



Navigating power imbalances in landscape governance: a network and influence analysis in southern Zambia

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Received: 8 January 2022 / Accepted: 14 November 2022 / Published online: 16 February 2023
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Abstract

Actors engaging in integrated landscape approaches to reconciling conservation and development represent multiple sectors and scales and actors with different powers, resource access, and influence on decision-making. Despite growing acknowledgement, limited evidence exists on the implications of power relations for landscape governance. Therefore, this paper asks why and how different forms of power unfold and affect the functioning of multi-stakeholder platforms in southern Zambia. Social network analysis and a power influence assessment reveal that all actors exercise some form of visible, hidden, or invisible power in different social spaces to influence decision-making or negotiate a new social order. The intersection of customary and state governance reveals that power imbalances are the product of actors' social belongingness, situatedness, and settlement histories. We conclude that integrated landscape approaches are potentially suited to balance power by triggering new dynamic social spaces for different power holders to engage in landscape decision-making. However, a power analysis before implementing a landscape approach helps better recognise power differentials and create a basis for marginalised actors to participate in decision-making equally. The paper bears relevance beyond the case, as the methods used to unravel power dynamics in contested landscapes are applicable across the tropics where mixed statutory and customary governance arrangements prevail.

Keywords Power dynamics · Multi-stakeholder platforms · Landscape governance · Integrated landscape approaches · Network analysis · Influence analysis · Zambia

Communicated by Diana Sietz

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Introduction

Integrated landscape approaches (ILAs) aim to reconcile nature conservation and socio-economic development by engaging and negotiating with multiple stakeholders to identify common concerns and planned actions (Sayer et al. 2013; Ros-Tonen et al. 2015; Arts et al. 2017; Duncan et al. 2021). Nevertheless, social-cultural and political-economic factors often engender competing claims to natural resources that pose significant challenges to equitable and effective landscape governance (Money et al. 2020; Forsyth and Springate-Baginski 2021). The persistence of such challenges can often be attributed to unequal power structures masked in 'participatory and engagement' governance (Nelson and Agrawal 2008; Mugo et al. 2020) and deliberative democracy spaces (Martin and Rutagarama 2012) employed at the landscape scale. It is often assumed that equitable participation and collective engagement of various stakeholders in decision-making will improve legitimacy (Birnbaum et al. 2015; Pachoud et al. 2019), enhance public acceptability (Purdy 2012), and

empower vulnerable groups (Mashapa et al. 2020). However, in practice, government agencies and civil society organisations may involve local stakeholders in decision-making processes without addressing the root causes of inequality or providing sufficient funding to support local actions (Hegga et al. 2020). Hence, the outcomes may be neither satisfactory nor enduring. Furthermore, such inadequacy can lead to the increased dominance of already powerful stakeholders and further frustrating, marginalising, and disenfranchising local stakeholders (Bingham et al. 2005).

In line with the African Union Agenda 2063 and the Sustainable Development Goals (SDGs), Zambia is one of the sub-Saharan countries that embarked on the devolution of rights and responsibilities to local communities in decision-making processes (Nansikombi et al. 2020; O'Connor et al. 2020; Adeyanju et al. 2021). The environmental governance literature has shown that transitioning from a 'top-down' to a decentralised structure positions local communities at the centre of 'responsibilisation'—assigning new responsibilities, roles, and functions previously performed by the state (Mustalahti and Agrawal 2020, p. 1)—and subsequently uncovering new power complexities (Shackleton et al. 2002; Raik et al. 2008). As such, decentralisation of natural resource governance has been criticised for both failing to deliver expected outcomes and altering power arrangements among stakeholders (Larson and Soto 2008; Ballet et al. 2020). Ribot et al. (2010) attribute the failure to a lack of local-level democratisation of natural resource governance and power relations.

To address power imbalances, decision-makers are challenged to reform institutions holistically and be responsive to local contexts whilst recognising multiple tiers of landscape governance (Ribot et al. 2010). Landscape governance refers to how rules and decision-making processes address stakeholders' competing claims to, and interests in, natural resources to stimulate dialogue and sustainable management of complex mosaic landscapes (Ros-Tonen et al. 2015; Kusters et al. 2020; Best et al. 2021). As a form of landscape governance, integrated landscape approaches have gained support as mechanisms to enhance landscape-scale sustainability (Dale et al. 2019; Reed et al. 2020) and are increasingly adopted in both tropical and temperate regions (Estrada-Carmona et al. 2014; Milder et al. 2014; DeFries et al. 2016; García-Martín et al. 2016; Zanzanaini et al. 2017; Wolff et al. 2020). Recent scholarship has developed guiding principles (Sayer et al. 2013; Freeman et al. 2015; Bürgi et al. 2017; Morgan et al. 2020), a decision-support framework (McGonigle et al. 2020), and typologies (Carmenta et al. 2020); examined stakeholder perceptions (Langston et al. 2019); assessed relevance under authoritarian contexts (Forsyth and Springate-Baginski 2021); and, to a lesser extent, attempted to evaluate performance (Sayer et al. 2015; Reed et al. 2017; Omoding et al. 2020). It is

also increasingly acknowledged that a greater focus on the roles and types of power could improve the effective implementation and long-term sustainability of ILAs (Arts et al. 2017; Sayer et al. 2017; Ros-Tonen et al. 2018). However, the interplay between power relations and decision-making in ILAs lacks a comprehensive empirical analysis. To address this knowledge gap, we present a case study from the COLANDS¹ initiative in the Kalomo landscape of southern Zambia—a contested tropical landscape with persistent tensions, power struggles, and disputes over land use (Moombe et al. 2020).

To guide our inquiry, the study seeks to (1) assess the forms, levels, and spaces of power in Kalomo District, (2) investigate the distribution of power among actors, and (3) examine the influence of power holders on decisions about access to, and utilisation of, natural resources.

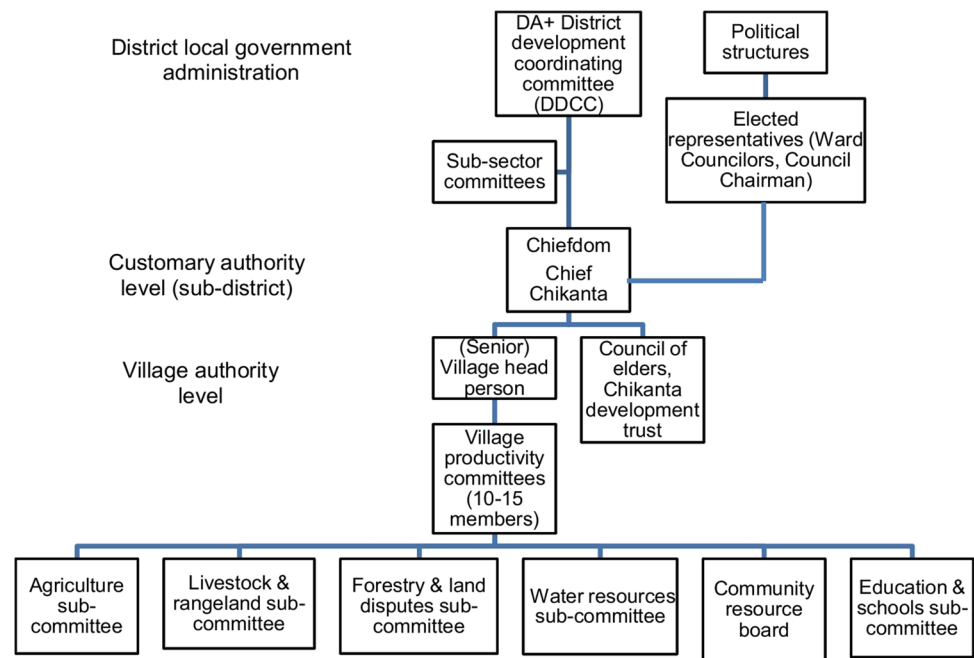
Landscape governance arrangements in the Kalomo landscape

As is typical across Zambia, the Kalomo District is characterised by legal pluralism with overlapping governing systems composed of statutory and customary institutions (Mushinge and Mulenga 2016; Chilombo 2021). The statutory governing structures are established through formal laws linking national and district institutions within administrative and political systems. The District Administration coordinates all government departments and implements government policies. The political systems are elective, with representatives at the constituency and ward levels. Kalomo District has three constituencies and 20 wards linked to a national assembly that formulates national laws (Moombe et al. 2020; O'Connor et al. 2020) (Fig. 1).

The customary governance systems are hierarchical with multiple levels of authority in charge of various aspects of sub-district governance. The Chiefs Act of 1965 and Registration and Development of Villages Act of 1971 recognise Chiefs as heads of Chiefdoms, assisted by village head persons. Kalomo District has three legally recognised independent Chiefdoms and thus three Chiefs. This study focuses on Chikanta Chiefdom, headed by the traditional

¹ The Collaborating to Operationalise Landscape Approaches for Nature, Development and Sustainability (COLANDS) initiative is led by the International Centre for Forestry Research (CIFOR) with the University of British Columbia, University of Amsterdam, and the French agricultural research and international cooperation organisation working for the sustainable development of tropical and Mediterranean regions (CIRAD). With several local partners in the countries of implementation—Ghana, Zambia, and Indonesia—the COLANDS initiative seeks to initiate, analyse, and evaluate the implementation of integrated landscape approaches. For more information, see cifor-icraf.org/colands.

Fig. 1 Landscape governance structure in the study area (source: constructed by the authors based on Moombe et al. (2020) and Nansikombi et al. (2020))



administrative head (the Chief), who adjudicates customary land matters and natural resources, whilst state land is administered through the Ministry of Lands. Through the Council of Elders, the Chief enacts local rules and regulations, appoints and dismisses village head persons, and intervenes in disputes over land and natural resources. The Council of Elders regularly consults with various village head persons on access to and control over natural resources (Moombe et al. 2020). A village head person can either be male or female. With a colonial legacy of appointing males as village heads, the position is locally referred to as simply ‘headman’. In this study, we use the neutral term of head person.

Theoretical background

Integrated landscape governance theory is framed around the ability of stakeholders to jointly govern in what Arts (2006) terms ‘governing beyond the state’ and negotiate inherent trade-offs between conservation, development, and livelihoods. Though context-specific, the principles of integrated landscape governance recognise the need for collaborative, participatory processes and acknowledge that power positions dictate trade-off narratives (Freeman et al. 2015; Sayer et al. 2015).

Since Robert Dahl’s critique of elite-power theories (Dahl 1961), different forms of power have been characterised in the literature (Bachrach and Baratz 1962; Bourdieu 1979; DuBois 1991; Schusser et al. 2015; Macuane et al. 2018; Svarstad et al. 2018; Fung 2020; Turnhout et al. 2020; Heikkinen 2021). Our point of departure is in the tradition of

Dahl (1961) and Weber (1978) and the development of an actor-centred power (ACP) perspective. The ACP focuses on the exercise of power by individuals or collective agencies (Krott et al. 2014; Svarstad et al. 2018; Juerges et al. 2021) and disentangles ways in which trade-offs are negotiated, given different actors’ power positions at the village, district, or national level. This raises fundamental concerns about who participates and sets the agenda, alters societal norms and beliefs (Reed 2008; Reed et al. 2009), why power is distributed and exercised in the manner it does (Turner et al. 2020), how power perpetuates marginalisation in certain contexts (Heikkinen 2021), why resources accrue to some and not others, and why some people resist decision outcomes (Walls et al. 2021). This myriad of concerns informs our analysis, in which we conceptualise power as ‘the uneven capacity of different actors to influence the goals, processes and outcomes’ of decision-making (Morrison et al. 2019, p. 2).

In analysing our case study, we adopt Lukes’ (2021) and Gaventa’s (2019) ‘three faces’ of power, referred to as the Power Cube framework. This is a heuristic tool to disentangle dimensions of power—spaces, forms, and places—and generate insight into the underlying causes and effects of power imbalances in landscape governance. The exercise of power depends on the forms of power and is largely ‘shaped by the institutions and social structures through which people make sense of their reality’, which can create ‘winners and losers’ and escalate or diffuse conflicts (Turner et al. 2020; Quintslr et al. 2021, p. 865). These forms of power are *visible*, *hidden*, and *invisible*, operating in power spaces (*closed*, *invited*, *claimed*) and across levels (*local*, *national*, *global*) (Gaventa

2006; Jacobi and Llanque 2018; Lukes 2021). We understand power spaces as potential places or arenas where different discourses are shaped, and social relations re-arranged to enhance (or diminish) participation (Gaventa 2006; Massey 2009).

Visible power is synonymous with what Barnett and Duvall (2005) refer to as observable power, which is negotiated or exercised through rules, structures, and procedures in decision-making processes. What makes power difficult to analyse is that it does not always manifest in visible ways and is thus more challenging to discern (Wade 2018). Lukes (2021) and Avelino (2021) argue that the exercise of visible power is just one of the power dimensions and identify other ways power unfolds. These may include discretely enabling or restraining influences on others, manipulation, or securing the dominance of certain discourses (e.g. rules that stereotype women's participation in decision-making). This form of power is referred to as hidden power, especially if it remains uncontested by those dominated by it. It aims to protect some stakeholders' vested interests, positions, and privileges by, for example, impeding transparent engagement by covertly making the public dialogue more complex or manipulating the 'behind the scenes- agenda setting', especially on critical issues (Njaya et al. 2012; Hathaway 2016). Scholars who adopt the political ecology perspective of power based on Bachrach and Baratz's (1962) works prefer to use the terms 'mobilisation of bias' or 'covert forms of power' to distinguish hidden power from invisible power (Fung 2020; Quintsler et al. 2021).

Invisible power, also called 'thought control' (Wade 2018, p. 1031), is the most insidious of the three dimensions of power, shaping the psychological and ideological limits of participation. The downside of the invisibility of this form of power relates to the manipulation of the minds and conscience of some stakeholders. Those with invisible power attempt to control socialisation, culture, and ideology to define what is normal, acceptable, and safe, hence exerting what in Foucauldian terms is referred to as disciplinary power—the power created by regulating spaces, time, or people's activities (Foucault, 1977).² The countervailing power is a positive manifestation of invisible power exercised by local people. Given that local people are rational actors and are embedded in social networks, oppressive decisions may trigger social mobilisation or autonomous voice from below to resist the 'powerful', enhance accountability, and counter elite capture (Hathaway 2016; Fox 2020). Unlike visible power, hidden and invisible powers are not

easily detectable and require careful observations to be uncovered.

Finally, we look at power in terms of actor influence, which is particularly relevant in natural resource contexts (Marques et al. 2020; Stanzel et al. 2020; Vallet et al. 2020; Ishtiaque et al. 2021). This paper conceives actor influence as the ability of an actor to alter another actor's action by limiting alternatives in the decision-making process. Thus, characterising actors, their relationships (ties), and networks help identify influential and peripheral actors in the governance network, who is connected to who, the extent of those connections, and their implications for power relations. Density and betweenness centrality are used to model influence as the measure provides the shortest links (relations) that pass through an actor (a node) to others (Blanc et al. 2018). In this paper, 'stakeholder' (the preferred term in ILA literature) and 'actor' (the preferred term in power and network analyses) are used interchangeably (Marques et al. 2020, p. 3). Stakeholders are generally understood as 'individuals, groups and organisations who are affected by or can affect policy, development and natural resource management' (Reed et al. 2009, p. 1933). An actor is defined broadly as a 'social entity, a person or an organisation able to influence a decision' (Marques et al. 2020, p. 3). However, some authors (Long 1990; Latour 2005) would assign more agencies to actors and distinguish between those 'affected by' or 'an interest in' (stakeholders) and those capable of effecting change (actors). Edward Freeman's classical stakeholder approach gives insights into two functional stakeholder categories based on their influence level and interests (Freeman, 2010). Primary stakeholders include those who directly influence decisions and have significant interests in the landscape. Secondary stakeholders have significant decision-making influence whilst being disproportionately affected by the outcomes or may just be concerned stakeholders with or without influence and are not affected by decision-making outcomes.

Methods

Fieldwork was conducted in the Kalomo District in the South of Zambia between July 2019 and October 2020 as part of the COLANDS initiative. Ethics approval to conduct this research was obtained from the Amsterdam Institute for Social Science Research (AISSR) Ethics Committee (2020-AISSR-11653) of the University of Amsterdam.

Background to the study area

Kalomo District lies in the conservation-tourism-agriculture complex in the southern part of Zambia and is home to the Kalomo Hills Local Forest Reserve (KFR-P13). The

² Foucault (1977) used the panopticon metaphor to explain how prisoners internalise the rules if they feel that they are continuously observed from the tower in the middle of the panopticon.

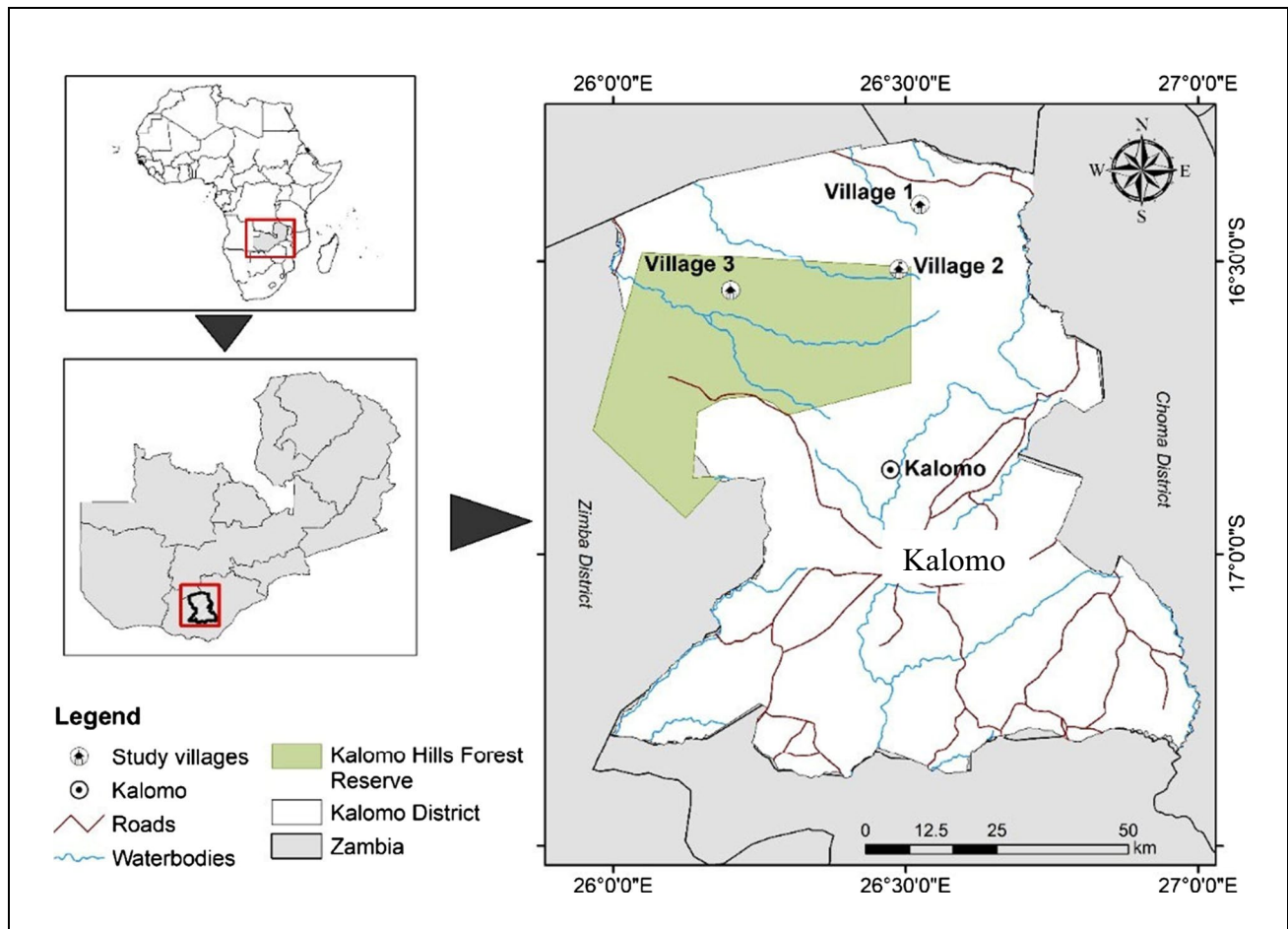


Fig. 2 Location map showing Kalomo District and study villages (1, 2, 3) (source: authors)

16,200-hectare forest reserve is surrounded by agricultural and livestock farming, the Nazhila water catchment, and the Sichifulo Game Management Area (Moombe et al. 2020). The study focused on the villages around and inside the KFR-P13 in Chikanta Chiefdom (Fig. 2). At the time of its declaration as a local forest reserve in 1952 to protect the water catchment by the colonial administration, few settlements in the area were not entirely relocated. As the population increased and more people migrated to the area, land and boundary disputes involving state actors (the Forest Department), the customary administration, and local people (in and around the forest reserve) remained unresolved, complicating the power dynamics in the area. With time, the government's hold on the almost entirely settled reserve has gradually weakened, exposing who has real power to access and control natural resources. This situation has created alliances and patronages, causing continuous counteraccusations among community actors.

In 1984, the President of Zambia instituted the *Sakala Land Commission of Inquiry* to investigate the status of land conflicts in the region, including KHR-P13. According to the

Chief of the area, the Commission presented 'useful recommendations that would have addressed most land conflicts in KHR-P13' (Interview, July 2019). However, 'none of the Commission's recommendations has been implemented by the government', he said. Due to increased land-use conflicts in the landscape, the Area Member of Parliament (MP) presented the case in Parliament on 7 July 2010 and proposed implementing the Sakala Commission of Inquiry recommendations to address land conflicts in the Chiefdom. This would entail the complete redistribution of land and implementing zoning by reconverting KHR-P13 into customary land.

Following these land-use problems in the area, the 2018 Human Rights Commission Report indicated that over 34,000 farmers live in the Forest Reserve. Public infrastructure supported by World Bank, including 20 schools, 6 health facilities serving approximately 57,000 people, including those who do not live in the Forest Reserve, more than 150 government-built boreholes, 4 communication towers, and other public and community facilities exist (HRC 2018). Paradoxically in 2018, the District Forestry Office

Table 1 Land uses and livelihoods of the respondents ($N=112$)

Land use	Livelihoods	% of respondents		
		Village 1 ($n=25$)	Village 2 ($n=53$)	Village 3 ($n=34$)
Agroecosystems	Agriculture (crops, home gardens)	100.0	100.0	100.0
	Livestock (cattle, chickens, sheep, and goats)	85.0	86.0	54.0
Forest production and conservations areas	Forestry (timber, charcoal, poles)	13.0	70.0	82.0
Built infrastructure	Entrepreneurs (small business, agro-commodity)	7.5	12.0	17.0
Water and wildlife areas	Others (hunting, fishing)	0.0	3.7	11.4

attempted to evict all the people through a notice endorsed by the Minister of Environment and Natural Resources: ‘You are hereby ordered to cease farming activities and demolish any structures in line with the Forest Act of 2015 and vacate the Forest Reserve by 30 September 2018. Failure to comply with this notice, the full force of the law shall be invoked’. Traditional leaders, NGOs, the District Administration, and local people were all outraged by this approach. Chief Chikanta objected, and the human rights commission appealed the decision which was later retracted. The Kalomo Hills Forest reserve (KHF) remains a space for power and governance contestations embedded in the colonial legacy of the fortress conservation model, yet local people who occupy the spaces have significant land-use claims.

Selection of villages

A survey was conducted in the Chief Chikanta Chiefdom in 2019. Three villages were purposefully selected to solicit social, economic, and ecological information. The demographic data in the study area does not differ significantly among the villages. The criteria used to select villages were based on land uses, historical background, and the power relations associated with distance from the Chief’s palace as the centre of customary decision-making and the forest reserve as the main centre of power contestations (Table 1).

Selection of respondents and data collection

Data collection focused on forms of power, who exercise it, and the distribution among actors related to decisions about access to, and control over, natural resources. The study employed the sequence design methodology developed by Schusser et al. (2012) and later used in several other studies (Schusser et al. 2015; Maryudi et al. 2016; Stanzel et al. 2020). The sequence design employs quantitative methods to gather initial data for network analysis, followed by qualitative methods to gather data on power dynamics. This mixed-method approach is cost-effective

whilst simultaneously ensuring research data quality, validity, and reliability through triangulation (Stanzel et al. 2020). The sequential steps are outlined below (Fig. 3).

First, key stakeholders were identified through purposeful sampling to ensure a fair representation across governance actors (Palinkas et al. 2015). Semi-structured interviews were held with three village heads, fifteen members of local platforms called village productivity committees (VPCs), one representative of the Zambia Community Based Natural Resources Management Forum (ZCBNRMF), and (later) two Chief representatives. The questionnaire included general information, institutional affiliation, and land uses, followed by name generator questions asking respondents to name institutions and actors they most frequently interact with on land and natural resource issues (Burt et al. 2012) (Supplementary Material).

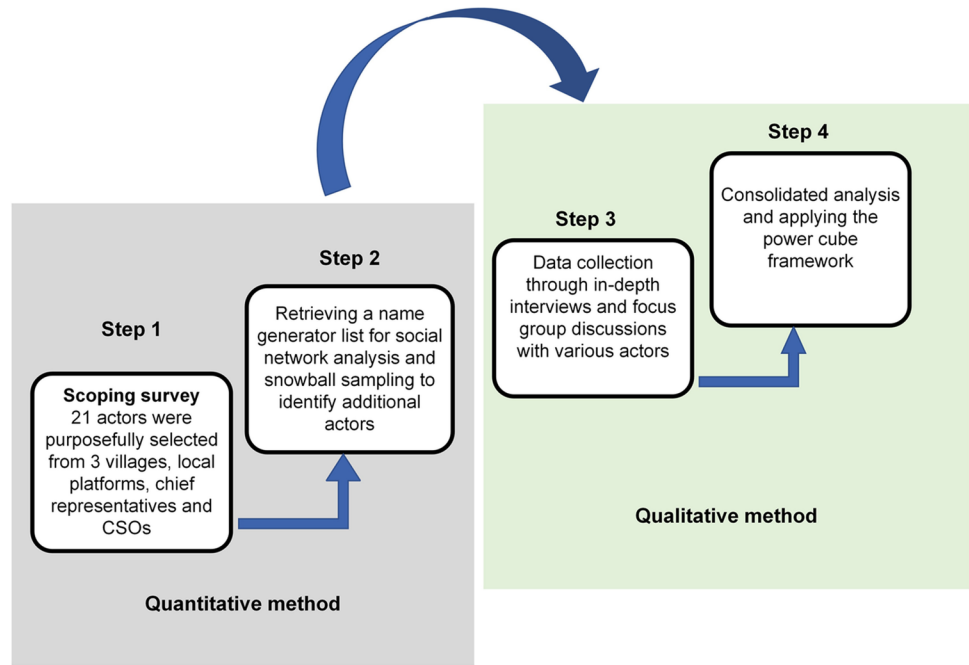
Second, snowball sampling was employed using the name generator to identify additional respondents and analyse the perceptions and sources of power. This added a mix of 112 new respondents affiliated with local communities, government agencies, civil society organisations (CSOs), and private companies. A fair distribution of gender and age was considered in selecting the final list of respondents (see Fig. 4).

Third, we conducted in-depth interviews (45–90 minutes) with the most frequently mentioned actors ($n=22$, 16.7%) to verify specific issues. In addition, the first author attended three multi-stakeholder meetings at the district and village level as an observer researcher.

Data analysis

The analysis followed two steps. First, interview responses were transcribed and coded to identify recurring themes and phrases (Nowell et al. 2017) using MAXQDA2020, a computer-aided qualitative data analysis software package. The analysis deductively followed the power cube framework to gain insights into the forms and sources of power that stakeholders exercise in decision-making in the governance of the

Fig. 3 Sequential mixed-method design used in the study (source: composed by the authors based on Schusser et al. (2012))



Kalomo landscape. Segments of phrases or nouns (themes, governance domains, institutions, or organisations) were coded for analysis to clarify the meaning and implications of the statements. Second, statistical analyses of influence scores were computed using the Likert scale (0–5). A social network mapping was performed to understand fully the power distribution using Kumu mapping software (<https://www.kumu.io>), a free and simple-to-use application (Stansfield et al. 2021).

Forms, sources, and spaces of power analysis

Actors were categorised according to their sectors and jurisdictional levels of governance, i.e. Chiefdom, village, and district. The interview guide (see Supplementary Material 1 and 2) focused on forms, sources, and spaces of power with examples of power manifestations. Using Gaventa’s (2019) power cube framework, we distilled, tabulated, and analysed the power sources for all actors

Fig. 4 Age and gender of respondents included in the data collection (source: authors’ field data from scoping survey). Note: $N=132$, representing 3 head persons, 15 village productivity committees (VPC) members, 2 Council of Elders members, 11 representatives of various government agencies, 5 staff members of civil society organisations, 3 private sector actors, and 93 community members from three villages

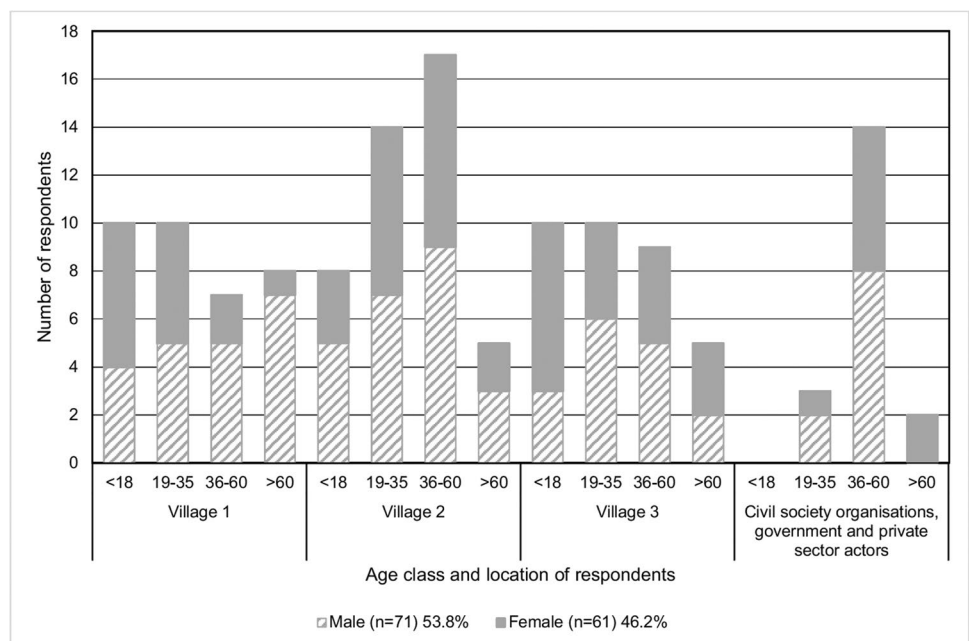


Table 2 Analysis of power relations in natural resource governance in Kalomo District (source: authors' compilation)

Governance jurisdiction	Actors assessed	Forms of power	Source of power	Examples of manifestation of power in Kalomo District
Chiefdom	Traditional leaders (Chiefs, Council of Elders)	Visible	Customary and traditions enshrined in traditional structures supported in the Chiefs Act Chapter 287 of the Laws of Zambia	Decides who has access and control of resources. Sometimes there is an unequal distribution of privileges some members favoured at the expense of others
Village level	Village head persons	Visible	Customary and traditional laws supported under the Registration and Development of Villages Act of the Laws of Zambia	Threats of eviction (in extreme cases actual eviction) through the implementation of local rules, beliefs, norms that govern access to and use of natural resources
	Village productivity committees	Visible	Customary and statutory laws such as the Registration and Development of Villages Act of the Laws of Zambia	Enforce sanctions on offenders Conflict resolution
	Local cooperatives	Invisible	Coalitions and partnerships	Participate in the decision-making process through representations of interest of members
	Livestock farmers	Invisible	Wealth and social status. Livestock is a measure of wealth in this society	Ensure the absence of issues that work against their interests from the agenda in decision-making processes
	Local farmers, incl. poor livestock farmers	Hidden	Social networks, coalitions and farmer alliances, and cultural identities	Mobilise local voices in decision-making processes and highlight their capacity to act based on beliefs and shared norms
	Local entrepreneurs	Hidden	Wealth and social status	Through donations, manipulating knowledge systems, or corruption, shape ideas about issues and delay the implementation of trade regulations
District	Government agencies for land, forests, water, agriculture, and livestock District administrator	Visible	Statutory laws and subsidiary regulations regarding resource management Statutory laws	Instil fear of evictions and sanctions to local communities involved in illegal accessing of resources Power seen through coercions by sanctioning erring government officials; and tangible and intangible incentives such as recognitions, encouragements, or awards (labour days)
	Civil society organisations (CSOs)/ donors	Invisible	Knowledge and financial incentives	Shape local ideologies, change cultural beliefs, and secure compliance by controlling their interests through dialogue processes. Withhold finances
	Private sector	Hidden	Certification procedures for seed control and timber licensing	Influence agenda to entrench their status quo and protect interest through 'social responsibilities'

at the various jurisdiction levels (Table 2). For analytical purposes, responses were aggregated per actor group.

Distribution of power and influences

In analysing the power distribution across actors, we first mapped the structural social network properties of the actors in the Kalomo landscape. Consistent with previous natural resource management studies (Lauber et al. 2008; Bodin and Crona 2009), degree (number of links) and betweenness (brokerage or intermediary role) centralities were used to unravel relationships. We further analysed power and influence by unravelling who controls resource access and determines land-use decisions. The influence analysis follows Vallet et al. (2020) modes of exercising

power, including persuasion, manipulation, and expert knowledge. More details on the power and influence analysis can be found in Supplementary Material 3 and 4.

Results

Forms, levels, and spaces of power

We identified actors at three relevant jurisdictional levels, i.e. the Chiefdom, villages, and districts. The identified actors wield various forms of power derived from various sources (Table 2). The power dynamics are shown along a constructed gradient from the Chief's palace towards state lands, including communities in the forest reserve.

We conceptualise this Chiefdom-state interaction as an intersection of power contestation in terms of the spheres of influence on natural resource governance between traditional and state authorities.

Manifestation of forms and levels of power among actors

Actors who derive their power from the traditional governance structures, customary inheritance arrangements, or regulations—primarily Chiefs, village head persons, and staff of government agencies—tend to wield *visible power*. For example, the Forestry Department holds the statutory power to issue concession permits and determine access to the Kalomo Hills Forest Reserve, whilst traditional leaders have the power to reinforce or impede collaborative processes in the Chiefdom. At the village level, social position and status (e.g. head persons, traditional medicine practitioners, or holding unique traditional knowledge) are also sources of visible power.

In contrast, actors such as donor agencies, big livestock farmers, and private companies with *hidden power* have economic capacities and some form of ‘expert knowledge’ that can subtly change conversations and agenda-setting. Furthermore, the hegemony of particular stakeholders in discourses and the selective promotion of certain interests over non-dominant actors, mostly marginal local farmers and women, resulted in the marginalisation of voices in decision processes. For instance, in Tonga culture, women are reluctant to speak in public spaces such as meetings and would not publicly express their opinions. They indicated that their voices were not respected in public meetings when they spoke.

Invisible (countervailing) power was also exerted. For instance, in shifting gender norms (challenging male dominance in land access), recently, a CSO has influenced a cultural shift to permit females to acquire land. Local farmers and cooperatives challenged *visible* and *hidden* power by mobilising local voices in decision-making (Table 2). In one community, we discovered that a decision restricting access to water resources was ineffective because women mobilised to oppose the decision implicitly. They resorted to silently protesting decisions that did not reflect their expectations, thus exercising (countervailing) hidden power.

Exercise of power and power spaces

We identified three power spaces in which respondents exercise powers—*closed*, *invited*, and *claimed*. Settlement histories, ethnic affiliations, gender, age, and wealth shape the power structure across these power spaces in Kalomo District. In *closed spaces*, participation in most decisions is exclusive to local Tonga people. Actors in *closed spaces* are associated with matrilineal tribal clans locally called

Mikowa—the ‘ruling elite’ in the Tonga language. In these spaces, Chiefs (*Mwami*) and village head persons (*Sibbuku*) who ascend to power through a matrilineal succession inheritance system (*kuMikowa*) are strategic stakeholders responsible for the maintenance of traditional norms and practices. However, one respondent observed that some ‘economically powerful and influential entrepreneurs and staff of government agencies enter these spaces and influence decisions’ (Interview Kalomo District village, August 2020). Typically, decisions are made with little or no consultation with other communities.

Various actors influence and express their opinions in decision-making processes in *invited* spaces such as open forums, for instance, district development committees, constituency and ward planning forums, village community meetings, and user groups (cooperatives and farmer groups). Participating actors in such *invited* spaces include staff of government departments, commercial farmers (so-called white settlers), entrepreneurs, staff of NGOs and donor agencies, and non-local Tonga who migrated from neighbouring places in search of arable land for agriculture and livestock. Most non-local Tongas came from the Gweembe Valley and were displaced during the construction of the Kariba dam in the 1950s. They are known for their economic power based on large herds of cattle and vast farmlands. Settled in and around the forest reserve, a government official referred to them as ‘encroachment settlers’.

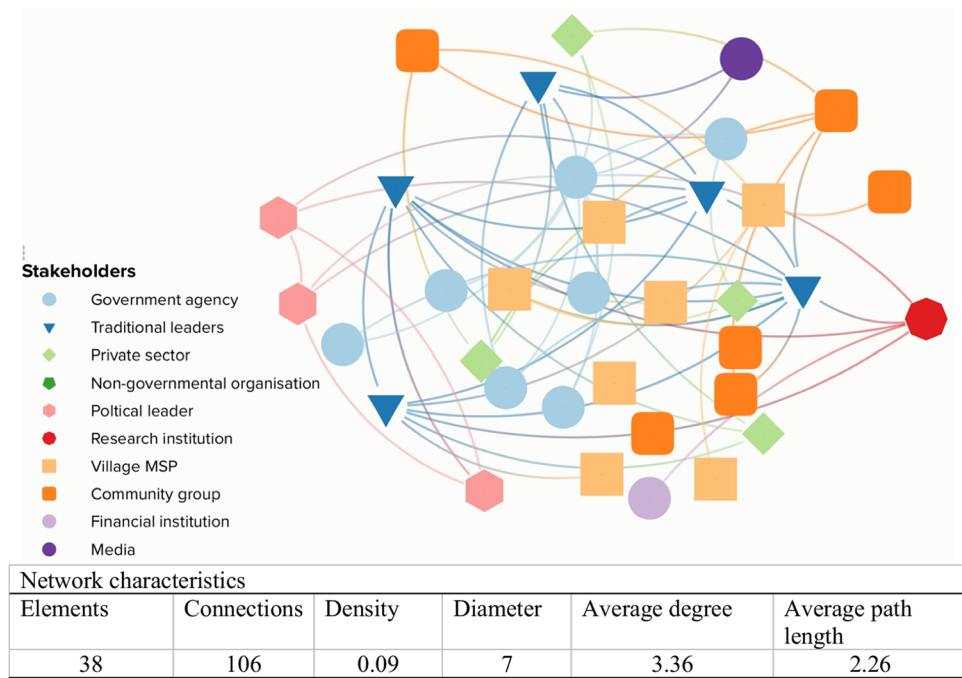
Claimed spaces are ‘class-based’, marginalised, and contested arenas. We identified informal stakeholder platforms at village and district levels, cooperatives, farmers’ coalitions, and partner NGOs as part of the spaces where some community members (mostly poor and vulnerable women, youths, and small-scale farmers) lobby for inclusion in decision-making. In addition, social media and digital platforms are part of the *claimed spaces*, which increase actor interactions across sectors, thus altering power dynamics.

In conclusion, understanding the nature and forms of power spaces is key to appreciating the transformations needed for equitable engagement, steering collective actions, and opening up ‘new frontiers of spaces’ (Gaventa 2006; Morrison et al. 2019) that broaden participation across actors towards positive outcomes of decisions in Kalomo District.

Actor interactions and power distribution in the Kalomo landscape

The social network in Kalomo District is relatively poor, with a density of 0.09 (a complete graph has a possible density equal to 1). Most actors ($n=39$; 67%) have a degree of centrality—the number of other actors with whom someone interacts directly—lower than 5 (Fig. 5). The undirected network shows that the head persons 1, 2, and 3 have a high

Fig. 5 Social network in the study area (source: authors)



degree of centrality (more ties to other actors) and betweenness centrality (i.e. bridging relations with other actors) owing to their frequent interactions with diverse actors across villages (Table 3).

There are power differentials among head persons. As one of the head persons explained, ‘[in the] exercise of power in matters of land or access and control of natural resources [at village level], some headmen are more powerful than others’ (Interview August 2020). Head person 3 was the least powerful of the three due to, among other reasons, his situatedness, i.e. the further away from the Chief’s palace—the perceived centre of power—the less influential the traditional leader is.

The government’s district administration and the Chief have a lower degree centrality owing to the bureaucracy associated with their office, which through a traditional prescription dictates that they can only be contacted through third parties, e.g. government departments or the Council of Elders. However, in practice, the Chief can veto some of the other stakeholders’ decisions, and certain rules do not apply equally since it also depends on who needs to see the Chief, such as politicians, government officials, or corporate investors. Like private sectors and CSOs, donor agencies have the lowest network interactions (see Table 3). Nonetheless, their roles in ‘demanding accountability’ have

Table 3 Influence spreading matrix (degree and betweenness centrality) of some selected actors in Kalomo District

Social network actor	Description of the tie relationship with other actors	Degree centrality	Betweenness centrality
Chief	Act as a bridge and share information with almost all social clusters	10	0.174
Head person 1	Form a link with lower and higher-level actors in the decision-making chain	15	0.276
Head person 2		11	0.225
Head person 3		9	0.194
Village MSP2	Receives and shares information with and from the Chief to community members	7	0.026
Central government at district level (DA)	Share policy-related information to various actors	9	0.184
Private company	Acts as a commodity player in the selling and buying of goods and services to various actors	6	0.059
Civil society organisation	Acts as a bridge to share information and is a link with village and district authorities and policymakers at the national level	6	0.118
Donor agencies	Function as financial providers to other CSO actors for specific deliverables	2	0.000

Key: DA, District Administration

implications for network power dynamics. A CSO respondent mentioned a specific donor organisation, noting that ‘unlike CSOs, donors work in the background, and their financial influence has ramifications for the power politics of natural resource governance’ (Interview October 2020).

Similarly, a village respondent claimed there appear to be conflicts between government agencies and traditional leaders when granting access to natural resources in open forests unless the Chief issues a consent letter. ‘Government agency decisions are normally overruled by traditional leaders’, according to another respondent, as the latter have institutional and symbolic ‘powers to influence compliance at village levels’ (Interview August 2020).

In summary, the notion of power spaces is unequivocally intertwined with the idea of where the real power to influence decisions resides and, ultimately, the forms and distribution of power among actors. This analysis helps understand the contested interests in a landscape and how common goals are to be mobilised.

Influence analysis

Influence perceptions

We computed the mean score of responses to a Likert scale (0–5) to ascertain how respondents perceived the influence across actors in each identified governance domain, i.e. development, land uses, access to land, water resources, and forest resources (Fig. 6). To some extent, all actors influence decisions. Traditional leaders (Chiefs and head persons) and government agencies (Lands Department, Resettlement Department and Agriculture) are, nevertheless, more influential actors in providing information and facilitation of granting access to land (for occupation) and land uses for agriculture. Furthermore, a government agency (the Forest Department) and the Chief have tremendous influence in granting access to forest resources.

The private sector’s demand for forest and agricultural products in the value chain implicitly influences land uses in Kalomo District. Predominantly, timber and charcoal merchants and agriculture commodity agents decide on the prioritisation of certain land-use practices.

Development, water resource and pasture management show significant differences in influence scores. Respondents perceived that livestock farmers influence pasture and grazing management decisions at the village level, whilst government agencies are perceived to influence development-related decisions (Fig. 6).

Actors with visible power

We detected six social clusters of actors in the Kalomo District around the three village head persons, the District

Administration, the Chief, and a private sector actor. The respective head persons and the District Administrator hold power typically expressed through coercion (sanctions against erring government officers) and incentives (work rewards, recognitions, and praises) (Table 2). We noted that despite having visible power, actors’ influence on actions at the local community level depends on the cooperation of the local stakeholders. For instance, notwithstanding coercive powers vested in the Chief, we observed evidence of highly deforested areas in villages around the palace compared with communities further away. One of the respondents noted that ‘persons involved in illegal practices tend to re-discover ways of eluding rules imposed by the Chief or council of elders’ (Interview August 2020). In decision-making, visible power could be insufficient without the support of other stakeholders.

Actors with hidden power

Hidden power is particularly evident among traditional leaders, private sector actors, and government agencies. A respondent from Village 1 perceived traditional authorities (the council of elders and head persons) as manipulative in decisions by either devaluing the magnitude of some key issues or excluding these from public arena discussions. Furthermore, the respondent said they [Council of Elders] veiled such issues as respect for traditional norms whilst controlling backstage processes out of fear that community members would challenge some decisions. An example of traditional authorities exerting hidden power this way was the discussion around grazing land and sacred groves.

Private sector actors masked their power in various ways—perpetuating conflicts using ‘divide and rule’ through donations, corruption, isolation, and solicitation of support from others. One of the respondents observed that ‘whenever invited to local meetings, some private sector actors [agribusiness enterprises] often refuse to participate to avoid being bound by collective decisions, and yet they sponsor influential community members as proxy actors who champion their agenda’ (Interview August 2020). Furthermore, a government respondent indicated that powerful illegal timber and charcoal traders ‘benefit from unresolved issues of KFR-P13³ governance disagreements between local communities and the government’ (Interview August 2020). In addition, a village head person observed that powerful private sector actors have ‘altered our focus on long-term benefits from nature to a focus on immediate economic benefits’, and added that comparatively ‘[high] prices offered for illegally extracted timber and charcoal incentivises some villagers to remain

³ KFR13 stands for Kalomo Hills Local Forest Reserve No. P.13.

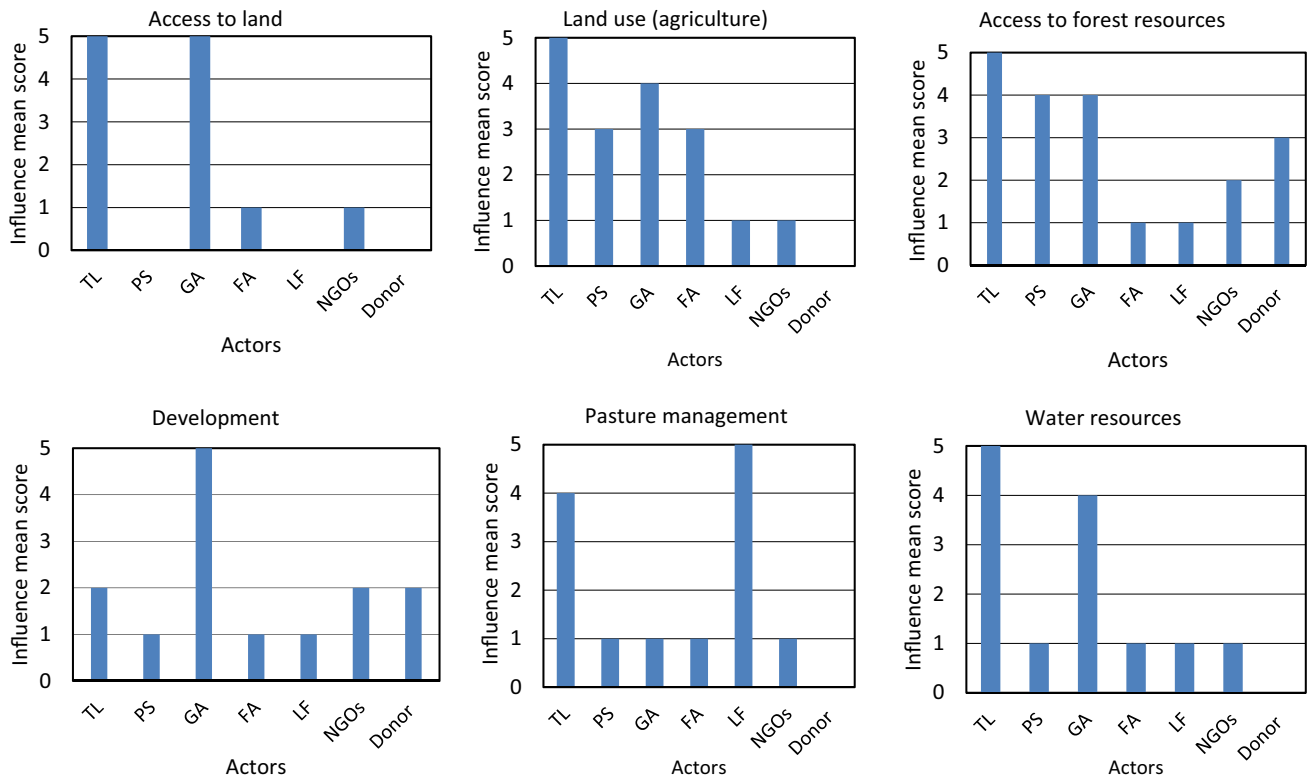


Fig. 6 Actor influence across governance domains in Kalomo landscape (key: TL, traditional leaders; PS, private sector; GA, government agencies; FA, farmer associations; LF, livestock farmers). (Perception scale-ranging between 0=no influence and 5=most influential)

uncooperative in decision-making processes aimed at enhancing conservation’ (Interview August 2020). However, a CSO respondent views the presence of private sector actors as a positive move. Referring to a World Vision (NGO) initiative on Customary Land Financing, a private sector respondent said, ‘This partnership brings together key stakeholders that will help the farmer to be commercialised’.

Similarly, government agencies are seen as manipulative in decision-making. A respondent from a village observed that ‘access to forest resources is a political issue’. He explained that whenever a named government agency calls for a meeting, this ‘... often creates barriers for some local people [based on political affiliation] to participate by framing dominant rules biased against certain groupings’ (Interview August 2020).

Actors with invisible power

In this study, we examined invisible power through efforts to counter visible and hidden power and create awareness among villagers of their rights and entitlements, as invisible power itself is elusive and difficult to observe in a fieldwork period of a short duration. We identified three such efforts:

Village Productivity Committees defending the rights of local resource users, CSOs aiming to foster partnership and collaborations, and a women’s organisation targeting women’s rights.

The local multi-stakeholder platforms (MSPs) appoint members, including men, women, and youths, to serve in various sub-sector committees (Fig. 1). According to one of the members of these committees, she said they are ‘consultative and all-inclusive in local-level decision-making’. However, another committee respondent elaborated that ‘higher authorities sometimes undermine sub-committee’s decisions’, referring to the council of elders who veto decisions. In addition, he said, ‘decisions made at the community level rarely get to policymakers at the district MSP or are ignored’ (Interview August 2020). Local communities mobilise through coalitions and alliances to act and manoeuvre around such examples of hidden power. They not only do so against higher-level authorities but also other more powerful actors. For example, some poor⁴ livestock farmers who felt oppressed by the affluent large livestock farmers mobilised themselves through informal

⁴ Historically, cattle are the measure of wealth. A farmer with less than 10 cattle is considered socially poor.

farmer groups to influence the VPC to enact local regulations on sharing communal grazing land. The head person said, ‘... we have rules that govern grazing regimes for all livestock farmers regardless of how many cattle one has. Each household cannot hold more than fifty heads of cattle on communal grazing land’ (Interview September 2020). Another respondent from Village 2 reiterated that ‘despite these rules, powerful livestock owners induce poor families to pose as owners to access shared communal grazing lands’ (Interview September 2020). In another village, a similar situation was observed where women farmers who claimed to walk long distances to fetch water in the dry season, with the help of a CSO, influenced the enactment of local rules that limit water points as sources of water for livestock.

Kalomo District hosts several CSOs supporting short- and long-term objectives in development, conservation, and community rights. Five CSOs were involved in activities relating to empowering locals to resist some form of domination (invisible power). Three CSOs can be qualified as intermediary or bridging organisations. The ZCBNRMF and the Centre for International Forest Research (CIFOR) facilitate district and local MSPs composed of diverse stakeholders to resolve natural resource-related issues in and around the KFR-P13. World Vision links private sector stakeholders with local communities in the agriculture and natural resource sectors. For example, more than 500 vulnerable village residents were involved in the Customary Land Financing activity through World Vision interventions to link rural farmers to financing options.

Women for Change (WFC) has a more transformative role. This CSO has a long history of sensitising local women groups through rights-based approaches in local MSPs to raise awareness of women’s rights to access land and natural resources. For instance, WFC coordinated a Swedish-funded Strengthening Accountability Programme (SAPII), which aimed to empower women and traditional leaders by providing them with knowledge on the rights of women and youths. A respondent from a Women Group in Village 1 who is a beneficiary of the initiative noted that ‘WFC promotes our rights to access land resources which in the past was a preserve of men’ (Interview Month year). Some men are opposed to women’s empowerment. A village respondent in Village 2 bemoaned that NGOs are causing ‘an unintended cultural shift leading to a ‘female-centric society’’ (Interview September 2020). Yet, a respondent from the Tonga-Gweembe Development Project (GTDP)—a local development CSO that works with the World Bank, local communities, and women groups in development projects in areas around Village 3—noted that ‘tremendous progress has been recorded in the last five years where women are participating in decisions through village committees and sub-committees’ (Interview September 2020).

Discussion and conclusion

With diverging interests and power positions, environmental or landscape management is a ‘wicked problem’ (Balint et al. 2011; Defries and Nagendra 2017). Recognising forms and use of power and actors’ interactions in decision-making processes is the first important step towards addressing why power imbalances persist and, ultimately, transitioning towards more inclusive and equitable landscape governance. Yet, this initial step has largely been overlooked in the ILA and related literature (Turnhout et al. 2020; Woroniecki et al. 2020; Ishtiaque et al. 2021). The scope of this research was to identify and analyse the power positions of various actors to understand why power imbalances persist in Kalomo landscape governance. The Kalomo Hills Forest Reserve and surrounding villages demonstrate a unique tropical landscape context in which power and influence intersect in a context of dual legal pluralism in the natural resource governance, a context similar to common occurrences in Zambia involving customary and statutory institutions (Mushinge et al. 2020; Chilombo 2021). This Chief-state interaction in natural resource spaces where actors wield power and influence differently adds new dimensions to ILA implementation. Three insights emerged into the reasons for power imbalances and their implication for the implementation of landscape approaches.

First, this study showed that actors’ *social situatedness* explains power dynamics across villages and actor spaces. We observed that visible power to influence certain decisions is concentrated around the Chief and those closer to the palace administration (Council of Elders and village head 1 near the palace). The palace constitutes the centre of customary power, whilst community leaders further away in terms of distance and relations are less influential in decisions and enforcement of local laws. In contrast, communities further away from the Chief’s palace have increased leverage to mobilise and resist visible power through coalitions and boycotts, displaying (countervailing) hidden and invisible powers ‘from below’. Initially, communities’ voices appear generally to be silent, emerging only in the forest reserve where statutory institutions exist as another centre of decision-making power (statutory). This results in recurring tensions in natural resource governance between actors with visible power (the Chief and government agencies) and hidden power (local level forums and landholders) on the one hand and local land users (sometimes resisting power) on the other.

Second, *actor spaces—closed, invited, or claimed*—rarely address collective concerns, especially those of marginalised community members, but rather perpetuate power asymmetries. This study has shown that the interests of stakeholders with different power positions in power spaces seldom

align. On a more pragmatic level, this misalignment is due to structural governance arrangements that perpetuate power differentials between local people and so-called non-Tonga immigrants. Social and cultural exclusion and stereotyping of some participants (e.g. marginal farmers and women) in land-use decision-making processes also compromise cooperative behaviour. These insights are relevant for the implementation of integrated landscape approaches (ILAs) that aim to create momentum to break silos and embark on MSPs and other negotiation forms to address trade-offs among various interest groups or different land uses (Reed et al. 2020). Various CSOs tended to broker and champion dialogue-based interventions over resource governance, such as breaking gender disparity perpetrated by males who held opposing views regarding female inclusion, especially regarding women's access to land and roles in decision-making. This is exacerbated by prevailing cultural and religious stereotypes (Andrew and Chiwele 2017). However, continuous engagement of all key actors in a transparent and accountable manner is central to achieving collective actions (Garcia 2002; Marcaletti and Riniolo 2015).

Third, like most rural community-based network studies (Ishtiaque et al. 2021), this analysis investigated network structures at one point in time. This might suggest that network structures tend to be stable over time (Marsh and Smith 2000). In a real-world setting, social processes are dynamic because of the dynamic nature of exercising power, depending in turn on how interests and power balances are configured at that moment. Usually, the private sector actors exert hidden power, which often derails collective bargaining efforts as they tend to benefit from the inconclusiveness of decisions and the ensuing conflicts. At the same time, the findings showed that community coalitions and alliances with CSOs—arguably countervailing powers 'from below'—are one way to curb such powers. This implies that stakeholders' rights and responsibilities should be clarified across scales and actor spaces. For instance, the findings provided insights into how awareness-raising of women's rights by CSOs caused a cultural shift towards reducing gender biases in the access to and control over land and natural resources. This shows that *countervailing powers* 'from below' influenced decision-making processes by invoking other stakeholders seemingly influential in decision-making processes to negotiate a new social order.

Integrated landscape approaches envisage bringing together stakeholders in 'new' social spaces beyond belongingness (settlement histories, ethnic affiliations, gender, age, and wealth) to achieve 'win more-lose less' outcomes. This is reflected in the ILA principles of multiple stakeholders and scales and the principles of common concern entry point, and the negotiated change logic (Sayer et al. 2013; Ros-Tonen et al. 2014; Morgan et al. 2020). These spaces are likely to be more dynamic and inclusive

than long-established action domains underpinned by rigid rules, norms, and institutions. As such, ILAs can trigger new dynamics in policies and actions at both the local and district levels, increasing the connectedness between Chiefdoms, state institutions, and communities to create a counter-power at the landscape level. This is not easy to achieve, but the dialogue envisaged by ILAs, in principle, offers the latitude for competing actors to seek clarity on their rights and responsibilities. This is particularly relevant for women and youths who often depend on covert action to have their opinions considered in decision-making processes. A power analysis before implementing ILAs and organising negotiation forums, together with monitoring and feedback loops, helps to better recognise power differentials and create a basis for equitable participation and meeting the interests of marginalised and less powerful actors across different governance levels.

In conclusion, network, influence, and power analysis helped unravel issues that may hinder the performance of integrated landscape approaches, particularly in the customary-state fuzzy landscapes. Power imbalances in natural resource governance remain a significant stumbling block to equitable and inclusive landscape governance. Therefore, assessing, understanding, and recognising the influences of different power holders in environmental governance is a first step towards navigating and addressing power differentials. When based on prior power analysis, ILAs offer the potential to balance diverging power positions, ensuring fair participation of women, youths, and other less influential stakeholders in dialogue-focused processes.

Questions remain on how power is reproduced at various levels of governance and how trade-offs between different interests can be effectively managed. We recommend developing tools to monitor power imbalances and their impacts where integrated landscape approaches are implemented for biodiversity conservation and sustainable development.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s10113-023-02031-4>.

Author contribution Freddie Sayi Siangulube: conceptualisation, methodology, data curation, formal analysis, visualisation, writing—original draft. Mirjam A.F Ros-Tonen: conceptualisation, writing—reviewing and editing, methodology, validation, supervision. James Reed: investigation, writing—reviewing and editing, supervision, funding acquisition. Houria Djoudi: conceptualisation, methodology, writing—reviewing and editing, formal analysis. Davison Gumbo: investigation, writing—reviewing and editing, supervision. Terry Sunderland: writing—reviewing and editing, supervision, validation, funding acquisition.

Funding This research was funded through a grant from the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) (grant 18_IV_084) for the Collaborating to Operationalise Landscape Approaches for Nature, Development and Sustainability (COLANDS) initiative carried out by the Centre for International

Forestry Research (CIFOR) in collaboration with the University of British Columbia, the University of Amsterdam, and local partners in the countries of implementation.

Data Availability The anonymised data that support the findings of this study are available from the corresponding author, [F.S], upon reasonable request.

Declarations

Conflict of interest The authors declare no competing interests.

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