sample data set includes 54 African countries and 154 other countries available from the DOTS, totaling 208 countries. In a simple calculation, this data set constructs $54 \times (53 + 154) = 11,178$ possible combinations of countries, namely, trade ties, for imports and exports. While bilateral trade data is available annually for the majority of countries since 1990, this study used only seven periods (1990, 1995, 2000, 2005, 2010, 2015, and 2020). This results in $11,178 \times 7 = 78,246$ trading pairs. However, Eritrea was officially recognized by the United Nations in 1993, and South Sudan became independent in 2011. Owing to differences in the number of countries in some years, the data set resulted in an unbalanced panel.

As a characteristic of trade data, the difference between imports (c.i.f) and exports (f.o.b) exists, while exports by country A to B should theoretically match imports by B from A. Other elements (*e.g.* misreporting, underreporting, or overreporting) play a significant role in making trade statistics inconsistent among reporting countries, especially in the case of statistics reported by developing countries (Ndikumana and Boyce 2021). Discussions have been conducted on such gaps and several efforts have been made for statistics to agree, but this study used the data as reported and analyze the trade ties based on both of exports and imports. While this may highlight the inconsistency of trade statistics, examining both import and export data is necessary, given the asymmetric construction of the data set that uses only trade data reported by African countries.

Table 1. Summary statistics

|  | mean | sd | min | max | count |
|---|---|---|---|---|---|
| lnex | -0.11 | 3.62 | -13.82 | 9.73 | 34592 |
| ex_v | 28.04 | 256.29 | 0.00 | 16809.68 | 77004 |
| ex_S | 0.48 | 2.64 | 0.00 | 87.07 | 77004 |
| ex_gdpS | 0.18 | 2.44 | 0.00 | 270.35 | 74313 |
| lnim | -1.23 | 3.96 | -13.82 | 10.35 | 35655 |
| im_v | 27.21 | 335.08 | 0.00 | 31357.50 | 77004 |
| im_S | 0.48 | 3.05 | 0.00 | 99.88 | 77004 |
| im_gdpS | 0.11 | 1.02 | 0.00 | 101.93 | 74313 |
| lngravity | 10.43 | 4.42 | 0.00 | 25.68 | 61218 |

Note: lnex: natural log of goods export value, ex_v: export value (in millions of USD), ex_S: export share of total exports $\times$100, ex_gdpS: export share of gdp$\times$100, and likewise for imports. For the calculation of $gravity$, refer to the main text.

Furthermore, given the characteristics of the trade data, it is not possible to distinguish between no-trade and traded-but-no-data if trade data between two countries are absent. In this analysis, trade pairs with no trade data are set to zero instead of dropping from the sample. This is a strong hypothesis, and this procedure produces many zeros in the matrix. This issue is discussed in the next section.

Table 1 presents summary statistics. The reason of missing values for the natural log of export and import values are 'zero trade'. Lack of current GDP data (for which the source is the World Bank or OECD, retrieved from the *World Development Indicators*) and minimal distance information for several countries also resulted in missing values in calculating the trade share of GDP and $gravity$ (discussed below), respectively (Schvitz *et al*. 2022, World Bank 2022).

(a) Import from African counterpart

(b) Import from other counterpart

(c) Export to African counterpart

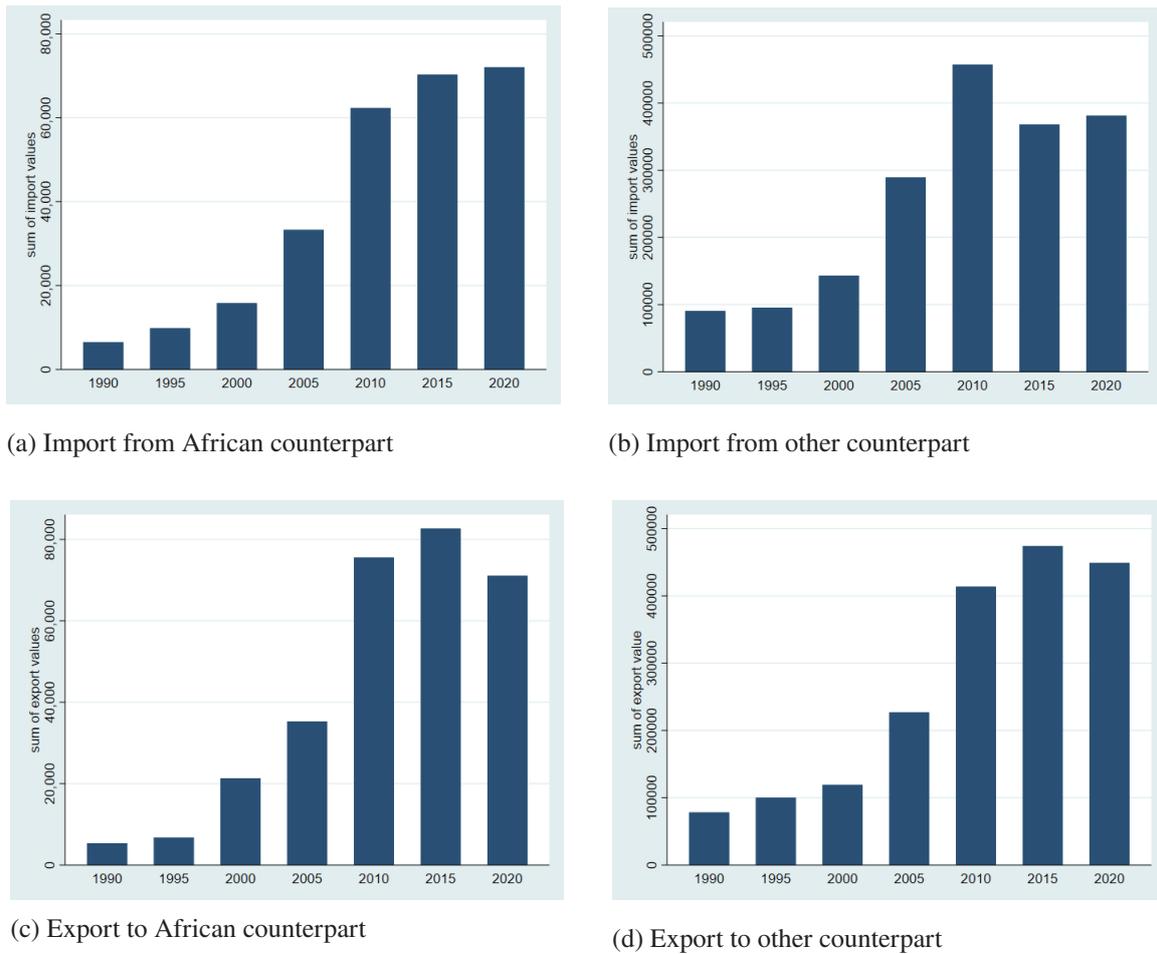(d) Export to other counterpart

Figure 1. Trend of African trade: 1990-2020

Data source: IMF (2022), in millions USD, current.

## 2.2. Trend of African trade

Figure 1 presents the trend in African trade based on the data set used in this study. Panel (a) indicates the increasing trend of total import value from peer African countries. Panel (b) indicates that, around 2010, total import value from the rest of the world peaked. Panels (c) and (d) indicate a similar trend of African total export value for trade with African peers and the rest of the world that peaked in 2015. However, the decrease in 2020 may be attributable to the effect of the global pandemic.

Increases in international commodity prices and increasing economic ties with emerging economies are often considered the background of these increases in trade values. However, this did not necessarily explain intra-African trade increases. An econometric model calculated as the average of the sample does not provide a detailed picture of changes in the roles of actors. In Section 3, an analysis will show whether the change was induced by any specific economic actor.
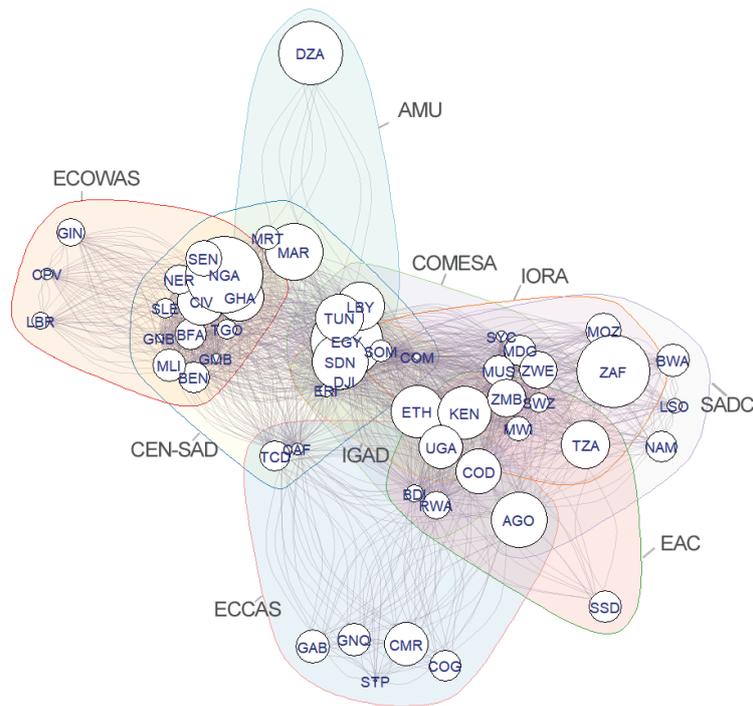
Figure 2. Networks based on the African regional agreements

Note: Membership relationships based on the seven regional agreements and one extra-regional economic agreements are depicted. The size of each node reflects the economic size. The network graph is drawn using R igraph.

## 2.3. Regional trade agreements

Several trade agreements exist in Africa. Frankel (1997) summarizes a list of regional agreements, including those that have already failed. The Southern African Customs Union (SACU), the oldest customs union, dates back to 1910. However, initiatives outside Africa also fostered several regional agreements (*e.g.* the United Nations or the IMF) to bolster stagnating economic cooperation through existing agreements. For example, in 1976, the UN backed the formation of the Economic Community of the Countries of the Great Lakes among Burundi, Rwanda, and Zaire. On the other hand, the IMF sponsored the Cross Border Initiative, which encompasses all members of the Southern African Development Community (SADC), except for Seychelles, in 1993 (Frankel 1997: 274). This may be considered as an international effort for supporting African regional development or neoclassical economic thought that considers smallness of economic size as weakness. Some of the currently existing regional agreements are not literary 'trade agreements' recognized at the World Trade Organization (WTO), and their memberships are so complex that finding systematic rules is difficult. Figure 2 indicates membership ties based on seven selected regional agreements and one extra-regional economic agreement. This figure highlights the complexity of the relationships among countries rather than clarifying the characteristics of the groups. The names of the agreements are indicated in Table 2. In Figure 2, each country's location is optimized by the algorithm in the *igraph* program of R and should not be considered an indication of any meaningful grouping. However, we can still recognize the rough geographical grouping of western and southern countries. This should be natural, given the geographical formation of several economic agreements.

Table 2. Selected African regional economic agreements

| Name | Official name | Members | # |
|---|---|---|---|
| AMU | Arab Maghreb Union | DZA, LBY, MRT, MAR, TUN | 5 |
| CEN-SAD | Community of Sahel-Saharan States | BEN, BFA, CAF, TCD, COM, CIV, DJI, EGY, ERI, GMB, GHA, GNB, LBY, MLI, MRT, MAR, NER, NGA, SEN, SLE, SOM, SDN, TGO, TUN | 24 |
| COMESA | Common Market for Eastern and Southern Africa | BDI, COM, COD, DJI, EGY, ERI, SWZ, ETH, KEN, LBY, MDG, MWI, MUS, RWA, SYC, SOM, SDN, TUN, UGA, ZMB, ZWE | 21 |
| EAC | East African Community | BDI, COD, KEN, RWA, SSD, UGA, TZA | 7 |
| ECCAS | Economic Community of Central African States | AGO, BDI, CMR, CAF, TCD, COG, COD, GNQ, GAB, RWA, STP | 11 |
| ECOWAS | Economic Community of West African States | BEN, BFA, CPV, CIV, GMB, GHA, GIN, GNB, LBR, MLI, NER, NGA, SEN, SLE, TGO | 15 |
| IGAD | Intergovernmental Authority on Development | DJI, ERI, ETH, KEN, SOM, SDN, UGA | 7 |
| SADC | Southern African Development Community | AGO, BWA, COM, COD, SWZ, LSO, MDG, MWI, MUS, MOZ, NAM, SYC, ZAF, TZA, ZMB, ZWE | 16 |
| IORA | Indian Ocean Rim Association | COM, KEN, MDG, MUS, MOZ, SYC, SOM, ZAF, TZA | 9(22) |

Note: IORA is extra-regional economic agreement, including other member states. The total number of member states are in parenthesis.

Considering the feasibility of AfCFTA, the effectiveness of existing agreements has significant implications. Ties among countries in Figure 2 indicate the relationship of countries belong to identical agreements; however, they also indicate the possible procedures and costs (*e.g.* meetings and negotiations) to maintain the agreements. Multiplicative relationships do not necessarily mean stronger ties but may imply burden. In the analysis below, influence of ties based on membership in regional agreements on economic activities is also examined.

## 3. Estimation of African trade relationships

### 3.1. Geography

To analyze trade relationships, specific elements need to be controlled for, especially in African trade. On economic geography, both geographic characteristics and trade costs are critical in international and regional trade. This analysis follows a type of gravity model that considers the distance between each trading pair as proxy for trading cost. As an index of trading costs weighted by economic importance, *gravity* is calculated as follows, following Yuan *et al.* (2021):

$$gravity = \frac{gdp_i \times gdp_j}{distance_{ij}} \tag{1}$$

where $i$ and $j$ indicates the reporting country and counterpart country, respectively.

The geographic distances between countries are retrieved from the *CShapes 2.0* project[1]. This data set provides the minimal distance for each pair of countries (Schvitz *et al.* 2022). GDP data is obtained from the *World Development Indicators* (World Bank 2022). Missing data in both distance and GDP reduced the sample size. While assuming that long-distance trade is associated with high trade costs is rational, geographic proximity may not necessarily mean lower costs for African countries given poor infrastructure. On the other hand, Brenton and Soprano (2018) and the World Bank (2020a) suggest that the volume of unrecorded cross-border trade amounts to half of officially recorded trade. In Africa, where many small countries reside in one large continent and national borders are artificially drawn, many countries share borders with their neighbors that are not natural boundaries (*e.g.* mountains or rivers). Given this historical legacy and the relatively poor institutional qualities, not every cross-border trade has been recorded. While volume and size of such small-scale cross-border trade should vary by border, African trade statistics significantly underestimates the importance of economic ties among African countries. Unrecorded trade is difficult to estimate, but the shared border length (*sborder*) is used in the models for intra-African trade instead of *gravity* to address the former issue. The shared border length information was obtained from *The World Factbook* (CIA 2022).

### 3.2. Model

The simple gravity model is expressed as follows:

$$y_{ijt} = \alpha + \beta_1 lngravity_{ijt} + \beta_2 colony_{ij} + \beta_3 clang_{ij} + \beta_4 rta_{ij} + v, \qquad (2)$$

where $y$ is bilateral trade, $lngravity$ is the natural logarithm of $gravity$, $colony$ is binary variable that takes 1 if the trade pair has colonial relationship and 0 otherwise, $clang$ is also binary variable indicating common official language, and rta is a matrix of binary indicators denoting membership to identical regional trade agreements based on the discussion in the previous section. Suffixes $i, j, t$ denote the reporting country, counterpart, and year, respectively. Regional agreements considered here are identical to those in Table 2 and not necessarily trade agreements. The data for colonial ties and common languages were retrieved from the database provided by Cepii[2] (Melitz and Toubal, 2014). While the colonial legacy is expected to remain influential to the Africa-European trade, Chinese influence on the African economies is also expected to be remarkable. Trade with China is captured by a dummy variable to check the strength of trade ties with China.

Bilateral trade $y$ can be calculated as either imports or exports in the current USD value or as a share. In this analysis, the share of trade was measured in two ways.

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[1]CShapes 2.0, <https://icr.ethz.ch/data/cshapes/, accessed on 9 October 2022>. Compared to the United Nations listing, for distance data, 36 countries are missing, mainly the small island states, including two African countries.

[2]Centre d'Études Prospectives et d'Informations Internationales, <http://www.cepii.fr/CEPII/en/welcome.asp, accessed on 9 October 2022>.

The importance of trade partner $j$ for reporting country $i$ relative to other trade partners is measured as

$$trade\_share_1 = \frac{trade\_value_{ij}}{\sum_{j=1}^{n} trade\_value_{ij}} \times 100, \quad i \neq j, \tag{3}$$

where n is the total number of countries, and the suffixes $i$ and $j$ denote a reporting country and its trade partner, respectively. This version of the trade share is especially convenient, as several African countries do not report basic and reliable statistics for national accounting, resulting in a lack of observations of GDP data. $trade\_share_1$ prevents the sample size from shrinking as the sum of imports and exports is independently calculated using the current data set.

Alternatively, it can be measure as the importance of a trade tie relative to the GDP of the reporting country $i$, which reflects the importance of trade partner $j$ relative to reporting economy's size.

$$trade\_share_2 = \frac{trade\_value_{ij}}{gdp_i} \times 100. \tag{4}$$

This version of trade share is straightforward; however, given the relatively small economic scales of African countries, the importance of ties may be exaggerated. This tendency is salient in small island countries. Trade networks based on differently defined trade shares may sometimes present considerably different pictures and require careful interpretation.

### 3.3. 'zero trade'

Intra-African trade is considered sparse and low volume, and this is reflected in the many zeros in the import and export values in the data set. Descriptive statistics (Table1) indicate that more than half of trade pairs in the sample either do not trade or report trade values. Moreover, the large standard deviation of the data owing to the widely varied sizes and types of economies in the continent skewed the distribution of trade statistics. Figure 3 indicates histograms of the import and export values, excluding zero. In this analysis, 'zero trade' pairs are either dropped from the sample in the models using the natural logarithm of trade values or maintained in the models using the crude values or shares. The many-zero models are run using Tobit model.

### 3.4. Regression results

Regressions were run on the entire sample and the subsample, which only includes African countries as counterparts, to determine the difference between international trade and intra-regional trade. The results of regressions are shown in Table 3 and 4.

For regressions based on import networks (Table 3), $lngravity$ terms are positive and statistically significant in all models. This suggests that countries tend to import more from geographically closer and larger countries. Moreover, shared border length ($sborder$) is positive and statistically significant,

Table 3. African trade relationships based on imports, 1990-2020

| | (1) lnim | (2) lnim | (3) im_v | (4) im_v | (5) im_S | (6) im_S | (7) im_gdpS | (8) im_gdpS |
|---|---|---|---|---|---|---|---|---|
| lngravity | 0.198*** [0.006] | | 48.386*** [0.646] | | 0.406*** [0.006] | | 0.139*** [0.002] | |
| sborder | | 2.486*** [0.214] | | 104.375*** [4.868] | | 1.353*** [0.079] | | 0.438*** [0.038] |
| colony | 5.374*** [0.362] | | 605.270*** [24.684] | | 10.220*** [0.218] | | 2.184*** [0.070] | |
| comlang | | 0.594*** [0.119] | | 49.771*** [2.794] | | 0.786*** [0.045] | | 0.319*** [0.022] |
| intafrica | -0.734*** [0.092] | | -21.233** [6.472] | | -0.564*** [0.057] | | -0.092*** [0.018] | |
| CHINA | 4.335*** [0.394] | | 619.177*** [27.089] | | 7.486*** [0.239] | | 2.073*** [0.077] | |
| COMESA | 0.742*** [0.174] | 0.442** [0.163] | 77.174*** [12.363] | 0.798 [3.865] | 1.044*** [0.108] | 0.459*** [0.062] | 0.248*** [0.035] | 0.115*** [0.030] |
| EAC | 2.742*** [0.481] | 3.276*** [0.468] | -71.947* [34.169] | 73.496*** [10.923] | 0.769* [0.299] | 2.179*** [0.175] | -0.219* [0.097] | 0.437*** [0.085] |
| SADC | 2.074*** [0.220] | 2.074*** [0.211] | 35.883* [15.439] | 93.997*** [4.927] | 0.501*** [0.136] | 1.190*** [0.080] | 0.177*** [0.043] | 0.442*** [0.039] |
| AMU | 3.715*** [0.637] | 3.193*** [0.635] | 54.734 [43.890] | 104.076*** [14.649] | 0.103 [0.388] | 0.565* [0.237] | 0.019 [0.123] | 0.354** [0.113] |
| CENSAD | 0.851*** [0.165] | 0.829*** [0.160] | 23.906* [11.454] | 6.702 [3.667] | 0.460*** [0.101] | 0.343*** [0.059] | 0.079* [0.033] | 0.071* [0.029] |
| ECOWAS | 1.455*** [0.231] | 1.644*** [0.225] | 61.410*** [16.010] | 59.989*** [5.212] | 1.105*** [0.141] | 1.381*** [0.084] | 0.260*** [0.045] | 0.495*** [0.041] |
| ECCAS | 0.493 [0.339] | 0.081 [0.317] | -129.555*** [23.870] | -40.619*** [7.437] | -0.986*** [0.210] | -0.453*** [0.119] | -0.288*** [0.067] | -0.111 [0.057] |
| IORA | 2.218*** [0.238] | 1.340*** [0.356] | 139.735*** [16.416] | 29.395*** [8.308] | 1.458*** [0.144] | 0.436** [0.134] | 0.202*** [0.048] | 0.179** [0.067] |
| Sample | world | intra-Africa | world | intra-Africa | world | intra-Africa | world | intra-Africa |
| Obs. | 32171 | 10249 | 61218 | 19716 | 61218 | 19716 | 59508 | 19027 |
| R2-within | 0.04 | 0.12 | | | | | | |
| R2-between | 0.23 | 0.15 | | | | | | |
| R2-overall | 0.19 | 0.15 | | | | | | |
| pseud-R2 | | | 0.02 | 0.02 | 0.05 | 0.04 | 0.07 | 0.03 |

Note: Standard errors in brackets. $^{*}$ $p < 0.05$, $^{**}$ $p < 0.01$, $^{***}$ $p < 0.001$.
Constant and year are included in all models (not reported).
For each model, dependent variables are: lnim is natural logarithm of import value, im_v is import value, im_S is import share of import sum, and im_gdpS is import share of GDP.

Table 4. African trade relationships based on exports, 1990-2020

| | (1) lnex | (2) lnex | (3) ex_v | (4) ex_v | (5) ex_S | (6) ex_S | (7) ex_gdpS | (8) ex_gdpS |
|---|---|---|---|---|---|---|---|---|
| lngravity | 0.143*** [0.005] | | 37.897*** [0.472] | | 0.337*** [0.004] | | 0.283*** [0.005] | |
| sborder | | 2.647*** [0.216] | | 108.777*** [5.653] | | 2.574*** [0.125] | | 0.922*** [0.051] |
| colony | 5.309*** [0.349] | | 554.318*** [18.270] | | 12.749*** [0.175] | | 4.204*** [0.185] | |
| comlang | | 0.518*** [0.123] | | 55.762*** [3.312] | | 1.355*** [0.073] | | 0.509*** [0.030] |
| intafrica | -1.997*** [0.091] | | -69.077*** [4.918] | | -0.832*** [0.047] | | -0.591*** [0.049] | |
| CHINA | 4.800*** [0.378] | | 859.942*** [19.865] | | 9.801*** [0.190] | | 5.131*** [0.200] | |
| COMESA | 0.647*** [0.170] | 0.407* [0.168] | 67.839*** [9.298] | 3.787 [4.545] | 0.725*** [0.088] | 0.365*** [0.100] | 0.681*** [0.093] | 0.117** [0.041] |
| EAC | 3.392*** [0.460] | 3.558*** [0.470] | 12.286 [25.277] | 137.642*** [12.576] | 3.459*** [0.236] | 4.969*** [0.276] | 0.317 [0.253] | 1.035*** [0.114] |
| SADC | 2.161*** [0.215] | 1.966*** [0.219] | 64.838*** [11.578] | 116.867*** [5.785] | 1.780*** [0.109] | 2.398*** [0.128] | 0.739*** [0.115] | 0.853*** [0.052] |
| AMU | 4.070*** [0.614] | 2.994*** [0.639] | 73.759* [32.534] | 112.840*** [16.985] | 0.658* [0.311] | 0.833* [0.377] | 0.496 [0.324] | 0.335* [0.153] |
| CENSAD | 0.776*** [0.161] | 0.722*** [0.164] | 35.260*** [8.689] | 16.839*** [4.330] | 0.522*** [0.082] | 0.502*** [0.095] | 0.362*** [0.087] | 0.171*** [0.039] |
| ECOWAS | 1.814*** [0.226] | 1.778*** [0.232] | 59.769*** [12.090] | 77.007*** [6.124] | 1.336*** [0.114] | 2.123*** [0.135] | 0.826*** [0.120] | 0.759*** [0.055] |
| ECCAS | 0.819* [0.323] | 0.276 [0.318] | -63.213*** [17.633] | -22.037** [8.547] | -0.155 [0.167] | -0.031 [0.187] | -0.162 [0.174] | 0.017 [0.077] |
| IORA | 2.143*** [0.227] | 1.143** [0.360] | 161.467*** [12.014] | 46.237*** [9.639] | 1.688*** [0.114] | 1.213*** [0.213] | 1.002*** [0.124] | 0.550*** [0.089] |
| Sample | world | intra-Africa | world | intra-Africa | world | intra-Africa | world | intra-Africa |
| Obs. | 32026 | 9169 | 61218 | 19716 | 61218 | 19716 | 59508 | 19027 |
| R2-within | 0.16 | 0.13 | | | | | | |
| R2-between | 0.19 | 0.16 | | | | | | |
| R2-overall | 0.21 | 0.17 | | | | | | |
| pseud-R2 | | | 0.03 | 0.02 | 0.08 | 0.04 | 0.04 | 0.05 |

Note: Standard errors in brackets. $^*$ $p < 0.05$, $^{**}$ $p < 0.01$, $^{***}$ $p < 0.001$.
Constant and year are included in all models (not reported).
For each model, dependent variables are: lnex is natural logarithm of export value, ex_v is export value, ex_S is export share of export sum, and ex_gdpS is export share of GDP.

(a) import value (excluding zero)

(b) export value (excluding zero)



(c) Natural log of import value
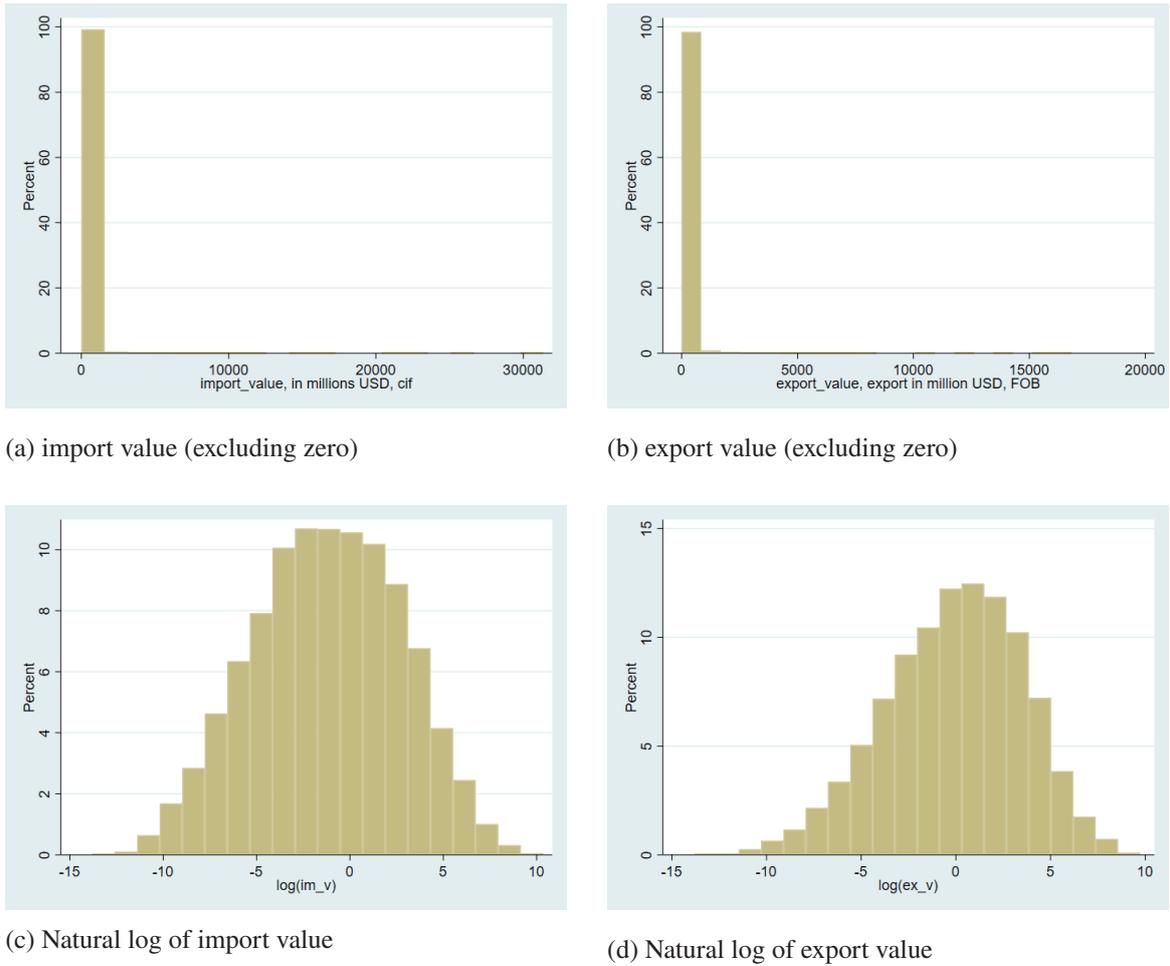
(d) Natural log of export value

Figure 3. Histogram of trade data

Note: Bin=20, and the y-axis represents the percentage.
Data source: IMF (2022), in millions USD, current.

which suggests that neighboring countries tend to trade more. While this may not be surprising, this ensures that neighbors trade more on average, even in Africa, where transportation networks connecting neighboring countries are not necessarily well equipped. Colonial ties remain effective, and sharing the same official language is associated with more trade, suggesting that the colonial legacy remains alive. Coefficient of $CHINA$ is positive and statistically significant, but the coefficient size is not necessarily much larger than that of $colony$.

The term $intafrica$ is negative and statistically significant when world countries are included. Hence, import volume and shares from outside Africa clearly outweigh intra-regional trade. Regarding trade agreements, only ties through ECOWAS and (or) IORA are constantly associated with more trade. However, when the sample is limited to intra-African trade, other agreements (*e.g.* COMESA and SADC) also have positive and statistically significant coefficients. Remarkably, the Economic Community of Central African States (ECCAS) has a *negative* coefficient, which suggests that member countries trade less with each other. When it is examined as the trade networks based on export ties (Table 4), the results

are similar to those of imports.

Regression results for African regional agreements suggest that ties established through the SADC, ECOWAS, and IORA are associated with greater trade. Members of the ECCAS trade less than others. As memberships overlap across the different agreements, a more detailed analysis for each agreement is required to distinguish the effect of different agreements. However, the results confirm that most African regional agreements function to some extent, especially in terms of intra-regional trade. This in turn, implies that nonmembership in subregional agreements is associated with less trade. While we need to be cautious about the causality between countries' trading relationships and existence of economic agreements, this may add to the expectation that African continental free trade agreement will push transactions.

## 4. Network analysis of African trade

The abovementioned econometric model helps us build an average figure for African trade. However, regression results often trigger further questions regarding which countries are the main actors in the model. This study apply an analytical method of network analysis to this point. Network analysis is a research area that began far earlier but was rapidly established in the 1990s along with the development of world wide web. Analyzing the relationships of things is backed by graph theory, and it is applied to various areas, from natural science to people's social network analysis (Wasserman and Faust 1994, Barabási 2016).

Regarding its application to economic analysis, Snyder and Kick (1979) used network analysis to investigate the relationship of countries and examine the discourse of 'centre and periphery' in the international economic structure. The recent network analysis applied to the relationship between countries are combined with geographic information system (GIS). For example, Yuan *et al.* (2021) examined the determinants of the network of the Indian Ocean Region using network analysis and GIS. As trade is the economic activity between two entities and since world trade is the assembly of those ties, applying network analysis to international trade should be natural.

### 4.1. Network graphs

In visualizing the African trade network, the relatively large sample size arises as a challenge. To avoid the graphs to become 'hairballs,' the sample is limited to 54 African countries and their top trade partners outside. Table 5 indicates the top trade partners for African countries from 1990 to 2020, calculated using rankings for each reporting country. Several points are worth noting. First, for importing partners, European countries and United States have occupied the top rankings for several years, while Japan dropped from the list around the 2000s, and India (IND) and China (CHN) began appearing in the list. Moreover, the United Arab Emirates (ARE) ranked among the top two import partners in 2020, which suggests that Middle Eastern countries are emerging as important suppliers for African countries. For

Table 5. Top 10 trade counterparts of African countries

(a) Counterparts of import to Africa

|    | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
|----|------|------|------|------|------|------|------|
| 1  | FRA  | FRA  | FRA  | USA  | USA  | IND  | CHN  |
| 2  | ITA  | DEU  | DEU  | FRA  | IND  | USA  | ARE  |
| 3  | DEU  | ITA  | USA  | DEU  | FRA  | CHN  | USA  |
| 4  | GBR  | ESP  | ITA  | NLD  | CHN  | FRA  | IND  |
| 5  | ESP  | GBR  | GBR  | ITA  | NLD  | NLD  | NLD  |
| 6  | NLD  | USA  | ESP  | GBR  | DEU  | ITA  | FRA  |
| 7  | PRT  | NLD  | NLD  | ESP  | ITA  | ARE  | ITA  |
| 8  | JPN  | PRT  | BEL  | BEL  | ESP  | GBR  | DEU  |
| 9  | USA  | JPN  | JPN  | IND  | GBR  | DEU  | BEL  |
| 10 | CHE  | CHE  | PRT  | CHN  | BEL  | ESP  | ESP  |

14 countries appear within top 10 at least once: United Arab Emirates (ARE), Belgium (BEL), Switzerland (CHE), China (CHN), Germany (DEU), Spain (ESP), France (FRA), United Kingdom (GBR), India (IND), Italy (ITA), Japan (JPN), Netherlands (NLD), Portugal (PRT), and United States of America (USA).

(b) Counterparts of export from Africa

|    | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
|----|------|------|------|------|------|------|------|
| 1  | FRA  | FRA  | FRA  | CHN  | CHN  | CHN  | CHN  |
| 2  | DEU  | DEU  | USA  | FRA  | FRA  | USA  | IND  |
| 3  | ITA  | GBR  | GBR  | USA  | USA  | FRA  | USA  |
| 4  | GBR  | ITA  | DEU  | DEU  | IND  | IND  | FRA  |
| 5  | NLD  | NLD  | ITA  | ITA  | DEU  | DEU  | NLD  |
| 6  | JPN  | USA  | BEL  | GBR  | NLD  | BEL  | DEU  |
| 7  | USA  | CHN  | CHN  | NLD  | BEL  | NLD  | BEL  |
| 8  | ESP  | JPN  | NLD  | BEL  | ITA  | ITA  | TUR  |
| 9  | CHE  | ESP  | ESP  | IND  | GBR  | GBR  | ITA  |
| 10 | DNK  | CHE  | JPN  | ESP  | **ZAF** | TUR  | GBR  |

15 countries appear within top 10 at least once: China (CHN), India (IND), United States of America (USA), France (FRA), Netherlands (NLD), Germany (DEU), Belgium (BEL), Türkiye (TUR), Italy (ITA), United Kingdom (GBR), Denmark (DNK), Switzerland (CHE), Japan (JPN), Spain (ESP), **South Africa (ZAF)**.

Note: Calculated as the sum of ranks based on each countries' share in total export/import. The country which had the most share in export/import in most countries receives the least score and is ranked as number one.

export partners, the trend is similar to imports, but in 2010, South Africa ranked within the top 10 as the only African country. China has been Africa's top trade partner since 2005, and Turkey, a country that has not been listed as an key import partner before, has also appeared in the export partner list since 2015. The following analysis included counterpart countries that appeared at least once in the top 10 list. Excluding South Africa, 16 countries outside Africa are counted as important export and import partners. In addition to the 54 African countries, this adds up to 70 countries in the network analysis.

Figure 4 are the network graphs that show countries as nodes, trade ties as edges (directed), and import share (as the sum of imports of the reporting country) as the weight of the edges. The data of trade ties among the 70 countries are extracted from the same data set used in the regressions above; however, network graphs are drawn only for the years 1990, 2000, 2010, and 2020 to see historical shifts in the trade networks. To simplify the visual comparison, positions of countries' nodes in each graph are fixed, and non-African countries are shaded and located in the inner circle. Graphs were drawn using the *igraph* package in R (Csárdi and Nepusz 2006).

### 4.1.1. Import networks

In Figure 4, countries at the arrowhead comprise the reporting country importing goods from its counterpart. The graphs indicate that through 1990 and 2000, trade partners for African countries were mainly Western countries, especially France. However, the USA also had many strong edges, indicating that for US firms, some African countries were targeted markets. For example, Gambian top imports from the United States in 2000 comprised raw sugar cane, sugar, and automobiles; however, its other imports included various goods such as cement, T-shirts, and cotton (UN Comtrade database).

(a) 70 countries: Import share, 1990

(b) 70 countries: Import share, 2000

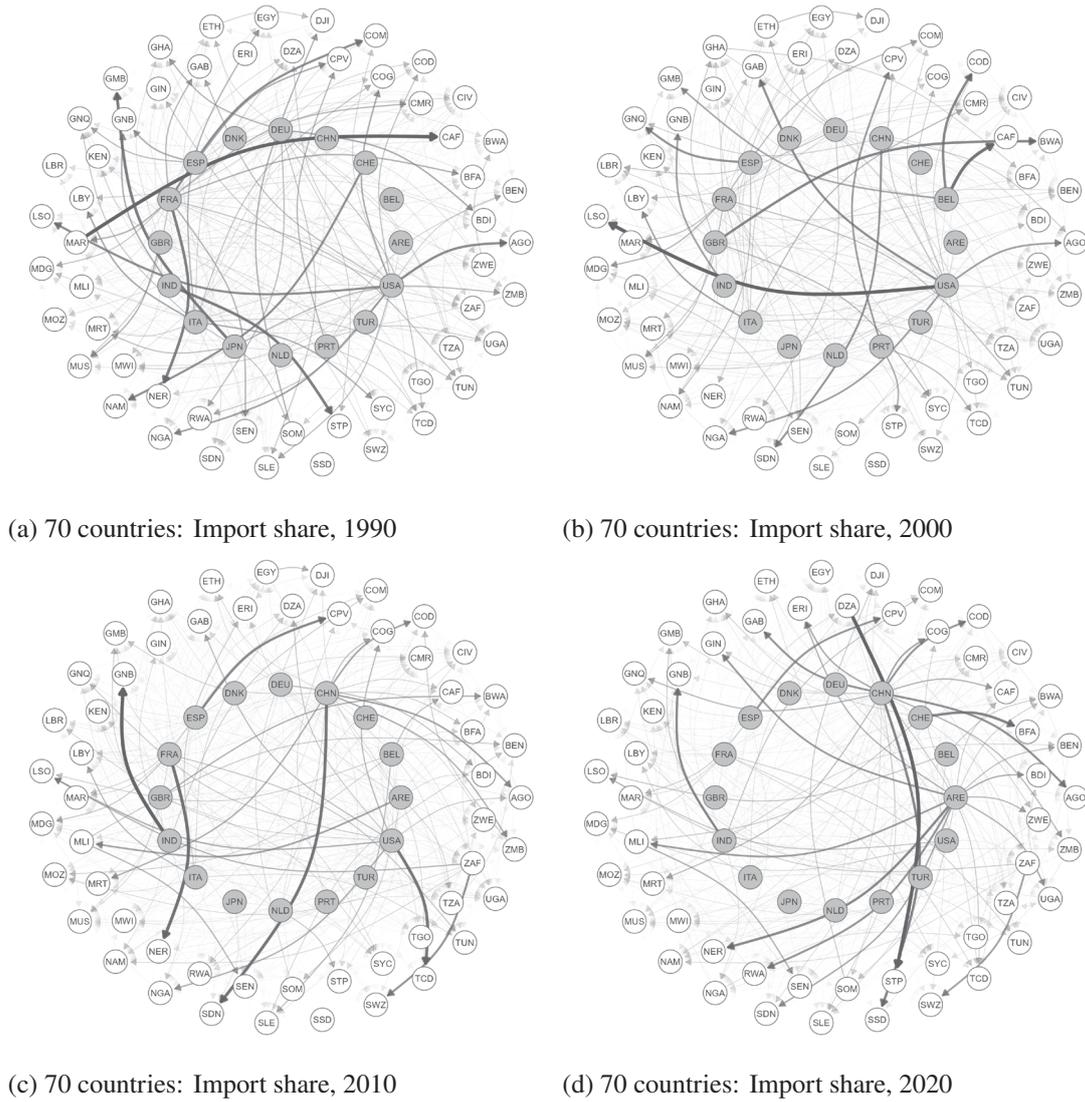(c) 70 countries: Import share, 2010
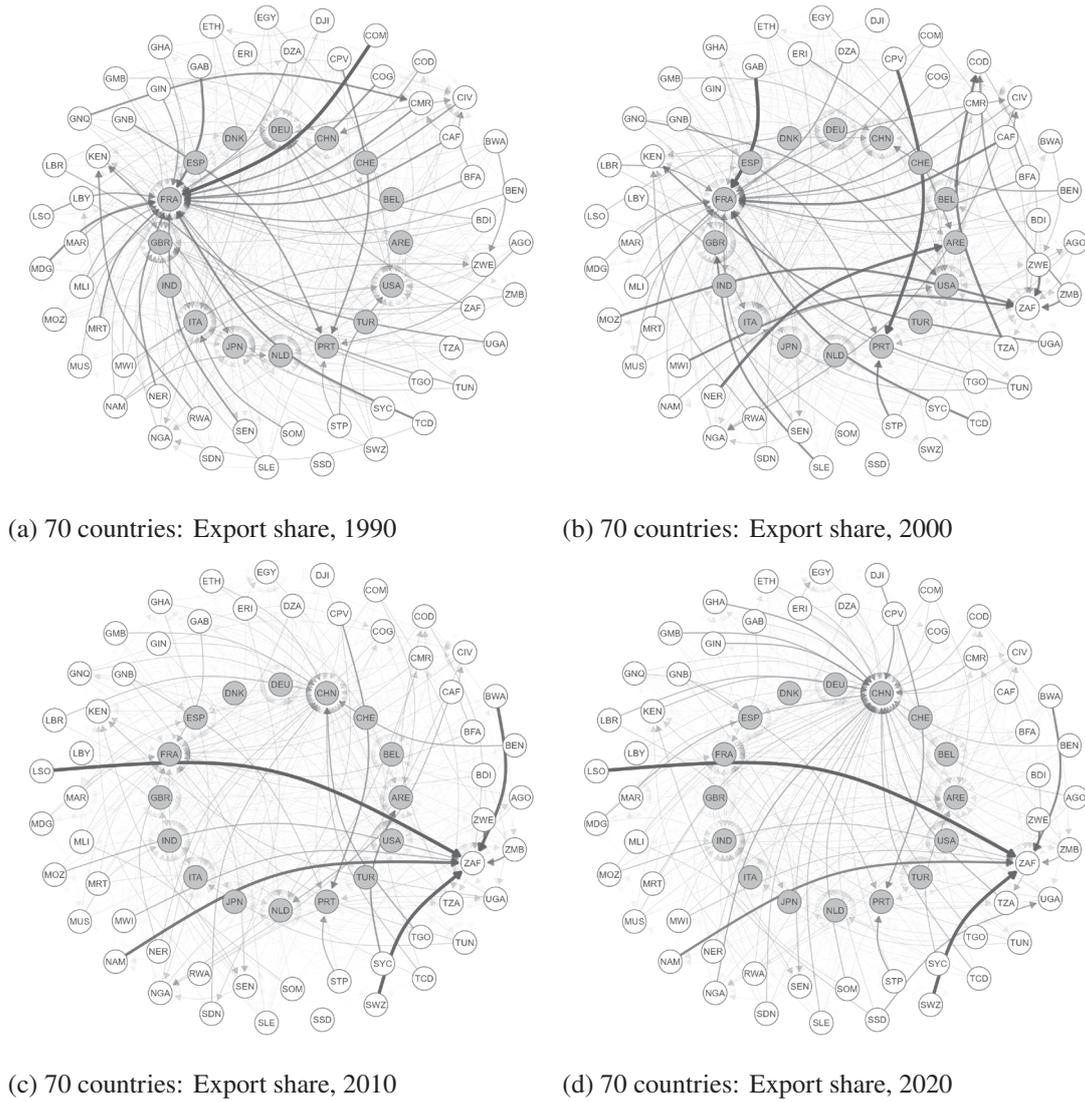
(d) 70 countries: Import share, 2020

Figure 4. Trade networks based on *import shares* of African countries

Note: 54 African countries and 16 non-African countries. Non-African countries are top 10 import counterparts for Africa through 1990 to 2020. Edges are weighted with import share, which is calculated as bilateral import share in the total import of reporting country.

Notably, in 2010, strong ties among African countries, namely, South Africa, and others are recognizable. Relatively strong edges from South Africa is directed to countries such as Lesotho and Eswatini (Swaziland), indicating a relatively strong regional network among neighboring countries. However, several southern countries, especially SACU members (*i.e.* Botswana, Eswatini, Lesotho, and Namibia), only began reporting their trade statistics after 2008. Given the fact that formation of SACU dates back to 1910 and historical economic dependence of the member countries on South Africa, South Africa's importance as the hub of trade networks before 2010 must be largely undervalued[3].

However, in 2020, considerable change occurred when China and the United Arab Emirates became the center of trade ties. Particularly, China had a few but strong ties with specific countries, such as

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[3]Author is grateful for the suggestion on this point by Shinichi Takeuchi of the ASC-TUFS.

(a) 70 countries: Export share, 1990

(b) 70 countries: Export share, 2000

(c) 70 countries: Export share, 2010

(d) 70 countries: Export share, 2020

Figure 5. Trade networks based on *export shares* of African countries

Note: 54 African countries and 16 non-African countries. Non-African countries comprise the top 10 export counterparts for Africa through 1990 to 2020. Edges are weighted with export share, which is calculated as bilateral export share in total export of reporting country.

Sudan (2000 and 2010) and South Sudan (2020). From the United Arab Emirates to Niger (NER), the top three export categories in 2020 comprised cigarettes, vehicles, and petroleum. Conversely, top exports from China to Sudan (SDN) in 2010 are in various categories related to materials and machines used in construction.

### 4.1.2. Export networks

When the trade networks are determined based on African exports, the picture became even clearer. In Figure 5, France represented colonial ties in the African trade in 1990. In 2000, the centrality of France as a trade partner remained the same, but several intra-African trades were recognized. Here, South Africa's neighboring countries (*e.g.* Mozambique, Malawi, Zambia, and Zimbabwe) export more to South Africa

than to any other counterpart. In 2010, export ties with France and other Western countries remained, but their importance started to fade, and many edges were then directed to China. Lesotho, Namibia, Eswatini (Swaziland), and Botswana hold strong ties with South Africa. China's importance as an export destination strengthened in 2020, while South Africa's remained the same for the southern counties. Notably, the United States has no clear ties with any specific African country, despite the AGOA. Even for typical oil exporters like Nigeria, ties with the USA are not heavily weighted. The category of goods traded between Eswatini and South Africa in 2020, for example, helps to obtain a fraction of the image of regional trade. Goods exported from Eswatini majorly comprise ingredients for the beverage industry and various types of sugar, which suggests the relative importance of beverage companies in South Africa as trade counterparts. Moreover, this case also implies the possibility that other neighboring countries depend on the inputs import demand of a few big companies in the regional giant economy.

Visualizing trade relationships using network graphs helps recognize important countries in trade networks. When trade is measured as a share, South Africa emerges as an important regional trade hub. Conversely, this also suggests that no other African country plays an equivalent role to South Africa. Considering the outstanding economic scale of South Africa in this region, this may be natural. However, a relatively large economy like Nigeria does not serve as a hub in Western or Northern countries. The absence of trade hubs in western and northern Africa may be because of their geographical proximity or historical ties with Europe. Several small island countries, such as Cabo Verde, São Tomé and Príncipe, and Comoros, even anchor their currencies to the euro, indicating economic proximity to the euro area. However, discussing the African relationship with the EU is beyond this study's scope, and it remains as a future task.
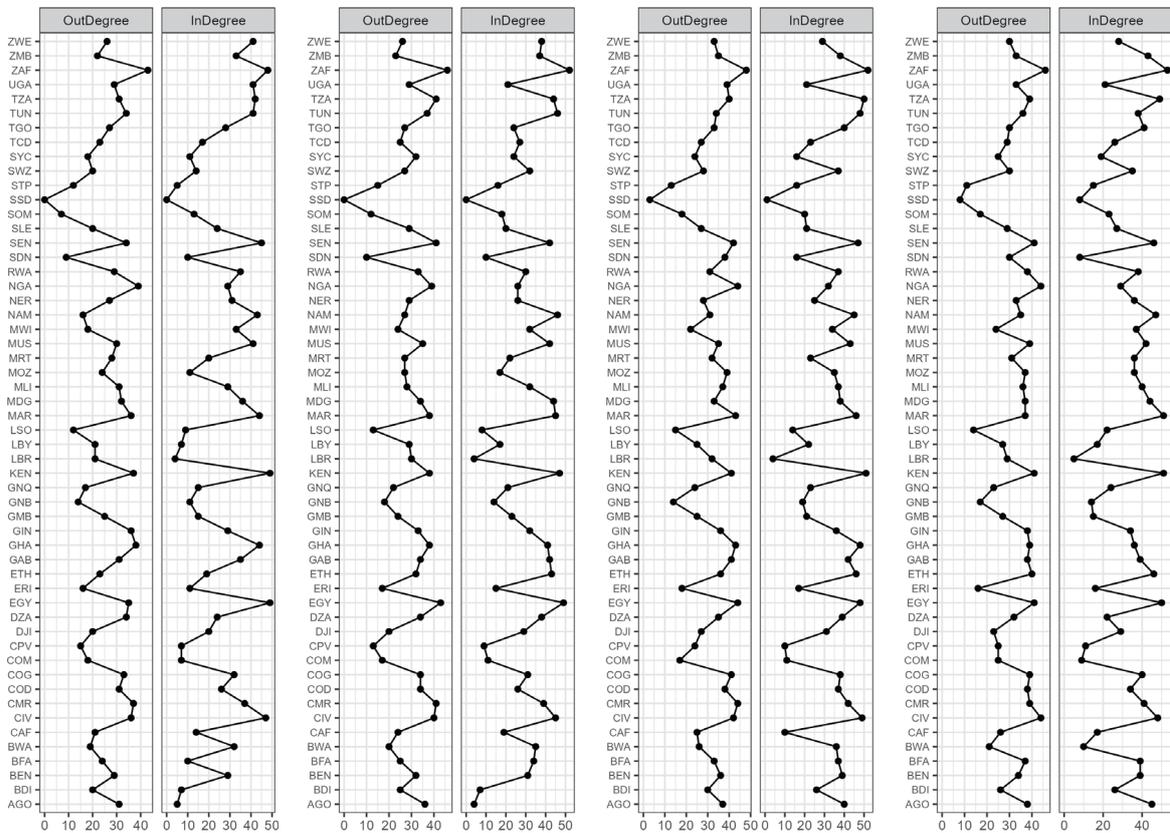
### 4.2. Importance of weak ties

The above analyses investigated trade in value, or either its share in total trade or share in GDP. While this is an orthodox way to analyze trade size among countries, when applied to African economies with relatively small scales, it results in overlooking not strong—but important—ties. To overcome this point, this section applies the tool of network analysis; however, here, trade ties are considered as non-weighted. That is, even when tiny in volume, non-zero trade is equally counted as unity.

Figure 6 shows the graphs indicating the sum of the incoming and outgoing edges for each node (country). Countries are limited to African countries to present the intra-regional trade ties. Differences between import and export graphs exist, even though import and export graphs should be mirror images in theory. While the causes of the gap can be relevant, only export graphs are presented here. Graphs were drawn using the *qgraph* in R.

Contrary to the network graph in the previous subsection, the figure indicates that several countries beside South Africa hold nearly full (53) ties. Graph shapes differ slightly by year, but countries includ-

ing Côte d'Ivoire (CIV), Egypt (EGY), Kenya (KEN), Morocco (MAR), Senegal (SEN), Tunisia (TUN), Tanzania (TAN), and South Africa (ZAF) hold approximately 40 or more incoming ties, although they are not necessarily associated with as many outgoing ties. These graphs present that the often-shared image that African intra-regional trade is very little does not reflect reality. The average number of ties is 37.7 for 2020. Given the number of countries in the region, this figure may not be considerably high, and each trade value may be small. However, countries are connected through the intra-African trade network. Moreover, it suggests the potential significance of North African countries as trade hubs on the African continent. In economic analysis, African countries are often divided into subgroups, where Sub-Saharan Africa is treated separately from North Africa. The graphs here suggest that the Sub-Saharan and North African countries are economically connected.



(a) Export ties, 2005     (b) Export ties, 2010     (c) Export ties, 2015     (d) Export ties, 2020

Figure 6. Exports to African peers, unweighted ties

Note: OutDegree is number of outgoing ties of reporting (exporting) country, and Indegree is number of incoming ties for counterpart (importing) countries.

## 5. Conclusion

This study examined African trade ties using bilateral trade data. A simple gravity model regression supported the existing legacy of colonial history on African trade, while it demonstrated the importance of China as Africa's trading partner. Among the existing subregional economic agreements, SADC and

ECOWAS are associated with more trade. An extra-regional economic agreements with countries in the Indian Ocean Region (IORA) are also associated with more trade. Existing African subregional agreements seem to be mostly associated with stronger trade ties when confined to intra-regional trade, except for those of central African countries. The analysis using the network graph showed that there were significant shifts in the importance of trade partners between 1990 and 2020. While colonial legacy remained significant in regression analyses, strong trade ties with European countries were found to be overshadowed by other countries (*e.g.* as China and the United Arab Emirates) in the network graphs. Emergence of intra-African trade, especially around South Africa, is also a big change, although strong ties with South Africa and its neighboring countries can exist even earlier. Additionally, the network analysis indicated that African countries maintain trade ties with African countries, regardless of volume.

A conclusion derived from the above results is quite ordinary. As African countries are connected through trade networks regardless of volume, the next focus should be on how to strengthen existing ties and not on broadening the network continent-wide. Because the bottlenecks for existing agreements are also an obstacle to AfCFTA, further evaluation of existing ties is necessary, especially for those wherein members trade less.

The gravity model regression implies that neighboring countries tend to trade more in Africa. On this point, further study on the conditions of transportation and geographic characteristics and the possibility of underreporting cross-border trade is necessary. Closely related to this point is the quality of the trade networks and the contents of African regional trade. Network graph visualization indicates that regional trade ties may be relatively strong in the southern part. However, the demand for traded goods may depend on a few large counterparts. To observe the weakness or thickness of such trade ties, a more detailed structure of value chains within Africa needs further examination. However, in the northern and western parts of Africa, there were no recognizable trade hubs, and the reason for this also requires further study.

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# Implications of Customary Land Conversions on the Power of Traditional Leaders in Mungule Chiefdom of Chibombo District in Zambia

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**Abstract**

The study examines the implications of customary land tenure conversions for the power of traditional leaders, who have had the power to allocate land and upholding customary law among occupants of such land. It is argued that conversion of customary land to leasehold tenure system negatively affects the power of traditional leaders. Using the conceptual framework premised on Gluckman's theory of power, one variable factor 'size of land' was used to formulate an interview guide. In-depth interviews were conducted with key informants. For validity and reliability, various stakeholders with different specialisation on this topic were incorporated to deepen/widen the scope of producing this knowledge. The results revealed that customary land that was being converted to leasehold tenure system was reducing the size of the customary land for the Chiefdom. Additionally, the change from customary land tenure system denies traditional leaders the rights to allocate land to local people. Second, local people are forced to change their livelihood from agricultural based to informal jobs. Finally, it stops local people living in clans for their unity and easy formulation of customary law in a collective voice.

**Keywords:** customary land, leasehold tenure, traditional leader

## 1. Introduction

The ever-increasing activity of personalising customary land has raised critical concerns, not only about the prospect of such land, but also the institution of traditional leaders and cultural norms in rural areas (Chitonge *et al.* 2017a). Gluckman (1965: 75) demonstrated that 'Judges in Barotseland, Zambia, worked with an ostensibly integrated concept of ownership of land to cover quite different kinds of rights over other persons and property'. In view of this, Rosenau and Czempiel (1992) highlighted that the institution of traditional leaders had a strength of living in close vicinity with the subjects and their skill and governing approach of collectiveness gave them an acceptance in their community. This suggests that traditional leaders have been strongholds in the customary areas, whereby any disturbance of their existence or operation can lead to detrimental outcomes among the populations that reside in customary areas.

In 1991, the Movement for Multiparty Democracy (MMD) took over governing Zambia from the United National Independence Party (UNIP). The former embraced the political ideology of humanism, while the latter favoured a liberalised economy, and, therefore, established a market-oriented socio-economy (Van Loenen 1999). These developments led to the need for land tenure reforms. Thus, the MMD government repealed the Land Conversion Act of 1975, which, among other measures, stipulated stringent processes of converting land, replacing it with the new Land Conversion of Title Act of 1995. The new Act facilitated the merging of native reserves and trust land into customary land and made the procedure for individuals and companies to convert customary land to leasehold less stringent. In addition to these legal reforms, the MMD proposed changes to some aspects of land policy in Zambia. The aim was to capture investors' interests and critical concerns such as giving investors essential rights to seclude possession of land, reinstating the assurance of investors by creating more proficient land delivery systems, ascribing economic value to undeveloped land, boosting private real estate agency business, and upholding regular issuance of titles to productive land holders both from rural as well as in urban areas (Roth *et al.* 1995).

From the aforementioned, it is clear that displacement due to land conversion is not new to the Mungule Chiefdom Community. When Lusaka was made the capital city of Zambia in 1935, some residents experienced such land usage conversion. At that time, there were institutions of traditional leaders in Lusaka such as senior Headman Mwalusaka. He presided over several headmen from Chilenje village, which was the main town for villages such as Lilanda, Chingwele, and Chipwalu (now Kabanana Township). Headman Mwalusaka was forced to relocate from the Nkomesha Chiefdom to Mungule. The heterogeneous communities that developed in Lusaka as a consequence of customary land conversions by non-ethnic group members, who shifted into the area and eventually took over all the villages, impacted on the cultures of the ethnic group and contributed to the phasing out of cultural

practices as well as recognition of the institutions of traditional leaders in the area. In a similar manner, being near Lusaka, the Mungule Chiefdom has become a hot spot for customary land acquisition.

Customary land conversions have not only created debates in political, social, and economic circles, but also in the academic sphere. This study is positioned within academic debates. One category of academics support and advocate for customary land to be converted. Deininger (2003) and Johnson (2011) argue that the concept of customary land has not protected the interests of well able investors and non-ethnic group members. It has been suggested that the challenge revolves around the elusive nature of current laws, limitations in accessing mortgages, as well as the stimulation of efficient markets (Elahi 2013). Scholars with contrary views argue that customary land conversions have not protected the incapacitated Indigenous community members of ethnic groups, resulting in further marginalisation in customary areas. How these conversions have impacted on the livelihood and social relations of the occupants of these areas has been investigated (Brown 2005), but limited academic attention has been paid to the effect of customary land conversions on the power of the institution of traditional leaders.

## 2. Statement of the Problem

In Zambia, there is a growing tendency towards leasehold tenure systems. Once customary land is converted to leasehold tenure system, there is no legal provision for reverting to customary tenure (Ntsebeza 2005). Customary land allows people of the same ethnic group to maintain their strong connections to cultures, norms, and practices passed on to their future generations, as well as promote institutional memory (Mpofu 2014). Fenrich *et al.* (2011: 16) suggested that 'a person observing dissimilar customary laws may find themselves living in close vicinity with the Indigenous community'. Thus, influx of new members was a problem because the conversion of customary land to leasehold tenure system either strengthened or weakened the power of the institution of traditional leaders and may have contributed to the erosion of customary law and, subsequently, ethnic community weakening. For example, Ng'ombe and Keivani (2013: 43) demonstrated that 'once customary land is converted to leasehold, non-ethnic members cease to pay homage to the chiefs and begin to pay mineral royalties and land rates to the government', a practice that was outside customary law. Mousseau and Mittal (2011: 37) further argued that 'customary rights were extinguished; when customary land was converted to leasehold tenure, the non-ethnic members caused the self-rule that the institution of traditional leaders had over such land to be disregarded with immediate effect'. However, whether such institution was aware of these facts or not was unclear. It was therefore necessary to examine how institutions of traditional leaders retained their power and applied customary law on the land governed under statutory law and how they controlled new members of these communities. Given the contextual background and problem identified, the main objective of this study was to examine the implications of customary land conversions on the power of the institution of traditional leaders.

## 3. Theoretical Framework

This study was anchored on the theory of the power of chiefs, which states that the kingly/royal office on which chiefs operate is sacred and is guided by the spirits of the ancestors buried in the land. It is sustained by cultural rituals and practices that tie every member of the ethnic group together; thus, the power of chiefs' flourishes in a homogeneous ethnic community because they all observe the same customs. By virtue of the origin of the kingly office, this theory highlights that there is a form of deep-rooted rules of conduct 'usually prescribed by the chiefs'. In most African ethnic groups, these rules are tightly linked to the throne of the chiefly position (see Daniel 2012). It is important to note that ethnic members of a community abide by the norms, practices, and values of their ethnic cultural requirement, not because it is logical but because it is cultural, traditional, and historical, above all their identity, defining the deeper relationship members of the ethnic community have with the kingly office (Chief *et al.* 2000).

## 4. Conceptual Framework

The study applied the conceptual framework premised on Gluckman's (1965) theory of power. One of the variable factors used to study the implications of customary land conversions on the power of traditional leaders was the 'size of land'. The variable has a direct link to the power of traditional leaders which is founded on cultural beliefs that are embedded in the administration of land. Ntsebeza (2005: 20) noted that traditional leaders derive their power from the control of the land apportionment process rather than their inhabitants among their subjects. According to this variable, if customary land is taken away from traditional leaders, their authority is taken away because it is partly derived from cultural beliefs that have an interconnection that spills over to land as a key resource where authority is applied and exhibited. The theory therefore establishes that the size of customary land determines the power that the traditional leader has. Furthermore, Gluckman (1965) highlights that the kind of rights one holds in land is a clear indicator of the status quo in relation to whom they are answerable to (the state or the traditional leadership), which is very important in the traditional leadership.
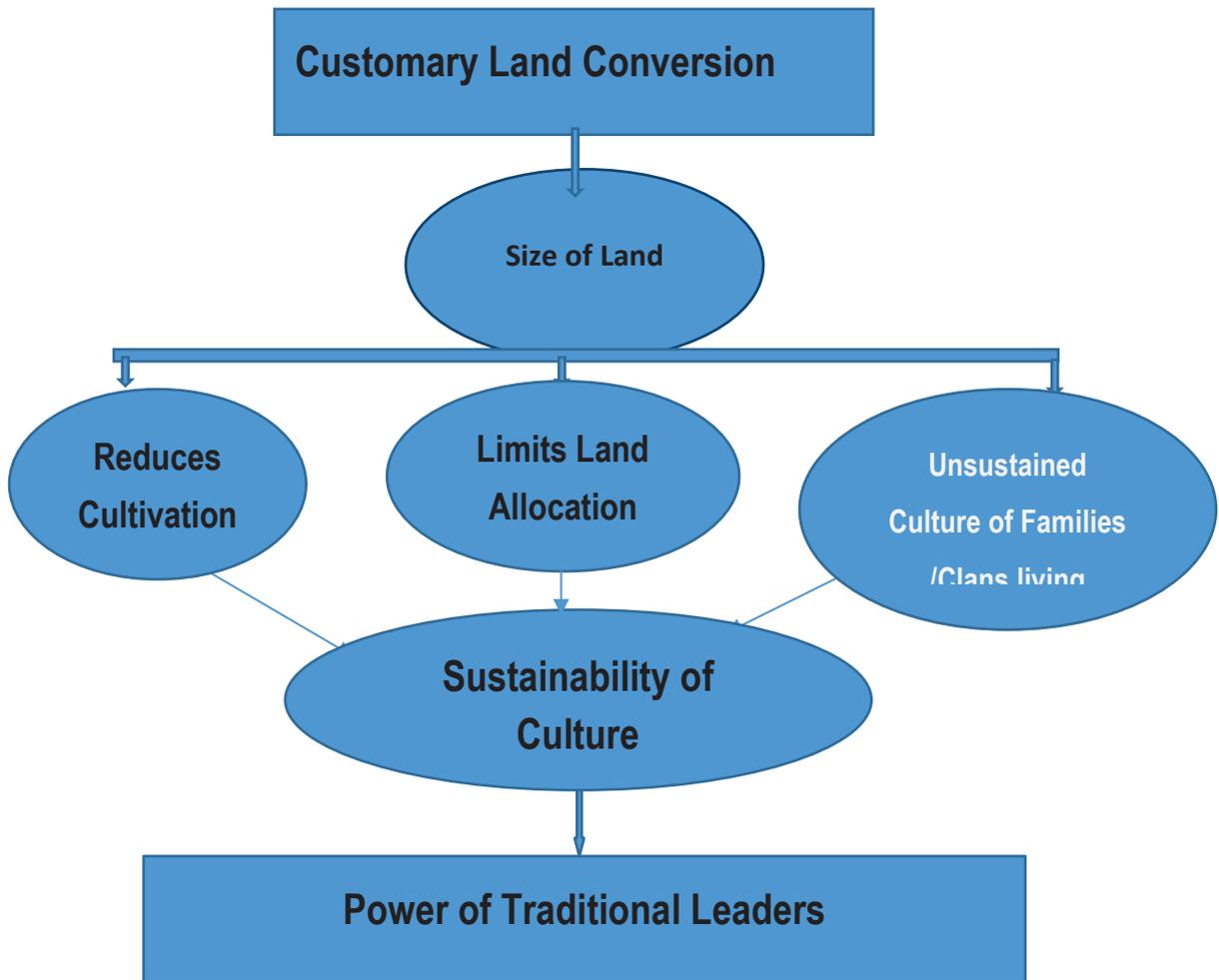
Figure 1: Conceptual Framework – Size of Land Variable

## 5. Literature Review

The literature includes extensive debates on land in relation to customary and state land, impacts of converting customary land to leasehold on investments, land use, land documentations (a common research stream in Zambia at the time of this research), cadastral systems, impacts of land reforms and land policy formulations, displacements, dispossessions and enclosures, land grabbing, and disputes on boundaries or family/clan decisions. However, a limited number of studies such as Buur and Kyed (2006), Ntsebeza (2005), Kompi (2018), and Tieleman and Uitermark (2019), have explored institutions of traditional leaders in relation to evolution, modern city, the colonial administration, and state presence, among other areas of focus. However, there is limited research on how these land conversions affect the institution of traditional leaders. This study is situated within customary land conversion debates and how it affects the power of the institution of traditional leaders.

The historical aspect of customary land emanates from the colonial period; however, land reforms for Zambia led to a paradigm shift in land administration. According to Sitko *et al*. (2015), 'The 1995

Land Act allocated the power to convert from the customary to the leasehold tenure system from the hands of the traditional leadership to the hands of the state… though without provision of the apparatus to protect customary rights from having their land taken'. Furthermore, Cotula *et al*. (2007) highlighted several aspects that led to conversions of customary land to leasehold, including demographic changes, war over land, change of livelihood leading to diversification into off-farm activities, incorporation of Indigenous production into the global economy with export crops expanding into areas previously used for locally consumed products. They further argued that new players also invested in and acquired land for projected purposes. Additionally, international migration created major financial inflows, which gave foreign investors easy access to finances to acquire land, and socio-cultural changes driven by low-priced communication technology and relaxed cultural 'give-and-take', which affected the way tradition was interpreted. The impact of epidemics such as HIV/AIDS affected land access and management, which also led to customary land conversions (Cotula *et al*. 2007). Mpofu (2014) established that 'land reform models adopted by most African countries were premised on assumptions and did not benefit the historically disadvantaged masses' despite them having traditional leaders who could speak and protect the masses in customary areas.

The legacy of local power has recognised chiefs as local leaders who have significant roles and legitimately representing their community. Kompi (2018) and Khunou (2017) define traditional leaders as individuals who are models of traditions and customs, holding communal political office in line with cultural customs and values, and enjoying the endorsement from their communities to serve them. Kompi (2018: 43), further argues that 'tradition' is the name bestowed on those cultural attributes which, in situations of change, are to be pursued, passed on, thought about, safeguarded, and not lost.

However, some governments and colonial masters could sometimes manipulate the selection of traditional leaders and impose it on a community for their own benefit. For example, Tieleman and Uitermark (2019) revealed that in some areas like Faroma in Ghana, the chief was just imported from another area (Leba). Such operations created a widespread uniform traditional-cum-bureaucratic web, resulting in inhabitants taking little or no role in establishing a chief and an aspiring chief claiming authority based on his background rather than on his connection to the actual inhabitants of the area. At this juncture, it is important to note that once a traditional leader is appointed into the chiefly office, they remain in office for life, and in most cases selection of chiefs followed the blood line linkages to replace them after their death.

Such scenarios could be the reason most of the traditional leaders are paranoid whenever the governments begin to discuss land issues with them; even before gaining an understanding of what their governments want to do, they tend to react negatively. Moreover, in Zambia, the constitution indirectly allows land grab as it states that once traditional land is converted to leasehold, it ceases to be under the traditional authority but is converted to state land. Considering that traditional land has been in the

custody of traditional leaders, while leased land is under the state, this entails that every conversion of traditional land reduces the size of such land. Tielerman and Uitermark (2019: 715) asserted that 'as part of the process of state formation, chiefs lose some of the functions they historically fulfilled, but also take on new roles, including being entrusted with the task of leasing out pieces of land to new settlers, a legal power enshrined in Ghana's constitution'. Other chiefs still obtain the power to administer customary land from the values and norms of the community or ethnic group that they are governing. Tielerman and Uitermark clearly demonstrated that during colonisation, the Privy Council of London decided where land in coastal West Africa was proven to have been managed communally and never individually owned in a landmark case in 1921. It was reported that this fact influenced the Ghanaian colonial government to grant all tribal leaders the important position of guarding (custodian) the customary land within the territories where their tribal communities were given the power to administer such land among their communities; this was later codified in the constitution (Tielerman and Uitermark 2019). Most of the governments had also bought into this idea, including Zambia. Hence, this research explored how land administration in the name of converting from customary to leasehold impacted the power of the traditional leaders in Zambia.

## 6. Methodology

### 6.1 Research Design

A case study design was adopted for this study. The selected case, the 'Mungule Chiefdom', has had a history of massive conversion of customary land to leasehold. Yin (2009: 11) indicates 'a case study has a unique strength as it can deal with a full variety of evidence, documents, artefacts, interviews, and observations, and it is ideal because it studies contemporary events'. This approach was ideal for examining how the institutions of traditional leaders are sustained after customary land is converted to the leasehold tenure system whereby the process is continuously reducing the sizes of customary land from where they draw their strength.

### 6.2 Data Collection Tools

### 6.2.1 Interview guide

The main tool for data collection was in-depth interviews as this method allows participants to express themselves without restrictions as they see appropriate (Bryman 2008). Moreover, interviews allowed the researcher to gather in-depth data through the interviewee's moods, competencies, and views (Schutt 2018). Semi-structured interviews were conducted in line with the researchers' own line of investigation as replicated by the protocol of the case study. Spontaneous questions were asked while following the interview guide prepared and pre-tested by the researcher. This helped elicit homogenous responses with information worth formulating into thematic areas relevant to the topic. Since questions were open ended,

it allowed probing to enrich the knowledge relevant to the study. Additionally, Bryman (2008) posits that as interviews progress, interviewees raise extra and complementary issues that form an essential part of the findings and that this aspect leads to collecting in-depth data. Additionally, the interviews were recorded with participants' consent and the researcher took notes following Mushinge and Mulenga (2016).

Since there were seven categories of respondents, seven different interview guides were formulated and each was complimentary to the others. The main questions common in all of them included the following:

1. What does customary land mean to you?
2. What does customary land mean to the people who are buying it from you?
3. Why do you think people convert land?
4. What is the process of converting?
5. How does converting of customary land affect you?
6. How does it affect traditional leaders in this chiefdom?
7. What strategies have you put in place to mitigate the impact?

### 6.2.2 Observation

Another data collection instrument was observation. The relationship that was established with participants enabled the researcher to gather relevant data through this technique because participants continued their daily lives as normal (Schutt 2018).

### 6.2.3 Secondary sources

Other sources of data such as published and unpublished literature, government documents, and relevant literature were utilised. Review revealed some of the historical and other efforts made to improve leadership skills such as the curriculum for the training of traditional leaders that was introduced by the government at Chalimbana Nisticle College. Such literature was reviewed and helped the researcher to add the historical knowledge of some of the background activities and debates.

### 6.3 Data Analysis

A considerable amount of text data was collected between 2019 and 2021 from several sources. The chiefdom was first accessed through one of the chief advisors to the Chieftainess Mungule and they reported that the Chieftainess was unwell at most of the times of the interview in the chiefdom. However, interviews were conducted with the Headmen (Advisory council, disciplinary committee, land management committee, and village councils), some representatives from the House of Chiefs, Ministry

of Traditional Affairs, Ministry of Land, The Private Sector dealing in land such as People's Process, Medeem, Land Alliance and Caritas, historians, academicians, local/ foreign investors who have acquired land from this customary area, and the members of the Mungule ethnic community (both newcomers as well as the local/Indigenous people).

Most of the participants agreed to have their interview recorded, and this was further transcribed. Additionally, field diary notes were reorganised to produce chronological and structured interpretations, which became the substantial basis for further analysis and reduction through description analysis. This facilitated the generation of the themes. The data were transcribed subjected to thematic analysis. A qualitative software tool 'QDA Miner' (Qualitative Data Analysis Software) was used for coding and categorising data, especially large amounts of texts considering that the questions were open ended. Data mining involved exploring and analysing large blocks of information to determine meaningful patterns and trends.

**6.4 Sample Size**

A total of 36 participants were randomly selected from diverse specialisations. The main participants included seven Headmen from within the Mungule Chiefdom, 11 randomly-selected members of the chiefdom in various villages (local people and newcomers). To enhance the research and data collection, triangulation was utilised as a strategy and it enabled participants with different specialisations to be identified (Mushinge and Mulenga 2016). These include four representatives of the government[1], five chiefs from other chiefdoms but within the country, five private sector personnel from different organisations, and two historians and two academics from the University of Zambia, since it is the University with a strong institutional memory in relation to the topic.

Key participants had various lengths of stay in the chiefdom. For example, three Headmen had lived in the chiefdom for between 6-10 years having relocated from elsewhere, two had lived in the chiefdom for between 16-20 years, and two had lived there for more than 20 years and were in fact born and bred from within the chiefdom. In addition, of the 11 randomly-selected participants from the Mungule Chiefdom, six had lived there for more than five years (they came from outside and had settled there), three for more than 20 years, and two were born and bred within the chiefdom.

Following approval from the University of Cape Town Doctoral Degrees Board (DDB), the researcher went to the field and collected data as presented below.

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[1] One each from the Ministry of Traditional Affairs, Ministry of Lands, and the House of Chiefs.

**6.5 Target Population**

The Indigenous tribe in the study area is Lenje. A Village Headmen (HD4, 17th September, 2019) explained that the 'Lenje tribe came from Kola in the Luba Lunda Empire in Congo, their king was Mulopwe, and he was the father of Chief Mukuni of the Tonga people in the Southern Province'. Before reaching Chibombo, the Lenje people had seven stopovers, meaning they established seven camps before reaching Chibombo. Several categories of the individuals were connected to the chiefdom in some way, as detailed below.

**6.6 Case Study Area**

The chiefdom is nearer to the city centre of Lusaka and attracts a lot of people wanting to acquire. The electricity source is within the parameters of about 400 metres away, and road set-up is good although not tarred. Chitonge *et al*. (2017b: 83) and Sitko *et al*. (2015) in their research, highlight the advantages of traditional lands that are close and have developed infrastructure such as major roads, railways, and towns. Their research revealed that such cities were experiencing numerous displacements, which were facilitated by increased land conversions from the customary to leasehold tenure system. Similarly, the Mungule Chiefdom has had several such conversions; therefore, institution of traditional leaders as well as the local people have had a practical experience of how land conversions have impacted them. The Nkhomesha Chiefdom has similar characteristics to the Mungule Chiefdom but the Chieftainess does not allow customary land to be converted; as a result, only 10% has been converted and only for public use such as community schools, clinics, and so on. The aforementioned characteristics of the chiefdom provided a potential study area for examining the implications of customary land conversions for the power of the institution of traditional leaders since this was being practiced even at the time of the interviews.

**7. Empirical Evidence**

**7.1 Reduced Size of Customary Land**

The Constitution of the Republic of Zambia clearly states that all land under leasehold tenure system is state land. Before the land reforms in 1995, the two-tenure system that existed in Zambia divided land in such a way that 94% was under the customary tenure system and 6% was under the leasehold system. Considering that there has been a scramble for customary land in the chiefdoms, especially those located near cities, individuals with capacity have been acquiring such land. Furthermore, as Chitonge (2018) indicates that, for security reasons, most of the individuals or investors who secure such land have limitations on how much capital they invest. The aforementioned study revealed that after individuals/investors convert their land to leasehold tenure system, such land becomes individualised

and new owners have no reservations investing huge capital, and through the conversion of customary land, newcomers obtain ownership of the land 'title deed'.

When customary land is not converted, investors are often at the mercy of traditional leaders and their activities on such land are regulated using customary law. For example, they are not allowed to fence their land for fear of breaking the 'oneness' in villages. Meanwhile, if they allow their pieces of land to be accessible at any time, local people tend to release their animals onto such land and these tend to destroy newcomers' crops; in some incidences, local people break into the newcomer's house and steal from them.

This clearly demonstrates that converting customary land has reduced the size of such land. Additionally, other participants stated that this reduction was worsened by the increase in population for the local people. These factors compelled traditional leaders to reduce the sizes of the land they were allocating to local people. Other participants indicated that population increase caused some people to be displaced due to limited resources. Others indicated that due to the perpetually increasing population in the chiefdom, they neither sold nor denied other people from accessing customary land, instead they indicated that they shared their land with others in need. The population increase was facilitated by birth or regeneration, as well as migration, among other factors. In justifying the reasons for not selling their land, some participants, especially the local people of the chiefdom explained that:

> Currently, headmen are reducing the sizes of the plots that they are allocating to members of the village in our chiefdom. (OM5 17 September 2019; OM6, 17 September 2019; OM3, 27 August 2019; OM 1, 28 September 2019).

However, reduction in the size of customary land further affects local people. It reduced their cultivation, changed their livelihood, and meant that traditional leaders have limited customary land to allocate. These are empirically discussed in detail in the next section.

### 7.1.1 Reduced cultivation in the chiefdom

The size of land for the local people of Mungule Chiefdom was reduced, and they linked this to the massive conversions that were happening in the chiefdom. One of the Headmen stated that:

> Since people have been left with small pieces of land, their cultivation is negatively affected and there are no instances when they have to ask the traditional leaders to provide food. In most cases, they tend to say 'Boma ilanganepo' (local language), meaning the government should come to their rescue through The Disaster Management and Mitigation Unit (HD2, 27 August 2019).

Some participants highlighted that reduction in cultivation drove the community into poverty because they were hardly able to address their basic needs in terms of food. It should be noted that the literature indicates that 14% of the arable land in Zambia is used for agricultural purposes. Furthermore, about 80% of the rural population's livelihood is dependent on agriculture since they have land as a natural resource, and maximise their benefit from the land (CSO 2012). Furthermore, this study established that local people of the Mungule Chiefdom now cultivate maize, soya beans, and vegetables on a smaller scale, while they were previously the major suppliers of the cities. Some participants highlighted that through these supplies, local people were able to send their children to school. Conversely, customary land conversion meant that newcomers acquire land from local people and develop it into something else, particularly real estate where they built houses and rented them out to people that work in Lusaka, built industrial works on them, or used them as commercial farming land. Other participants highlighted that such a scenario compelled local people to continue using smaller sizes of their customary land and that they had no choice but to use the little remaining land for cultivation regardless of the sizes of their families. Furthermore, some participants indicated that initially, traditional leaders considered the size of the family when deciding the size of the land to apportion. However, they no longer consider this factor. Furthermore, another participant highlighted that:

> With the Kaonde tribe, where I was raised, we called it shifting cultivation, where you cultivate a certain portion of land and after 5 years you abandon the area and look for a new one. This was done because there was still enough virgin land; now with this higher population, there would be nowhere to go. So you will intensify cultivation on the piece of land you already have access to (A1, 12 February 2020).

Therefore, customary land conversion has reduced cultivation in the chiefdom.

### 7.1.2 Changed livelihood among the local people

As discussed in the preceding section, Lenje people who live in the Mungule Chiefdom have survived on agricultural cultivation since time immemorial, and the amount was determined by the size of a particular family, which traditional leaders used to determine the size of land to allocate. Therefore, reduced cultivation appeared to mean that local people could no longer sustain their livelihoods, and most were forced to search for other alternatives to survive. Some participants began to flock to the nearby cities to search for informal jobs such as garden boys, maid, or shopkeepers. This forced most to stay away from their chiefdom most of the time.

### 7.1.3 Limited space to allocate to local people

As previously highlighted, conversion reduced the sizes of customary land while the population continued to increase. As a result, such land had to be shared to accommodate others, either through monetary transactions or purely sharing without the involvement of money. However, most of the participants indicated that whenever the sharing involved money, tension was created not only with the seller but also with their families because, in many cases, heads of households seemed to conduct such transactions secretly. Furthermore, it was also highlighted that most such scenarios surprised the initial owners as they observed that the new owners did not cooperate with the rest of the families. One participant from the ordinary members of the chiefdom stated:

> The problem is that when money is given to get customary land, the land becomes theirs, if they even get title deeds for it. This is where you get to see the new owners begin to fence their land to cut us off from accessing any resources from such land, and in some instances, they begin to make you pay for the water and no traditional leader can intervene, since the property is now privately owned (OM1, 28 August 2019).

In the same vein, another participant highlighted that:

> I sometimes regret having sold land. First of all, there is no land to sell anymore, and when new people first arrive, they look humble, and seem to bring development for all of us to benefit from. However, when they finish building their structures on their acquired land, they change their minds. Therefore, this place looks like it has developed; meanwhile, we have no access to the many amenities that have been brought into our chiefdom and our leaders cannot say anything to change the minds of the newcomers once they have made their own decisions (OM 4, 28 September 2019).

However, some local people were refusing to sell their land and they had their own reasons for not selling. For example, one member of the community stated:

> We have never sold any land because we wouldn't want to have our children and their children stranded in the future due to limited space for their allocation or extension of their pieces of land (OM4, 28 September 2019).

In a similar vein, one of the historians indicated that traditional leaders would not sell traditional land due to the issue of sustainability. Others indicated that they could not sell the land because it was the

final resting place for their beloved family members who have died (HD2, 27 August 2019; OM3, 28 August 2019; CH3, 22 June 2020).

## 8. Findings and Discussion

### 8.1 Stoppage of the Culture of Paying Homage to the Traditional Leaders

The reduced cultivation among local people in the Mungule Chiefdom causes them to fail to pay homage to their traditional leaders as part of their culture. Homage is paid in form of the harvest that each member of the chiefdom takes to the palace after every season. This is consistent with one researcher who argued that such resources enabled traditional leaders to exert influence and control over their people in times of need (Geu 2020: 19). In the Mungule Chiefdom, traditional leaders used this harvest to respond to the food crisis experienced by different members; for example, some participants indicated that crises could come through situations such as 'a breadwinner for a particular family becomes critically ill and fails to provide for the family'; in such circumstances, the traditional leader would step in and assist. Geu (2020) further suggested that traditional leaders no longer had profitable means and constitutional powers to administer the law that can guarantee social order in their community.

In other instances, some participants stated that they have sometimes faced crises due to their own actions. They gave an example of when they fail to respect the spirits of the ancestors who are buried in the customary land within their chiefdom. The spirits of the ancestors tend to get annoyed and punish the whole chiefdom either through mysterious deaths or drought.

Therefore, traditional leaders' power is enhanced and recognised by onlookers as well as by local people through their responses to the crises experienced within the chiefdom. When selecting traditional leaders, people within the chiefdom consider events where individuals help the rest of the community such as provision of protection or food when there is a crisis. Members of the community tend to build on such and follow it religiously as a culture of a qualification for one to become a leader. When traditional leaders fail to respond positively in dealing with a crisis, it affects how the community perceive them.

The aforementioned is a clear indication that the power of traditional leaders is negatively affected by every conversion of customary land in the chiefdom. This was supported through an interview with one of the traditional leaders:

> In the past five years, there has been no instance when local people in this village have
> come to ask me to provide food for them. In most cases, they tend to say Boma ilanganepo,
> in local language), meaning the government should come to their rescue through the
> disaster mitigation unit (HD2, 27 August 2019).

This is consistent with Geu's (2020: 4) findings that lack of power and influence limited some traditional leaders in Dinka Bor from preventing interclan conflicts and enforcing social cohesions that could maintain peace and harmony among the communities across villages.

**8.2 Unavailability of Local People for Community Activities within the Chiefdom**

Nonresponse to crises has caused most local people to look elsewhere for solutions and not to the traditional leaders as was historically the case. This rendered the power of traditional leaders ineffective, as demonstrated when such leaders call for meetings or activities such as maintaining the roads in their chiefdom. Local people are generally not available because they tend to go to nearby cities to look for piecework to survive. Meanwhile, Honig (2019) argued that among other guidelines of conduct, traditional institutions term when and why followers ought to be submissive to their leaders and what they can anticipate in return. However, the traditional leaders perceive those local people as disloyal to the leadership.

The critical shift of local people and traditional leaders from their domain to the government for solutions indicates the shift in the authority vested on the traditional leaders over their chiefdoms; hence, further weakening the command these leaders once had in their land. This implies that traditional leaders have been replaced by the state, whereby, local people no longer look to them for provisions or any solutions to their plight. This finding is consistent with Chimhowu (2018), who clarified the dilution of generic set-ups in chiefdoms as a result of dynamics in original set-ups of communities in relation to production. The foregoing development in the chiefdom has resulted in local people struggling to access basic needs, such as food and clothes. Therefore, to survive, local people are compelled to secure formal jobs. For example, those who were previously entirely dependent on the harvest begin to look for piecework within, as well as outside the chiefdom. Owing to the demand for such workers, local people are no longer easily available for local meetings. This development is worrisome for the traditional leaders, who perceive their people as no longer paying allegiance to them. This could be true to some extent as such a scenario intensifies, and traditional leaders' power will eventually diminish in their chiefdoms. The changed lifestyle of the local people is in line with Chitonge *et al*.'s (2017b) findings, which highlight how traditional leaders were encouraging their people to engage in other economic activities apart from cultivating maize because the fields were becoming smaller in the Mungule Chiefdom.

In the same vein, due to the above factors, traditional leaders' power has been compromised and negatively affected to the extent of causing anxiety in the institution of traditional leaders. For example, Chieftainess Mungule had become very hostile to other traditional leaders from other chiefdoms because they began to mock her for selling most of her land. This was established when other chiefs realised that Chieftainess Mungule had stopped attending any traditional leaders' meetings.

**8.3 Curtailed culture of families living in Clans**

The consequence of restricted space for land allocation by traditional leaders weakens the culture of families living in clans, for numerous generations, because customary land becomes restricted to share with the future generations. Wolf *et al.* (2021) argue this set-up confines the significant evidence of a protective family bond and shared social values. Chitonge *et al.* (2017a: 7) state that 'the policy which permits converting customary land to leasehold tenure can be blamed for this increasing phenomenon of monetary transactions in the customary areas'. Meanwhile, through this scenario, it was established that local people were financially incapacitated in that they could not engage in any activity that attracted money, hence creating an opportunity for newcomers to access customary land and converting to leasehold tenure, leading to the disintegration or displacement of family or clan bonds among the local people. This outcome forces future generations to instead move to other locations within or outside the chiefdom, which potentially leads to displacement of the local people. As such families are scattered, this creates a challenge when formulating customary laws for the village/chiefdom, thereby affecting the efficiency of such laws within the chiefdom.

This study reveals the worry local leaders have, that is, losing their family connections. Whenever members of some families move, traditional leaders would have no subjects with fathomable knowledge of their culture, values, and norms, and this would compromise their power in their chiefdoms. Moreover, the action of people relocating to other areas has potential to cause poverty, family disintegration and destitution among those who remain since their spaces for cultivation would be reduced with every land transactions with buyers. Wolf *et al.* (2021) revealed that lack of family connection brought about impending social change towards Americanised values and conduct. Geu (2020: 25) affirms that 'internal conflicts, lack of peace and stability continue to affect villagers … in the absence of empowered traditional leaders…' This study established that traditional leaders are not empowered when clans and families disintegrate because they cannot form proper collective voices to empower the traditional leaders with customary laws. This has resulted in a challenge for such leaders to control the negative practices that have been identified within their chiefdoms, leading to the diminishing of the culture and tradition of the local people. Geu (2020) further highlights that the effect instigated by such diminishing powers could be responsible for the lawlessness and cultural and social chaos observed in the customary areas.

**9. Conclusion**

This study established that reduced sizes of customary land renders traditional leaders powerless to the extent of them failing to govern populations in their chiefdom, leading to an inevitable wearing away of culture in the Mungule Chiefdom. This scenario causes local people to stop conducting certain activities that are culturally based and begin to follow foreign cultures. This aspect clearly demonstrates that

traditional leaders are negatively affected by the conversion of customary land to leasehold tenure. Apart from the aforementioned, local people begin to look elsewhere for solutions in times of crisis, especially to the government instead of the traditional leaders whom they initially depended on entirely for everything they needed in the chiefdom; local people's failure to look up to traditional leaders is a clear indication of how customary land conversion negatively affects the power of such leaders. Finally, customary land conversions to the leasehold tenure system leads to disintegration of families or clans/villages. Individuals who tend to acquire and convert customary land in most cases tend to settle between families depending on who sold them land. This aspect tends to break the 'oneness' because newcomers usually build enclosures which subject local people to using long cuts to reach other relatives or members of the clan. This therefore causes the local people not to stand together with a collective voice and this becomes a challenge when formulating customary law for the community. Failure to formulate such law negatively affects the power of traditional leaders who use it to govern people in customary areas. Therefore, this study argues that converting customary land to the leasehold tenure system negatively affects the power of traditional leaders.

## 10. Recommendations

Based on the findings and conclusions, the following recommendations are made:

1. There is a need to permit all stakeholders to help traditional leaders sustain their power in the customary areas. This can be done through the government, who can amend their policies on land that is, integrating land documentation in the policies. This ought to be done in such a way that the power over land should continue to remain in the hands of traditional leaders even after land has been documented.

2. Instead of labelling modification of the tenure system as 'land conversion', the government should consider calling it 'Land Documentation'. As such, the government should help expedite comprehensive documentation of the occupants of the Chiefdom for records purposes.

3. Based on Recommendations 1 and 2, the government needs to ensure that they re-value land through the Land Documentation to the extent of facilitating having it be used as collateral in banks if a person needs to access financial assistance. This aspect will empower the community as well as the traditional leaders.

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# Trajectories of Cocoa Production in Tshopo Province: Potential for Climate-Change Mitigation

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**Abstract**

The global demand for cocoa has increased. As a result, the area used for cocoa production rapidly increased. Africa alone produces over 70% of the cocoa in the world, with Ghana and Côte d'Ivoire being the main producers. Although listed as a crop that drives deforestation and forest degradation, cocoa farming has the potential to actively contribute to forest restoration. If practised in agroforestry and fallow or degraded areas, it can considerably contribute to biodiversity conservation, climate change mitigation, poverty mitigation, and other services. The Democratic Republic of Congo (DRC), which features a large forest in the Congo Basin (60%), has become a new hotspot for this cash crop. As one of the areas suitable for the development of this crop, which has been grown since colonial times, Tshopo province, DRC, is experiencing rapid increases in its cocoa-growing area. As such, our objective in this study was to track the trajectories of cocoa farming in Tshopo and determine their contributions to climate change mitigation through the restoration of degraded ecosystems. We described all cocoa development initiatives in the Tshopo province, along with their potential responses to climate change.

**Keywords**: climate change, carbon storage, cocoa agroforests, MRV, Tshopo, DRC

## 1. Introduction

The medium-term growth in global cocoa consumption has been projected at 3% per year, with new markets (China, India, and eastern Europe) 'discovering' chocolate, with demand increasing compared with that of traditional markets (Europe and the United States of America). Therefore, new emerging countries producing cocoa must be identified to meet this global demand (Huart *et al.* 2011). The Democratic Republic of Congo (DRC), with its suitable climatic and soil conditions, is an area where African cocoa production is expanding. As cocoa production increases in the DRC, the country can learn from its West African counterparts to avoid mistakes and to prioritise sustainable and climate-smart practices, good governance, innovation, and value addition (Downie 2018).

As a developing-world organic cocoa producer and one of the main European Union organic cocoa bean suppliers, supplying 8.6% of the total, the organic cocoa areas in the DRC have substantially expanded in recent years (Le Douarin 2020). The DRC is a unique country with land that is suitable for this crop in 16 of its 26 provinces, and is therefore extremely favourable for the development of cocoa production (Huart *et al.* 2011).

The production systems in the DRC are mostly mixed, with industrial and semi-industrial plantations surrounded by village plantations. This production system favours the rapid development of village production, allowing smallholders to access not only markets but also the technologies and services they need, which cannot yet be offered by public services on a daily basis (Huart *et al.* 2011).

DRC soils are generally deep, well-aerated, and more fertile than those of West African countries, where fertiliser use has become essential to achieve satisfactory yields. In the DRC, where the agro-climatic conditions are appropriate, high yields can be obtained through the application of environmentally friendly farming practices, such as the use of cover plants, organic waste, or compost (Huart 2016). However, until now, cocoa has been cultivated to the disadvantage of forests (Kibambe and Madibi 2022). Cocoa, instead, should be grown in savannahs or areas that were formerly forests that have become fallow (Huart 2016).

In the DRC province of Tshopo, the National Institute for Agronomic Research and Studies (INERA) station in Yangambi has selected elite cocoa clones that produce of 2 tonnes/ha of cocoa. However, in practice, the yield produced by old cocoa farms is around 500 kg/ha (Huart 2016). Generally cultivated under diversified shade in Tshopo, cocoa farming could constitute one method to store more aboveground carbon than other agricultural systems (Batsi *et al*. 2021).

Given the current revival of cocoa crops in Tshopo, especially by people with the financial means to open up large areas of land (>50 ha) (Windey 2020), vigilance is required. Land grabbing deprives local communities of their land commonly used for cash crops, and some forest land is being converted to agricultural lands to produce cocoa, thus contributing to increases in the rate of deforestation and forest degradation. The growing interest in cocoa production in Tshopo is also explained by the rampant

insecurity in the cocoa-producing areas of North Kivu (Beni Territory) and Ituri (Mambasa Territory).

Identifying opportunities and challenges for cocoa production in Tshopo Province was our main objective with the current literature review. We aimed to analyse its development trajectories to determine its sustainability based on climate-smart cocoa production practices for an effective response to climate change.

## 2. Geographical context

Tshopo, located between 2°0' N and 2°0' S and 21°24' W and 28°2 E, is approximately 87% covered by rainforest. Agricultural areas (~10%) are located mainly along roads, waterways, and large agglomerations, such as in the city of Kisangani. Forests predominate owing to the geo-climatic conditions in the region (Omasombo 2020). Covering an area (including the city of Kisangani) of 199,567 km², representing 8.5% of the national territory, Tshopo is the largest province in the DRC (Figure 1). Kisangani is the capital of this province.

Currently, Tshopo has 17.6 million ha of mature forests (Masson 2022). From 2002 to 2021, Tshopo lost 661,000 ha of primary rainforest[1] at an average rate of 1.5% per year (Masson 2022), mainly due to urbanisation and agricultural expansion. In the immediate vicinity of Kisangani (<1 h), these disturbances are the most serious.

## 3. Temporal analysis of cocoa farming in Tshopo

Cocoa cultivation has undergone three major periods in this region. It was first introduced by INERA in Yangambi during the colonial period. During this period, several agronomic experiments were conducted, including the selection of different shade-tolerant species. However, this crop was not popularised in rural areas at that time. In 1979, the Bengamisa cocoa plantation Cacaoyère de Bengamisa (CABEN) was set up in the country. CABEN was managed by a South African company with the aim of developing more than 2000 ha of farmers' plantations in addition to an industrial plantation. Three farmer stations supervised by CABEN agronomists were created: Kisangani, Kapalata, and Yangambi. Several peasant farms were established between 1986 and 1988. However, CABEN went bankrupt, and the farmers supervised by CABEN lacked a market to sell their cocoa. At the time, CABEN was the exclusive buyer. Consequently, many farmers' plantations were either abandoned or converted to food crops. A few farmers were able to maintain their plantations owing to the advice provided by the former agronomists of the company who had settled in the community.

More recently, with the arrival of some communities from the eastern DRC, particularly from North Kivu, old cocoa plantations are being revived. This is due to the discovery of a new market in the east

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[1] https://www.globalforestwatch.org, Accessed on 23 November 2022

and Uganda, and the presence of new buyers at the local level from North Kivu. Abandoned plantations have been taken over and rejuvenated. This market recovery has led to the creation of new plantations by other farmers. Thus, several plantations have been and are continuing to be established. Notably, this new expansion of cocoa farming is the work of migrants and local traders who have the opportunity to acquire large tracts of land at the expense of the village community.

In addition to the expansion mainly by migrants, initiatives by REDD+ projects provide support to local communities in cocoa farming. However, the process is still basic and limited to a few small villages and farmer associations that are not fully supervised due to the lack of leadership, technical capabilities, and human resources within the Ministries of Agriculture and Rural Development.

## 4. Varietal and genetic potential of cocoa plants in Tshopo

Tshopo, which hosts INERA, has a collection of 62 genetic materials in a trial cocoa plantation at the Centre de Recherche de Yangambi (CRY). The current germplasm collection in Yangambi has resulted from selection experiments involving diverse accessions from various introductions. The INERA research station in Yangambi still harbours old cacao trees, derived from crossings between the best local selections and the Upper Amazon introductions in 1934. These old trees were probably genetically related to the trees introduced during the Belgian Congo period. Genetically, the Yangambi collection is composed of two groups: a hybrid population, originating mainly from Amelonado and/or Criollo–Trinitario, and, to a lesser extent, from Marañón and Nanay; and a population predominantly assigned to Amelonado, but also to Nanay, Contamana, and Nacional.

Most of the CRY cultivars are scattered between the Forastero and Trinitario reference accessions, indicating the hybrid nature of the African collection. Belgium introduced various cacao varieties from Brazil, Trinidad, Ecuador, and Venezuela, all of which were tested in Brazil. The diverse foreign introductions and the substantial number of hybridisation events that have occurred in the DRC have caused an admixed ancestry of most of the CRY cultivars, as observed. Only a small amount is associated with one reference group: Forastero or Trinitario. The Yangambi collection has some agronomically interesting hydrides, including CRY1424 and CRY15, which are resistant to several cacao diseases, such as witches' broom and black pod rot; and cultivars CRY14 and CRY12, which are known for their high organoleptic quality and floral aroma (Rottiers *et al.* 2018).

## 5. Main cocoa production areas in Tshopo

Formerly cultivated only in the area influenced by the CABEN (on the Kisangani–Banalia road) and at the INERA-YANGAMBI Research Centre, cocoa farming has now intensified mainly in diverse locations: (1) along the Kisangani–Alibuku–Ngeno road in the Industrie Forestière du Congo (IFCO) forest concession in Alibuku (36 km from the town of Kisangani on the old Banalia road) (Windey 2020,

Vyawahare 2022), (2) the Kisangani–Bafwasende axis, and (3) the Kisangani–Lubutu road. The intensification of cocoa farming has resulted from the growing use of allochthones, mainly from the Nandé tribe originating from North Kivu, as well as some local elites and notables living in Kisangani and elsewhere, and some politico-military authorities (Windey 2020). In addition to these initiatives the distribution of cocoa trees and some shade-tolerant species to local communities by REDD+ projects (including PIREDD-MBKIS, mainly on the Kisangani–Banalia axis (Banalia territory) and PIREDD-ORIENTAL (Bafwasende, Ubundu, and Isangi territories) have also contributed to the expansion of cocoa production in the region (Figure 1).



Figure 1. Potential and active cocoa production areas in Tshopo province, Democratic Republic of the Congo
Source: Authors

## 6. Cocoa production statistics in Tshopo

Currently, evaluating the exact quantity of cocoa producers in Tshopo is difficult because of the inefficiency of public services. However, many producers likely do not accurately declare their production to avoid harassment by various types of public services and the collection of taxes. We obtained the data (Figure 2) from the National Office of Agricultural Products of Congo (ONAPAC), which is a state-owned company that controls exports, uses end buyers to declare annual production, and sends a report to the Central Bank of Congo (BCC). Based on the data obtained from ONAPAC-Tshopo and the BCC report, we found that the annual growth in cocoa production at the national level

and in Tshopo Province has been exceptional, mainly since 2017. At the national level, production rose from 5995 tonnes in 2013 to 58,238 tons in 2021; in Tshopo, it rose from 12.3 tonnes in 2016 to 202.24 tonnes in 2021.
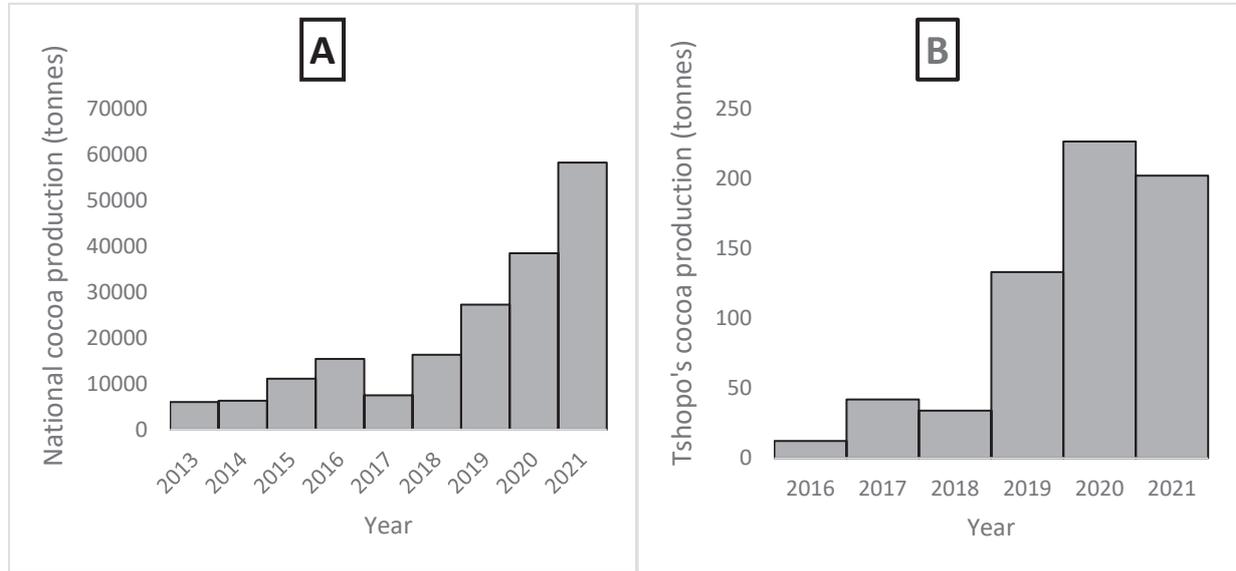


Figure 2. Cocoa production evolution at national (A) and Tshopo province (B) level

Source: Figures developed from the ONAPAC Tshopo (A) and BCC 2022 statistics reports (B).

## 7. Main public and private actors in cocoa production in Tshopo

The cocoa sector in Tshopo (Figure3) is organised into three categories of actors: nongovernmental organisations, public organisations (public services), and private actors (farmers, buyers, and cooperatives). The cocoa farming sector in Tshopo is driven more by private actors (elites and the political and military authorities, but, to a large extent, non-natives, including the Nandés); the Belgian Development Agency (ENABEL) through the Agricultural Development Program in the Tshopo District (PRODAT); United Nations Development Programme (UNDP) and Tropenbos-DRC (nongovernmental organisation) through the Eastern Integrated Program for Reducing Emissions from Deforestation and Forest Degradation (PIREDD-Oriental); Environment and Sustainable Development Ministry (MEDD) of the DRC through the Integrated REDD+ Project in the Mbuji-Mayi/Kananga and Kisangani basins (PIREDD/MBKIS), which is locally implemented by a nongovernmental organisation consortium: Congolese Organization of Ecologists and Friends of Nature (OCEAN), Pygmies Support and Accompaniment Organization (OSAPY), and Association for the Integrated Development of Kisangani (ADIKIS).

The cocoa trade in Tshopo is largely centralised around the company Kivu Agricultural Cooperative Society (SCAK) in Kisangani, which exports cocoa via its headquarters in North Kivu. It is also centred around certain buyers and wholesalers, such as OMER, who take their cocoa to Edm Schluter &

Company (ESCO), Kivu, and other companies in North Kivu, or transport it themselves to Uganda. Figure 3 shows the organisational model of cocoa farming in Tshopo.
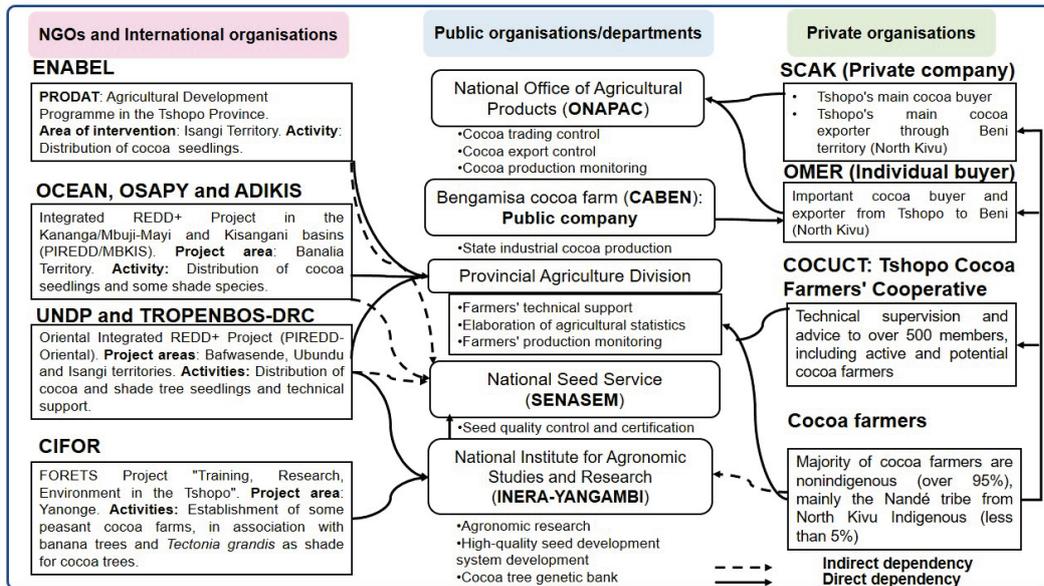


Figure 3. Organisational model of cocoa sector in Tshopo, based on field information

## 8. Cocoa farming in response to climate change in Tshopo

Cocoa plantations are among the perennial crops that the DRC has integrated into its response to deforestation, forest degradation, and climate change mitigation since the REDD pilot project. Two main REDD+ programs focusing on smallholder-cocoa-based agroforestry are currently underway in Tshopo. The first is the Oriental REDD+ program (Bafwasende, Ubundu, and Isangi territories), and the second is the Integrated REDD+ Project in the Mbuji-Mayi, Kananga, and Kisangani basins (PIREDD/MBKIS).

Cocoa in Tshopo is largely produced within agroforestry systems. These systems substantially contribute to carbon sequestration and storage. However, several differences exist between the diverse cocoa-based agroforestry systems in terms of environmental services, such as carbon sequestration and storage. Three main systems, defined by the type of shade plants, are more prevalent in Tshopo: under palm trees, under the shade of forest trees only, and under a mixed shade composed of some palm and forest trees (Batsi *et al.* 2020). The carbon storage in Tshopo cocoa farms (Batsi *et al.* 2021, Mangaza *et al.* 2022) depends on three parameters: (1) shade tree density (especially large trees), (2) wood density of the shade species, and (3) basal area. Therefore, the higher the tree density, wood density, or base area in the system, the greater the carbon storage (Table 1). The carbon stock is mainly maintained by cocoa-associated plants (more than 80%) and large trees (more than 60%). Thus, to increase the carbon stock in agricultural plots, the planting of tree species in pre-existing cocoa farms should be encouraged and to shaded cocoa production under forest trees should be popularised. The cocoa farms using forest tree shade have a multistory structure and, therefore, have considerable potential to provide several

environmental services. This multistory structure is also important for creating a continuum to connect forest mosaics in degraded areas (Batsi *et al.* 2021).

Table 1. Aboveground biomass carbon storage and associated attributes of cocoa farms in Tshopo

| Type of system | Associated plant density (no. ha$^{-1}$) | Cocoa tree density (no. ha$^{-1}$) | Basal area (m²/ha) | Biomass (Mg ha$^{-1}$) | Carbon (Mg ha$^{-1}$) | Reference |
|---|---|---|---|---|---|---|
| INERA-Yangambi cocoa farms | 88±52 | 916±120 | 23.7±10.3 | 197.1±119.2 | 93.62±56,62 | Mangaza *et al.* 2022 |
| Smallholder cocoa farms–forest shade tree | 162±77.98 | 984±200.55 | 22.99±3.86 | 125.12±52.76 | 59.43±25.06 | Batsi *et al.* 2020, Batsi *et al.* 2021 |
| Smallholder cocoa farms–mixed shade | 182.4±113.3 | 824±109.8 | 16.22±2.77 | 72.59±26.04 | 34.48±12.37 | Batsi *et al.* 2020, Batsi *et al.* 2021 |
| Smallholder cocoa farms–palm tree shade | 145.2±38.69 | 826±114.53 | 12.1±2.85 | 71.12±47.41 | 33.78±22.52 | Batsi *et al.* 2020, Batsi *et al.* 2021 |

Source: Built from information compiled by Batsi *et al.* 2020, Batsi *et al.* 2021, and Mangaza *et al.* 2022.

In deforested and/or degraded areas, cocoa farming is a viable option because it can maintain up to approximately 50% of the aboveground biomass (carbon stock) and forest diversity as a perennial crop. However, new cocoa plantations should not be established at the cost of mature forests (Mangaza *et al.* 2022) to avoid the massive deforestation that decimated Ivorian and Ghanaian forests. Therefore, the Zero Deforestation[2] Cocoa Roadmap can be a useful tool for addressing deforestation from cocoa farming from a REDD+ perspective (Pirker and Carodenuto 2021).

## 9. Climate-change-adapted CAFS models of Tshopo and central and west African cocoa-producing countries

Carbon stocks depend on the systems adopted by farmers to manage cocoa farming (Sonwa *et al.* 2018, Batsi *et al.* 2021). Central African cocoa agroforest systems (CAFS) store more carbon than west African CAFS. In west Africa, particularly in Ghana (the global leading cocoa producer), carbon stocks

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[2] Collective commitment signed by the global chocolate industry in 2017 for full supply chain traceability to end deforestation in cocoa-growing regions.

in CAFS hardly reach 30% of that in mature rainforest, and in Central Africa, they can exceed 75% (Cameroon). This contrast is owing to in the systems adopted by the farmers in these two regions. In Cameroon, cocoa farms are established under a thinned forest overstory; conversely, in Côte d'Ivoire and Ghana, cocoa farms are most typically established by slashing and burning the forest (Gockowski and Sonwa 2010) (Table 2).

Table 2. Aboveground biomass carbon storage and associated attributes of cocoa farms in Tshopo

| Country | CAFS' AGC (Mg ha$^{-1}$) | Reference | Foress AGC (Mg ha$^{-1}$) | Reference |
|---|---|---|---|---|
| Cameroon | 170 | Sonwa *et al*. 2017 | 227 | Gockowski and Sonwa 2010 |
| Cameroon | 70 | Saj *et al*. 2013 | 174.8 | Djomo *et al*. 2018 |
| Cameroon | 125.3 | Madountsap *et al*. 2018 | | |
| Ghana | 26 | Mohammed *et al*. 2016 | 173 | Brown *et al*. 2020 |
| Ghana | 36.21 | Afele *et al*. 2021 | 229.4 | Adu-Bredu *et al*. 2008 |
| Ghana | 41.3 | Asigbaase *et al*. 2020 | | |
| DRC/Yangambi | 93.62 | Mangaza *et al*. 2022 | 185.73 | Mangaza *et al*. 2022 |

CAFS**:** cocoa agroforest systems**,** AGC**:** Aboveground carbon.

Source: Built from information compiled by Adu-Bredu *et al*. 2008, Gockowski and Sonwa 2010, Djomo *et al*. 2018, Brown *et al*. 2020, and Mangaza *et al*. 2022.

The CAFS of Tshopo (DRC) lags that of Cameroon in terms of aboveground carbon storage. Although the country is too young for cocoa production compared with Cameroon and west African countries, the DRC should take the necessary steps to avoid the environmental disasters that have occurred in west African cocoa-producing countries. To be well-positioned in the zero-deforestation process and to increase the value of Congolese cocoa and ensure the ecological transition, the systems adopted by INERA-Yangambi (DRC) and Cameroon (regarding their level of carbon storage) must be popularised. In general, the intensification of cocoa agroforestry systems offers considerable potential for advancing the REDD+ mechanism (Alemagi *et al* 2015). Shaded cocoa systems are important for climate change mitigation and adaptation given the ability of these systems to capture atmospheric carbon dioxide ($CO_2$) and store carbon in shade and cocoa (*Theobroma cacao*) trees and soil compared with other agricultural practices (Acheampong *et al.* 2014).

## Conclusions

Most of the newer cocoa farms in Tshopo, DRC, have been developed on forest land, either by directly clearing the existing forest or by first establishing food crops and cocoa farms. Therefore, regardless of the size, the development of cocoa farming in this province has contributes to forest degradation and deforestation This observed deforestation and forest degradation driven by cocoa farming has mainly been the consequence of the failure of the Congolese state to supervise this sector through the relevant services. Some communities, particularly the Nandé community from North Kivu, where this crop is highly developed, have migrated in large numbers to Tshopo either for commercial reasons or to escape insecurity. Because of the lack of remaining arable land in the densely populated North Kivu, these migrants have purchased vast tracts of forest, either from a land acquisition process via provincial authorities or in agreement with local chiefs, resulting in less diversified cocoa production.

The areas used for cocoa production must be carefully chosen to avoid any form of deforestation or forest degradation associated with cocoa production. Consequently, the choice of zero-deforestation cocoa farming, different from cocoa-based agroforestry, is essential in Tshopo specifically and in the DRC generally. This requires a coherent agricultural policy and strong coordination between the sectors involved (the environment, rural development, and agriculture).

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# Preliminary Reflections on Water Vulnerability Stemming from Anthropogenic Activities and Climate Change in the Forested Province of Tshopo, Democratic Republic of Congo

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**Abstract**

In Tshopo, a forested province in the north-eastern part of the DRC (Democratic Republic of Congo), the regulation of water availability and quality is crucial for sustaining livelihoods and protecting communities from natural hazards. These ecosystem services are crucial for reducing water vulnerability and providing sufficient water for domestic use in places where the government's capacity to manage water resources is insufficient. However, the forests of Tshopo are threatened by climate change and various anthropogenic activities. Its rural landscape is dominated by forests that are undergoing several transformations, exposing water bodies to contamination. Hence, water is one of the key resources vulnerable to climate change in the Tshopo Province. As few studies have focused on the understanding of water availability at the sub-national level in the DRC, in this work, we aim to review the current water situation and its relation to climate change and forest degradation in the Tshopo province. Our analysis shows the necessity to develop well-defined strategic plans that consider contextual specificities and to find a trade-off between forest and water management strategies to respond to water-vulnerability risks in the region.

## 1. Introduction

In Tshopo, a province in the central part of the Democratic Republic of Congo (DRC), almost 87% of the region is covered by humid dense tropical forests (Johannes and Sophia 2021, de Wasseige *et al.* 2015). A substantial part of this province consists of protected areas, logging concessions with a vocation to be managed sustainably, reserves, and natural communitarian forests, with or without forest ownership (Drachoussoff *et al.* 1991, UICN 2010, Katembo 2011, Iyongo *et al.* 2013). The presence of an immense forest landscape generally represents a major asset for the regulation and renewal of water resources (Partow 2011).

Unfortunately, the pressure on these forests is likely to be amplified by climate change and human activities, including mining, artisanal logging, slash-and-burn agriculture, fuelwood production, and oil palm exploitation (Denis *et al.* 2020, Likoko *et al.* 2019, Flouriot 2008). Furthermore, many people from surrounding areas who experience sustained violence and insecurity are migrating to Tshopo, leading to significant additional pressure on forest and water ecosystems (Bogaert *et al.* 2017). Only 40% of the entire Tshopo province has water services, and access to safe drinking water is insufficient in almost all territories (almost less than 5%). In addition, a climate-change-predictive model for the Congo Basin shows that water vulnerability is likely to exacerbate in the future (Likoko *et al.* 2019). Moreover, the potential benefits of tropical forests in improving water availability are not straightforward—the presence of forests is not always synonymous with water availability at the watershed level (Mapulanga and Naito 2019). Indeed, targeted studies must be conducted to elucidate the link between forest resources and water vulnerability in the context of Tshopo province. Nevertheless, forests provide many other ecosystem services (Bogaert *et al.* 2017) and should not be protected only for the benefit of water-resource regulation. A trade-off between the different aspects of the ecosystem services delivered by forests must be considered. Therefore, it is essential to develop strategic plans for sustainably managing forest ecosystems with explicit attention to water resources. In this study, we aimed to review the current water situation and its relation to climate change and forest degradation in the Tshopo Province. To this end, this study provides preliminary insights into the gaps in knowledge regarding the links between water and forest resources in Tshopo. These insights will help policymakers develop and adopt appropriate strategies and sustainable forest and water management plans.

## 2. Administrative context of Tshopo province

The Tshopo province is located at 24°29′E–0°49′N. It comprises seven territories (Isangi, Opala, Banalia, Bafwasende, Ubundu, Basoko, and Yahuma), six communes in the city of Kisangani (Kabondo, Kisangani, Lubunga, Makiso, Mangobo, and Tshopo), seven cities (Kisangani, Isangi, Yangambi, Lokutu, Basoko, Yahuma, and Ubundu), 58 sectors/chieftaincies, and 2,597 villages (South Pole 2020).

The province extends over an area of 200,559km², including Kisangani, which is its chief town, and is limited to the southeast by Ituri, to the northwest by Mongala, to the north by Bas Uélé, to the southeast by Maniema, to the east by North Kivu, and to the southwest and southeast by Sankuru (South Pole 2020).

According to the classification of Köppen and Geiger (1928), Tshopo province is subject to an Af-type climate. The data received at the Yangambi meteorological station indicated an average annual rainfall of 1845 ± 719 mm (2000-2017). It rains all year round with two maxima, one in October (major rainy season) and the other in April-May (minor rainy season). The average annual relative humidity varies between 77.5% and 85.2% (Djiofack 2018).
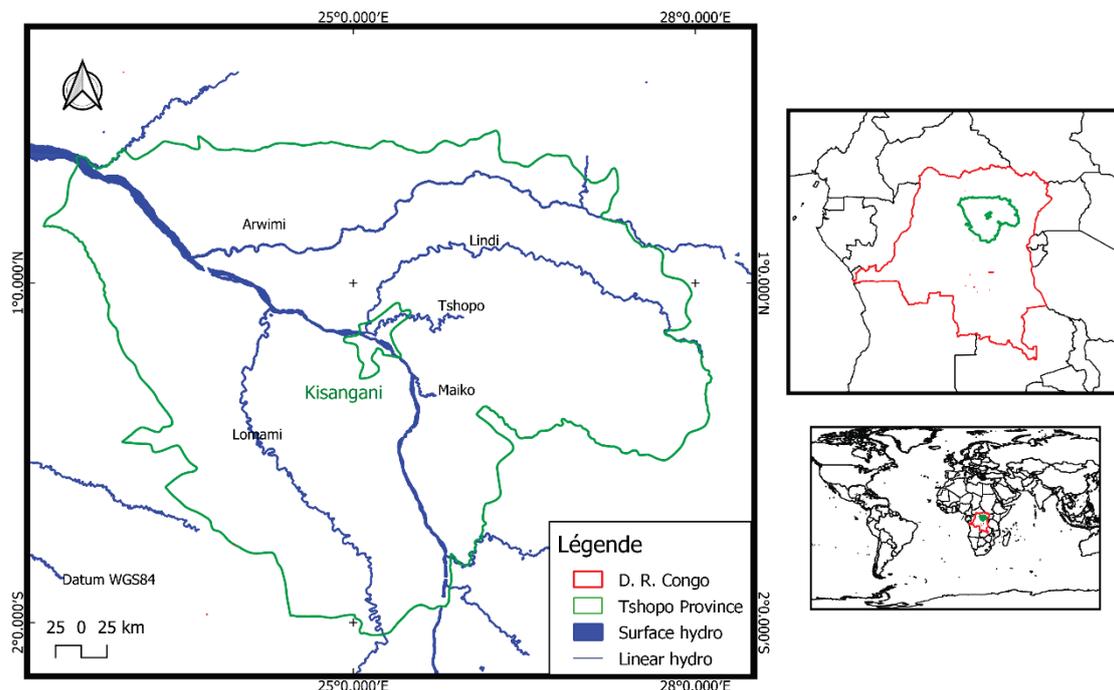


Figure 1. Location of Tshopo, a forested province in the D.R. Congo (drawn by the authors with QGIS software)

## 3. Vulnerability to climate change and anthropogenic activities

Forest and water vulnerability related to climate change and anthropogenic activities in the context of the Tshopo province can be summarized using the diagram in Figure 2, as previously discussed by Chishugi *et al.* (2021). They showed that reduction of precipitation and increasing temperatures coupled with a range of destructive human activities can cause a transition of forest cover into other types of land cover, which will likely negatively influence the quality and quantity of water at the watershed level. Communities are highly vulnerable to the resulting impacts on water resources, as they have a limited capacity to mitigate negative impacts or adapt to a changing environment (PNUD 2019).
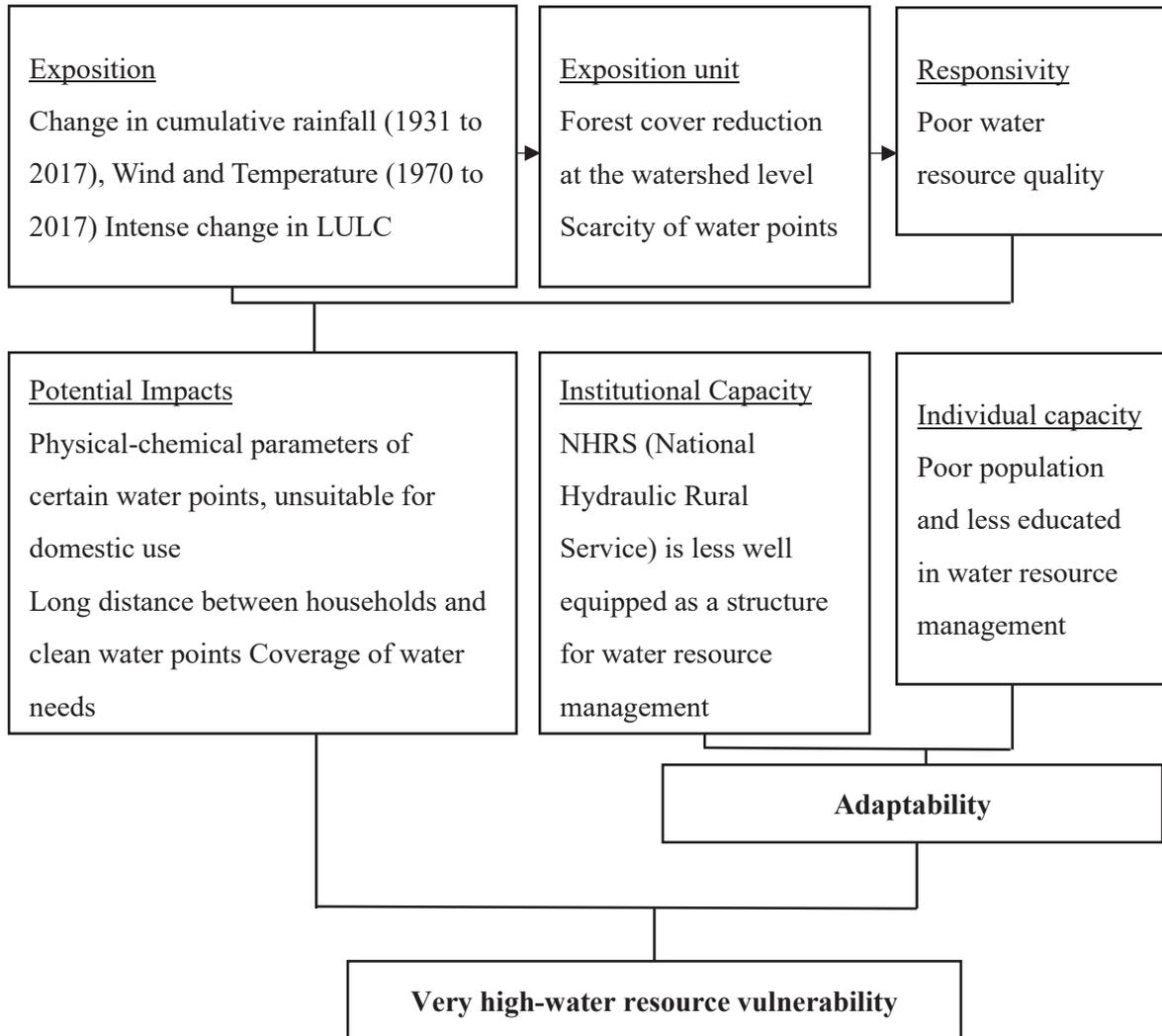
| Exposition | Exposition unit | Responsivity |
| --- | --- | --- |
| Change in cumulative rainfall (1931 to 2017), Wind and Temperature (1970 to 2017) Intense change in LULC | Forest cover reduction at the watershed level Scarcity of water points | Poor water resource quality |

| Potential Impacts | Institutional Capacity | Individual capacity |
| --- | --- | --- |
| Physical-chemical parameters of certain water points, unsuitable for domestic use Long distance between households and clean water points Coverage of water needs | NHRS (National Hydraulic Rural Service) is less well equipped as a structure for water resource management | Poor population and less educated in water resource management |

**Adaptability**

**Very high-water resource vulnerability**

Figure 2. Chain of impact for vulnerability to water resources in Yangambi (Chishugi *et al.* 2021)

## 4. Water nexus Forest protection and conservation strategies

Pristine forests are known to protect water resource quality and quantity in many watershed landscapes worldwide (Uuemaa *et al.* 2005, Carvalho-Santos 2014, Zhu *et al.* 2015, Brummett *et al.* 2008). By increasing water infiltration while decreasing soil erosion, the groundwater is recharged, thus supplying springs with a lot of quality water that is less contaminated than surface water. However, forests do not necessarily improve water quality and quantity (Mapulanga and Naito 2019). The processes of water regulation in forests are complex. In some regions, forest land cover is responsible for decreasing the surface water quantity in streams and springs by enhancing soil infiltrability, and some incontrollable sources of contamination can reduce water quality (Maréchal 2011).

Furthermore, a trade-off must be found between ecosystem services related to water regulation and other ecosystem services delivered by forests that are beneficial to communities and the environment. We need to better understand the different processes occurring in forests and their different uses in local contexts when attempting to promote water nexus forest protection and conservation strategies.

In the case of Tshopo Province, the links between forest protection, conservation, and water availability are not well-defined. By assessing the state of forest and water, the possible synergies between the two resources, and the level of the other roles of the forest, we can develop better forest management strategies that simultaneously promote water resource protection and conservation.

### 4.1. State of forest ecosystem in the Tshopo

In Tshopo, the forest ecosystems total gross area is estimated at 87% of its area (South Pole 2020). It is primarily composed of dense and humid equatorial forests (Bogaert 2017). However, in the Ubundu, Opala, Isangi, Yahuma and Basoko Territories, forests are predominantly swampy or periodically flooded (MINAGRI 2010).

The main protected areas are the Yangambi Biosphere Reserve, which has an area of 6,297km$^2$ (Drachoussoff *et al.* 1991) and contains an important species diversity, the Yoko Forest Reserve with an area of 6,975ha, and the Masako Forest Reserve, which has an area of 2,105ha (Iyongo *et al.* 2013). The Maiko National Park and Lomami National Park have a large part located in the Tshopo province, covering an area of 1,083,000ha and approximately 888,000ha, respectively (UICN 2010, Katembo 2011). Tshopo is on the list of provinces in the DRC with the largest area of forest concessions (142,957,661ha) and second on the list with the largest number of loggers permits (14 permits) after Mai-Ndombe. The forest code of 2002 protects the forest massifs exploited for economic income to be managed sustainably (ATIBT 2019).

The other parts of the forest belong to local communities. However, nowadays, through the forest code of 2002[1], the government gives the opportunity to the local community to obtain a permit for their forest, so that they may manage them sustainably and be protected by law. This law offers local communities the possibility of obtaining free and perpetual Local Community Forest Concession (LCCF), which covers all or parts of the protected forests among those regularly owned by custom. Many of them are in process, and others already have the required documents (Trefon 2010).

### 4.2. State of water in the Tshopo

The forests in Tshopo are part of the watershed of the Congo River, including tributaries such as Tshopo, Lomami, Lobilo, Ituri, Lindi, and many other secondary streams (CICOS 2015). The Congo River divides Tshopo Province into two approximately equal parts.

Owing to the situation of the Congo River on the equator and the high rainfall patterns throughout the year, the river has a large hydrological potential. For example, a hydroelectric plant is located on the

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[1] Loi Portant Principes Fondamentaux Relatifs à La Protection de l'Environnement. 2011. République Démocratique du Congo.
〈https://www.leganet.cd/Legislation/Droit%20administratif/Environnement/JOS.16.07.2011.pdf, Accessed on 21 February 2023〉

Tshopo River. In addition, owing to the low population density in the DRC, the potential water availability per capita was very high. Approximately 15,000–70,000m$^3$ per person per year in all countries (WHO 2017). The rivers in Tshopo supply drinking water to almost the entire city of Kisangani and to the principal villages of the provinces. However, the rate of access to safe drinking water and sanitation is paradoxically very low in the province, especially in principal villages (Table 1). This is the case in most other provinces in the DRC (Brummett *et al.* 2008). Despite its large hydrological reserves, only 29% of its rural population and 79% of its urban population have effective access to safe water to meet various basic needs, including those related to domestic use (IMF 2015).

Finally, apart from rivers and rainforests, few other water-related ecosystems are present in Tshopo. Preliminary cartography of wetlands carried out by the Congo peatland project, led by the FAO and other partners, shows that wetland coverage in Tshopo province is very low. Wetlands are generally located in the western part of the country, apart from small-scale marshes (Bambuta and Freeman 2021).

Table 1. Water supply rate in the principal towns of the Tshopo province (DRC)

| Town | Total population covered | Total population | % Population served |
|---|---|---|---|
| Kisangani | 590,698 | 1,293,221 | 46% |
| Ubundu | 2,121 | 42,773 | 5% |
| Opala | 695 | 31,922 | 2% |
| **Tshopo** | **593,514** | **1,367,916** | **43%** |
| **RDC** | **14,095,564** | **35,034,196** | **40%** |

Source: GIZ and Ministère des Ressources Hydrauliques et Electricité (RDC) 2020

Table 2. Water supply rate in the territories of the Tshopo province (DRC)

| Territories | Population | Number of households | Households accessing water | Drinking water access rate |
|---|---|---|---|---|
| Bafwasende | 363,505 | 77,341 | 1,589 | 2.05% |
| Banalia | 3,462,414 | 73,663 | 1,832 | 2.49% |
| Basoko | 331,642 | 70,562 | 400 | 0.57% |
| Isangi | 652,034 | 138,731 | 1,250 | 0.90% |
| Opala | 203,881 | 43,379 | 900 | 2.07% |
| Ubundu | 233,133 | 49,603 | 2,922 | 5.89% |
| Yahuma | 233,128 | 49,603 | 450 | 0.91% |

Source: GIZ and Ministère des Ressources Hydrauliques et Electricité (RDC) 2020

## 4.3. Possible synergies and trade-offs between forest and water resources

Finding synergies between forests and water resources will be a more integrated and sustainable way to manage them. NGOs, such as TropenBos DRC and its partners, are leading projects related to water and forest resource protection and conservation. The objective is to find better ways to exploit forests sustainably and implement sustainable agricultural practices while promoting the forests' capacity to regulate, provide, and sustain water resources in terms of quality and quantity. Furthermore, other projects related to oil bloc exploitation in wetland zones are developing, while others attempt to map wetlands (peatlands) to help manage them sustainably.

However, the protection and conservation of forests for water in the Tshopo province will only be possible if synergies between different (conflicting) users are well documented and analysed. For example, while only one oil bloc is envisaged in Tshopo province, the latest one was adopted without considering the socio and ecological specificities of the region, which led to unsustainable management and catastrophic consequences (Partow 2011).

Despite possible synergies that can be developed between water and forest management, it is important to note that forests also provide other ecosystem services beyond water. For example, timber extraction, Produits Forestiers Non Ligneux (PFNL), land for agriculture, hunting, wood energy, and cultural activities (Brummett *et al.* 2008). Therefore, finding trade-offs between different usages is essential. Conservation strategies play a key role in determining these trade-offs.

## 4.4. Conservation strategies

Deforestation and the degradation of forest and water ecosystems are often the result of mismanagement and inadequate policies that are not adapted to the local context (Verburg *et al.* 2004). For example, an estimated 84% of forest disturbance area in the region is caused by small-scale, non-mechanized forest clearing for agriculture. Unfortunately, these drivers are sometimes neglected by strategic resource management plans when conceived at a large-scale level (Tyukavina *et al.* 2018). The major concern is that most strategic resource management plans in the DRC have been conceived on a large scale using top-down or downstream approaches, thus holding the risk of underestimating local specificities. There is an urgent need to develop management plans at local scales to protect and conserve forest and water resources, such as in Tshopo province.

To meet this need, strategic documents have been developed at various levels. The objective was to promote sustainable forest ecosystem management, which would not have negative impacts on water resources in the current context, to improve the livelihood of the population. Illustrative cases include the Sustainable Development Goals (SDG 6 and SDG 15), Agenda 2063 of the African Union, the global Bonn challenge goal of bringing 350 million hectares of worldwide deforested land into restoration, the AFR100 (the African Forest Landscape Restoration Initiative), the national action program for

adaptation to climate change, and sustainable forest management plans, *etc.* (Guizol *et al*. 2022).

*a)   Government responses*

Indeed, the DRC government recognizes the key environmental challenges facing the country when it comes to considering multiple policies, strategic documents[2], and all the environmental framework laws that deal with the issue of water resources and forest ecosystem protection. For example, the water law promulgated in 2015[3] gave more power to local communities, such as those living in forest landscapes, so that they may be involved in the management of resources with more decision power. In addition to this, there is also the 2002 Forest Code Act, already cited above, through which the logging of timber and collection other forest resources are conducted in a sustainable way, considering the rights of the local population and the preservation of some vital ecosystems such as river banks and all water bodies within the forest massif. The reduced impact logging standards inspired by the DRC's 2002 forestry code prohibit logging on riverbanks in swampy areas covered by dense forests and hydromorphic soils. Article 48 of this code prohibits all deforestation within 50 m on either side of watercourses and within a radius of 100 m around their sources. There are also many other legal arsenals initiated at national or international levels, such as the Law on Fundamental Principles of Environmental Protection (2011)[4], the Congo Basin Blue Fund[5] for Climate Transition and Sustainable Economic Growth in Central and East Africa, and the National Action Program for Adaptation to Climate Change[6] (NAPA), whose goal is to identify long-term climate risks and guide management initiatives in the country. This legal arsenal contributes to the regulation of forest and water resources by considering ecological aspects, the need for development, and the reality of climate change (Guizol *et al*. 2022).

At the local scale, in the Tshopo province, there is, for example, the PIREDD program, initiated by the DRC government as a part of the UN's international REDD+ goals, which include stabilizing forest cover in the country by recognizing the role of climate change causing rainfall irregularities, heat waves, floods, erosion, *etc.* (South Pole 2020).

*b)   Implementation of national plans*

Unfortunately, the strategic documents developed to address these issues are not always well implemented, and sometimes not even clear or adapted to the local context of the DRC's sub-zones. In addition, the lack of clear responsibilities at the institutional level and the need to mobilize more funds for these plans constitute a major challenge. The Nationally Determined Expected Contribution (2017),

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[2] CSC RDC. Cadre Stratégique Commun République Démocratique Du Congo 2022-2026. ; 2021
[3] République Démocratique du Congo. Loi n° 15/026 du 31 décembre 2015 relative à l'eau. 2015. <https://leganet.cd/Legislation/JO/2016/JOS.13.01.2016.pdf, Accessed on 21 February 2023>.
[4] République Démocratique du Congo. Portant Principes Fondamentaux Relatifs à La Protection de l'Environnement. 2011.
[5] Commission Climat du Bassin du Congo. Le Fonds Bleu du Bassin du Congo. 2021. <https://www.ccbc-cbcc.org/, Accessed on 21 February 2023>.
[6] République Démocratique du Congo. Programme d'Action National d'Adaptation Aux Changements Climatiques 2010.

submitted to the United Nations Framework Convention on Climate Change, outlines the DRC's main priority actions related to climate change for the period 2021-2030. In this document, the government expresses major concerns about the lack of real capacity to address adaptation issues in the DRC on a large scale. Similarly, the absence of a real policy of cross-sectoral intervention in the context of fighting conflicts of interest between different sectors (mining, agriculture, water, and forestry) does not facilitate the implementation of actions in the field of climate change within a federating framework of mitigation and adaptation programs.

## 5. Socio-ecological system and community resilience

In Tshopo, almost all rivers are directly protected by the forest cover of the region. However, in some watersheds, destructive activities such as logging, slash-and-burn agriculture, cutting wood for energy, and heavy erosion occur frequently (Chishugi *et al.* 2021). These activities increase pollution, which directly threatens forest ecosystems and water bodies. In addition, immigration into the province, mainly from the surrounding provinces, especially North Kivu (Yira), Haut-Uelé, and Ituri, constitutes a significant pressure on local forests (PNUD 2019).

The observed degradation of forests will increase the negative impacts of climate change mitigation. The population is poor and highly dependent on natural resources for their livelihoods and is therefore particularly vulnerable to the effects of climate change and water ecosystem-related issues (Sonwa *et al.* 2020). The fact that they are not well informed and lack the capacity to lobby to defend their rights decreases the socio-ecological resilience of the ecosystems and their inhabitants to deal with changes in the environment and climate.

It is therefore essential to explore how communities can maximize their well-being on the one hand without compromising the resilience of the forests and their resources. This was the main challenge in the context of Tshopo.

## 6. Lack of data availability and access

Deforestation can be driven by a range of factors (*e.g.*, need for firewood, need for construction wood, population growth, *etc.*), and can also lead to a range of impacts (*e.g.*, erosion, loss of soil fertility, reduced water infiltration, *etc.*). Unfortunately, the drivers and impacts are likely to be underestimated if they are not studied at an appropriate scale (Tyukavina *et al.* 2018). In addition, there is a lack of comprehensive data on the quality, quantity, and sustainability of natural resources such as water in relation to human activities and environmental change in the Tshopo province. Although the policy documents reveal an awareness of these challenges and concerns about their potential negative impacts and the need for responses, the country has difficulty accessing scientific data to support policy

development. These challenges make local and sub-regional actions to conserve and protect water resources and ecosystems highly relevant. Therefore, local research at the small-scale level is needed in this area (Tyukavina *et al.* 2018). For the entire province, data on water quantity, quality, and biological characteristics are missing. There is no sufficient temporal series data on rivers and spring flows that could help reveal the pattern of this resource with regard to other resources such as forests. In addition, meteorological stations are insufficient for analysing water patterns in relation to climate. Even the mapping of different water points is weak because it considers only the principal water bodies. Studies dealing with water needs or the relationship of the latter with the other elements of the ecosystem), are difficult to perform in this region.

## 7. Conclusions

Appropriate strategic plans for sustainably managing forest ecosystems with explicit consideration of water resources are urgently needed. However, currently, there is a lack of reliable data and scientific studies at the local scale to support the development of such plans. More insights and evaluation tools are needed to understand how anthropogenic activities and climate change increase water vulnerability in Tshopo province. Well-defined political approaches need to be conceived and applied through the inspiration of peer-reviewed scientific studies that consider the specificities and context of the Tshopo region.

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# Perception and Management of Diseases and Therapeutic Resources among Ewondo Population (Central Region of Cameroon): A Case of Malaria and Spleen Disease

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**Abstract**

In Cameroon, malaria is a major public health problem despite the response mechanisms put in place. According to the Ewondo Population, an interinfluential relationship exists between this pathology and spleen disease, a disease recognized as such only at the community level. Our main objective was to describe the perceptions and different cultural mechanisms of the management of these two affections. To achieve this goal, 70 informants were interviewed, and results were obtained. The populations attributed to these pathologies, namely, *ebem koé* or snail spleen and *tite meki* or an animal's blood disease describe the characteristics and potential sources of these pathologies. In the event of a malaria crisis, 37.1% of the informants used their knowledge of existing therapeutic solutions, 28.6% passed through clinician advices, and 34.3% recourse to traditional pharmacopoeia. For proven spleen disease cases, 77.1% of the informants directly sought the services of traditional doctors, and 20.8% used their own knowledge. Of the 42 samples identified, 28 were used against spleen disease and 14 against malaria, while 9 were used against both pathologies. This reflection contributes to the enhancement of traditional pharmacopoeia through the enrichment of knowledge of the natural resources used by Ewondo.

**Keywords**: African traditional medicine, environment, Ewondo, malaria, spleen disease

## 1. Introduction

The question of disease eradication has always been the subject of all human societies. Therefore, it is of concern to political decision makers at the national level as well as to international organizations in charge of related issues at the global level. According to the World Health Organization (WHO), health is not only an absence of infirmity but also a state of overall physical, mental, and social well-being (WHO 1946). In this context, the disease, known as a major source of destabilization of this state of general well-being, is a complex reality whose appreciation of its existence, nature, and severity depends on the cultures and medical skills of the populations. In several socio-cultures in Cameroon, the populations reported that spleen disease is a real pathology with serious consequences for victims. Several researchers have provided explanations for splenic pain, a situation that can create confusion in the minds of the population. Thus, a link between malaria, schistosomiasis, and inflammation of the spleen has been established (Gentilini 1995, Greenwood *et al*. 1987, Stein and Gelfand 1985, Ouattara *et al*. 2008). Based on this clinical reality, biomedical practitioners believe that effective management of these causes can lead to the disappearance of pain and inflammation. Malaria is still a public health problem in Cameroon despite policies to prevent it (Dike DeLancey *et al*. 2010, Nyam 2020). One of the reasons for this reality is the cultural representations that the populations have of the disease, which reveal their lack of mastery of the real causes and, consequently, their disaffection with public health policies. According to the Ewondo target populations of our research, an inter-influence exists between malaria and what is called spleen disease, a pathology recognized at the community level but which remains unrecognized at the clinical level by health professionals, a paradoxical but understandable situation.

In fact, illness is inherent to all living beings, and every society, therefore, sets up a system of therapeutic recourse that responds to the health problems of its group (Essi 2007: 14). According to the WHO, 80% of the population of developing countries are dependent on traditional medicine, mainly using plant extracts to meet their needs. This question is all the more topical as new diseases are emerging, while others are disappearing; new drugs are being developed to replace those that are less effective or less available (Mbonji 2009). It can also be explained by the poverty of the population, their socio-cultural habits, the isolation of rural areas, the absence of sanitation or rudimentary infrastructure, the high cost of pharmaceutical remedies, and low income (Dibong *et al*. 2011). Whether it is malaria or spleen disease, the solicitations of Ewondo ethnomedicine by members of this community confirm this reality. To face the various health threats they encounter on a daily basis, they seek various existing therapeutic approaches. This is the case for traditional African, Asian (mainly Indian and Chinese), and Western medicine. While traditional African medicine plays a crucial role in the treatment of malaria and spleen disease, Cameroonians, in general, and the Ewondo community, in particular, mainly seek Chinese medicine for the benefits of acupuncture, a practice introduced in Cameroon in 1975 (Keubou

2018), as well as many therapeutic herbal teas.

This openness reveals the place of the representation of diseases and medicines that the people of Yaoundé have. Traditionally, culture allows people to take advantage of the wonders of the forest and environment to solve their multifaceted daily problems including health issues. The first point is the recognition of the existence of the disease, then comes the discrimination of certain medicinal offers deemed suspect or ineffective, and the elaboration or adoption of those likely to meet their expectations. The occurrence of COVID-19, one of the latest major health events, has shown how people's perceptions can sometimes be useful in defining medical responses. This paper examines the meanings of the local names given to these two diseases (malaria and spleen disease), the medicinal practices of the populations, and the ways in which they access care and therapeutic resources.

## 2. Methods

### 2.1. Study site

The study was conducted in Yaoundé, the capital of the Mfoundi Division in the Central Region and political capital of Cameroon. Institutionally, Yaoundé's administrative post was created in February 1889, making it the first relay of German administration in the hinterland (Quinn 1989, Porto *et al.* 2012). The city is located at latitude 3°90 North and longitude 11°50 East (Aimé *et al.* 2015). The population of the town is estimated at around 4,336,670 inhabitants in 2022, *i.e.*, a growth of 4.14% compared with that in 2021 (World Population Review 2022). The population density was approximately 13,487 inhabitants/km$^2$ in 2019. Yaoundé is a city of hills and valleys, located on the southern Cameroonian Plateau at an average altitude of 760m, a geographical configuration that lends itself to flooding. The Yaoundé station records an average of 1,564.7mm of rainfall per year, divided into four seasons: long dry season from mid-November to mid-March, short rainy season from mid-March to mid-June, short dry season from mid-June to mid-August, and long rainy season from mid-August to mid-November. This city rains an average of 153 days/year. The annual average temperature is estimated at 23.5°C, and the annual temperature range is 2.4°C (Abossolo *et al.* 2015). A mixed vegetation exists in the current urban perimeter of the city consisting of forest relics on the summits and slopes of the mountains, grasses, gallery forests, market gardening plants that line the bottom of the valleys, and banana plantations and fruit trees along the edges of public roads and houses (Nguendo *et al.* 2008).

### 2.2. Focused population

Cameroon is a Central African country made up of a mosaic of peoples, the main cultural groups being the Fang-Beti in the South, Central, and East regions; Sawa in the Littoral, Southwest, and part of Southern Cameroon; the Gras-Fields in the West and Northwest regions; and Sudan–Sahelian in the northern part of the country. More than 250 ethnic groups exist in Cameroon, each with their own

particularities in relation to worldview (Datidjo *et al.* 2021). Our research focuses on the Ewondo, forest people living in a crossroad town and experiencing a kind of dualism marked by urbanization and, conversely, by rurality, which is observed through agricultural and livestock practices and the strong presence of African medicine. Economic/infrastructural development has not completely eliminated the capacity of populations to preserve their culture, of which health is a part.

Of the eight divisions in the Central region of Cameroon, the Mfoundi Division constitutes Ewondo's largest urban concentration (Franqueville 1984, Fotso 2014). A total of 2,501,000 inhabitants are in the Central region of Cameroon, half of whom live in the city capital Yaoundé. The Ewondo are the original inhabitants of Yaoundé (DeLancey *et al*. 2010: 160). This community represents approximately 20.5% of the city's total population (Franqueville 1968). We interviewed 70 people chosen for their roots in the local culture and knowledge of spleen disease and malaria. We relied not only on the selection process of therapists' knowledge of the disease and their involvement in the care procedures but also on the recognition of their status as caregivers by the local population. Respondents were selected using a snowball approach, which allowed us to identify another respondent who met the research criteria operationally. The participants voluntarily agreed to participate in the study. Their answers were kept in notebooks and audio tapes that were used for transcription.

## 2.3. Data collection and processing

We organized home interviews with the patients, caregivers, and other holders of knowledge on their conception of spleen disease, malaria, and the medicinal species their therapists use. We then went with them into the forest or house gardens where we identified with them the species they used, the privileged parts, and the instructions for use. We then collected specimens that were well preserved in the Plank and protected from moisture. After fieldwork, the different species collected were identified at the National Herbarium of Yaoundé. We subsequently constructed an Excel database with items such as family names, scientific names, biological types, and sources of therapeutic specimens. These different elements provided us with a global idea of management strategies for this disease in the community. At the level of analysis, we were interested in decoding the name and meaning of spleen disease in the Ewondo language. We then identified the points of convergence and divergence that resulted from the descriptions. Data interpretation was based on cultural ecology theory, which has the aims of 'the study of dynamics, active human behaviour in the context of a changing environment, [and] interconnections among the dynamic components of our system' (Jochim 1981: 5). This perspective allows us to demonstrate how this population uses their environmental resources to solve daily health problems, such as malaria and spleen disease.

## 3. Results

### 3.1. Local denomination of spleen disease (*ebem koé*) and malaria (*tite meki*)

Among the Ewondo Population, these two health problems have different names depending on the degree of severity. To speak of spleen disease, some respondents used the word *tite*, believing that it is a disease that rages and is manifested by inflammation and pain felt inside the flesh. For the second category of respondents, spleen or spleen disease is called *ebem*. According to them, a simple mention of the name of this organ *ebem* is enough to draw the attention of an interlocutor to an abdominal ailment, which is the subject of this research, a disease that people regularly suffer from in the community. To this end, the informant tells us that:

> '*Ebem* is the spleen generally, it is the disease of the spleen. As far as I know, when we say *ebem* in our community, this name refers to the spleen or spleen disease everyone understands it easily' (Joseph, Interview on 2021/08/17).

For the third and largest group of respondents, this primary term is rather simplistic in describing the deeper meaning of spleen disease in the Ewondo language. For greater clarity, this condition is known in this sociocultural context as *ebem koé*. This expression is composed of two words: *ebem*, which means the spleen, and *koé*, which means snail in English. Normally, the spleen (*ebem*) refers to the organ in good working condition. The term spleen disease is used when this part of the body changes into *ebem koé*. Here, people speak of *ebem* resembling *koé*; in other words, the ordinary organ called spleen has undergone modifications or changes due to the intrusion of germs to resemble the mollusc called *koé*. According to a therapist interviewed on the subject:

> 'The spleen is first of all an organ, we speak of *koé*, to designate what we call spleen disease, the Ewondo use the expression *ebem koé*. *Koé* refers to the snail. *Ebem koé* therefore means that *ebem* resembles *koé*, i.e. the spleen that has changed and resembles the snail' (Omer, Interview on 2021/02/13).

Following his testimony, the spleen that appears physiologically like a snail and is accompanied by pain suggests that the victim has a potential spleen disease (*ebem koé*). As for the second condition, we say that malaria, still known as *tite meki* in the Ewondo language, is understood as *tite*, which means blood, and *meki* means animal, that is, an animal's blood disease. Following this conception, it is a pathology that generally arises from the infection of patients' blood by harmful germs of various origins. When the blood that regulates the functioning of the human organism is polluted or infected, the patient needs specific care that can be provided by biomedical practitioners and community members with knowledge of ethnotherapy.

### 3.2. Aetiology of disease

Regarding the sources of these diseases from the community perception, different points of view were raised in the field depending on whether one is dealing with a person suffering from malaria or is a victim of spleen disease.

### 3.2.1. Aetiology of spleen disease or *ebem koé*

Regarding spleen disease, the respondents considered that its occurrence was attributable to a plurality of events, the main ones being the family history with notably the transmission from parents to their offspring (70.8%), transgression of dietary prohibitions with an emphasis on the consumption of snails and excessive consumption of iced or sweetened beverages and foodstuffs (54.8%); and the result of associated diseases such as malaria (12.8%).

Table 1. Summary of people's perceptions of the aetiology of spleen disease

| Aetiology of spleen disease or *ebem koé* | Number |
|---|---|
| Affection of mystical origin | 5.7% |
| Consequence of severe malaria | 12.8% |
| Consumption of snails | 31.9% |
| Consumption of sweet food | 15.7% |
| Consumption of ice-cold drinks | 7.1% |
| Brown children | 1.4% |
| Karma or consequence of sins | 1.4% |
| Disease of uncertain origin | 6.9% |
| Spleen disease equals malaria | 5.7% |
| Ordinary illness, i.e., like all other illnesses | 14.3% |
| Resulting from the "woman's worm" | 4.2% |
| Hereditary transmission | 70.8% |

Source: Table built based on information from the field.

Note: n = 70; the number of people interviewed for this research is 70, and it is based on the calculation of the percentage of each statement in the overall sample.

### 3.2.2. Aetiology of malaria or *tite meki*

Malaria, also called *tite meki*, which means an animal's blood disease in the Ewondo language, is a condition in their conception marked by the infection of the blood by harmful germs of various origins. The informants believed that the onset of malaria could be the result of mosquito bites (57.1%), consumption of poorly cleaned fruit (35.7%), consumption of the first mangoes (21.1%), exposure to bad weather, such as cold and rain (12.9%), and consequence of spleen disease (20%). On this last point, the respondents spoke of a simple manifestation of this main disease (*i.e.* spleen disease). For the latter, malaria, which takes a long time to heal despite the various medications taken, would be a potential manifestation of spleen disease. On this subject, we would like to put a caveat by specifying that as the

dosage and preventive measures were respected by the users, we are not sure that this is the case.

Table 2. Summary of people's perceptions of the aetiology of malaria

| Aetiology of malaria | Frequency |
|---|---|
| Mosquito bites | 57.1% |
| Consumption of poorly cleaned fruits | 35.7% |
| Consumption of the first mangoes | 21.1% |
| Exposure to weather conditions such as cold and rain | 12.9% |
| Transmission from pregnant or breastfeeding women to their children | 15.3% |
| Consequence or manifestation of the "spleen disease" | 19.4% |
| Undetermined causes | 1.4% |

Source: Table built on the basis of field data.

Note: n = 70; the number of people interviewed for this research is 70, and it is based on the calculation of the percentage of each statement in the overall sample.

### 3.3. Management of spleen disease and malaria

The Ewondo community, like all human societies, relies on their culture to find solutions to the health problems they encounter while simultaneously being open to effective therapeutic solutions from other civilisations. Our work on disease, spleen disease, and their treatment makes sense in that:

> Medical anthropology establishes the link between the diseases from which a community suffers and the remedies to cure them, finds that there is no society without medicine, simply because there is no society without diseases (Mbonji 2009: 12).

In the case of a malaria crisis, as mentioned in the field, 26 informants used their knowledge of existing therapeutic solutions as a first line of defence (*i.e.* self-medication), followed by recourse to the services of a clinician (20), and finally recourse to the services of a traditional doctor (24). In the case of proven spleens, 54 of the informants directly solicited the services of traditional doctors, and 15 used their own expertise. However, one former victim of spleen disease acknowledged that he had found a cure by following the prescriptions of a clinician. Self-medication is understood as a behaviour that consists of administering pharmaceutical or herbal products for treatment without a specialist's advice whether it is malaria or spleen disease (Dohou and Dodji 2015: 64).

### 3.3.1. Clinical management of malaria in Cameroon

To deal with malaria, the care protocol in force in Cameroon, in coherence with WHO recommendations, proposes the administration of injectable artesunate-based treatment as the first line, quinine as the second line, followed by artemether as a last resort (WHO 2013). The decision

n°0406/D/MINSANTE/CAB on June 23, 2014, on the pricing of the management of severe malaria in Cameroon sets in Article 9 the price of treatment transfer in the framework of intergenerational solidarity of a severe malaria episode at the level of health facilities throughout the national territory. Thus, apart from the cost of hospitalization and possible complications, the cost of which is determined according to the status of each health facility, treatment for children under 5 years of age is (officially) free; pregnant women from the second trimester of pregnancy, 4,000; and patients over 5 years of age, as high as 8,000 CFA francs.

### 3.3.2 Therapeutic plants used against malaria and spleen disease

In this study, 28 species were described by the populations as containing properties that could be mobilized against spleen disease, and 14 species possessing anti-malarial properties, that is, a total of 42 plants were identified for both diseases (Table 3). Of the 42 inventoried, 9 were simultaneously used by the populations against spleen disease and malaria. These common species are: *Aframomum melegueta* (Zingiberaceae), *Alstonia boonei* (Apocynaceae), *Carica papaya* (Caricaceae), *Combretum micranthum* (Combretaceae), *Euphorbia hirta* (Euphorbiacea), *Irvingia gabonensis* (Irvingiaceae), *Rauvolvia vomitoria* (Apocynaceae), *Vernonia amygdalina* (Asteraceae), and *Persea americana* (Lauraceae). The significantly low number of plants used against malaria mentioned on the field is partly explained by this disease being recognized by both traditional medicine and biomedicine. This means that people usually turn to these different medicines in case of an illness. The informants also have a penchant for self-medication, which generally leads them to seek street medicine vendors along the streets and markets of Yaoundé City.

Table 3. Plants used against spleen disease and malaria

| Scientific name | Family | Biological type | Local name | Spleen disease | Malaria |
|---|---|---|---|---|---|
| *Aframomum melegueta* | Zingiberaceae | Herb | *Ndong* | x | x |
| *Ageratum conyzoides* | Asteracae | Herb | *Nyat elok* | x | |
| *Alstonia boonei* | Apocynaceae | Tree | *Akuk* | x | x |
| *Annickia chlorantha* | Anacardiaceae | Tree | *Nfouol* | x | |
| *Annona muricata* | Annonaceae | Shrub | | | x |
| *Artemisia annua* | <u>Asteraceae</u> | Herb | | | x |
| *Bidens pilosa* | Asteraceae | Herb | | | x |
| *Canarium schweinfurthii Engl.* | Burcéraceae | Tree | *Abel* | x | |
| *Capsicum annum* | <u>Solanaceae</u> | Herb | *Chilli* | x | |
| *Carica papaya* | Caricaceae | Shrub | *Fofo'o* | x | x |
| *Combretum micranthum* | Combretaceae | Herb | *Gometane* | x | x |
| *Croton oligandrum* | Euphorbiaceae | Tree | *Ebin* | x | |

| *Dichrocehala integrifolia* | Asteraceae | Herb | *Midzla* | x | |
|---|---|---|---|---|---|
| *Elaeis guineensis* | Arécaceae | Tree | *Nboan mevié* | x | |
| *Erythropheleum suaveolens* | Ceaesalpiniaceae | Tree | *Tali* | x | |
| *Eucaluptus saligna* | Myrtaceae | Tree | | | x |
| *Euphorbia hirta* | Euphorbiacea | Herb | *Okoul bifes* | x | x |
| *Gnetum africanum* | Gnetaceae | Herb | *Okock* | x | |
| *Guibourtia tessmanii* | Leguminosae–Caesalpinoidae | Tree | *Essingan* | x | |
| *Irvingia gabonensis* | Irvingiaceae | Tree | *Ndo'o* | x | x |
| *Mangnifera indica* | Anacardiaceae | Tree | *Manguier* | x | x |
| *Milicia exelsa* | Moraceae | Tree | *Abang* | x | |
| *Morinda lucida* | Rubiaceae | Tree | *Akeng* | x | |
| *Newbouldia laevis* | Bignoniaceae | Tree | *Mbicam* | x | |
| *Persea americana* | Lauraceae | Tree | *Avocatier* | x | x |
| *Phyllanthus amarus* | Euphorbiaceae | Herb | *Incomo* | x | |
| *Psidium guajava* | Myrtaceae | Shrub | | | x |
| *Rauvolfia vomitoria* | Apocynaceae | Shrub | *Menzanga menzanga* | x | |
| *Solanum torvum* | Solanaceae | Herb | *Itondo* | x | |
| *Spilanthes filicaulis* | Asteraceae | Herb | *Odondongo ng-si* | x | |
| *Triumfetta cordifolia* | Malvaceae | Liana | | x | |
| *Vernonia amygdalina* | Asteraceae | Herb | *Atet* | x | x |
| *Voacanga africana* | Apocynaceae | Shrub | *Etoam* | x | |

Source: Table built on the basis of field data.

### 3.3.3. Biological type

Overall, of the 42 samples collected and identified, 18 were trees, 17 were herbs, 6 were shrubs, and 1 was a liana species (Figure 1). Specifically, of the 28 species identified as being dedicated to spleen disease, 13 were trees, 11 were herbs, 3 were shrubs, and 1 was a liana. For malaria, five species were trees, three were shrubs, and six were herbs.
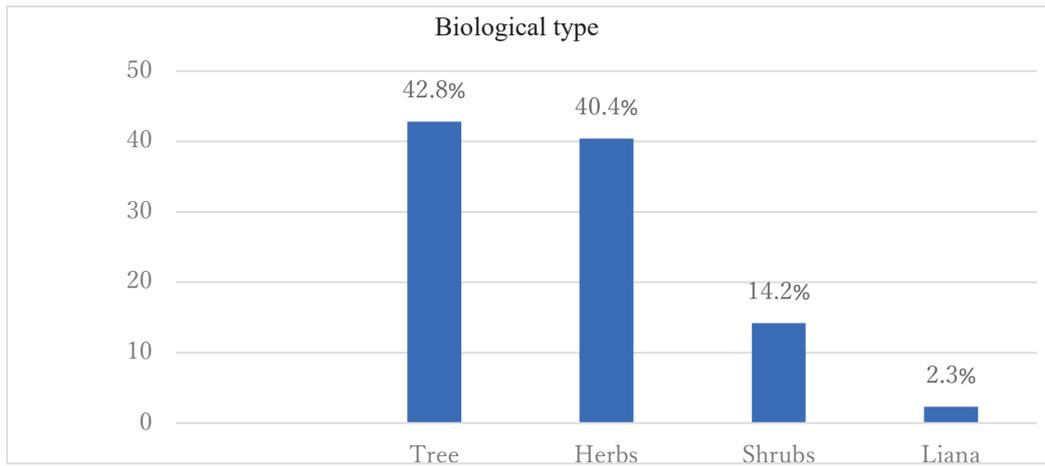
Figure 1. Biological type

Source: Figure built on the basis of field data.

## 3.4. Sources of therapeutic resources

Overall, the plants used to produce therapeutic recipes for spleen disease and malaria come from home gardens, orchards, fallows, plantations, and forests.

Table 4. Summary of plant collection sites

| Sampling location | Number of plants |
|---|---|
| Home gardens | 35.7% |
| Orchards | 16.6% |
| Fallows | 19% |
| Plantations | 31% |
| Forests | 21.4% |

Source: Table built on the basis of field data.

Note: n = 42; the total number of samples identified is 42, based on which the percentage of assertions about each plant harvesting location is calculated.

The majority of our research samples were collected in home gardens and plantations, the fruits of ambient agriculture in the area, which led to the domestication of several therapeutic species. In addition, demographic pressure has led to the disappearance of forests, with only a few patches scattered in the localities bordering Yaoundé. The familiarity of the Ewondo population with these different areas can be seen in the uses of the medicinal resources found there.

## 3.5. Access to therapeutic resources

The therapeutic resources used by the Ewondo population to produce remedies against malaria and

spleen disease come from the natural environment. In Cameroon, all forest resources, with the exception of communal, community, and private forests; orchards; agricultural plantations; fallow lands; plantation forests; and pastoral and agroforestry lands, belong to the state following the 1994 forest law. In terms of customary property rights, each indigenous family has and uses plots of land bequeathed to the present generation by their ancestors (Socpa 2010). As in most communities in the forest region, the owner of the land is automatically the first to cut down the forest and create fields or build houses in the Ewondo tradition. Their descendants are the rightful owners of these lands and the vegetation they contain. They can take plants for therapeutic use without constraint, as can those to whom they grant freedom of access. Legally, populations exercising their customary rights may use non-timber forest products (NTFP) in a traditional and non-profit way in neighbouring forests, except for protected species (Article 8 of Law 94/01, Article 35 (3) of Decree 95/531/PM).

For research purposes of the NTFP, Article 4 (1) of order n° 000001/MINRESI/B00/C00/C10/B30 of January 23, 2019, sets the conditions for granting research authorization. It consists of a stamped application addressed to the Minister of Scientific Research, a curriculum vitae, a photocopy of the passport or the National Identity Nard (NIC), passport photos (04), a disbursement of the fees for the issuance of the permit, a research protocol, and a statement on honour. Article 8 (2) stipulates that the duration of the validity of a permit for scientific research purposes in Cameroon is 1 year and renewable. Article 5 of the ministerial decision succinctly recalls the terms of renewal. The terms of this article stipulate that the researcher who applies for this renewal must send to the Minister in charge of scientific research, in addition to the documents mentioned in paragraph 1 of Article 4, a report of the activities carried out during the period of validity of his previous research permit for scientific purposes.

In the context of commercial exploitation of NTFP, any person may exploit NTFPs for profit; however, to do this, it must obtain an agreement with the forestry profession from the forest administration (Article 35 of Law 94/01, Article 4 (1) of Decree 95/531, and Article 32 (1) of Decree No. 95/466/PM of July 20, 1995). The agreement is obtained for life, but each year, licensed operators apply for annual operating permits specifying the quantity to be collected and collection areas for special products (Article 87 (1) of Decree 95/531/PM). The issuance of this permit is subject to prior payment of the regeneration tax (10 FCFA[1]/kg) depending on the quantity (quota) requested.

## 4. Discussion and conclusion

To understand the medicinal behaviours of a population, the anthropologist is advised to consider the way in which ordinary people elaborate their conception of illness through their own practice, experience, and the contacts they have with specialists (Kleinman 1980). At the level of disease

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[1]Franc of the African Financial Community

conception, each ethnic group gives a particular name to a pathology in the mother tongue, a designation that has meaning in the culture of the people concerned (Kum Awah 2005). This is a reality that must be considered when conducting research on the cultural conception of illness and understanding the therapeutic behaviours of victims. In the field, the Ewondo population uses several names to communicate about spleen disease (*ebem koé* or snail spleen) and malaria (*tsit meki* or blood disease). These names constitute a frame of reference that makes it possible to identify a part of the history of these people, the laws of social regulation, and the context of the emergence or management of these diseases. The disease is first indicative of the sense of the world of a given human society that is at the symbolic or ideological level meditated by language (Meziane 2003: 66). Indeed, deciphering these names gives legibility to food and animals suspected to be the cause of one or the other disease. The palpable illustrations are notably the relationship they establish between blood and animal infection in the case of malaria, and spleen disease, which would be the result of eating snails, conversely. Nevertheless an essential component used in the composition of remedies, at least for spleen disease, this animal protein is not recommended in the community for children, patients, and pregnant and lactating women.

A similar situation has been observed among the Baka and Bakwele of southeast Cameroon, who believe that the liver of the animal, which is considered (rightly or wrongly) the primary source of spleen disease by the local population, is also used as a therapeutic agent against the same health problem (Mvetumbo *et al*. 2020). We are in the register of explanations of medicinal practices highlighted by François Laplantine (1986) under the term 'medicine of fellow human beings'. A better understanding of this social reality can provide researchers with new avenues of reflection and directions for raising awareness or strategically reorienting programs for political decision makers in charge of health. It is known that certain etiological beliefs formulated by populations show poor knowledge of the real causes of malaria, a reality that is sometimes ignored by those in charge of their health. As a result, they have a negative impact on eradication initiatives, resulting in the persistence of this disease in Cameroon (Nyam 2020). Like spleen disease and malaria, the Ewondo's idea of a health problem determines their therapeutic behaviour, leading them to focus when a crisis occurs. Indeed, the determinants of the decision to act include the perception of a threat to health and belief in the effectiveness of the action to be taken to reduce this threat (Godin 1991). In addition, according to several researchers, the representation of a disease is an essential determinant of health behaviour (Augé and Herzlich 1984, Fassin 1992).

This work allows us to understand the importance of environmental resources used by the Ewondo Population to prevent the spread and cure of these two diseases (malaria and spleen disease). Thus, 42 plants were identified and collected from home gardens, fallows, orchards, plantations, and forests. Beyond this community, many plants used against spleen disease have been identified, and their modes

of use are known in several communities in Cameroon (Adjanohoun *et al.* 1996, Brisson 2011), Gabon (UNESCO 2009), and CAR (Jacqueline 1959). With regard to the use of wildlife resources, we recorded a few species mentioned by respondents as being used as ingredients in the production of traditional remedies for spleen disease and malaria. However, informants mentioned the frog and snail as part of the arsenal that could be mobilized against spleen disease. The liver of the pound and doe among the Bakwele, the liver of any edible animal, and the skin and nail of the elephant are used by the Baka of Southeast Cameroon to deal with the same disease (Mvetumbo *et al.* 2020). The use of natural resources, particularly forests, still occupies a place in the lives of the Ewondo population regardless of the health problems they face on a daily basis.

This population lives in an urban setting that, like most large urban areas, faces health and environmental challenges. Urbanization is accompanied by a bewildering anthropogenic change in landscapes, with degradation, replacement, or complete loss of natural ecosystems, including vegetation cover, soil, and water (Bolon *et al.* 2019). The consequence is, as the Ewondo population points out, a reduction occurs in the availability of plant and animal resources that people regularly use to manage common health problems such as malaria and spleen disease. Yaoundé, which suffers from the degradation of its landscape, has a strong history with the forest and its resources, which is reflected in the names of several neighbourhoods that bear the names of animals and the environment (Essono 2016, Pondi 2012). It is also shown that water bodies (lakes, ponds, etc.) in urban green spaces are breeding grounds for disease-carrying mosquitoes (Lõhmus *et al.* 2015). In the political capital of Cameroon, malaria, which is a result of this state of insalubrity and a major cause of mortality, is taxed by the fringe of our informants as the direct cause of spleen disease and/or its synonym. Efforts must be made to better control and resolve the health challenges resulting from human–environment relationship, as the occurrence of other threats, such as those generated by climate change, would only complicate the situation.

In this perspective, the concept of 'nature-based solutions' (NBS) that is closely related to other notions, such as sustainability, resilience, ecosystem services, human–environment coupling, and green (blue) infrastructure (Lafortezza *et al.* 2018), can be a better option. These solutions are likely to produce additional co-benefits for societal well-being, thus constituting strong investment options for sustainable urban planning (Kabisch *et al.* 2016). In the city of Yaoundé and its surroundings, the local initiatives identified are the creation of home gardens, preservation of plants with therapeutic virtues in plantations, and creation of urban gardens by municipal authorities, although much remains to be done in terms of enlarging the areas. Urban vegetation can improve air quality by removing air pollutants. Open spaces in cities, such as parks, gardens, playgrounds, and cemeteries, are non-impervious spaces that improve infiltration during extreme precipitation events by providing water regulation functions (Kabisch *et al.* 2017). It has been shown that people living in urban areas with more green spaces have reduced stress

levels and higher life satisfaction than those living in areas with little natural environment (White *et al.* 2013).

In conclusion, this research notes a divergence of views between biomedicine and African traditional medicine on the nature of spleen disease and its relationship with malaria. On this point, we believe that a healthy collaboration between different health practitioners is likely to promote the demystification (if necessary) of certain cultural considerations regarding the aetiology of the disease, improvement of medical practices, and especially development of innovative health approaches. Whether it is malaria or spleen disease, this study reveals the strong attachment of the populations to endogenous therapeutic knowledge. Access to medicinal resources from forests and the natural environment is governed by both traditional and institutional norms.

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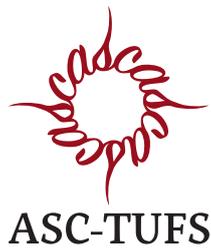<https://worldpopulationreview.com/world-cities/Yaoundé-population, Accessed on 2 September 2022>

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