# Political Participation and Accountability Mechanisms in Tropical Forests Governance

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DEPARTMENT
OF POLITICAL AND
SOCIAL SCIENCES

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Chazottes Rens

Thesis submitted for assessment with a view to
obtaining the degree of Doctor of Political and Social Sciences
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European University Institute
**Department of Political and Social Sciences**

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## Researcher declaration to accompany the submission of written work Department of Political and Social Sciences - Doctoral Programme

I Rens Chazottes certify that I am the author of the work Political participation and accountability mechanisms in tropical forests governance I have presented for examination for the Ph.D. at the European University Institute.

I also certify that this is solely my own original work, other than where I have clearly indicated, in this declaration and in the thesis, that it is the work of others.

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I declare that this work consists of 49,526 words.

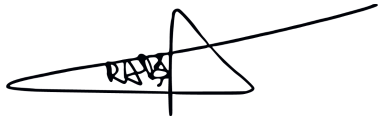
**Statement of inclusion of previous work**

I confirm that chapter 3 was jointly co-authored with Mr Junisa Nabieu. I was responsible for developing the research question, designing the survey experiment, coordinating the data collection, analysing the data, and writing the paper while Junisa Nabieu contributed to the design of the survey instrument, the measurement strategy, and the supervision of the data collection.

I confirm that chapter 4 was jointly co-authored with Mr Niccolo Meriggi and Mr Maarten Voors. I was responsible for developing the research question, designing the survey experiment, coordinating the data collection, analysing the data, and writing the paper. Niccolo Meriggi contributed to the research question, the design of the study and the supervision during the data

collection. Maarten Voors contributed to the design, the analysis, and to a lesser extent in the writing of the paper.

Signature and date:



September 4, 2024

## Acknowledgements

If I were to choose a landscape to describe my PhD journey, it would resemble the steep hills of the Tuscan valley rather than the flat terrain of Gelderland in the Netherlands, where I am concluding my PhD. Nonetheless, here I am. Completing this adventure would not have been possible without the invaluable help of the following individuals.

First and foremost, I am deeply grateful for the constant feedback, trust, and freedom that my supervisor, Miriam Golden, has provided over the past four years. She believed in my potential and capacity to successfully pursue the EUI PhD program despite my lack of formal social science background. Furthermore, she supported my decision to study at Wageningen University and Research during the last two years of my PhD, a necessary and important step for my intellectual development. I would also like to thank my co-supervisor, Maarten Voors. He welcomed me during the final two years of my PhD. When I considered leaving the program, he offered me the most valuable experience of my academic journey: engaging in a conservation-related project in Sierra Leone. This opportunity significantly contributed to my professional and personal growth and provided me with the resources needed to complete the program. I extend my sincere thanks to Niccolo Meriggi for his hospitality and assistance during my stay in Sierra Leone and for his support in writing my PhD chapters. My PhD journey would not have been the same without the excellent infrastructure and welcoming environment of the European University Institute and the inclusive atmosphere at Wageningen University, especially at the Development Economics Department.

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# Abstract

*To get the most out of this book, consider the following reading approach: start with the abstract to get a quick overview of the main lessons. In 10 minutes, the conclusion summarises the main takeaways. In 30 minutes, the introduction gives a deeper understanding of the context and background of the dissertation. Each chapter can be read independently, so feel free to dive into any chapter that interests you.*

The blueprint approach posits that institutions have intrinsic effects across contexts, regardless of differences in norms or power dynamics. This approach is particularly prevalent in conservation initiatives, assuming that a universal set of strategies will benefit forest ecosystems. A significant focus has been on fostering and developing democratic institutions despite the existence of local accountability systems. The blueprint approach overlooks the intricate relationships among resources, users, governance systems, and broader political-economic contexts. This dissertation argues for a context-specific approach that recognizes local accountability mechanisms and power dynamics, illustrating the approach across three different papers that address independent but related questions. The first paper (Chapter 2) uses Cameroon's 1994 forest decentralization reform as a case study. It shows that blueprint approaches can empower elites with economic interests, leading to increased deforestation. Effective conservation requires understanding local accountability tools and empowering groups invested in forest protection. Chapter 3 asks whether citizens sanction their traditional leaders when they do not act in the community's best interests and how they do so. Using rural Sierra Leone as a case study, the research demonstrates how communities hold leaders accountable and the role of traditional leaders in maintaining order. Finally, Chapter 4 explores why participatory approaches often fail to limit elite capture. The study examines the empowerment hypothesis through a framed field experiment, testing whether empowering low-status youth increases their representation and how this mechanism is moderated by village elite power. Overall, this dissertation advocates for a nuanced understanding of local governance, power dynamics, and accountability. Such an understanding would enrich current theories of representation and political control, enhancing our capacity to address important social issues and forest conservation efforts.

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Chapter 1

# Introduction

# Blueprint and context specific approaches of political accountability and representation

***Rens Chazottes*** [1]

## 1.1 Introduction

### 1.1.1 Empirical relevance

The 21st century presents significant global challenges, particularly in the realm of environmental crises. Since the Industrial Revolution, greenhouse gas emissions have dramatically escalated, precipitating global warming. Projections indicate a substantial increase in extreme weather events, heatwaves, sea-level rise, and disruptions to water cycles, all of which are expected to have severe socio-economic impacts. These extreme climate events will likely increase food insecurity, decrease agricultural productivity, and drastically disrupt the global food supply chain (Abbass et al., 2022; Hasegawa et al., 2021). Climate change has also exacerbated half of all human pathogenic diseases (Mora et al., 2022), and the increased frequency of heatwaves is associated with a sharp rise in human mortality (Ballester et al., 2023). Additionally, human conflicts are likely to escalate due to climate change (McGuirk & Nunn, 2024; Mendenhall et al., 2020).

Another pressing issue is the erosion of genetic diversity, intensified by the sixth mass extinction of species. This decline, largely driven by human societies' expanding material footprints and global land-use changes, disrupts essential ecosystem functions, with an estimated 58% of terrestrial Earth under moderate or intense human pressure (Williams et al., 2020). Ecosystems,

[1] The research presented in this chapter has been profoundly shaped by the insights gained from the Political Economy of Development seminar, taught by Professor Amal Amhad. I am deeply grateful for the enriching discussions and the foundational knowledge imparted during this course, both of which have significantly influenced and guided my work.

crucial to human existence and the global economy, provide indispensable services including food production, climate regulation, and extreme weather mitigation, alongside significant cultural benefits (Hasan et al., 2020).

Deforestation sits at the intersection of these two phenomena. Changes in land use, mostly driven by deforestation, account for 20% of global greenhouse gas emissions, with tropical deforestation being the most prevalent (Lamb et al., 2021). This trend has seen increasing threats and negative impacts over the past decade (Hoang & Kanemoto, 2021). These forests are not only critical carbon sinks but also reservoirs of rich biodiversity, home to approximately two-thirds of all known terrestrial species (Bradshaw et al., 2009). Deforestation is a major driver of species extinction (Burgess et al., 2012) and disrupts essential services such as water provision through rainfall and carbon storage. Additionally, deforestation is linked to health issues, including the increased spread of disease vectors and a higher prevalence of diseases such as malaria (MacDonald & Mordecai, 2019; Ellwanger et al., 2020).

As a result, international organizations have increasingly focused on combating deforestation. At the Glasgow Conference of the Parties for UN-Biodiversity 15 in 2022, nations pledged to protect 30% of the world's areas, highlighting the critical need to address the carbon and climate implications of deforestation as integral components of global biodiversity and environmental strategies. This prioritization underscores the importance of understanding deforestation phenomena worldwide in order to develop policy instruments capable of effectively addressing the issue.

Deforestation typically results from both legal and illegal logging activities, where various stakeholders—including politicians, corporations, and local farmers—seek to capitalize on the economic value of timber or alternative land uses. These uses include cattle production in Brazil, palm oil cultivation in Indonesia, and cash crops such as coffee and cocoa in Western Africa (Balboni et al., 2023). The incentives to log and shift in land uses are shaped by socio-economic and political institutions. Institutions—comprising formal constraints like laws and rules, and informal ones like norms and taboos—shape human behavior and are pivotal to economic incentives by reducing exchange uncertainties and lowering transaction and production costs (North, 1990). Extensive literature underscores the critical role of institutions in driving economic growth and sustainable resource use (Leblois et al., 2017), and the most pressing questions have become understanding which institutions are better able to cope with deforestation concerns.

### 1.1.2 Theoretical relevance

The standard and mainstream approach to deal with deforestation posits that there is a set of universal instruments that are intrinsically beneficial for the health of forest ecosystems (Ostrom et al., 2007). I refer to this approach as the blueprint approach of forest conservation. This approach has influenced the development of protected areas (Bonilla-Mejía & Higuera-Mendieta, 2019), secure property rights (Robinson et al., 2014; Busch & Ferretti-Gallon, 2017; Fischer et al., 2020), with a focus since the 1980s and 1990s on community-based management of forest resources (Ostrom et al., 2007; Slough et al., 2021; Busch & Ferretti-Gallon, 2017; Conley & Moote, 2003), and democratic institutions (Sanford, 2023; Gulzar et al., 2024; Farzanegan & Markwardt, 2018).

I focus on democratic institutions as a blueprint approach for solving conservation issues. A broad literature discusses the democratic-institutions advantages for climate mitigation and conservation efforts (Stein, 2022). Democratic institutions, defined in the formal procedural sense as a system in which leaders are selected through periodic fair and competitive elections (Przeworski et al., 1999), may provide incentives to leaders to represent the interest of a majority of their constituents. Through elections, public participation, free and fair competition between political parties, electoral democratic accountability could be guaranteed. In its simplest form, across contexts, democratic institutions is believed to provide the incentives to politicians to be responsive to a broader part of their electorates, value public good provision, provide an environment where property rights can be secured and future investment such as the conservation of forest resources (Deacon, 1994).

However, the blueprint approach to democratic institutions lacks empirical support (Stein, 2022). Additionally, it often overlooks the complex interrelationships among resource systems, user groups, governance systems, and broader political-economic contexts, which undermine the predictive value of implementing formal rules (Ostrom, 2007). Formal systems are typically underpinned by complex norms shaped over long periods (Greif & Laitin, 2004). Without these norms, formal rules are likely to be non-functional. Consequently, exporting electoral democratic institutions has proven to be extremely difficult (Humphreys et al., 2019).

The blueprint approach to democratic institutions is rooted in the dichotomy between democratic and autocratic systems that dominates much of the political science literature. It is an overly simplistic analytical tool for assessing when and why leaders feel compelled to provide public goods to a broad range of their population. Furthermore, these democratic and undemocratic concepts are used in multiple and contradictory ways (procedural, functional, and normative), which undermines their explanatory power. Leaders and regimes are often labeled

as undemocratic or authoritarian based on the rules for leader selection (Svolik, 2012; Ece et al., 2017). In other contexts, institutions may be called democratic even when leaders are not elected, as long as functional accountability systems allow for efficient provision of public goods (Magaloni et al., 2019). There is also a longstanding literature regarding democracy as a normative ideal to achieve (Habermas, 2006). Lastly, the blueprint approach neglects and undermines existing local systems of accountability that operate based on different social contract relationships (Cleaver, 1999). This plurality of systems is poorly understood, further weakening the blueprint approach's theoretical robustness.

I highlight the limitations of the blueprint approach to democratic institutions through the case of institutions developed to protect forest ecosystems. This oversight can lead to interventions that fail to address the root causes of deforestation. In this dissertation, I argue that applying universal tools to promote democratic accountability, a core tenet of the blueprint approach, may fail to enhance accountability links between citizens and leaders and can hinder the capacity to conserve forests. Chapter 2 provides empirical evidence to support this claim. In Cameroon, in 1994, the forest decentralization reform was implemented using the classic framing of blueprint approaches. Local communities were allowed to create community forests and manage their own forest resources by forming legal entities whose leaders were selected through elections. The reform did not integrate the complexity and diversity of local institutions and instead empowered a new forestry elite that could appropriate logging rents. I demonstrate its negative impact on forest cover from 1994 to 2015. This finding suggests that the blueprint approach to promoting local democratic accountability may not be effective in all contexts.

Why, in settings where leaders are not elected, are some leaders held accountable by the majority of their population while others are not, even when exposed to standard participatory approaches?

A context-specific approach of institutions is helpful in understanding accountability mechanisms in non-electoral settings and how such mechanisms shape forests conservation outcomes. It is crucial to understand which groups have vested interests in forest conservation and whether leaders are held accountable to those groups. This requires an in-depth understanding of how accountability mechanisms and representation dynamics operate, as well as the distribution of power among social groups from a multi-level perspective. The conceptual framework developed by Lust (2022), based on an in-depth understanding of arenas of authority and their underpinning social institutions, provides crucial analytical tools for understanding such phenomena across contexts. This framework is well complemented by the political settlement literature, which assesses how power dynamics shape institutional changes (Khan, 2018). Such a context-specific

approach allows for: (a) identifying the relevant social groups, (b) examining the balance of power between these groups, (c) understanding the range of actions available to restrict the behavior of others, (d) analyzing the incentive structures of all agents involved, and (e) considering the socio-political norms, formal pressures, and threats that shape these incentive structures.

Through the following three chapters, I contribute to a theoretical perspective that encourages a deeper examination of local leaders' incentive structures and their accountability relationships with constituents. I argue that moving beyond the traditional dichotomy between democratic and autocratic institutions, as commonly used in comparative politics (Svolik, 2012), is essential for understanding the rich heterogeneity of local institutions and their socio-environmental outcomes. Contributing to the emerging discourse on traditional political systems (Baldwin, 2016; Holzinger et al., 2020), I propose that non-electoral accountability mechanisms, particularly in contexts where leaders are well-integrated within their communities, can effectively develop public goods. I demonstrate that a broad range of socio-economic norms and tools, such as grievances to higher authority, public blame, and direct economic sanctions, are available to local social groups to hold their leaders accountable.

### 1.1.3 Setting the scene: traditional political institutions in Cameroon and Sierra Leone

Taking the case of two sub-saharian countries, Cameroon and Sierra Leone, I underline the importance of deepening our understanding of the nuanced power dynamics within traditional political systems. In Sub-Saharan Africa, these systems are often characterized by chieftaincy structures within forest-dependent communities. The literature on the politics of forest conservation in the Bassin of Congo and more generally in sub-saharian Africa is relatively scarce compared to the two other major areas studies: the Amazon and Indonesia (Balboni et al., 2023).

Traditional governance refers to a system of rules (institutions) and organization designed to regulate behavior and make collective decisions (Holzinger et al., 2016). Traditional governance covers substantial rules related to internal security (Labonte, 2012), resource allocation (Carlson & Seim, 2020), public health (van der Windt & Voors, 2020), land use (Adjei-Poku et al., 2023) and matters of marriage and inheritance (Peters, 2011). Traditional political institutions are defined as "institutions whose legitimacy is based in part on their association with customary modes of governing a community. These institutions are political in the sense that they make decisions regulating and providing for the collective, and they are traditional in the sense that they are popularly believed to be connected to custom" (Baldwin & Holzinger, 2019). The main

protagonists (organization) inside traditional governance are authorities and leaders, such as chiefs, kings, headmen, queen mothers, and councils of elders (Holzinger et al., 2016).

The regulations and laws provided by traditional institutions can overlap with those provided by the State. This context, shared by many sub-Saharan countries, is referred to as legal pluralism (Griffiths, 1986). Scholars have highlighted the potential for competition (Boone, 2003) or complementarity (van der Windt et al., 2019; Mcmurry, 2022). The intersection of State institutions with traditional institutions also shapes the quality of public good provision (Baldwin, 2016). Such interactions have been studied through the way the State integrates traditional institutions within their constitution (Henn, 2022; Holzinger et al., 2019).


**Figure 1.1:** Study Locations: Cameroon (Chapter 2) and Sierra Leone (Chapters 3 and 4)

Cameroon, independent State since 1960, is an autocratic regime comprising 200 ethnic groups with different customary rules and traditional institutions, known as chieftaincies. It is a centralized state with 10 regions, 58 divisions, and 360 subdivisions that overlap with traditional institutions. The formal laws structure all chieftaincies under a three-level framework: degree 3 chiefs are village chiefs, while degree 2 and degree 1 chiefs are higher-level chiefs who historically had formal authority over village chiefs. Traditional institutions are extremely diverse with significant variability among ethnic groups, but this heterogeneity is not recognized by the State. As table 1.1 shows, when using afrobarometer data from 2021, traditional leaders maintain significant levels of trust among the population, with 59% of respondents indicating they trust these leaders somewhat or a lot. A strong majority (84%) perceive traditional leaders

as compatible with democracy. Interaction with traditional leaders appears significant, with 40% of respondents having engaged with them at least once in the past year. Regarding their influence, traditional leaders in Cameroon are perceived to have considerable power in local governance (58%), land allocation (56%), and dispute resolution (65%), while their influence on votes is comparatively lower (40%). Most forested regions (Centre, East, and West) have chiefs with more marginal roles (Geschiere, 1993). In other regions of Cameroon, particularly in the northern and western parts, chieftaincies are constituted as kingdoms holding significant power (Geschiere, 1993).

**Table 1.1:** Attitudes towards traditional leaders in Cammeroon and Sierra Leone using Afrobarometer wave 8 (2021)

| | % of respondents | |
|---|---|---|
| | Cameroon | Sierra Leone |
| ***Attitudes toward traditional leaders*** | | |
| Trust somewhat or a lot traditional leaders | 59 | 62 |
| Most or all traditional leaders are corrupt | 28 | 23 |
| Traditional leaders are compatible with democracy | 84 | 62 |
| Over the last year, at least one interaction | 40 | 59 |
| ***Power: At least some influence in*** | | |
| Governing your local community | 58 | 78 |
| Allocating land | 56 | 60 |
| Votes | 40 | 15 |
| Solving disputes | 65 | 85 |

*Notes:*
This table presents the average perceptions of traditional leaders in Cameroon and Sierra Leone, based on data from Afrobarometer Wave 8 (2021). Values represent the percentage of respondents. The questions were identical across both countries. For trust, the question asked, 'How much do you trust traditional leaders?' The table reflects the average proportion of respondents who answered 'somewhat' or 'a lot.' For corruption, the question was, 'How many traditional leaders do you think are involved in corruption?' The table shows the average proportion of respondents who answered 'most of them' or 'all of them.' Regarding compatibility with democracy, the question posed was, 'Do you think that traditional leaders strengthen democracy, weaken democracy, or don't make a difference?' The values represent the average proportion of respondents who answered 'strengthen' or 'don't make a difference.' For interaction, the question was, 'During the past year, how often have you contacted a traditional leader?' The table reflects the average proportion of respondents who reported contacting a traditional leader 'at least once.' Lastly, for power, the question asked, 'How much influence do traditional leaders currently have in each of the following areas?' The table displays the average proportion of respondents who answered 'somewhat' or 'a lot.'

The Republic of Sierra Leone, a former British protectorate, was established in 1971. After a period of civil war in the 1990s and early 2000s, where an estimated 70,000 civilians died

(Fanthorpe, 2001), Sierra Leone returned to a multiparty democratic system governed as a presidential republic. Sierra Leone's formal legal system, a remnant of its colonial past, is dual in nature. It consists of two distinct components: English law, which is managed by the high court and various magistrate courts, and customary law, which is implemented by local courts across the country's 149 chiefdoms (Sawyer, 2008). Rural Sierra Leone is governed by traditional political institutions, called chieftaincies, that hold considerable authority over marriage, judicial matters, land, and access to natural resources. How chiefs exercise power, whom they represent, and how they are held accountable remains unclear. Analyses have been restricted to assessments based on formal legal analysis. They have been characterized by their exclusionary nature (Mamdani, 1996) due to a dual challenge: while chiefs are typically elected, their tenure extends for a lifetime (until death or retirement). Additionally, they are often elected from a limited pool, and frequently extractive leaders are elected (Acemoglu et al., 2014). Table 1.1 summarises the view of Sierra Leonian citizens on their traditional leaders. They are highly trusted, with 62% of respondents expressing trust in them. Concerns about corruption are slightly less pronounced compared to Cameroon, with 23% considering most or all traditional leaders to be corrupt. The perception of traditional leaders being compatible with democracy is somewhat lower in Sierra Leone, at 62%. Interaction with traditional leaders is more frequent, with 59% of respondents having contacted them at least once over the past year. Traditional leaders in Sierra Leone are perceived to have substantial influence in various areas: local governance (78%), land allocation (60%), and particularly in solving disputes (85%). However, their influence on votes is significantly lower, with only 15% of respondents acknowledging such influence.

### 1.1.4 Relevance for scholars in comparative politics

Although this dissertation examines forest conservation in Sierra Leone and Cameroon, the theoretical arguments developed are relevant to a broader range of themes in comparative politics.

Scholars interested in the decentralization literature in political science (Kosec & Mogues, 2020) and political economy (Faguet, 2014; Bardhan & Mookherjee, 2006; Mookherjee, 2015), and its political and socio-economic effects, may find Chapters 2 and 4 of this dissertation valuable. By examining forest decentralization reforms and participatory development approaches, I discuss the conditions under which such reforms foster elite oversight and achieve greater public goods.

Chapter 3 highlights the various channels available to citizens to pressure non-elected leaders, potentially strengthening bottom-up accountability mechanisms. The findings directly address the literature on accountability mechanisms in autocratic settings, which has significantly developed in the Chinese context (Mattingly & Yao, 2022; Truex, 2016; Buntaine et al., 2024). Researchers

have emphasized the capacity of citizens to pressure bureaucrats directly and activate top-down accountability mechanisms (Chen et al., 2016), discussing the relative influence of selection and sanction models of political representation (Fischer, 2016). I demonstrate the theoretical relevance of these dynamics in traditional political contexts and the various measures citizens state they could undertake to discipline their leaders. Scholars interested in the politics of chieftaincy institutions (Baldwin, 2016; Holzinger et al., 2020; Baldwin et al., 2024) would also benefit from the insights of this chapter.

Chapter 4 sheds light on how the responsiveness of local leaders is shaped by the connection between local and national elites. Our argument contributes to the literature on government responsiveness in developing countries, where ethnic politics and clientelism are commonplace (Grossman & Slough, 2022; Eifert et al., 2010; Habyarimana et al., 2007; Harris & Posner, 2022). Using an experimental approach, we highlight how standard participatory approaches used in development and conservation settings are unhelpful in including and representing marginalized groups when the village elites have family ties with the Paramount Chief, the head of the chiefdom.

Finally, there are contexts where democratic institutions do not incentivize leaders to be responsive to the general public, and others where non-democratic institutions enable leaders to be responsive and accountable to a majority of their constituents. These considerations challenge the relevance of the dualistic framework of democratic versus undemocratic institutions for understanding patterns of representation and accountability, particularly at the local level of decision-making. I build upon the concepts of arenas of authority and political settlement to contribute to the emergence of an alternative framework. This framework highlights potential channels of non-electoral accountability mechanisms in an understudied context: traditional political institutions in sub-Saharan Africa.

In the following section, I will critique the limitations of the blueprint approach and propose an alternative conceptual framework. Subsequently, I will outline an alternative approach aiming at deepening our understanding of traditional political institutions. Then, I will outline the research objectives, methodologies, and data used in the following chapters.

## 1.2 The blue print approach of conservation

In this section, I examine the theoretical and empirical arguments that suggest democratic institutions possess an inherent advantage in mitigating deforestation across diverse contexts. These arguments have been leveraged in various policy arenas (Lake & Baum, 2001; Acemoglu et al., 2015) to justify extensive structural reforms in numerous countries. They are particularly

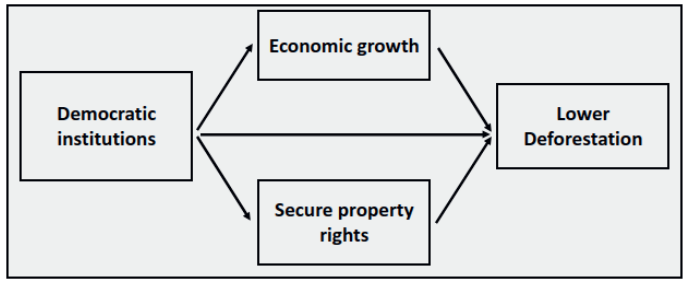


**Figure 1.2:** Causal diagram illustrating the blueprint theory linking democratic institutions with conservation outcomes. Political decentralization is generally believed to strengthen the three links displayed in the figure.

pertinent to conservation politics, which serves as a case study for their application. However, coherently synthesizing these arguments is challenging due to the diverse conceptualizations present in the literature. Numerous models and interpretations of democratic institutions coexist, each with its respective strengths and weaknesses (Warren, 2017). My focus is on definitions that adopt a minimalist approach to democracy, specifying that "For a regime to be considered democratic, both the chief executive office and the legislative body must be filled by elections. Contestation is present when there exists an opposition with a feasible chance of winning office as a result of elections" (Cheibub et al., 2010: p. 69). Given the breadth of the literature, I will also include pivotal arguments that extend beyond this minimalist definition, typically incorporating the protection of individual rights or the presence of free media. This section is not intended as a critique of democratic institutions. I firmly believe in the intrinsic benefits of democratic institutions in maintaining an inclusive social environment. However, I contend that approaches which promote these institutions without considering local institutional contexts and power dynamics are inadequately equipped to foster political representation and address conservation challenges.

The literature offers four main explanations, summarized in a simplified model depicted in Figure 1.2. First, there is a belief in the intrinsic advantages of democracy for combating climate change and addressing ecological issues through electoral accountability, the protection of individual rights, and the power of civil society groups. The second argument suggests that democracy fosters economic growth, which, according to the environmental Kuznets curve hypothesis, leads to higher environmental standards and, ultimately, reduced deforestation over time. The third explanation posits that democratic institutions strengthen property rights, which support conservation efforts. Lastly, the fourth argument contends that democratization promotes better ecological outcomes only when it is followed by substantial local devolution.

### 1.2.1 Democratic advantages

The current academic debate revolves around which political system is better equipped to address global environmental challenges, with advocates supporting both democracies (Fiorino, 2018; Lindvall & Karlsson, 2024; Povitkina, 2018; Buitenzorgy & P. J. Mol, 2011) and authoritarian regimes (Shearman & Smith, 2007; Beeson, 2010). Recent research suggests that democracies are more capable of formulating policies and regulations to protect the environment (Lindvall & Karlsson, 2024). Specifically on deforestation, Cary & Bekun (2021) argue that democracy reduces deforestation. They also highlight the importance of spillover effects from democratic neighbors. I outline the main three arguments of the democratic advantage theory following the work of Stein (2022) and then I outline the main critics.

First, electoral accountability is believed to motivate democratic leaders to respond to demands for environmental policies (Stein, 2022). To secure reelection, democratic leaders need the support of a majority of voters, which incentivizes governments to provide public goods to a broad segment of the population and avoid overly extractive activities (Olson, 1993). As a consequence, democratic leaders would face lower incentives to deforest compared to autocratic leaders. Second, the protection of individual rights and civil liberties could foster an environment where citizens can increase their environmental awareness and engage in activism (Stein, 2022). In such contexts, politicians and bureaucrats are also more likely to draft policies based on accurate information (Shahar, 2015). Conversely, in environments where citizens are fearful, administrations may neglect issues (Shahar, 2015) and hide poor performance (Wurster, 2014). The inclusion of civil society groups in environmental governance has been shown to enhance the perceived legitimacy and transparency of the policy process (Bernauer & Gampfer, 2013). Overall, this environment may empower and incentivize democratic leaders to develop more effective conservation policies, as the scrutiny of conservation interest groups could jeopardize their chances of reelection. Third, checks and balances is considered to ensure that no single government actor can unilaterally impose policies, facilitating the implementation of environmental regulations (Stein, 2022).

Critics of these theoretical arguments raise several points. The effect of competitive elections leading to electoral accountability may only result in stronger environmental policies if the electorate prioritizes environmental concerns (Stein, 2022). In developing countries, political platforms often do not rely on programmatic policies but on strong patron-client relationships, with electoral competition rooted in factional diversity (Khan, 2005). This scenario is likely to result in weak electoral accountability (Goyal, 2024). Furthermore, new democracies have often seen the empowerment of small-holder farmers, who typically have a higher demand for

deforestation (Sanford, 2023; Boone, 2003). In autocracies, these actors are generally weaker, and the demand for deforestation remains lower.

Additionally, for the past five decades, the political business cycle literature has demonstrated that political economy variables are influenced by electoral cycles, driven by politicians' private interests (Nordhaus, 1975; Dubois, 2016). Recent studies have identified a political business cycle for deforestation in regions with weak electoral institutions, commonly referred to as the adverse deforestation impact of electoral cycles (Sanford, 2023; Pailler, 2018; Morpurgo et al., 2023). This discussion includes two intricate arguments based entirely on the theoretical framework provided by Sanford (2023). Weakly institutionalized democracies often exhibit greater clientelism due to fragile political parties and unreliable public services (Gottlieb & Kosec, 2019). Increased electoral competition tends to amplify these clientelist behaviors (Pierskalla & Sacks, 2020; Driscoll, 2018), making the targeted allocation of forest lands more likely during competitive elections in these settings (Sanford, 2023). Politicians facing upcoming competitive elections, who are uncertain about their reelection, tend to prioritize immediate electoral gains over long-term environmental benefits provided by forests (Sanford, 2023). This inclination stems from a reduced time horizon, where the perceived value of long-term ecological goods diminishes in favor of short-term benefits that could enhance immediate political support. Specifically, if politicians do not secure reelection, the long-term benefits of preserved forests hold no personal value, thus making the immediate allocation of these lands for political favor more compelling (Sanford, 2023). This is particularly true if the allocation can influence pivotal voters, thereby outstripping the efficiency of broader public goods provision. The strategic allocation of forested lands tends to occur under conditions of perceived electoral threat and institutional weakness, which might allow such actions without significant political repercussions (Sanford, 2023). In contrast, autocratic regimes, which generally lack meaningful electoral competition, and well-institutionalized democracies, equipped with mechanisms to penalize clientelistic behavior, are less prone to such practices (Sanford, 2023).

Another stream of arguments emphasizes the importance of individual rights in democracies. But the effectiveness of individual rights depends on the societal power structure. If businesses opposed to climate action hold significant power, environmental activism is unlikely to be effective (Mildenberger, 2020). Finally, checks and balances can obstruct policy changes, thereby favoring the status quo (Stein, 2022), which may be detrimental when addressing environmental challenges.

Empirically, this area of research is fraught with weaknesses, with many claims unsupported by the research design and empirical strategy. Recently, the empirical relationship between CO2 emissions and democratic governance has been demonstrated to be weak (Lindvall & Karlsson, 2024). Selseng et al. Selseng et al. (2022) argue, using a random effects model, that

democracy positively impacts environmental outcomes without necessitating a trade-off with climate mitigation strategies. Similarly, Jahanger et al. Jahanger et al. (2022) suggest, based on a simple OLS model, a strong impact of democracy on reducing environmental pressures and an inverse U-shaped relationship between democracy and environmental outcomes in developing countries. Another research found a similar pattern between democracy and deforestation making a particular emphasis on the role of intelligence (measured by IQ) in mediating this relationship (Obydenkova et al., 2016). Cary and Bekun Cary & Bekun (2021) when replicating Buitenzorgy and Mol Buitenzorgy & P. J. Mol (2011) results, they show they were spurious and inconsistent once heteroskedasticity robust standard errors were employed. Such empirical studies suffer from endogeneity issues, rendering causal claims unreliable. These overstatements are compounded by simplistic theoretical models that fail to advance our understanding of how to solidify commitments to stronger environmental policies.

### 1.2.2 Democratic institutions, economic growth and the environmental kuznet curve

Democratic institutions were believed to lead to better environmental outcomes through their influence on economic growth (Ward, 2008). Although this theory has been demonstrated to be extremely weak both empirically and theoretically, this stream of research has been influential.

Theoretically, there are three primary arguments that is believed to explain the comparative advantages of democracies over autocracies in promoting economic development, as outlined by (Khan, 2005). First, democracies tend to make better use of information, which enables leaders to better identify preferences and formulate effective policies. Secondly, democratic institutions may lead to higher efficiency due to lower political transaction costs, such as the costs associated with organizing coalitions and reaching agreements, thus fostering economic institutions that lower economic transaction costs. In such systems, the low political transaction costs facilitate reaching agreements on compensation for losers. Third, it is argued that democracies are more adept at shifting and transforming patron-client politics, which can hinder economic development. However, these arguments have their weaknesses: the informational advantages of democratic institutions may be overshadowed by the over-representation of powerful groups (Olson, 1993); the checks and balances in developing democracies are often practiced by groups with sectional interests (Khan, 2005); and the emergence of growth-enhancing institutions is contingent on the bargaining power of interest groups and the capacity of losers to organize and resist, which is often strong in developing countries (Khan, 2005). Furthermore, Khan (2005) argues that

evidence from developing countries shows that democratization does very little to undermine the dominance of patron-client politics and informal power networks.

Empirically, notable papers have been written on the relationship between democracy and economic development (Acemoglu et al., 2019; Colagrossi et al., 2020). Using cross-country panel data with an instrumental variable strategy, Acemoglu et al. (2019) argue that democracy increases economic development by about 25% in the medium term. This research assumes that democracy and its complex array of institutions can be reduced to a dummy variable, which can have a measurable effect across different contexts. However, as previously discussed, the impact of democracy on growth depends on the type of social groups empowered and the redistributive strategies developed within patron-client networks (Khan, 2005). These papers also suffer from endogeneity issues, weakening the empirical claims and suggesting that such an empirical strategy may be inadequate for studying the impact of political institutions on growth.

The second theoretical pillar argues that higher economic development leads to greater environmental protection. This hypothesis, known as the environmental Kuznets curve, posits that environmental degradation exhibits an inverted-U relationship with economic development measured by income per capita (Grossman & Krueger, 1995). This hypothesis is discussed in the forest transition research, which theorizes a relationship between advanced economic development and forest regrowth (Barbier et al., 2017). In the early stages of development, deforestation would prevails, but the rates at which deforestation evolves may slow down with economic development. After a turning point, it is argued that higher economic development will be associated with forest regrowth. Various mechanisms have been proposed to explain this relationship: economic growth may enhance environmental protection through increased supply and demand for better regulation (Jayachandran, 2022), and wealthier citizens typically hold stronger environmental attitudes (Jayachandran, 2022). Additionally, responding to this higher demand for environmental amenities, governments may develop policies aimed at reducing the conversion of forests to agriculture (Barbier & Tesfaw, 2015).

Empirically, the same weaknesses found in research linking democratic institutions with higher growth are present in studies examining the relationship between income and environmental quality (Jahanger et al., 2022; Culas, 2007). Focusing on a Latin American country, Culas (2007) argues that there is an environmental Kuznets curve for deforestation and economic development, moderated by institutional variables such as secure property rights and high-quality environmental policies. Using data from 45 African countries between 1990 and 2016, Ajanaku & Collins (2021) claim to confirm the environmental Kuznets curve hypothesis with a turning point estimated to be US $\$3,300$. However, the evidence for such a U-shaped relationship is extremely

weak due to poor research design quality, lack of comparability across contexts, and measurement issues (Stern, 2017). Theoretically, it also seems implausible that there is a static relationship between economic development and environmental externalities (Stern, 2017). Research has shown that this relationship is mediated in complex ways by institutional variables such as regulatory quality or rule of law (Harstad & Mideksa, 2017). Finally, the framing of the literature is problematic, often overlooking how development or democratic institutions emerged in the first place (Jayachandran, 2022).

### 1.2.3 Democratic institutions and property rights

It is commonly held that democratic institutions will bolster secure property rights, thereby naturally enhancing conservation efforts. Property rights encompass a bundle of nested rights that shape individual incentives for specific actions. The classic framework on property rights differentiates between five types of rights: access, withdrawal, management, exclusion, and alienation (Schlager & Ostrom, 1992). This nested framework implies that the rights of access and withdrawal are contingent on higher-order rights of management, exclusion, and alienation (Schlager & Ostrom, 1992). Well-defined property rights mitigate market failures by reducing transaction costs and serve three main functions: extending time horizons, enabling efficient resource allocations, and fostering productivity growth (Khan, 2009; Jayachandran, 2022). In forest management, for instance, a landowner with a long-term perspective is more likely to prioritize conservation over deforestation due to the long-term benefits of forests (Jayachandran, 2022). Following this rationale, global stakeholders have championed land titling programs (Jayachandran, 2022). Conversely, weak and uncertain property rights may lead to a tragedy of the unregulated commons, where stakeholders might opt to exploit resources immediately rather than waiting for ecological regeneration (Hardin, 1968; Balboni et al., 2023).

Proponents of secure property rights assert that the efficacy of these institutions is contingent upon the political framework in place. Robust checks and balances and accountable governments tend to enforce property rights more effectively, enhancing the credibility of agents' commitments. The predictability of others' behavior is crucial for the emergence of institutions, which in turn reinforces the beneficial impacts of property rights (Greif & Kingston, 2011).

However, this theoretical framework has attracted significant criticism for its simplicity. Firstly, it assumes that authorities will consistently act in the social best interest and enforce rules adequately. This assumption holds only if enforcers are personally incentivized to align with the social optimum, which is frequently not the case (Knight, 1992). Democratic institutions might enhance the positive effects of property rights on deforestation if democratic leaders are

accountable to constituencies with vested interests in conservation. Moreover, conservation policies depend heavily on local governments for enforcement (Balboni et al., 2023). Yet, these bodies are often susceptible to lobbying and corruption by entities with interests in deforestation. The effectiveness of such policies hinges on local governments also being held accountable by pro-conservation groups (Balboni et al., 2023). Secondly, the property rights regime involves a diverse array of institutions, and depending on which groups secure their rights, socio-environmental outcomes can vary significantly (Khan, 2009). Thirdly, when property rights are clear and secured, it is feasible to tax those who deforest or subsidize those who refrain, through payments for ecosystem services. However, implementing such policies requires strong state capacities, which include rule enforcement and revenue collection through taxation (Harstad & Mideksa, 2017; Besley & Persson, 2009). These policies are unlikely to succeed in regions with limited state capacity and unclear land ownership, conditions prevalent in many Sub-Saharan countries (Balboni et al., 2023). Fourthly, even if the context is favorable, transition costs may impede the implementation of such reforms. Transition costs refer to the expenses associated with altering the rights system within a society, tied to conflict and bargaining dynamics (Khan, 2009). These costs depend on the distribution of power and political resources within a society (Khan, 2009). Property rights are dynamic and often contentious, particularly in Western and Central Africa where customary regimes often compete with state authority (Sikor et al., 2017). Finally, empirical research has yielded mixed results regarding land titling reforms. For instance, the formalization of customary land rights in Benin reduced deforestation by approximately 20% (Wren-Lewis et al., 2020), while similar policies in Peru had no significant impact on deforestation trends (Probst et al., 2020). These findings suggest that securing property rights is not a universal solution.

### 1.2.4 Democratic institutions under decentralization

Since the late 20th century, forest decentralization or devolution has emerged as a leading model of forest management, documented in 60 instances by the end of the 1990s (Agrawal & Ribot, 1999). These reforms typically transfer forest management responsibilities to local governments or community leaders through the establishment of community forests. They are often justified on the premise that they lead to higher efficiency, equity, and enhanced government responsiveness to citizens (Agrawal & Ribot, 1999; Larson & Ribot, 2004). Political decentralization differs from deconcentration in that it involves devolving powers to actors or institutions that are accountable to the local population (Agrawal & Ribot, 1999). Proponents of decentralization reform emphasize the structure of accountability, embedding local actors with new responsibilities (Larson, 2003;

Agrawal & Ribot, 1999). The effective implementation of decentralization, regardless of form, requires electoral democracy to ensure accountability within politically decentralized systems (Faguet, 2014).

The theoretical expectation that democratic decentralization reduces deforestation rates is founded on several arguments. Firstly, it is expected to increase citizens' political participation, often through local elections that restructure local officials' incentives (Faguet, 2014; Agrawal & Ribot, 1999). Decentralization strengthens the accountability loop between the providers and consumers of public goods and services. When local officials' tenure and career prospects are determined by the citizens who elect them, they have strong incentives to provide public goods, such as forest resource protection.

Secondly, it has the potential to reduce national power abuses by distributing resources and governance functions across multiple levels (Faguet, 2014). The reduction of central political power increases political competition, which correlates with positive economic performance and reduced corruption (Albornoz & Cabrales, 2013). Political decentralization shifts the political discourse to local matters, enabling new political entrepreneurs by lowering entry costs and reshaping political party dynamics (Faguet, 2014).

Thirdly, decentralization is anticipated to enhance efficiency by facilitating the internalization of costs and reducing transaction costs associated with power delegation (Tacconi, 2007). Local authorities typically possess more accurate information about local actors, interest groups, and forest users, enabling them to develop better policy solutions (Wright et al., 2016). In financially constrained countries, forest decentralization might allow for more cost-effective forest management, potentially reducing deforestation (Somanathan et al., 2009).

Additionally, democratic decentralization can catalyze the development of community-based forest management (Tacconi, 2007), an approach founded on the seminal work of Ostrom (1990). Ostrom's institutional design principles have been widely used as a blueprint for designing conservation projects through a community-based lens by international donor organizations such as the World Bank, the Food and Agriculture Organization's Forest, Trees and People program, and the International Forestry Resources and Institutions research program. These principles encompass the need for political participation in forest rule-making and accountability between enforcers and forest users. Empirical evidence supports these design principles; for example, the forest decentralization reform in Bolivia was successful in sustaining forests when local forest users were actively engaged with local government officials. Such active engagement creates an environment conducive to easy conflict resolution mechanisms, intercommunal cooperation, and increased local government capacity (Wright et al., 2016). Recent studies also highlight the

importance of forest users' participation in rule-making as a significant predictor of conservation efforts (Okumu & Muchapondwa, 2020).

Despite the rich conceptual and theoretical frameworks that include intricate variables such as actors' incentive structures, local power relations, government capacity, and local environmental and social ethics (Larson, 2003), policy recommendations following such work often adopt a more simplistic blueprint approach. This approach typically relies on a set of universal instruments, such as local elections and community participation, recommended across different contexts to enhance democratic accountability (Ostrom, 2007).

However, in practice, many of these reforms were incomplete and instrumental, leading to a recentralization of forest management that empowered national state agents (Agrawal & Ribot, 1999). The failures of such reforms are explained by multiple factors. First, not granting adequate powers to local institutions can hinder the capacity of local leaders to represent and be accountable to their constituents (Ribot, 2003; Tacconi, 2007). Although elections are significant where they occur, they alone do not suffice to ensure comprehensive accountability, especially to groups interested in forest conservation (Agrawal & Ribot, 1999). Indeed, the relatively smaller scale of local government may increase its vulnerability to domination by elites, such as large landowners or employers (Faguet, 2014). Furthermore, at the local level, electoral accountability is not the only effective tool for ensuring that leaders are responsive to community members and promote public goods. In developing countries, traditional political structures remain effective. In Mexico, the system of "usos y costumbres" has proven more effective in promoting civic engagement and improving governance compared to communities that rely on a party-based system (Díaz-Cayeros et al., 2014).

Second, decentralization can negatively impact forest cover based on the choices local governments make in collecting local revenue and their political agenda (Tacconi, 2007). Local authorities may favor logging and/or agricultural expansion to boost tax revenues, a trend observed in Indonesia (Tacconi, 2007). Even when accountable, local governments might prioritize development and meeting the needs of the poorest strata of their population, potentially resulting in improved infrastructure and services (Tacconi, 2007). However, this development could inadvertently contribute to increased deforestation, as the construction of more roads and improved market access may facilitate logging activities. As a consequence, the impact of political decentralization is contingent on the incentive structure given to local political actors. In Indonesia, Burgess et al. (2012) indicate that in cases where political jurisdictions are sufficiently large to exert some market power in wood markets, and where political leaders benefit financially from permitting illegal logging (though not necessarily from conserving forests for

future generations), subdividing these jurisdictions can actually result in increased (rather than decreased) deforestation. Comparing the municipal mayors of Guatemala and Bolivia, research has shown that in line with the principles of decentralized governance, mayors show interest in and actively support municipal forest governance when they perceive a political benefit in doing so (Andersson et al., 2006).

Furthermore, the outcomes of forest decentralization reforms have been proven to be extremely difficult even in experimental settings with a fair control over the treatment condition. The recent Metaketa study aiming at fostering community monitoring through external intervention has underlined how extremely case-specific the results are (Ferraro & Agrawal, 2021). It is difficult to predict the effect of community-based programs because of the complexity of socio-ecological systems (Ostrom et al., 2007). Depending on the local and national political economy, the effect of democratic forest decentralization reforms can either increase or decrease deforestation rates (Harstad & Mideksa, 2017). Empirically, there is also a lack of strong empirical papers to understand the effect of decentralization on deforestation, especially with a sub-Saharan geographical focus (Samii et al., 2014).

## 1.3 An alternative contextual approach based on arenas of authority and the political settlement framework

The key takeaway from the previous section is that there is no clear basis to anticipate that democratic institutions will necessarily result in reduced or prevented deforestation. It echoes recent developments in the anthropology of development which criticize the prevalence of the blueprint approach in development policies, noting that the outcomes of donor-based development projects and policies are highly context-specific (Sardan, 2021). This is particularly evident in discussions on the role of democracy in influencing deforestation (Harding et al., 2023).

Furthermore, democratic theory perform poorly in explaining the wide heterogeneity in leadership quality in non-electoral settings. The classic account on chieftaincies conceptualized them as despots because of the absence of electoral accountability (Mamdani, 1996). Such account can also be found in the conservation literature (Ece et al., 2017). The claim that traditional leaders inherently behave like tyrants due to a lack of electoral accountability stems from a democratic theory perspective (Neupert-Wentz et al., 2022). The standard democratic theory labels a government as accountable (Przeworski et al., 1999: p 10):

> "if citizens can discern representative from unrepresentative governments and can sanction them appropriately, retaining in office those incumbants who perform well and

> ousting from office those who do not. An "accountability mechanism" is thus a map from the outcomes of actions (including messages that explain these actions) of public officials to sanctions by citizens. Elections are "contingent renewal" accountability mechanism, where the sanctions are to extend or not to extend the government's tenure".

Theory of representation and accountability have been largely drawn using data and case-studies from western democracies (Przeworski et al., 1999; Lijphart, 2012). Applying democratic theory of accountability to chieftaincies (Neupert-Wentz et al., 2022) oversimplify how chiefs are held accountable by their communities. While fair and competitive elections serve as a means to both choose and penalize leaders who perform poorly (Przeworski et al., 1999), traditional leaders in rural Africa are often appointed for life, with removal from office being rare. Logan (2013), using data from 19 countries, found that these leaders often have strong popular support and are seen as vital to local governance, challenging the stereotype of the "chief-as-despot."

When leaders are accountable to groups with vested interests in forest conservation, conservation outcomes are likely to be positive. Understanding these accountability mechanisms is therefore central. Why, in settings where leaders are not elected, are some leaders held accountable by the majority of their population while others are not, even when exposed to standard participatory approaches?

To provide answers, I build on the approach developed by Lust (2022), who formulated a conceptual framework as an alternative to the state-centric approach to development issues. Rather than viewing the state as the ultimate solution and competing institutions as marks of inefficiency, she proposes setting state and non-state authorities and institutions on equal intellectual footing. This approach aims to accumulate knowledge about how these competing arenas and social institutions influence politics and development (Lust, 2022: p7). I enhance this framework with insights from Khan (2010), who identifies the core drivers of institutional changes, specifically the political settlement. My dissertation positions its theoretical foundation on similar intellectual ground, emphasizing the necessity of incorporating context into the analysis for a comprehensive understanding of conservation and political issues.

### 1.3.1 Arenas of authority and social institutions

In this section, I will present the conceptual framework of Lust (2022) and its two main components: arenas of authority and social institutions. She defines arena of authority as follows:

> "An arena of authority is a sphere of activity with clear membership, goals, and institutions. Visualize an arena of authority as a physical arena. It has boundaries,

> which distinguish members of the community (inside the arena) from outsiders. Membership in the community may be based on such foundations as ethnicity, tribe, or religion, but regardless of the foundation, the community seeks to propagate itself beyond the current generation. This common goal does not imply equality or a lack of conflict. The community may be highly differentiated, with leaders and followers, masters and slaves. Indeed, members need not necessarily have joined the community by volition. Members may also contest the rules or compete with each other over resources. Ultimately, however, those within the arena of authority are engaged, more or less consciously, in a grand project of sustaining the group. They are thus mutually interdependent, with each member's welfare tied to that of others within the arena. (Lust, 2022: p. 17)"

Traditional governance can be seen as an arena of authority founded on ethnicity and kinship relationships, with the common goal of improving the welfare of their members.

The sovereignty of an arena of authority over an issue is not guaranteed. For instance, traditional governance and the state might govern land use with competing sets of rules. When multiple arenas of authority make contradictory demands, individuals must prioritize and respond to some arenas of authority over others.

Salience and strength are key characteristics of arenas of authority that shape why some individuals choose to comply with the rules of one arena over another (Lust, 2022). Arenas of authority govern communities over multiple issues. As shown in Table 1.1, in Sierra Leone, traditional authorities are the primary space where disputes among group members are resolved, with 85% of respondents considering traditional leaders to have significant power over these issues. On the other hand, during general elections, voting is not a salient issue in traditional governance, with only 15% of respondents considering traditional leaders to have power over this matter. There are three characteristics that determine the strength of an arena. Social network and social solidarity strengthen arenas as members might seen themselves more obliged to comply with rules when they are part of strong network (Tsai, 2007b). The more areas governed by an arena, the stronger the later is. Finally, the arena is stronger when monitoring and enforcement are eased.

Social institutions shape interactions within arenas of authority. They clarify the roles, rules, and rewards that organize community activities. These institutions ultimately influence the distribution of power, set expectations for members' responses, and impact individuals' decisions. Social institutions vary in their degree of formality.

Boundary rules, rules of engagement, and leadership rules characterize a social institution (Lust, 2022). Boundary rules dictate how and who can enter and exit an arena of authority. The rules of engagement specify who is expected to act, how they should act, and in relation to what. Leadership rules determine leaders' authority over community members and the community members' ability to hold leaders accountable. The selectorate plays a crucial role, as leaders tend to be more responsive to members when competition for leadership is higher (Acemoglu et al., 2014). Leader embeddedness is another key feature; leaders are part of multiple arenas of authority, and their responsiveness to demands from different arenas depends on how critical these arenas are to their success. Reciprocity relationships create non-electoral sanctioning mechanisms that can effectively discipline leaders. Rules regarding the length of leadership tenure also impact leader responsiveness. Leaders with long tenures and limited exit options are more likely to personally benefit from local development and consequently to foster development (Baldwin, 2016).

Nevertheless, the conceptual framework does not provide sufficient insight into understanding which institutions are likely to develop in various contexts and how effective these institutions will be in achieving specific forest conservation goals. The political settlement approach addresses these gaps and serves as a useful complementary analytical tool.

### 1.3.2 Political settlements and institutional change

The political settlements framework seeks to explain which institutions are likely to emerge in different contexts and how effective these institutions will be in achieving specific goals such as forest conservation (Khan, 2018).

Institutions arise from distributional conflicts within a society, where organizations seek strategic advantages over other groups, making the exercise of power essential (Knight, 1992). Power is defined as the influence one actor has over the choices of another, and asymmetries in power typically stem from disparities in resources (Knight, 1992). Institutional change occurs when a group stands to benefit from a new rule; through collective action and bargaining, they attempt to impose this new rule (Greif & Kingston, 2011).

A political settlement describes the power distribution across organizations relevant to an institutional or policy problem. Powerful organizations are those capable of mobilizing resources and withstanding pressures (Khan, 2018). Influential elites and organizations are typically active in multiple arenas of authority, mobilizing others through identity politics or ideologies, and leveraging identity, ethnic, or other arenas to organize patronage networks and large clientelist parties (Khan, 2018). Depending on the strength of these arenas, they can typically influence

institutional outcomes. The relative power of organizations and elites usually mirrors the relative strength of arenas of authority. Organizations continuously mobilize to change rules, reflecting shifts in their relative power, and their activities can further alter this power balance (Khan, 2018). While organizations exercise agency, their effectiveness is constrained by the flexibility within the structure of the political settlement (Khan, 2018). Methodologically, Khan (2018) advocates for the use of in-depth historical (comparative) analysis to operationalize such a framework.

Understanding power dynamics is also crucial in conservation politics at both the local and national levels. At the local level, groups negotiate resource use, management, and conservation efforts (Agrawal & Gibson, 1999). They work to implement agreed-upon rules and resolve disputes that arise during this process. These local interactions are fundamentally shaped by the existing power dynamics and incentive structures within and across specific social groups (Agrawal & Gibson, 1999).

The political settlement analysis does not imply that aligning institutions with the interests of powerful organizations will necessarily lead to the intended outcomes Khan (2018). Aligning conservation policies with powerful organizations can be problematic, especially when these organizations have high extractive capabilities and are likely to distort rules to capture resources. The policy challenge is to identify strategies that encourage conservation behavior in these contexts, considering the capabilities and power of relevant organizations.

Analyzing rents provides insight into this process Khan (2018). Institutions and policies aimed at conservation create new income flows (rents) and disrupt existing ones Khan (2018). To understand why conservation objectives may not be met, it is important to examine how checks and balances constrain organizations responsible for implementing conservation policies. This involves ensuring that the organizations receiving rents are the intended recipients and that they fulfill their conservation roles. The distribution of power among organizations involved in rent management critically affects the success of conservation institutions.

### 1.3.3 Implications for understanding accountability and representation patterns

As Agrawal & Ribot (1999) states, "critical to understanding the process is empirical examination of the structures of accountability in which actors are located." On issues of forest conservation, Burgess et al. (2012) highlights that mitigating the incentives for local officials to engage in illegal activities is central to successful conservation and likely extends to broader natural resource protection efforts.

Accountability is rooted in the interdependent social relationships between social groups and their leaders. These relationships are highly heterogeneous and context-dependent, defined by the multiple arenas and social institutions in which leaders are embedded. Within an arena of authority, rules and norms typically discipline leaders and specify how they can be sanctioned. These rules also elucidate how decisions can be made and by whom. Leaders are embedded in multiple arenas, each offering potential leverage for members to pressure their leaders. Because both members and leaders of an arena are also part of other arenas, the actions available to members to discipline their leaders are governed not only by the social institution within the arena but also by the social institutions in which the leader is embedded.

Understanding patterns of political representation and accountability requires an in-depth understanding of the primary social institution at play and the other social institutions in which leaders are embedded. These intersections of social institutions make the outcomes of political arrangements highly contextual. Researchers interested in accountability relationships between members of an arena and their leaders should consider the following key features. First, a clear map of the players and the leadership decisions should be created. Next, analyzing the distribution of economic and social resources among these groups will clarify the potential balance of power. Third, understanding the range of actions available to members to create or oppose new rules is crucial. This aspect requires not only comprehending the rules in use within the arena but also identifying other intersecting arenas that may be relevant. By considering other contextual norms and socio-political pressures, researchers can map out the incentive structures for all members within the arena.

For forest conservation projects, it is crucial that groups with an interest in forest conservation are empowered. When local and national leaders are accountable to these groups, the health of forest ecosystems is likely to be prioritized. The challenge lies in improving the connection between these social groups and local leaders, rather than eliminating them and replacing them with vote-based systems, as is often attempted. To design effective policies and advance this research agenda, one must first understand how de facto institutions of power and representation function and clarify the political settlement at play. Additionally, it is essential to comprehend the set of institutions that are feasible to implement, based on the power distributions among key social groups within a society, often referred to as a political settlement (Khan, 2018).

## 1.4 Questions studied

The motivation for this thesis stems from the importance of deepening our understanding of the relationship between political institutions of representation and accountability and deforestation

in the arena of traditional governance. It is structured around three chapters, each addressing a specific research question.

- Chapter 2: What are the forest conservation impacts of forest decentralization reforms that inadequately consider local institutional settings and empower groups unaccountable to other community members?
- Chapter 3: Do citizens sanction undemocratic traditional leaders? If yes, how do they sanction them?
- Chapter 4: How do traditional leaders perform in representing youth interests in land-use decision-making? Does youth participation improve youth representation?

Chapter 2 leverages the forest decentralization reform implemented in 1994 in Cameroon to shed light on the adverse conservation effect of institutional changes that fail to account for local practices of accountability and legitimacy empowering groups driven by short-term economic interests and lacking ties with other community members. In 1994, the Cameroonian government initiated a forest decentralization reform that allowed local communities to manage up to 5000 hectares of forest and legalize logging activities. The chapter investigates the causal effects of this policy on forest conservation outcomes, particularly in the main forested regions of Cameroon. Using a staggered difference-in-difference design with matching (Imai et al., 2021), the study analyzes remote sensing data and case studies to assess the conservation outcomes of community forests from 1994 to 2015. Findings reveal that, overall, community forests did not significantly reduce deforestation or forest degradation. However, in the Southern region, where logging activities are high, there was a notable increase in forest degradation. This outcome is attributed to local elites with economic interests in timber extraction, who exploited the decentralized system. The chapter exemplifies the argument lay out in the section 2 of the introduction where I criticize the lack of efficacy of blue print approach of conservation.

The decentralization reform extended the State's arena of authority to forest governance, thereby competing with the traditional governance arena. The economic prospects of timber exploitation legitimized this extension but also empowered bureaucrats in forest ministries who have fewer social ties with communities than traditional elites. Overall, the contextual approach illustrates why decentralization reforms often fail to achieve their intended outcomes and instead increase the discretionary power of elites, which further negatively impacts forest resources.

Instead, reforms that aim to achieve conservation objectives would need to empower groups that have a vested interests in forest protection. To do so, one needs first to have a good understanding of the tools available by social groups to sanction leaders. An estimated 30%

of the global population lives under customary laws and traditional governance structures, prevalent across continents. Despite their global relevance, accountability structures are not well understood under such governance framework. The chapter 3 studies how traditional leaders in rural Sierra Leone are held accountable by their communities, a crucial aspect for designing effective development and conservation initiatives. Traditional leaders often play significant roles in facilitating collective action and brokering government resources. The research focuses on whether citizens in Sierra Leone sanction undemocratic traditional leaders and the methods they employ. Using a survey experiment conducted in 77 small communities in the Southern province, the study tests if village members would sanction their town chiefs for misappropriating community project funds. The experiment also examines the moderating role of chiefs' councilors, who mediate between community members and the chief. Findings reveal that citizens prefer indirect sanctions, such as complaints to higher authorities, over direct actions like public blame and economic pressure. The presence of councilors broadens the range of acceptable sanctions, indicating their role in coordinating social order. Furthermore, indirect village-level sanctioning preferences are inversely related to inclusive participatory decision-making and positively associated with lower conflict frequency, highlighting the importance of chiefs in maintaining village peace. The chapter also suggests that higher level chieftaincy figures might be essential in disciplining lower level chiefs.

A widespread strategy in development settings was to develop participatory spaces to enable the representation of excluded group. However such spaces have been prone to elite-capture. Chapter 4 empirically tests the "empowerment hypothesis" within participatory conservation approaches, positing that meaningful representation for low-status groups can only be achieved when their inclusion disrupts existing power dynamics. The research investigates the conditions under which participatory approaches empower marginalized groups and challenge village elites' dominance. Focusing on youth exclusion from land use decisions in mangrove-dependent communities in Sierra Leone, the study develop a framed field experiment involving land-planning activities, comparing standard participatory approaches with an intervention that increased youth participation. Findings demonstrate that increased youth participation improves their policy representation by 10% without affecting planning quality. The effect is particularly significant in villages where elites have strong ties with higher-level leaders, suggesting that such elites are more accountable to higher authorities and less responsive to marginalized groups in standard participatory setting.

The failure of participatory approaches, as demonstrated in Chapter 4 when local elites are powerful, can be further explained by the contextual approach outlined earlier. Standard participatory approaches create parallel arenas of authority for governance issues traditionally

managed by chieftaincy authorities. Members included in these new parallel arenas remain part of other, typically stronger, arenas. Consequently, these new institutions compete with established ones, and it may be more rational for members to adhere to the norms and behaviors of the competing stronger arenas. In our case, traditional governance arenas. Two likely scenarios may arise: first, the outcomes of the two arenas may resemble the status quo, resulting in no significant change. Second, substantial differences in outcomes may occur. However, once the new arena is no longer enforced (e.g., when a donor leaves), elites from the traditional authority may sabotage the new initiatives, leveraging their existing power.

## 1.5 Methodology

The dissertation employs a diverse array of quantitative methods from the comparative politics toolbox. Table 1.2 provides an overview of these methods and the section discusses their respective strengths and weaknesses. A more detailed introduction to the empirical strategy is provided in each chapter.

**Table 1.2:** Summary of the methodologies and data used in Chapter 2, 3, and 4

| Chapters | Methodology | Data |
|---|---|---|
| Chapter 2 | Difference-in-differences | Remote sensing and administrative data |
| Chapter 3 | Survey experiment | Questionnaire delivered in person |
| Chapter 4 | Framed field experiment | Questionnaire delivered in person, focus group discussions, land planning quality |

*Notes:*
*The table presents the methodology and the main data collected in each of the three chapters constituting the dissertation. In Chapters 3 and 4, I, along with 12 enumerators, collected primary data through in-person questionnaires. For each chapter, interviews and focus group discussions were organized to gain a deeper understanding of the context.*

### 1.5.1 Framed field experiments

Field experiments, also known as Randomized Control Trials (RCTs), are widely considered the gold standard for estimating the causal effects of interventions or programs (Gerber & Green, 2012). This method originated in medical research and has become increasingly popular in economics and more recently, political science (Kalla & Broockman, 2022; Badrinathan, 2021; Yan & Bernhard, 2024).

The core principle of an RCT involves randomly assigning an intervention (treatment) to one group (treatment group) while withholding it from another (control group). Under the

assumption of stable unit treatment value assumption (SUTVA), which posits that the only difference between the two groups is the intervention itself, the observed differences in outcomes can be attributed to the intervention.

Despite its strengths, the use of RCTs is not without limitations. These studies can be prohibitively expensive to implement and may not be well-suited for addressing all research questions (Deaton, 2010).

As noted by Harrison & List (2004), various types of field experiments can be distinguished based on several criteria, including: the nature of the subject pool (e.g., students, community members), the information subjects bring to the task, the nature of the task , the nature of the stakes involved (financial, reputational), and the nature of the environment where the experiment takes place (laboratory, field setting) (Harrison & List, 2004: p. 1012).

Framed field experiments combine elements of traditional laboratory experiments with the natural environment of field studies (Harrison & List, 2004). Unlike lab experiments, framed field experiments take place in real-world situations where people normally encounter the decision being studied, allowing researchers to observe behavior closer to what might happen naturally. While the environment may be located "in the field", it remains under the control of the researchers. This approach allows for studying the behavior of experienced participants recruited from the target population and observing their reactions to an intervention within a quasi-laboratory setting. Framed field experiments offer greater control over the intervention compared to traditional field experiments, leading to higher internal validity, but may have limitations in generalizability due to the more controlled environment.

Chapter 4 of this dissertation utilizes a framed field experiment to investigate how youth participation in a land-use planning activity impacts their representation in policy outcomes.

### 1.5.2 Survey experiments

A survey experiment is a research method that involves deliberately manipulating the format or presentation of questions in a survey to understand how political attitudes and preferences are formed. Respondents are randomly assigned to either a control group, which receives the unaltered survey, or a treatment group, which receives the modified version. By comparing the responses from these groups, researchers can isolate the causal effects of the specific manipulation being studied (Gaines et al., 2007). Survey experiments can be employed for both methodological and substantive purposes. In the latter case, researchers alter information within the survey with the expectation of influencing political attitudes or preferences (Gaines et al., 2007).

The use of survey experiments with population-based samples is widespread in political science due to their high internal validity. This strength is assured by the random allocation of the survey manipulation across treatment and control groups (Dülmer, 2016; Barabas & Jerit, 2010). However, the issue of external validity, which refers to the generalizability of findings to real-world behavior beyond the specific context of the study, remains a topic of ongoing discussion (Barabas & Jerit, 2010; Brutger et al., 2023; Mullinix et al., 2015; Dafoe et al., 2018).

There are four primary concerns regarding external validity. First and foremost, survey experiments randomize information rather than attributes. Consequently, survey experiments are limited to studying responses to information within a research setting. Second, the sampled population might not accurately reflect the broader population to which researchers wish to generalize their findings (Mullinix et al., 2015). Third, the characteristics of the treatment manipulation within the survey might differ from the characteristics of the real-world phenomenon being studied, a problem also known under the label of information equivalence (Dafoe et al., 2018). The degree to which the treatment should mirror real-life scenarios remains a topic of debate (Brutger et al., 2023). While including more contextual information can enhance the salience of the treatment, it can also decrease participant attention to the manipulation itself. Finally, the process of treatment allocation in a survey experiment may differ significantly from real-world settings, potentially limiting the generalizability of the results. These aforementioned constraints can all contribute to confounding the size of the treatment effect. Studies have shown that treatment effects may ultimately only be generalizable to specific sub-groups within the population (Barabas & Jerit, 2010).

Despite limitations in external validity, survey experiments offer a distinct advantage for studying attitudes and preferences that are susceptible to social desirability bias, particularly when related to sensitive topics (Gaines et al., 2007). Chapter 3 of this dissertation utilizes a vignette experiment to examine how citizen attitudes towards village chiefs are affected when the chiefs are portrayed as stealing from community project funds, a scenario commonly reported in development contexts. The vignette experiment offers a key opportunity to learn about sanctioning attitudes and preferences. It also presents a valuable opportunity to identify potential heterogeneity in sanctioning attitudes and preferences at the village level, that could be indicative of heterogeneity in sanctioning norms.

### 1.5.3 Quasi-experimental approaches

Many research questions in comparative politics are causal research questions. While experiments are considered the gold standard for studying these questions, they are often costly to implement

and not suited for addressing a wide array of questions. For instance, exploring the impact of a policy implemented using a non-randomized treatment assignment covers a large body of politically relevant inquiries. Instead, quasi-experimental methods rely on additional assumptions to derive causal estimates of the effect of such policies. These methods necessitate a detailed understanding of the contexts to appropriately apply them.

One of the most utilized quasi-experimental methods in political science and beyond is the difference-in-differences method (Abadie, 2005). This approach compares the outcome variable before and after a policy is implemented, and contrasts these differences between units that received the policy and those that did not. Under the assumption that there are no time-variant characteristics affecting the outcome variable differently in the treated and untreated groups, known as the parallel trend assumption, the effect of the policy can be estimated for the units receiving the policy. A standard estimation strategy is the two-way fixed effect strategy, which has been shown to produce unbiased estimates under the parallel trend assumption (de Chaisemartin & D'Haultfœuille, 2020). However, when the policy is implemented across multiple time periods, it has been shown that two-way fixed effects may require additional, unnecessary assumptions to recover causal estimates (Imai & Kim, 2021; Athey & Imbens, 2022). Alternative estimators are recommended for policies evaluated under a staggered difference-in-difference design (Baker et al., 2022).

Chapter 2 employs a staggered difference-in-difference approach combined with matching techniques based on the method developed by Imai et al. (2021). Assuming parallel trends and balance in covariates, the causal effect of the policy is identified and the estimator is unbiased.

## 1.6 Data

The dissertation is based on broad range of primary and secondary data using the extensive variety of data generally used in comparative politics. For the integrity and robustness of research, I tried, whenever possible, to multiply the sources of information. Overall, I used interviews and focus group discussions, survey questionnaire administered in the field, remote sensing data, and administrative data.

### 1.6.1 Interviews and focus group discussions

Although not central to the empirical strategy, I extensively utilized semi-structured interviews and focus group discussions in my research to gain contextual knowledge over the context. In both Cameroon and Sierra Leone, I conducted interviews with key informants. Specifically, in Chapter 2, which focuses on Cameroon, I conducted 30 interviews with heads of NGOs, bureaucrats from

the Forest Ministry, local authorities, workers in logging companies, and village leaders. This approach enabled me to gain a deep understanding of the case, develop a theoretical framework for the mechanisms at play, and enhance the interpretability of the results.

In Sierra Leone, I conducted 5 semi structured interviews and 7 focus group discussions to better understand the case but also to robustly assess the quality of the measurement strategy. The semi structured interviews were conducted with traditional chiefs and elders at the village and the section level. Focus group discussions were conducted with elders in multiple communities. It was helpful in understanding the plausible range of strategies and their relative costs used by community members and the village elites to discipline their leaders.

### 1.6.2 Survey data

Chapter 3 and 4 rely on survey data I administered. With 4 teams of enumerators, we administered face-to-face surveys with mangrove dependent communities, using tablets in 80 villages. Both chapters use the same field location and wave of survey but leverage different section of the survey.

### 1.6.3 Remote sensing data

Studying forest conservation and the evolution of forest ecosystems on a large scale using field surveys is challenging. The advent of geographical information science has facilitated the study of deforestation and forest degradation at broader scales in a more accessible manner, thanks to interdisciplinary teams such as Hansen et al. (2013) and Vancutsem et al. (2021).

This data was utilized for two distinct purposes throughout the dissertation. In Chapter 2, I employed remote sensing data to assess the evolution of forest cover in Cameroon, which is the dependent variable of interest.

In Sierra Leone, due to the absence of administrative data, I needed alternative methods to acquire preliminary knowledge about the communities included in the study population. I used remote sensing data to select the sample of villages and build the randomization strategy for the framed field experiment in Chapter 4. I calculated the number of settlements in each village using remote sensing data, including only villages with between 20 and 250 settlements. For the framed field experiment, I created two treatment arms for a sample of 76 villages. Given the low sample size, including additional experimental blocks could potentially increase the precision of the estimates and the power of the study (Gerber & Green, 2012). I constructed three experimental blocks based on forest cover, distance to the coast, and distance to the river. This approach enabled a more effective randomization strategy.

### 1.6.4 Administrative data

Finally, Chapter 2 relies on administrative data collected through the forest atlas Cameroonian governmental portal (https://cmr.forest-atlas.org/). The portal gives an overview of forest property rights across the countries. I downloaded data on community forests, their location, geographic boundaries, their juridical form, and their date of creation. Each community forests was matched with data on forest cover and the climate for each year between 1990 and 2020 thanks to the geographical boundaries.

## 1.7 Concluding remarks

The blueprint approach claims that fostering democratic institutions and universal tools to promote political participation, such as elections, can positively impact forest ecosystems across contexts. However, drawing on extensive literature, I demonstrate both theoretical and empirical evidence highlighting the weaknesses of this approach. Chapter 2 critically analyzes Cameroon's forest decentralization reform, showing that such reforms can lead to increased forest degradation if local institutional settings and power dynamics are not adequately considered.

Instead, understanding how leaders are accountable to social groups with vested interests in forest conservation is crucial. I argue that combating deforestation requires a thorough understanding of why some leaders in non-electoral settings are held accountable by the majority of their population while others are not.

A context-specific approach, based on an in-depth understanding of how arenas of authority interact and shape the power and social contracts between traditional leaders and their community members, would provide valuable insights into the study of politics in non-Western countries and how politics shape development and conservation outcomes. Chapter 3, focusing on traditional governance in Sierra Leone, reveals the nuanced ways citizens may hold non-elected leaders accountable, emphasizing the importance of indirect sanctions and the role of intermediaries. Additionally, the investigation into participatory development approaches in Sierra Leone's mangrove-dependent communities shows that the meaningful inclusion of marginalized groups is generally hindered by strong ties between local and national elites.

These findings collectively emphasize the need for culturally adapted and context-specific policies to enhance conservation efforts and governance outcomes.

Chapter 2

# Assessing Forest Decentralization Reforms: the Impact of Community Forests on Deforestation in Cameroon

***Rens Chazottes*** [1]

## 2.1 Introduction

The protection of natural resources, particularly forests, has been prioritized on the global biodiversity agenda. In 2022, the Kunming-Montreal Global Biodiversity Framework was ratified by 188 governments, aiming to guide conservation efforts until 2030 and achieve the ambitious goal of protecting 30% of terrestrial land to restore ecosystems, halt biodiversity loss, and uphold indigenous rights.

What conservation policy instruments are necessary to implement this global policy and meet its objectives? Since the late 20th century, forest decentralization or devolution has emerged as a leading model of forest management, with Agrawal & Ribot (1999) documenting 60 instances by the end of the 1990s. These reforms typically transferred forest management responsibilities to local governments or community leaders, leading to the establishment of community forests. By the early 2000s, it was estimated that community-owned and managed forests covered at least 377 million hectares in developing countries, representing about 22% of all forested areas (White & Martin, 2002).

Decentralization is a broader political phenomenon that encompasses the delivery of public services and infrastructure such as education (Fiske, 1996; Channa & Faguet, 2016), the health

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sector (Richard et al., 2006; Channa & Faguet, 2016), and development projects (Olken, 2010). Balancing centralized and decentralized service delivery has long been a topic in political economy (Mookherjee, 2015). Classic accounts have shown that such reforms can result in local elites controlling resources for their own benefit (Bardhan & Mookherjee, 2006). The effectiveness of decentralization also depends on how local governments are funded (Bardhan & Mookherjee, 2006).

Similarly, the efficacy of community forests is influenced by numerous contextual factors, including intra-group dynamics, institutional objectives, and geographical conditions (Agrawal et al., 2018; Hajjar et al., 2021). These reforms are expected to yield greater efficiency, equity, and stronger conservation outcomes when local authorities are accountable to community members (Agrawal & Ribot, 1999; Larson & Ribot, 2004). The prevailing approach has developed a set of universal instruments, such as local elections and community participation, recommended across different contexts to enhance accountability (Ostrom, 2007). However, this mainstream conceptualization has two major flaws. First, communities are not homogeneous; they consist of multiple social groups with diverse preferences regarding forest management and conservation. Second, the effectiveness of fostering community member participation varies depending on local institutional settings. Consequently, community forests that employ these universal instruments without considering local contexts are unlikely to succeed (Ostrom et al., 2007). Their success hinges on whether the new institutions are grounded in culturally adapted processes of legitimacy and accountability (Brown & Lassoie, 2010), empowering groups committed to forest conservation. Nonetheless, many reforms failed to include local institutions because they were not recognized by the state, often empowering groups with minimal community ties, leading to conflicts at the local level (Brown & Lassoie, 2010).

What are the conservation impacts of such reforms that inadequately consider local institutional settings and empower groups unaccountable to other community members?

The paper aims to determine the causal effects of Cameroonian community forests - a decentralized forest management regime - on forest cover change. This paper hypothesizes that reforms are likely to yield negative forest conservation impacts when empowered groups have an interest in wood extraction, the capability to extract and appropriate economic rents from forests, and find it economically viable to do so. The study examines the potential adverse effects of such reforms through the lens of the Cameroonian forest decentralization reforms, notorious for their poor integration of the local context (Oyono, 2003). The 1994 reforms permitted local communities to manage up to 5000 hectares under community forests, facilitating the commercialization of timber and non-timber forest products and transitioning the property

rights regime from formally state-owned to collectively owned land. The official objective was to reduce deforestation and enhance local welfare. As depicted in Figure 2.1, Cameroon experienced relatively modest deforestation rates between 1994 and 2015, approximately 2% of the total forests deforested, compared to regions like Brazil, where over 4 to 5% of their forested area was deforested (Global Forest Watch, 2024). The selection of the Cameroonian case is warranted as, despite numerous case studies examining changes in institutions and property rights regimes following the implementation of community forests, no research has specifically assessed the impact of community forests on forest conservation at a national scale. Such an assessment is crucial and strategic, considering that community forests in Cameroon make up 9% of the national forest estate and are generally located in areas of high biodiversity, including both natural and secondary forests in zones at high risk of conversion to other land uses (Bernard & Minang, 2019).

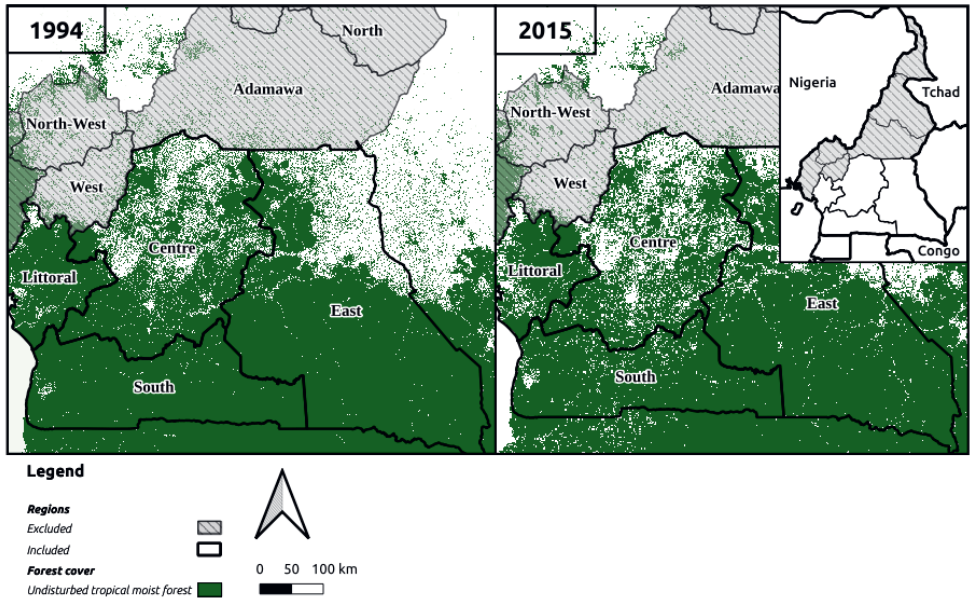


**Figure 2.1:** Evolution of forest cover between 1994 in the main forested regions in Cameroon.

Notes: The maps display primary forest cover in 1994, the year of the decentralization reforms, and in 2015, in the main forested regions of Cameroon. Data come from the tropical forest moisture dataset (Vancutsem et al., 2021). Regions highlighted in grey have been excluded from the analysis due to their lack of forest cover.

This study examines the impact of the property regime shift introduced by the 1994 forest decentralization reform in Cameroon, which facilitated the creation of community forests, and its contribution to forest degradation over the following two decades. Building on prior research focusing on decentralization reform in Cameroon, particularly on the implementation of community

forests (Bruggeman et al., 2015), this paper extends the analysis beyond the previously studied Eastern region to encompass the four main forested regions of the country. It employs a staggered difference-in-difference design with matching, based on the methodology developed by Imai et al. (2021). This approach is used to assess the impact of community forest implementation on conservation outcomes, highlighting how reforms that neglect to integrate crucial contextual information are likely to fail. The findings reveal that community forests have had no significant overall effect on deforestation or forest degradation, with no spatial spillover to its buffer zone. However, a heterogeneity analysis indicates a significant increase in forest degradation in the Southern region, attributed to the implementation of community forests.The exacerbation of forest damage in this region is likely driven by the presence of elites interested in extracting forest revenues and heightened economic opportunities for timber exploitation. In the Southern region, I find a higher proportion of commercial community forests and a higher proportion of citizens who consider the political and economic elites to be corrupt. Additionally, there is no history of timber extraction in the South compared to other regions, suggesting that high-value timber is still present. Case studies in the academic literature also supports this narrative.

Despite the extensive body of literature, studies employing quasi-experimental methods in sub-Saharan Africa are still rare. This research contributes to the discourse on community forests and collective titling by providing empirical evidence of the relatively negative impacts of reforms that fail to adequately incorporate contextual knowledge.

The next section of the paper will review the case study, literature, and theoretical framework. Subsequent sections will discuss the methodology, present the findings, and conclude the discussion.

## 2.2 Background

### 2.2.1 Literature review

Political decentralization has been a central theme in political economy for the past decades (Bardhan, 2002; Mookherjee, 2015). Unlike deconcentration, political decentralization involves devolving powers to actors accountable to the local population (Agrawal & Ribot, 1999). Effective implementation was often believed to require electoral democracy to ensure accountability (Faguet, 2014).

Using the forest sector as an example, I argue that universal instruments promoting political participation, such as local elections, might not be effective in promoting democratic accountability if they are not rooted in local practices of legitimacy and accountability.

The theoretical expectation that democratic decentralization reduces deforestation is based on several arguments. Firstly, local elections are expected to increase political participation and restructure local officials' incentives (Faguet, 2014; Agrawal & Ribot, 1999). This would strengthen the accountability loop between providers and consumers of public goods. Secondly, it is believed that decentralization distributes resources and governance functions across multiple levels, reducing national power abuses and increasing political competition, which correlates with positive economic performance and reduced corruption (Faguet, 2014; Albornoz & Cabrales, 2013). Thirdly, decentralization may enhance efficiency by reducing transaction costs and leveraging local authorities' knowledge of local conditions (Tacconi, 2007; Wright et al., 2016).

Despite these theoretical benefits, practical implementations often fall short, leading to recentralization and the empowerment of national state agents (Agrawal & Ribot, 1999). Failures are due to inadequate powers granted to local institutions and an overreliance on elections for accountability, risking elite domination (Ribot, 2003; Tacconi, 2007). Local governments might favor logging and agricultural expansion for revenue, increasing deforestation (Tacconi, 2007; Burgess et al., 2012). The outcomes depend on local political incentives, with varying effects on deforestation (Harstad & Mideksa, 2017). Empirical evidence, particularly in sub-Saharan Africa, is limited and mixed, highlighting the complexity of socio-ecological systems and the need for context-specific approaches (Samii et al., 2014; Ferraro & Agrawal, 2021).

Forest decentralization can follow different trajectories, with some models granting greater power to local governments and others empowering local communities through community-based natural resource management (Tacconi, 2007). In this paper, I focus on reforms aiming to devolve power to local communities. Community institutions typically involve collective titling, securing lands to local communities for either commercial or non-commercial forest resource use, depending on legal frameworks and community preferences. A recent meta-analysis conducted a global analysis of community forest management using data from 643 cases across 51 countries (Hajjar et al., 2021). Authors found that while most cases reported positive environmental or income outcomes, forest access and resource rights of local communities were frequently negatively affected (Hajjar et al., 2021).

Although numerous studies have explored the impact of these institutional arrangements on forest outcomes—such as forest cover, carbon stocks, forest tree density, or regeneration—relatively few have employed robust causal inference methods that enable the identification of unbiased and precisely estimated causal effects (Di Girolami et al., 2023). Taking only into consideration those studies, results are mixed. For example, Rasolofoson et al. (2015) assessed the impact of community forests in Madagascar on forest cover and found no statistically significant results.

Similarly, community forests in Nepal were not more effective at carbon storage than non-community forests (Luintel et al., 2018), though another study reported a significant reduction in deforestation (Oldekop et al., 2016). In contrast, similar institutional setups in Indonesia reduced deforestation between 2012 and 2016 (Santika et al., 2017), mirroring findings from Peru where legal titling was granted to communities in the Amazon (Blackman et al., 2017). In Easter Cameroon, a study found no effect of community forests on reducing deforestation rates (Bruggeman et al., 2015). Some suggest a potential negative effect, but these claims lack robust methodological support (Lescuyer et al., 2016).

The efficacy of community forests is influenced by numerous contextual factors, including intra-group dynamics, institutional objectives, and geographical conditions (Agrawal et al., 2018; Hajjar et al., 2021). The type of community forests intervention is critical for its success. Agrawal et al. (2018) emphasized the importance of supportive policies, capacity building, collaborative stakeholder processes, and monitoring mechanisms. The motivations underpinning the creation of community forests are also critical. In Colombia, collective titling proved effective in reducing deforestation when local communities decided to expel private logging companies and large palm oil operators (Vélez et al., 2020). Conversely, in Madagascar, when community forests were established for commercial purposes, deforestation rates increased in subsequent years. Evidence from Nepal suggests that legal designation is less important than social cohesion and collective action mechanisms in achieving positive ecological outcomes (Bluffstone et al., 2018). When forest user groups maintain good relations with local politicians and actively engage them on forest issues, better forest outcomes are observed (Wright et al., 2016), highlighting the significance of multilevel governance in forest management (Andersson & Ostrom, 2008).

I aim to contribute to this literature by providing evidence of the importance of looking at the interaction between the incentive structures of the groups being empowered by the reform and the economic benefits of land clearing and timber extraction. I also provide another robust empirical evidence of the conservation impact of decentralization reforms in Cameroon, extending previous research geographically and temporally.

### 2.2.2 Institutional context

#### The 1994 decentralization reform

Since independence in 1960, all forested land was owned by the State and timber commercial uses by local communities were forbidden. The reform in 1994, which aimed to increase popular participation in forest management, foster sustainable management, and fight against poverty, introduced a new zoning with two zones. The permanent forest estate, owned by the state

and managed by the forest ministry, aimed to foster logging and conservation activities. The non-permanent forest estate, where most of the degraded and secondary forests are, is managed by the agriculture ministry for agriculture development. Concretely, the law allowed the transfer of power and forest management responsibilities to communities to create community forests in the non-permanent forest estate. Under certain conditions, since 1994, local communities can manage patches of forested lands up to 5000 hectares and for a period of 25 years. The creation follows three key steps: 1) a consultation meeting with the population; 2) a provisional agreement with the forestry ministry that covers the location of the community forests, the type of exploitation, and the legal structure; and 3) a final convention in which the nature of the exploitation is defined, the ways economic benefits will be shared within the community, and how the governance structure is set-up.

Community forests can be legally registered as an Association, Cooperative, Common Initiative Group (CIG), or Economic Interest Group (EIG), which handle all government correspondence related to the establishment and management of the community forest. As of 2013, most community forests were registered as either a common initiative groups (63.47%) or under associations (36%) (Alemagi et al., 2022). Communities often choose those legal structures for their advantages. Associations are simple to establish and manage, tax-exempt, and eligible for subsidies, donations, and bequests if recognized as a public utility by the President (Alemagi et al., 2022). Similarly, CIGs are manageable, convertible into cooperatives, can distribute benefits among members, and are also eligible for subsidies and donations (Alemagi et al., 2022).

The legal entity is governed by the president of the community forests (Mbairamadji, 2009). By law, the president must be elected by community members and held participatory meetings with communities to decide on the objectives of the community forests, the set of economic activities to develop, and the benefice sharing mechanisms (Mbairamadji, 2009). In practice, the reforms are not implemented as intended on the ground with most of community forests leaders who are not downwardly accountable to community members. Oyono & Efoua (2006) examined the composition and appointment methods of Community Forestry (CF) management committees in the southern region. Their findings indicated that only 10% of committee members were elected through democratic means, while 20% were appointed by consensus. Furthermore, they pointed out that nearly half (43%) of the committee members assumed their positions through self-appointment. Additionally, elites who play a significant role in establishing the community forests typically allocate management roles among themselves, leading to a decline in both democratic governance and participatory involvement. Furthermore, Piabuo et al. (2018) explain that community meetings regarding the community forests are rarely held and participation rates,

especially among women, is relatively low, engendering low information flow, no transparency, which is fertile ground for no-accountable leadership.

Most community forests engage in logging activities as an income generating process. To legally engage in logging activities, community forests need to develop a management plan and make it approved by the forest ministry. Because the development of such management plan is technically, procedurally and financially demanding, and the need of high initial investment to start logging activities, community forests generally seek to partner with a logging company to exploit the forests (Kimengsi & Bhusal, 2021).

In 1997, the first community forests received a final convention, but the first wave of community forests emerged in the early 2000 with the acceleration of the rate of community forests creation from 2005 onwards. In 2020, there were 687 community forests, among which 604 were in the five regions of interest (Center, East, Littoral, South), and 345 received a final convention (MINFOR, 2021).

**A de-facto shift in property right**

By law, when a community forest is implemented, the property regime shifts from a State to a collective ownership regime. Nevertheless, in practice the introduction of a community forest is much more disruptive (Brown & Lassoie, 2010).

Before colonization, the Bantu forest peoples of Cameroon's humid forest zone managed the forest primarily through lineage ownership, utilizing productive use to assert collective rights. The forests, along with associated agricultural lands, were managed as common property by lineages, with decision-making centralized within lineages encompassing multiple generations (Etoungou, 2003). During colonization, some traditional practices were maintained, allowing local use rights. Post-independence legislation perpetuated state control, marginalizing local populations and nationalizing lands except those registered as public or private, or under cultivation (Oyono, 2005). Despite the state ownership of the forests, the lineage ownership regime was still in place. Forest management was a collective endeavor rooted in ancestral traditions, with decisions typically made collaboratively rather than through formal permissions, especially within the clan and lineage systems (Diaw, 1997,9). While the chief and lineages heads theoretically dictate land use within primary forests, in practice, villagers followed an informal consensus on land usage, rarely requiring explicit authorization except for outsiders (Brown & Lassoie, 2010). In areas dominated by secondary growth and customary tenure, decisions about land use were generally made at the lineage or household level, with the village council resolving disputes over forest resources (Brown & Lassoie, 2010).

In 1994, the forest decentralization reform created a shift in the de-facto property right regime. It was widely criticized for its lack of integration of the local context and institutions (Brown & Lassoie, 2010). The legislation did not adequately define 'community' in a way that aligns with the cultural realities of the region, a widespread phenomenon also found in the academic literature (Schusser et al., 2016). As per the legal definition, a community is a local population or village near a forest with recognized forest access and use rights (Vabi, 1999). This definition, however, often excludes many key users whose usage does not conform to the proximity criteria (Brown & Lassoie, 2010). The legislation also creates a new institutional layer that overlooks the traditional systems of natural resource management in Cameroon, which rely on the authority of elders, lineage leaders, and village chiefs (Diaw, 1997; Vabi, 1999).

The shift in community rights to forests and resources led to the transfer of management powers from village chiefs to management committees (Oyono et al., 2012), who may be more educated but lack traditional legitimacy (Brown & Lassoie, 2010). The committees are frequently comprised of retired civil servants or educated young men unable to find urban employment (Etoungou, 2003; Oyono, 2005). They tend to dominate the process and exclude other local stakeholders from the benefits of community forests. As Etoungou (2003) documented, these committees have become a kind of forestry elite, self-interested and detached from the village communities they serve. This shift towards elite control has resulted in disorganized management and exploitation of many community forests (Assembe, 2006; Mbairamadji, 2009; Oyono et al., 2012), with funds being often misappropriated by community forests managers (Piabuo et al., 2018). This has led to significant conflict between community forests committee members and traditional authorities (Oyono, 2005). Such exclusion has escalated into conflicts, some of which have turned violent, suggesting that the approach to decentralization may have disrupted established social regulatory mechanisms, paving the way for social distortion and increased conflict (Brown & Lassoie, 2010).

**Low economic viability of timber production**

Due to the lack of technical and bureaucratic forestry skills at the local level, community members generally partner with logging companies to fulfill the administrative paper work and the logging activities. The institutional landscape described so far would have been conducive to an ecological disaster. However, there are multiple factors that have limited the timber exploitation of community forests (Mbarga, 2013). First, they are located in the non-permanent forest domains where forests richness is more limited (Mbarga, 2013). Second, the size of community forests are small from 1000ha up to 5000ha. In comparison, private concessions are generally 10 times bigger to achieve economic scalability. Third, the limited timber potential is also explained

by an history of timber exploitation where the more monetary valuable woods were already logged (Mbarga, 2013). Finally, they are poorly geographically connected to the timber market, generating high transportation costs (Lescuyer, 2013).

### 2.2.3 Theory of change

In Cameroon, subsistence agriculture stands as the primary driver of deforestation, further intensified by substantial population growth (Tegegne et al., 2016; Epule et al., 2014). Industrial and illegal logging follow suit as significant contributors (Tegegne et al., 2016; Tyukavina et al., 2018). These dynamics are indirectly influenced by factors like infrastructure development, urbanization, industrialization, market expansion, formal policies, and weak law enforcement (Tegegne et al., 2016).

The initiative to establish community forests appears to be predominantly driven by local elites (Kenfack Essougong et al., 2019) who often prioritize short-term forestry gains, leading to forest appropriation. These elites may even refer to the community forests as their personal property (Kenfack Essougong et al., 2019). The management plans for most community forests prioritize logging over conservation or other efforts aimed at maximizing resource value (Bernard & Minang, 2019). Furthermore, community forest managers frequently outsource the development of these plans to logging companies, resulting in a prioritization of economic benefits and logging interests over ecological or social considerations (Bernard & Minang, 2019).

Where timber logging remains economically viable, I posit that the creation of community forests will likely increase forest degradation due to intensified logging activities. This effect is likely to be exacerbated by the presence of local elites with short-term interests, empowered by the shift in property rights regimes. Figure 2.2 illustrated a simplified version of the theory of change.

The new institutional framework is likely to generate uncertainty in many communities regarding access to forest revenues. This stems from a frequent lack of participatory decision-making and low transparency, factors that impede accountability of elites to the local population. This lack of oversight creates opportunities for elites to misappropriate funds (Kenfack Essougong et al., 2019) and potentially collude with logging companies for timber extraction. Consequently, community forests might exacerbate local conflicts, potentially fueling further forest degradation or limiting it, depending on the specific power dynamics at play.

Furthermore, the absence of secure land tenure could incentive the conversion of forested land for agricultural purposes. In situations characterized by internal conflicts over forest control and a lack of benefits derived from logging activities, lineages might attempt to secure their

land rights by selectively logging forested areas and converting them to agricultural use. In this scenario, I anticipate an increase in deforestation, resulting in a permanent conversion of forest land to non-forest land.

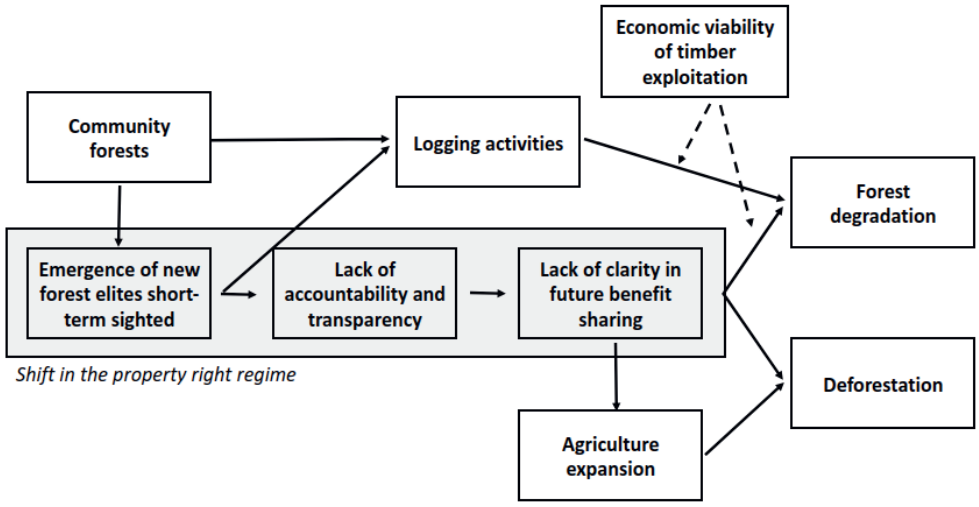


**Figure 2.2:** Theory of changes linking community forests implementation and deforestation rates

Consequently, I expect that when local political and economic elites hold significant power, they will manipulate decentralized forest management to their advantage. This manipulation is likely to result in increased forest degradation and potentially even deforestation, but only if it is economically viable for them to do so.

### 2.2.4 The study area

Community forests in Cameroon have been concentrated in the forested regions: Centre, East, Littoral, and South. As of 2010, these regions implemented 187 community forests (considering only those with finalized administrative agreements). The Anglophone regions (Southwest and Northwest) exhibited a different pattern, with only 6 and 3 community forests established, respectively. These regions have distinct institutional arrangements, characterized by strong traditional leadership structures with a degree of autonomy from the central government. This often mitigates conflicts with newly empowered elites, leading to a smoother transition in property rights regimes. Furthermore, historical marginalization of the Anglophone regions by the Central government culminated in the 2016 civil war located in the Anglophone regions, which displaced hundreds of thousands of civilians. Consequently, the theoretical framework outlined earlier may not be directly applicable in these regions. To ensure a focused analysis, I excluded them from

the study. Additionally, non-forested regions, irrelevant to forest conservation and deforestation research (comprising four community forests), were also excluded. Including these regions did not affect the consistency of the results presented in this paper.

Difficulties arose in assessing forest changes before and after 2013 due to changes in satellite data during that period (2013-2015). To address this challenge, the study focused on community forests established up to 2010. This timeframe allows for the observation of at least three years of deforestation data preceding the introduction of the new Landsat satellites.

Data on community forests were obtained from the Cameroonian Ministry of Forestry's online portal. A critical variable for this study is the community forest's implementation date, which coincides with the signing of the official convention with the state. This convention grants the community forest the right to exploit forest resources. Of the 604 community forests identified within the four regions of interest, only 398 possessed sufficient information regarding implementation dates. Appendix A1.2 depicts the geographical distribution of all 604 community forests across the four regions. The excluded units, lacking implementation date information, appear to be well distributed throughout the study area. This suggests that the phenomena under investigation might not differ significantly within those excluded forests.

## 2.3 Staggered difference-in-difference with matching design

### 2.3.1 Treatment and outcome variables

I consider the year of the creation of the community forests as the year when the treatment starts. The treatment is staggered between 1996 and 2010. Among the 398 community forests included in the analysis, 187 were created before 2010 and constitute the treated sample of units. Figure 2.3 shows the distribution of the creation of community forests among the community forests created before 2010. There are 211 community that were created after 2013. Those community forests are used in the control pool of never treated unit in the empirical design.

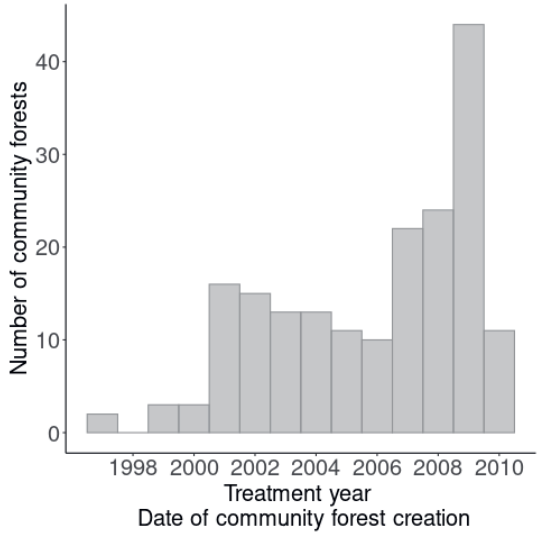


**Figure 2.3:** Temporal distribution of community forests implementation, the treatment under consideration.

Notes: The graphic illustrates the temporal distribution of community forests implementation. The implementation date which corresponds to the administrative date when the permit is deliver, corresponds to the treatment under consideration. The data come from the forestry ministry (MINFOR, 2021).

The unit of analysis is the community forest. I am interested in the impact of community forests on deforestation and forest degradation. Deforestation refers to the permanent change in forest cover from forested land to unforested land, typically representing a shift in land use from forest to agriculture. Forest degradation, on the other hand, is a non-permanent change in forest cover. After the forest has been cleared, it regrows, indicating that logging has occurred but without a permanent change in land use. Forest clearing is typically classified as forest degradation when the forest regrows within the next three years; otherwise, it is considered deforestation (Vancutsem et al., 2021). Both phenomena are significant because they negatively impact forest ecosystems, particularly biodiversity and carbon stock. Nevertheless, they indicate different human-nature interactions, suggesting different political economies at play. In cases where elites are short-sighted and it is economically viable to cut trees, I expect the creation of community forests to increase forest degradation as the elites are interested in selling timber. Patterns of deforestation, however, could be related to either investments by the newly arisen elites in new land uses or actions by excluded families who prefer to log and farm the land to secure a share of the economic benefits.

### 2.3.2 Empirical strategy

A simple comparison of the deforestation rates before and after the implementation of community forests would lead to bias in estimating the Average Treatment Effects on the Treated (ATT) (Blackman, 2013). In a case in which climate and economic factors drive deforestation and forest degradation. If such factors disappear at the exact moment of community forests' implementation, the reduction of deforestation and/or forest degradation would be misallocated to the implementation of community forests. Hence, the estimate will be biased.

The process of assigning community forest implementation may largely depend on access to financial resources, networks within the forestry ministry, and access to information. Community forests established in the early 2000s may, on average, differ from those implemented later. Appendix A1.3 presents descriptive statistics for community forests established before 2005, between 2005 and 2010, and after 2010. On average, community forests implemented in the late 1990s and early 2000s are closer to main roads and cities, more densely populated, and located farther from protected areas. Regions with stronger connections to areas of higher socio-economic activity and the capital city where the forest ministry is located, may have greater access to resources and information for implementing community forests. Consequently, a simple difference-in-difference analysis between implemented and yet-to-be-implemented community forests could lead to biased results due to differences in socio-economic connectivity.

Consequently, the conservation literature advises using matching methods combined with panel data to cope with that issue (Andam et al., 2008; Jones & Lewis, 2015). Therefore, I used a staggered difference-in-difference with a matching strategy to construct the control group (Imai et al., 2021), in which, for each year, each newly created community forests is compared with not yet implemented community forests.

For the matching strategy, I follow the practical guide given by Blackman (2013) to choose the best-observed covariates to match on and use: distance to main cities, capital, and port, elevation average, and variation, four lags of temperature, precipitation, population and four lags of deforestation rates. I use a broad set of matching techniques to constitute the matched control group. These techniques vary according to the treatment-to-control ratio, the replacement of control units, weighting, setting capillaries, and the order of selecting matches (Schleicher et al., 2020). Then, I assess the quality of the matching strategy according to three main criteria: covariate balances (using a criterion of 0.25 standard mean differences), the number of treated and control units retained (100% of treated units and a maximum of control units are considered as a good approach), and the consistency of the parallel trend assumption. Appendix A1.3 provides the list of the matching approaches and their assessment. The best technique is the

so-called *1 to 1 Mahalanobis matching*, the technique does not exclude any treated unit but 50% of the control units are discarded.

To identify the causal effect of the creation of community forests on conservation outcomes using a staggered difference-in-difference, there are two key identification assumptions. The most important is the conditional independence assumption. It states that all omitted variables are integrated into the matching strategy (Huntington-Klein, 2021). The assumption is strong and might not hold (Blackman et al., 2015). However, using a difference-in-difference strategy might mitigate concerns about biases in the estimation. The second identification assumption is the covariates balance assumption. The distribution of covariates should be balanced between the treated group and the matched control group. I use a standardized mean difference of covariates to assess the validity of such assumptions.

The quantities of interest are the change in deforestation rates and forest degradation between treated and matched control units between 0 to 5 years after implementation. It captures the middle-term effect of community forests on deforestation and forest degradation with non-parametric covariates adjustment. Formally, the quantity of interest is the average treatment effect of community forests' implementation among the treated (ATT, $\delta$):

$$\delta(F) = E\{Y_{i,t+F}(X_{it} = 1, X_{it-1} = 0) - Y_{i,t+F}(X_{it} = 0, X_{it-1} = 0)|X_{it} = 1, X_{it-1} = 0\}$$

with $F$ being the number of lead of interest, $Y_{i,t+F}(X_{it} = 1, X_{it-1} = 0)$ the potential outcome under the policy change and $Y_{i,t+F}(X_{it} = 0, X_{it-1} = 0)$ the potential outcome for the units who did not experience the policy. The difference-in-difference estimator is causally identified when the absence of spillover effects and the parallel trend assumptions hold.

Community forests can generate spatial spillover effects on deforestation and forest degradation in areas around the community forests. Community forests could decrease deforestation and forest degradation inside the border but increase it outside the borders. I assess such effect using the same strategy (matching method combined with difference-in-difference) but using the areas around 500m, 1km, and 3km from community forests.

### 2.3.3 Data

I match geographical, socio-economic data, and political variables to each community forest. Table 2.1 presents the averages and standard deviations of those characteristics for all community forests in Cameroon and the one included in the analysis. I use a variety of controls known to be essential factors explaining deforestation outcomes: demographic, geographic, socio-economic, and

political controls. Appendix A1.1 displays the main sources for each of these variables, the units and transformation used in the analysis. I use three main outcome variables, forest degradation and deforestation from Vancutsem et al. (2021) and a measure of forest loss combining both forest degradation and deforestation from Hansen et al. (2013).

As a demographic control, I measure population density from the grid population data to determine the population density in each subdivision. The following years are available: 1990, 1995, 2000, 2005, 2010, 2015, and 2020. Taking advantage of the monotonous and slow change of population density, I compute the value for the missing years, fitting a polynomial model of degree three (maximum degree available).

**Table 2.1:** Descriptive statistics of community forests

| | All CF | CF with creation date |
|---|---|---|
| **General information** | | |
| N | 604 | 398 |
| Cumulated surface (in 1000ha) | 1615 | 1041 |
| *In % of the national forest surface* | *8.2* | *5.3* |
| **Matching variables** | | |
| Population density (in hab/km) | 14.0 | 11.1 |
| | *(72.4)* | *(9.4)* |
| Temperature (maximum, in K) | 347.6 | 347.9 |
| | *(7.6)* | *(7.5)* |
| Temperature (minimum, in K) | 234.0 | 233.5 |
| | *(12.7)* | *(12.9)* |
| Precipitation (mm) | 1693.9 | 1681.5 |
| | *(264.6)* | *(248.3)* |
| Elevation (m) | 589.2 | 595.6 |
| | *(163.4)* | *(159.9)* |
| Slope | 16.6 | 16.6 |
| | *(18.1)* | *(19.0)* |
| Distance to main city (km) | 117.1 | 119.9 |
| | *(65.7)* | *(63.6)* |
| Distance to national road (km) | 33.1 | 33.8 |
| | *(36.5)* | *(35.8)* |
| Distance to departmental road (km) | 38.1 | 39.6 |
| | *(37.1)* | *(38.1)* |
| Distance to provincial road (km) | 37.5 | 36.7 |
| | *(36.3)* | *(36.0)* |
| Distance to protected area (km) | 67.5 | 78.5 |
| | *(67.3)* | *(74.5)* |
| Latitude | 3.9 | 3.9 |
| | *(1)* | *(1)* |
| Longitude | 12.9 | 12.9 |
| | *(1.4)* | *(1.4)* |
| High proportion of State-owned lands | 0.5 | 0.5 |
| | *(0.3)* | *(0.3)* |

*Notes:*
The table presents descriptive statistics for the full sample of community forests (all CF column) and the subset for which implementation dates are available (CF with creation date). For the general information, N is the number of community forests. The cumulated surface represents the total area the community forests cover in thousands of hectares and as a proportion of the national forest surface. Average values are displayed for all variables, with standard deviations in parentheses. The national territory is divided into the permanent and non-permanent forest estate. The proportion of State-owned lands represents the proportion of community forests located in subdivisions (equivalent to cantons) with at least 50% of the area covered by the permanent forest estate.

I use the annual precipitation average, annual minimum, and maximum temperature average (Hijmans et al., 2005), and elevation measures (average altitude and the variation of this altitude in each subdivision) for geographic controls (Farr et al., 2007).

I also control for socio-economic and political variables. As administrative data are not available, I use the distance between the main cities and the capital as proxies of political connectedness. I use the distance to the main port, the main national, provincial, and departmental roads to proxy economic connectedness. Requests for community forests might be more straightforward in places close to the political hubs. Also, as the wood is sold in the international market, the cost of the activity depends widely on transportation costs. Therefore the farthest from the port, the highest the cost of logging activities.

### 2.3.4 The matching quality

The covariate balance measures the quality of the matching strategy. Figure 2.4 displays covariate balances before and after matching using the one-to-one Mahalanobis distance measure. Before matching, not yet treated units (used as the control group) are, on average, more distant to protected areas and closer to national roads. Community forests used as treated units are also located on lands with higher temperatures and precipitation. After matching, most of the sources of imbalance are removed with an exception for the distance to protected areas where a standardized mean difference of 0.275 exists between treated and not yet treated units. I describe the potential effect of this difference in the discussion.

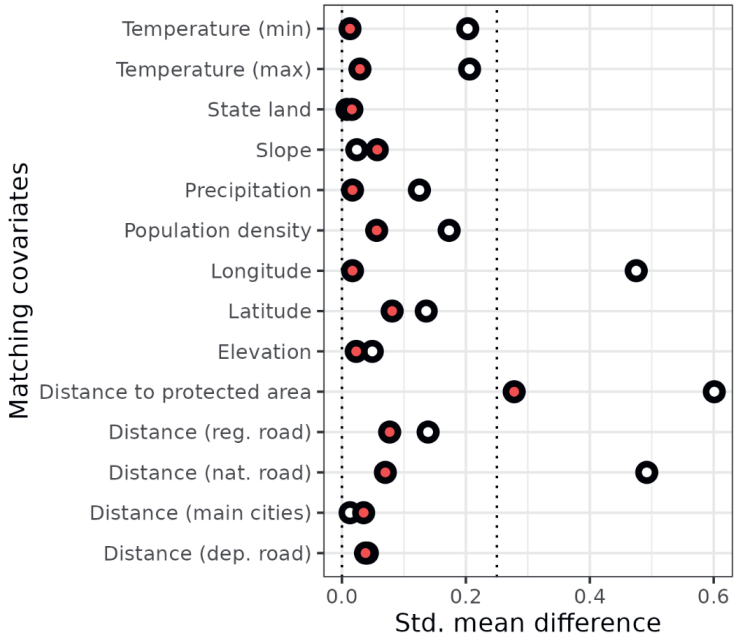


**Figure 2.4:** Covariate balances for the main matching strategy: 1 to 1 mahalanobis.

Notes: The graphic displays the covariate balances for the 1 to 1 mahalanobis strategy. The matching is done on the 5-year preceding the creation of community forests. Empty dots represent differences in covariates before matching while full dots represent differences after matching.

To assess the plausibility of the parallel trend assumption, I display the lagged standard difference of the outcome variable and conduct placebo tests. Overall, the tests are consistent with the parallel trend assumption, as depicted in the the result section.

## 2.4 Community forests, forest degradation and deforestation

### 2.4.1 Main results

I test whether the implementation of community forests affects two main ecological outcomes: forest degradation and deforestation rates. To do so, I used a difference-in-difference with 1 to 1 mahalanobis matching strategy. Panel A and B in figure 2.5 display the average treatment effect on the treated of the creation of community forests on deforestation rates using the two main standard sources in the literature (Appendix A1.4 reports the results in table format). The effects are estimated from 4 years before the implementation to 5 years after the implementation. Overall, the results using tropical forest moisture datasets (Vancutsem et al., 2021) show no differences in deforestation after the implementation of community forests. Appendix A2.1

display the results of a pooled estimate from those years and results are not statistically different from 0 with an estimate of 0.01% higher deforestation rates. When using the Hansen data (Hansen et al., 2013), a dataset commonly used to assess deforestation rates in tropical countries (Mihaylova, 2023; Larcom et al., 2016), the patterns are slightly different. The analysis shows a small statistically significant increase in deforestation rates of 0.05% in treated units compared to not-yet treated units after 2 years of implementation, with the other effect sizes being positive but not statistically significant from 0. The differences can be explained by three reasons. First, Hansen data uses deforestation threshold of 30% at baseline. Second, deforestation rates from Hansen data is provided relative to the baseline year 2000. Finally, Hansen data uses additional assumptions to calculate annual deforestation rates, (i.e. a pixel deforested a given year is considered as deforested even if there is forest regrowth afterwards).

The analysis focusing on forest degradation depicted in the panel C in figure 2.5 reveals similar findings. After 3 to 5 years the creation of community forests, forest degradation rates increase up to 0.2%. However, none of the point estimate are statistically different from 0. Appendix A2.1 displays the pooled estimation and reveals an increase of 0.12% forest degradation rates after the creation of community forests but the result remains statistically insignificant from 0.

I test whether the results are robust when accounting for treatment anticipation. To do so, I test the robustness of the results using two alternative specifications displayed in Appendix A2.2. The first specification assesses whether there is any anticipation of the treatment which could explain the null finding in the main specification. To do so, I used another treatment variable, the year in which communities send the administrative request for the implementation of the community forest. The results underline an increasing trend in forest degradation among treated units although none of those results are statistically significant.

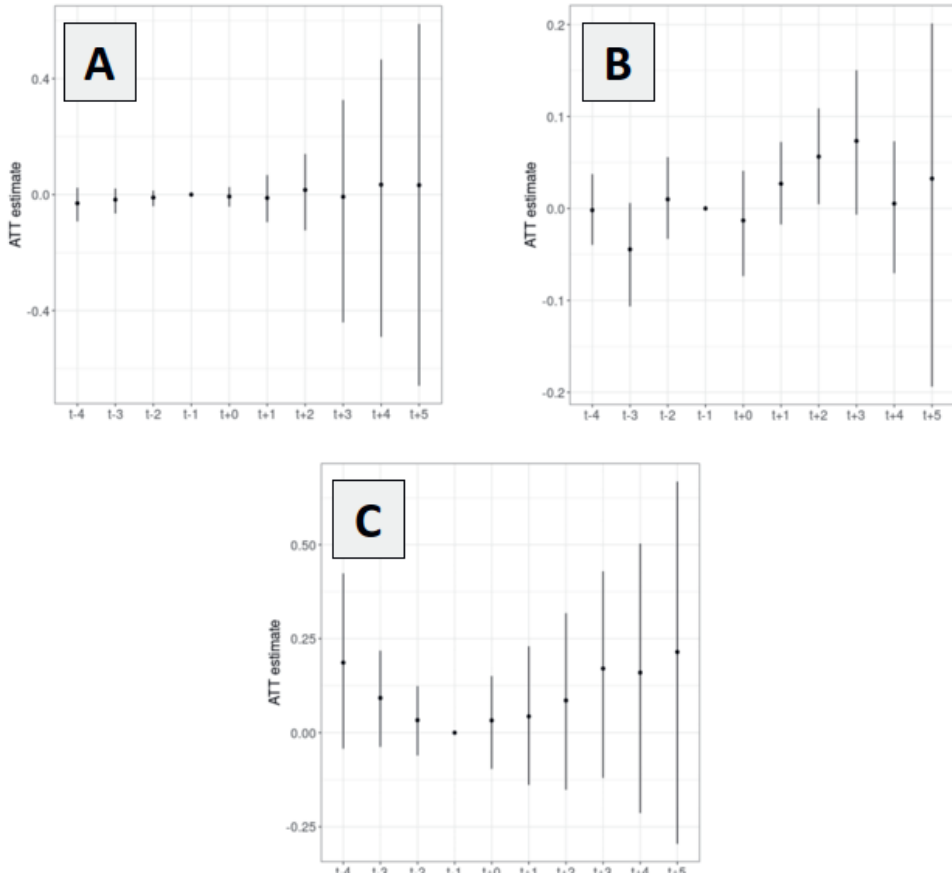


**Figure 2.5: (A)** ATT of the impact of the creation of community forests on **deforestation rates** (vancutsem data) from 4 years before implementation to 5 years after, **(B)** ATT of the impact of the creation of community forests on **deforestation rates** (hansen data) from 4 years before implementation to 5 years after, **(C)** ATT of the impact of the creation of community forests on **forest degradation** from 4 years before implementation to 5 years after

### 2.4.2 Placebo test

The validity of the identification strategy depends on the fact that observations with the same treatment status have similar outcome variables trends, the so-called parallel trend assumption. If communities that receive treatment early on present a declining deforestation trend compared to of that communities that receive treatment later on, one could expect that the treatment effect would capture this even in the absence of a titling effect. I test whether such trends are similar for deforestation and forest degradation, illustrated by figure 2.5. The test is undertaken between community forests implemented early on and the ones implemented later for four years before the implementation of the community forests. As figure 2.5 suggests, there is no evidence of the presence of statistically significant differences between deforestation trends in treated and not yet treated units. When using forest degradation, the standardized mean differences between control and treated units decrease from 0.2 four years before implementation to 0.03 2 years before the implementation. However, none of these differences are statistically significant at the 5% level. For the robustness strategy, I display the placebo test in the appendix A2.2.

### 2.4.3 Spillover effects

The impact of community forests on deforestation is difficult to assess because of the spatial spillover. The creation of a community forests could potentially affect how forests users interact with the forest at the buffer. Forests users could choose to stop cutting trees at the buffer to cut trees inside the community forests where it has been legalized. On the other hand, forest users that did not access to the management of the community forests could choose to deport the extraction of timber to the zone at the buffer of the community forests. I assess the potential for spatial spillover using a two ways fixed effects models and comparing the trends of deforestation rates at the buffer compared to the trends inside the community forests at the creation of the community forests. Table 2.2 presents the results. The implementation of community forests did not affect deforestation rates within 500m, 1km, or 3km buffers around these areas. These findings are consistent with the absence of spatial spillover effects.

**Table 2.2:** Spatial spillover analysis. Two ways fixed effects models of the impact of a creation of community forests (CF) on the differences in deforestation rates between the zone inside CF and the buffer.

| | Deforestation: CF vs. buffer | | |
|---|---|---|---|
| | 500m | 1km | 3km |
| Community forests implementation | −0.001 | −0.003 | −0.005 |
| | (0.010) | (0.010) | (0.010) |
| Adj. $R^2$ | 0.323 | 0.329 | 0.332 |
| Num. obs. | 11976 | 11964 | 11928 |

*Notes:*
The table assesses the potential for spatial spillover. It presents two ways fixed effects models of the relationships between the creation of community forests on the differences in deforestation rates between the zone inside community forests and the buffer: 500m, 1km and 3km. It uses the Hansen data. Positive values implies that the creation of community forests increases deforestation inside the community forests zone compare to the deforestation trends in the buffer. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

## 2.5 Heterogeneous effect

### 2.5.1 Regional differences in the effect of community forests

The literature emphasizes critical moderating factors of the effect of community forests on deforestation and forest degradation such as the geographical locations (regions), the legal status of community forests (commercial vs. non commercial community forests) (Rasolofoson et al., 2015), and proximity to protected areas (Loveridge et al., 2021). I explore whether there is any heterogeneity in the effect of community forests based on those factors. Figure 2.6 in the analysis display the main result for geographical locations and the other heterogeneous results are displayed in Appendix A3. When focusing on deforestation, the results suggest no discernible pattern in the East and in the Center. In the Littoral, the effect sizes are high with a point estimate of 0.2% after two years of implementation to 0.7% after 5 years of implementation. The low number of community forests (less than 10) renders the estimate noisy and therefore it does not reach statistically significant level. In the South, deforestation rates increased slightly reaching statistically significant levels of 10% and 5% for the first and second year after the creation of community forests. The effect sizes remain small compared to the trends in the Littoral. When looking at forest degradation, it is noticeable that in the South region, community forests seem to lead to a significant increase in forest degradation from 2 to 5 years after implementation with an effect size of around 1% increase when comparing to not-yet treated units reaching statistical significance level of 5 to 1%. On the other hand, in the other regions included in the analysis, I do not find any impact of the creation of community forests on forest cover. As already discussed previously, forest degradation means that the cutting of the forests was followed by forests regrowth. It suggests that such forest degradation was not induced by agriculture practices but rather by logging activities. I further dig into the mechanisms in the following subsection.

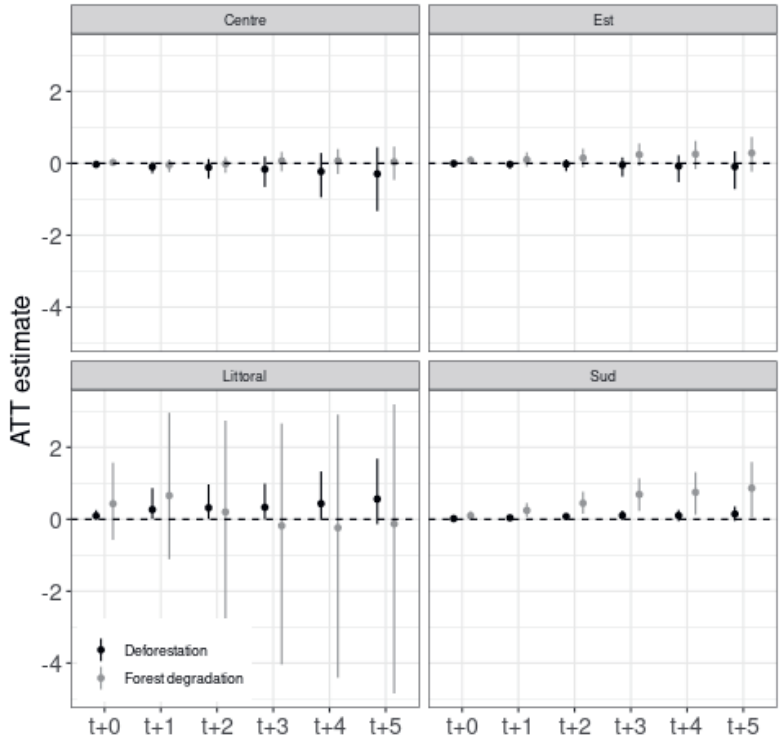


**Figure 2.6:** Average treatment effect on the treated of the implementation of community forests on primary forest loss, deforestation, and forest degradation

Notes: The figures displays the average treatment effect on the treated of the implementation of community forests on deforestation and forest degradation from 0 to 5 years after implementation in the four regions where the analysis takes place. Dots represent average estimate and bars bootstrap 95% confidence interval. Black colour represents the effect for deforestation and grey colour for forest degradation.

When looking at the moderated impact of commercial community forests compared to non-commercial community forests, I find that effect sizes are close to 0 and not statistically significant results unlike previous studies (Rasolofoson et al., 2015). Finally, community forests in proximity to protected areas have often been targeted by NGOs as conservation priorities to create buffer zones around biodiversity hotpot (the protected area). If those community forests concentrate conservation and NGOs efforts, they might experience a different treatment effect. However, in this paper, I don't find any evidence suggesting that community forests have different ecological outcomes around protected areas compared to community forests further away.

### 2.5.2 The profitability of forests logging as a potential driver

In this section, I explore why community forests lead to increased forest degradation in the Southern region but not in others, excluding the Littoral region due to its low number (8) of community forests. The Central region is unlikely to have experienced increased forest degradation or deforestation due to its geographic characteristics. The forests in this region have lower timber values and it is more densely populated than the South and East (Piabuo, 2022). Additionally, less than 70% of the Central region is covered by forest, compared to 80% to 90% in the South and East. This, combined with high population density and low enforcement capacity, makes the new institutional arrangements around community forests less effective. Consequently, pressure on forest resources under both community and non-community forest regimes might have led to similar levels of forest degradation and deforestation.

The differences in forest degradation rates between the East and South are more intriguing. I propose three complementary explanations for these differences, with the results detailed in Appendix D.

Firstly, increased forest degradation in the Southern region may be attributed to higher industrial logging activities. I proxy the phenomena with the extent of unusual high rates of forest degradation in a given year and descriptive statistics are reported in Appendix A4.2. In the South, community forests are significantly more likely to experience high rates of forest degradation, with a nearly 10% difference. This contrast is only observed in the South. In the East, community forests are less likely to experience such phenomena compared to areas where community forests have not yet been created, also by about 10%. This quantitative evidence is supported by case studies from the southern region of Cameroon, which document prevalent industrial logging activities (Ezzine de Blas et al., 2009; Piabuo et al., 2018).

Secondly, leaders of community forests may be more inclined to pursue private gains, successfully arranging with logging companies for the exploitation of community forests, as documented in multiple comparative case studies in the area (Oyono et al., 2012). To evaluate this potential explanation, I analyze corruption perception in the South and in the East region using Afrobarometer data, and the rates of commercial versus non-commercial community forest creation with descriptive statistics reported in Appendix A4.3. As Table 2.3 shows, in the South, most professions related to the forest sector are perceived as significantly more corrupt than in the East. For instance, 50% of respondents in the South considered most businessmen to be corrupt, compared to 27% in the East. It is also the case for bureaucrats and NGOs, although to a lesser extent. Regarding status, in commercial community forests, locally known as common initiative groups, members can directly benefit from exploitation, which facilitates the use of forest revenues

for private gains. In the South, there was only one community forest until 2004. From 2004 to 2010, the number of commercial community forests consistently exceeded non-commercial ones, peaking in 2007 when approximately 70% of community forests were commercial. After 2010, the proportion of commercial and non-commercial community forests was similar. In contrast, in the East, non-commercial community forests consistently outnumbered commercial ones, with proportions around 55% to 60%.

**Table 2.3:** Attitudes towards different professions in the South and the East region of Cammeroon using Afrobarometer wave 9 (2022)

| | East | South | Diff. |
|---|---|---|---|
| Number of observations | 56 | 40 | - |
| *Most or all of the following figures are corrupt (in %)* | | | |
| Business men | 27 | 52 | +25% |
| MPs | 38 | 50 | +12% |
| Judges | 55 | 62 | +7% |
| Bureaucrats | 57 | 62 | +5% |
| NGOs | 30 | 35 | +5% |
| Municipal councilors | 38 | 40 | +2% |
| Chiefs | 27 | 22 | −5% |

*Notes:*
This table presents the average perception of multiple professions by residents from the East and the South of Cameroon using Afrobarometer Wave 9 (2022). The question was, 'How many *of the following profession* do you think are involved in corruption?' I averaged the proportion of respondents answering 'most of them' or 'all of them.'

Finally, the commercial benefits from community forests are likely higher in the South than in the East. To investigate this pattern, I examine two characteristics associated with lower profitability. The first characteristic is the size of community forests, with results reported in appendix A4.6. Smaller community forests are less viable for effective logging and sourcing sufficient timber resources for scalable operations. In 2010, community forests in the South averaged 2400 hectares, compared to 3200 hectares in the East, which does not provide a substantial explanation. However, the second characteristic—the history of logging activity within community forests—is more telling. I assess this by examining industrial logging permits in the area years before the creation of community forests. Interestingly, community forests in the East had experienced heavy logging in the years prior to their creation, suggesting that the most valuable trees had already been extracted. This is corroborated by the creation of new logging roads prior to the establishment of community forests, with results displayed in appendix

A4.5. No new roads were found in the South, whereas numerous roads were created in the East before the creation of community forests.

Overall, the increased forest degradation in the South may have been driven by higher industrial logging activities, fueled by the short-term gain preferences of rising local elites (Ezzine de Blas et al., 2009; Oyono et al., 2005) and a context of higher economic profitability of the community forests (Nuesiri, 2015).

## 2.6 Conclusion

In 1994, the Cameroonian government initiated in a forest decentralization reform allowing communities to govern small patches of forests and legalize logging activities. Such a reform did not take into account the local institutions and induce an abrupt shift in the property right regimes leading to higher tenure insecurity. This paper contributes to the literature on collective property right regime by highlighting the potential negative effect when local institutions are not taken into account. The reform induces the rise of new institutions where a forestry elites, not accountable to the local population, could extract private revenues from the forests, especially when strong ties with logging companies were developed. In this paper, I tested formally such an argument by determining the effect of the creation of community forests on forest conservation in the main forested regions. Using a staggered difference-in-difference using matching method, I found that the reform did not induce higher forest conservation benefits. If anything, it has led to higher forest degradation, especially in the Southern region where industrial logging activities were found to be unusually high.

The empirical strategy identifies the Average Treatment Effect on the Treated (ATT) for community forests with known implementation dates prior to 2010. However, the external validity of these results remains uncertain. Table 2.1 presents the characteristics of community forests with and without available information, showing overall similarity. Nevertheless, forests established after 2010 are, on average, more remote and less connected to markets and political centers. Consequently, the results likely represent general deforestation trends for community forests implemented in Cameroon before 2010 but may not accurately reflect the impact on forests established after that date.

# Appendix A: Supplementary Materials

## A1 Details on the main empirical strategy

### A1.1 Data sources

**Table 2.4:** Data, sources and units

| Variables | Source | Units | Transformation |
|---|---|---|---|
| *Outcome variables* | | | |
| Community forests requests | MINFOR & WRI (2020) | % | |
| Deforestation rates | Hansen et al. (2013) | % | |
| Forest degradation | Vancutsem et al. (2021) | % | |
| *Control variables* | | | |
| Forest cover | Hansen et al. (2013) | % | |
| Population density | (CIESIN) | $N/km^2$ | |
| Precipitation | Hijmans et al. (2005) | mm | |
| Temperature (min) | Hijmans et al. (2005) | K | |
| Temperature (max) | Hijmans et al. (2005) | K | |
| Public/private owned forests | Hansen et al. (2013) | m | log |
| Land pressure | Author | 0/1 | |
| Subdivisional area | Hansen et al. (2013) | m | log |
| Elevation | Farr et al. (2007) | m | log |
| Distance to capital | Author | m | log |
| Distance to main cities | Author | m | log |
| Distance to roads | Author | m | log |

*Notes:*
The table presents the main variables used in the main empirical strategy (column 1), where they have been downloaded (column 2), the measurement unit (column 3), and whether any additional transformation was used.

### A1.2 Map of community forests location

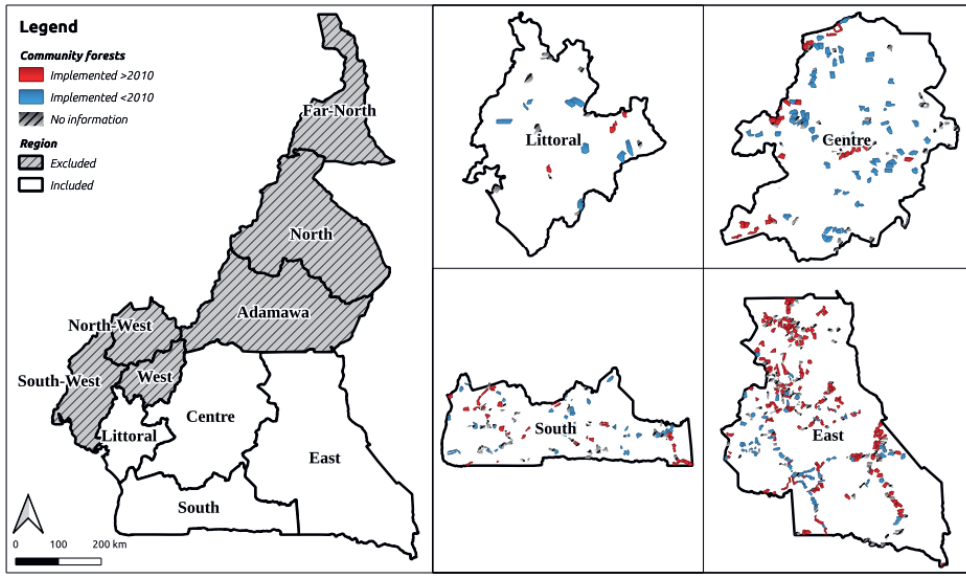


**Figure 2.7:** Map of the regions included and excluded from the analysis and location of community forests.

Notes: The maps shows the region included in the analysis. For each region, it also displays the community forests included in the analysis (implemented before 2010) and the community forests whose implementation happens after 2010 included in the control group.

### A1.3 Descriptive statistics of the community forests by the implementation period

**Table 2.5:** Descriptive statistics of the community forests included in the analysis by period of implementation.

| | Implementation date | | |
|---|---|---|---|
| | 1994-2004 | 2005-2010 | After 2010 |
| Observation | 65 | 122 | 211 |
| Population density (in hab/km$^2$) | 12.0 | 10.6 | 8.8 |
| | (13.5) | (10.7) | (5.1) |
| Temperature (maximum, in K) | 346.2 | 345 | 347 |
| | (8.5) | (7.7) | (6.7) |
| Temperature (minimum, in K) | 235.9 | 231 | 230 |
| | (15.2) | (11.4) | (13.4) |
| Precipitation (mm) | 1733.1 | 1695 | 1719 |
| | (309.7) | (201) | (200) |
| Elevation (m) | 567.6 | 604 | 599 |
| | (192.3) | (150) | (154) |
| Slope | 19.2 | 15.7 | 16.4 |
| | (20.6) | (20.1) | (17.9) |
| Distance to the main city (km) | 120.5 | 120 | 120 |
| | (45.6) | (60.8) | (69.8) |
| Distance to national road (km) | 27.7 | 33.6 | 35.8 |
| | (29.1) | (32) | (39.4) |
| Distance to departmental road (km) | 39.6 | 38.2 | 40.4 |
| | (34.6) | (41.5) | (37.2) |
| Distance to provincial road (km) | 28.5 | 29.5 | 43.3 |
| | (28.2) | (25.3) | (41.7) |
| Distance to protected areas (km) | 165.2 | 78.2 | 52 |
| | (101.9) | (68.9) | (39.5) |
| Latitude | 4.1 | 3.8 | 4 |
| | (0.9) | (0.9) | (1.1) |
| Longitude | 12.2 | 12.8 | 13.3 |
| | (1.3) | (1.4) | (1.4) |
| High proportion of State owned lands | 0.2 | 0.2 | 0.2 |
| | (0.4) | (0.4) | (0.4) |

*Notes:*
Values represent the average for the community forests implemented between 1994 and 2004 (column 1), 2005 and 2010 (column 2), and after 2010 (column 3). In parenthesis, the standard deviation is displayed. For the time variants variable (population, temperature, precipitation, and high proportion of State owned lands), values for the year 2000 are used.

## A1.4 Matching strategies

| Matching technique | | Parallel trends | | | | Covariate balances | | | | | | Control units used | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Refinement** | **N match** | **T – 4** | **T – 3** | **T – 2** | **T – 1** | **min_covbal** | **Q1_covbal** | **Q2_covbal** | **mean_covbal** | **Q3_covbal** | **max_covbal** | **min_w** | **Q1_w** | **Q2_w** | **Q3_w** | **max_w** | **mean_w** |
| **No matching** | - | 0.306 | 0.301 | 0.3 | 0.299 | -0.492 | -0.139 | -0.011 | -0.007 | 0.171 | 0.601 | 0.006 | 0.127 | 0.813 | 0.813 | 0.813 | 0.521 |
| **Mahalanobis** | **1** | 0.023 | 0.016 | 0.012 | 0.013 | -0.041 | 0.011 | 0.035 | 0.047 | 0.07 | 0.278 | 0 | 0 | 0 | 1 | 10 | 0.521 |
| **Mahalanobis** | **5** | 0.059 | 0.05 | 0.046 | 0.044 | -0.236 | 0.003 | 0.03 | 0.038 | 0.092 | 0.359 | 0 | 0 | 0.2 | 0.8 | 4.8 | 0.521 |
| **Mahalanobis** | **10** | 0.045 | 0.038 | 0.035 | 0.032 | -0.428 | -0.088 | 0.032 | 0.034 | 0.188 | 0.382 | 0 | 0.1 | 0.3 | 0.8 | 4.4 | 0.521 |
| **Mahalanobis** | **15** | 0.04 | 0.033 | 0.03 | 0.028 | -0.55 | -0.107 | 0.035 | 0.029 | 0.212 | 0.388 | 0 | 0.067 | 0.333 | 0.867 | 3.267 | 0.521 |
| **Mahalanobis** | **20** | 0.04 | 0.033 | 0.03 | 0.028 | -0.618 | -0.127 | 0.032 | 0.024 | 0.223 | 0.391 | 0 | 0.1 | 0.3 | 0.8 | 2.8 | 0.521 |
| **Propensity score** | **1** | 0.125 | 0.129 | 0.13 | 0.13 | -0.166 | -0.099 | -0.01 | -0.024 | 0.064 | 0.13 | 0 | 0 | 0 | 1 | 16 | 0.521 |
| **Propensity score** | **5** | 0.13 | 0.135 | 0.133 | 0.129 | -0.207 | -0.058 | -0.02 | 0.001 | 0.072 | 0.284 | 0 | 0 | 0.2 | 0.6 | 7.4 | 0.521 |
| **Propensity score** | **10** | 0.137 | 0.139 | 0.139 | 0.136 | -0.212 | -0.086 | -0.051 | -0.005 | 0.064 | 0.347 | 0 | 0 | 0.2 | 0.7 | 4.9 | 0.521 |
| **Propensity score** | **15** | 0.091 | 0.091 | 0.091 | 0.087 | -0.215 | -0.067 | -0.035 | -0.004 | 0.068 | 0.379 | 0 | 0.067 | 0.267 | 0.667 | 3.867 | 0.521 |
| **Propensity score** | **20** | 0.044 | 0.044 | 0.043 | 0.039 | -0.232 | -0.073 | -0.035 | -0.007 | 0.04 | 0.413 | 0 | 0.05 | 0.3 | 0.675 | 3.55 | 0.521 |
| **Covariate balance propensity score** | **1** | 0.176 | 0.177 | 0.181 | 0.183 | -0.239 | -0.107 | -0.059 | -0.028 | 0.045 | 0.183 | 0 | 0 | 0 | 1 | 20 | 0.521 |
| **Covariate balance propensity score** | **5** | 0.252 | 0.251 | 0.25 | 0.248 | -0.194 | -0.109 | -0.039 | -0.011 | 0.034 | 0.296 | 0 | 0 | 0.2 | 0.6 | 6 | 0.521 |
| **Covariate balance propensity score** | **10** | 0.173 | 0.176 | 0.175 | 0.172 | -0.205 | -0.06 | -0.022 | 0.001 | 0.031 | 0.352 | 0 | 0 | 0.3 | 0.6 | 5.3 | 0.521 |
| **Covariate balance propensity score** | **15** | 0.136 | 0.136 | 0.135 | 0.132 | -0.213 | -0.06 | -0.04 | -0.006 | 0.056 | 0.396 | 0 | 0.067 | 0.267 | 0.6 | 4.267 | 0.521 |
| **Covariate balance propensity score** | **20** | 0.095 | 0.094 | 0.094 | 0.091 | -0.215 | -0.077 | -0.033 | -0.01 | 0.043 | 0.427 | 0 | 0.05 | 0.3 | 0.65 | 3.95 | 0.521 |
| **Propensity score weighting** | - | 0.25 | 0.251 | 0.25 | 0.247 | -0.243 | -0.091 | 0.002 | 0.003 | 0.074 | 0.303 | 0 | 0.095 | 0.258 | 0.566 | 9.485 | 0.521 |
| **Covariate balance propensity score weighting** | - | 0.213 | 0.213 | 0.211 | 0.208 | -0.195 | -0.054 | -0.018 | 0.01 | 0.097 | 0.311 | 0 | 0.082 | 0.21 | 0.633 | 9.44 | 0.521 |

**Figure 2.8:** Quality of the matching strategies.

Notes: The table summarises the main matching strategies developed. The first two columns show the matching technique used: the refinement methods and the match set size. All match set between 1 and 20 were used. For simplicity, the table displays only match sets of size 1, 5, 10, 15, and 20. The parallel trends column display placebo tests of the different-in-means at t-4, t-3, t-2, and t-1 between treated units and not yet treated units using primary forests loss as outcome variable. The covariates balances columns represent the summary statistics of the difference-in-means for all covariates used in the empirical strategy between treated and not-yet treated units. The last columns show the proportion of control units used for the analysis. Based on the three set of indicators - parallel trends, covariates balances, and proportion of control units kept - the matching technique was chosen. 1 to 1 Mahalanobis optimises those criteria.

### A1.5 Main results

**Table 2.6:** Average treatment effect on the treated of the creation of community forests on forest degradation and deforestation.

| | Degradation | Deforestation (1) | Deforestation (2) |
|---|---|---|---|
| t+0 | 0.033 | −0.007 | 0.004 |
| | (0.061) | (0.018) | (0.018) |
| t+1 | 0.043 | −0.012 | 0.014 |
| | (0.090) | (0.042) | (0.022) |
| t+2 | 0.086 | 0.016 | 0.039 |
| | (0.115) | (0.068) | (0.029) |
| t+3 | 0.171 | −0.008 | 0.049 |
| | (0.141) | (0.198) | (0.042) |
| t+4 | 0.160 | 0.034 | 0.013 |
| | (0.188) | (0.240) | (0.036) |
| t+5 | 0.215 | 0.032 | 0.049 |
| | (0.255) | (0.321) | (0.079) |

*Notes:*
The table displays the average treatment effect on the treated of the creation of community forests on forest degradation and deforestation using Vancutsem data (Vancutsem et al., 2021) in column 1 and 2 and Hansen data (Hansen et al., 2013) in column 3. Estimation includes 0 to 5 years after the implementation of community forests. Bootstrap standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### A1.6 Heterogeneous analysis by region

*Forest degradation*

**Table 2.7:** Average treatment effect on the treated of the creation of community forests on forest degradation by region.

| | Center | East | Littoral | South |
|---|---|---|---|---|
| t+0 | 0.024 | 0.078 | 0.430 | $0.098^{+}$ |
| | (0.043) | (0.052) | (0.594) | (0.057) |
| t+1 | −0.046 | 0.098 | 0.656 | $0.244^{*}$ |
| | (0.086) | (0.101) | (1.102) | (0.100) |
| t+2 | −0.016 | 0.144 | 0.199 | $0.444^{**}$ |
| | (0.111) | (0.129) | (1.528) | (0.164) |
| t+3 | 0.064 | 0.240 | −0.183 | $0.690^{**}$ |
| | (0.134) | (0.152) | (1.934) | (0.242) |
| t+4 | 0.063 | 0.254 | −0.239 | $0.748^{*}$ |
| | (0.176) | (0.188) | (2.105) | (0.301) |
| t+5 | 0.038 | 0.283 | −0.129 | $0.865^{*}$ |
| | (0.246) | (0.241) | (2.285) | (0.377) |

*Notes:*
The table displays the average treatment effect on the treated of the creation of community forests on forest degradation for each region in the analysis. Estimation includes 0 to 5 years after the implementation of community forests. Bootstrap standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

*Deforestation*

**Table 2.8:** Average treatment effect on the treated of the creation of community forests on deforestation by region.

| | Center | East | Littoral | South |
|---|---|---|---|---|
| t+0 | −0.031 | −0.007 | 0.093 | 0.017 |
| | (0.035) | (0.022) | (0.064) | (0.013) |
| t+1 | −0.101 | −0.029 | 0.268 | $0.039^{+}$ |
| | (0.078) | (0.051) | (0.225) | (0.022) |
| t+2 | −0.114 | −0.023 | 0.317 | $0.075^{*}$ |
| | (0.132) | (0.083) | (0.250) | (0.035) |
| t+3 | −0.168 | −0.046 | 0.330 | 0.104 |
| | (0.213) | (0.134) | (0.255) | (0.065) |
| t+4 | −0.230 | −0.077 | 0.432 | 0.101 |
| | (0.304) | (0.189) | (0.342) | (0.077) |
| t+5 | −0.296 | −0.094 | 0.560 | 0.145 |
| | (0.432) | (0.270) | (0.457) | (0.098) |

*Notes:*
The table displays the average treatment effect on the treated of the creation of community forests on deforestation for each region in the analysis. Estimation includes 0 to 5 years after the implementation of community forests. Bootstrap standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

## A2 Robustness check

### A2.1 Pooled estimate

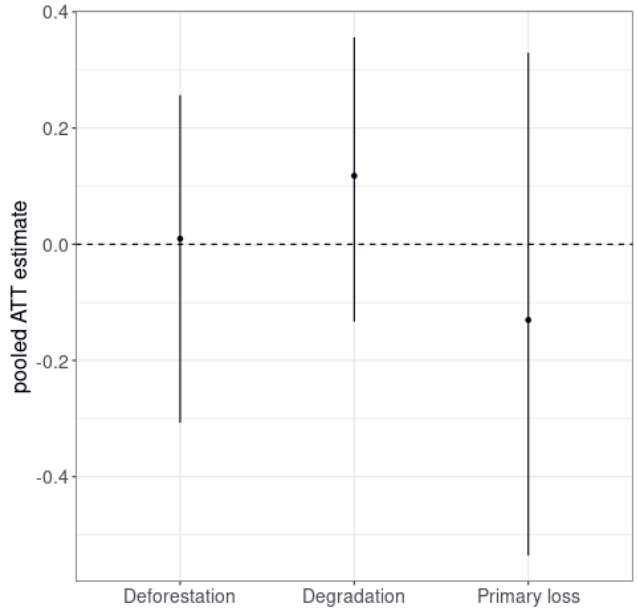


**Figure 2.9:** Pooled results of the community forests implementation on deforestation, forest degradation and primary forest loss from 0 to 5 years after implementation

### A2.2 Alternative treatment variable

*Pooled results*

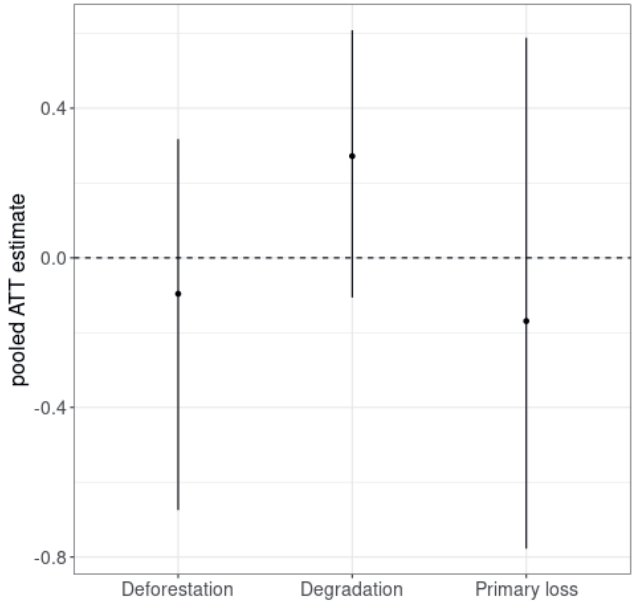


**Figure 2.10:** Average treatment on the treated of the implementation of community forests on primary forest loss, deforestation, and forest degradation from 0 to 5 years after implementation using an alternative treatment variable.

Notes: The figure shows the average treatment on the treated of the implementation of community forests on primary forest loss, deforestation, and forest degradation from 0 to 5 years after implementation using an alternative treatment variable. The alternative treatment variable is the administrative request. Propensity score weighting is the matching technique. Dots represent average estimate and bars bootstrap 95% confidence interval.

*Event study results*

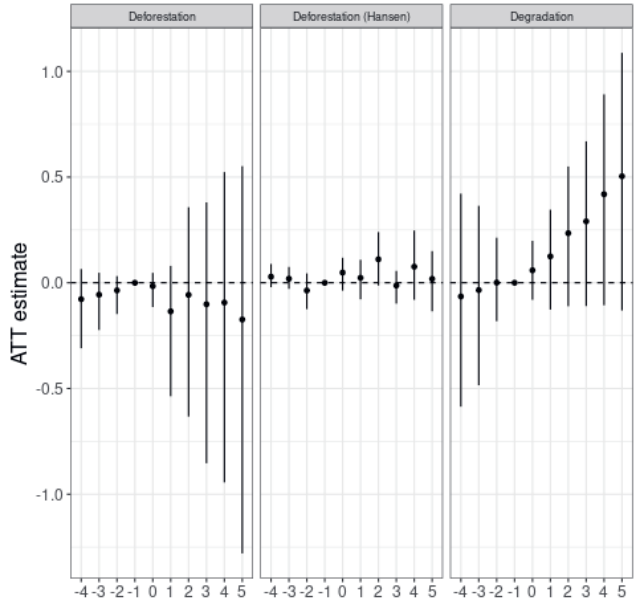


**Figure 2.11:** Average treatment on the treated of the implementation of community forests on forest degradation, and deforestation using Vancutsem data and Hansen data, from 4 years before to 5 years after the first administrative request.

Notes: The figure shows theaverage treatment on the treated of the implementation of community forests on forest degradation, and deforestation using Vancutsem data and Hansen data, from 4 years before the first administrative request to 5 years after the first administrative request as the treatment variable and propensity score weighting as the matching technique. Dots represent average estimate and bars bootstrap 95% confidence interval.

## A3 Heterogeneous effect

### A3.1 Protected area

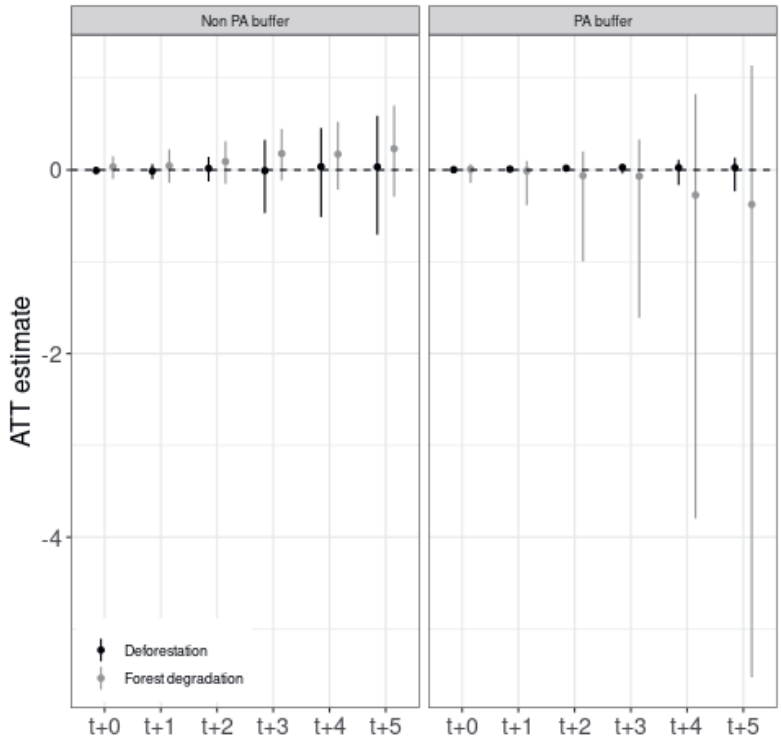


**Figure 2.12:** Average treatment on the treated of the implementation of community forests on Primary forest loss, deforestation, and forest degradation from 0 to 5 years after implementation in units at a 5-km buffer of protected areas and units further away. Dots represent average estimates and bars bootstrap 95% confidence interval.

### A3.2 Type of community forests

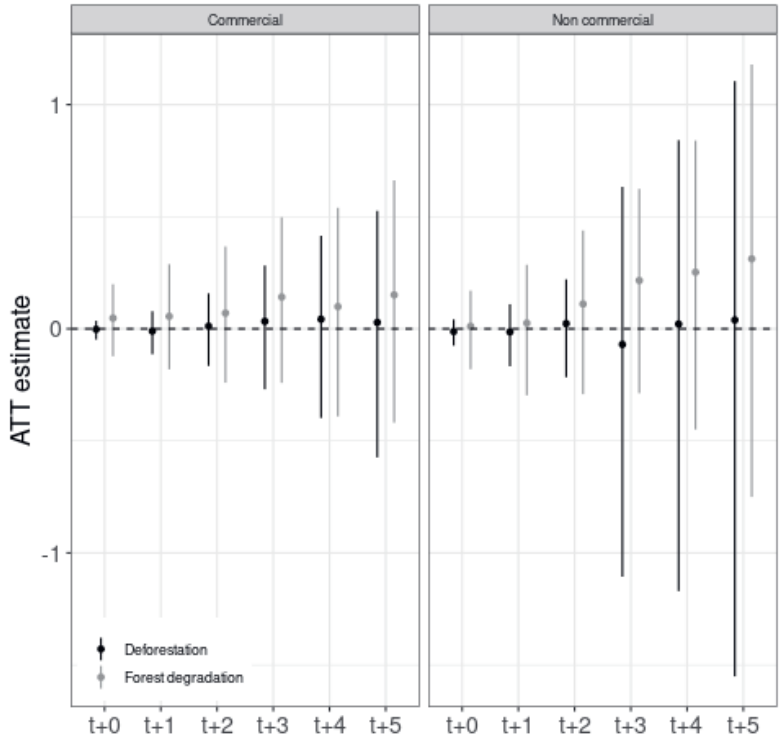


**Figure 2.13:** Average treatment on the treated of the implementation of community forests on Primary forest loss, deforestation, and forest degradation from 0 to 5 years after implementation in commercial and non-commercial legal types. Dots represent average estimates and bars bootstrap 95% confidence interval.

## A4 Mechanisms explaining higher forest degradation in the South

### A4.1 Number of community forests in each region by year

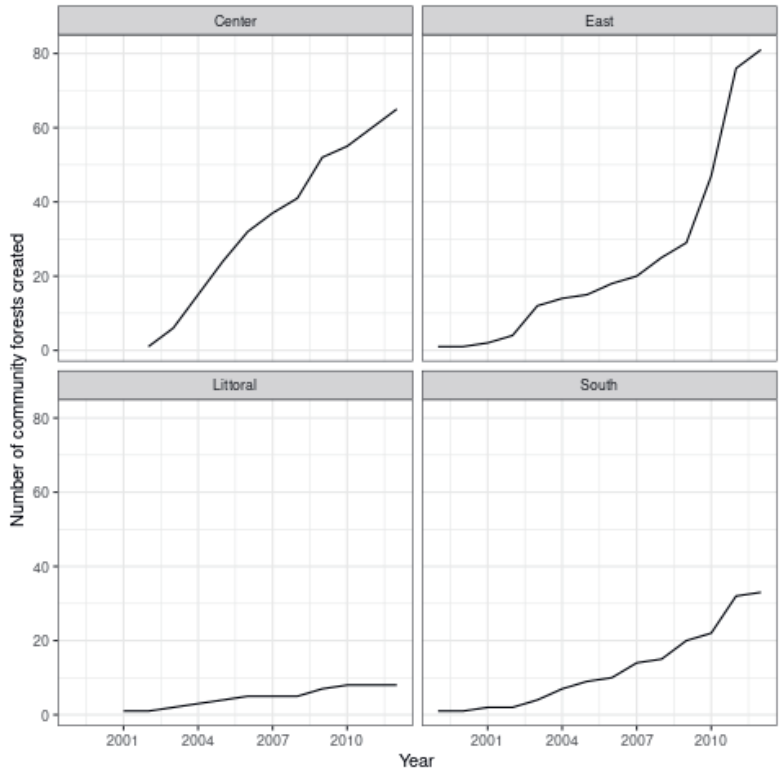


**Figure 2.14:** Number of community forests created by region

### A4.2 Rates of unusual high annual forest degradation

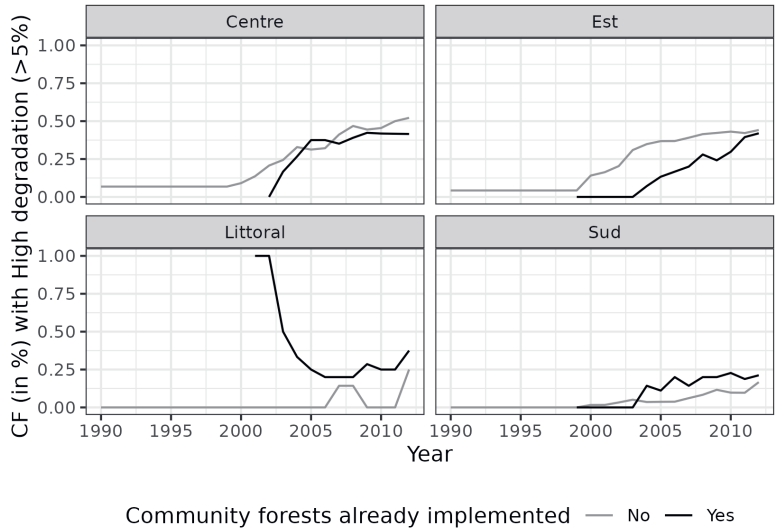


**Figure 2.15:** Proportion of community forests and not yet created community forests (used as control) with unusually high level of forest degradation for each year and region. Threshold is put at 5%, the third quartile in the dataset. CF in the Y-axis refers to community forests.

### A4.3 Number of commercial and non-commercial community forests created

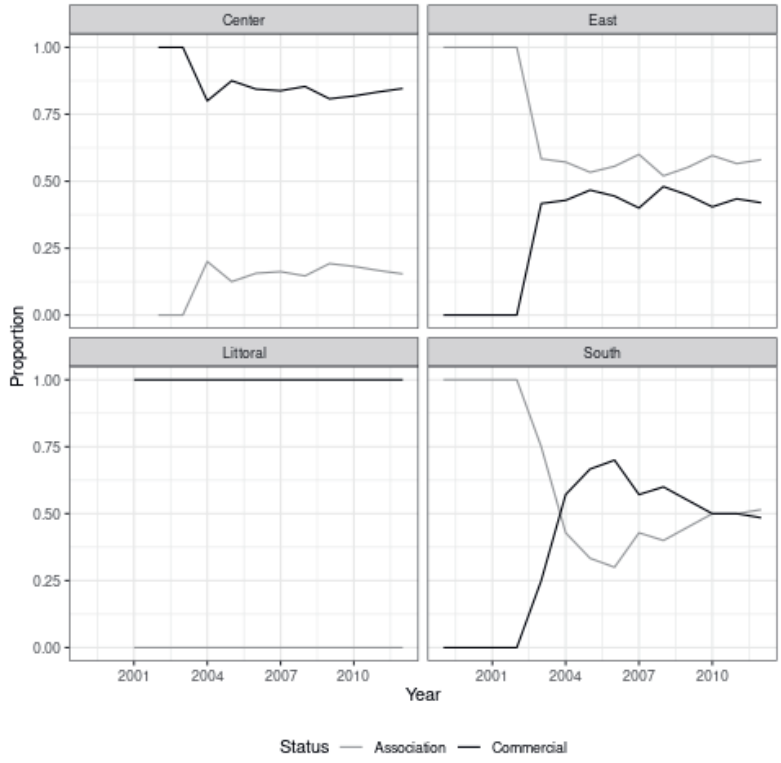


**Figure 2.16:** Proportion of commercial community forests and association created by year in each of the four regions.

### A4.4 History of industrial logging activities

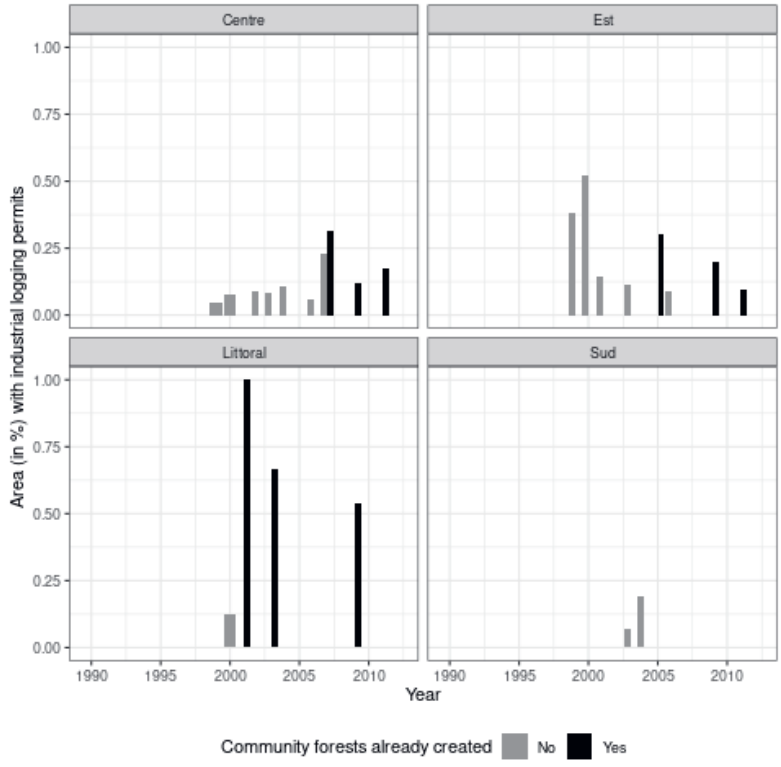


**Figure 2.17:** Logging permits given in area where future community forests will be created or are already created. Logging permits are generally given in a given year and expire after two to three years. They allowed only a certain volume of wood exploitation.

### A4.5 Length of logging roads

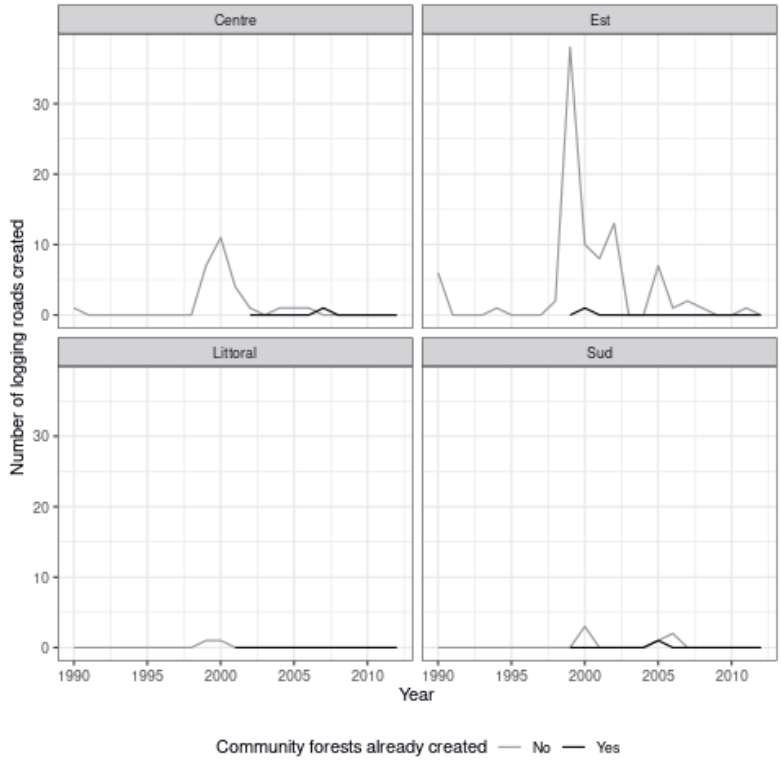


**Figure 2.18:** Number of logging roads created in each region

### A4.6 Size of community forests

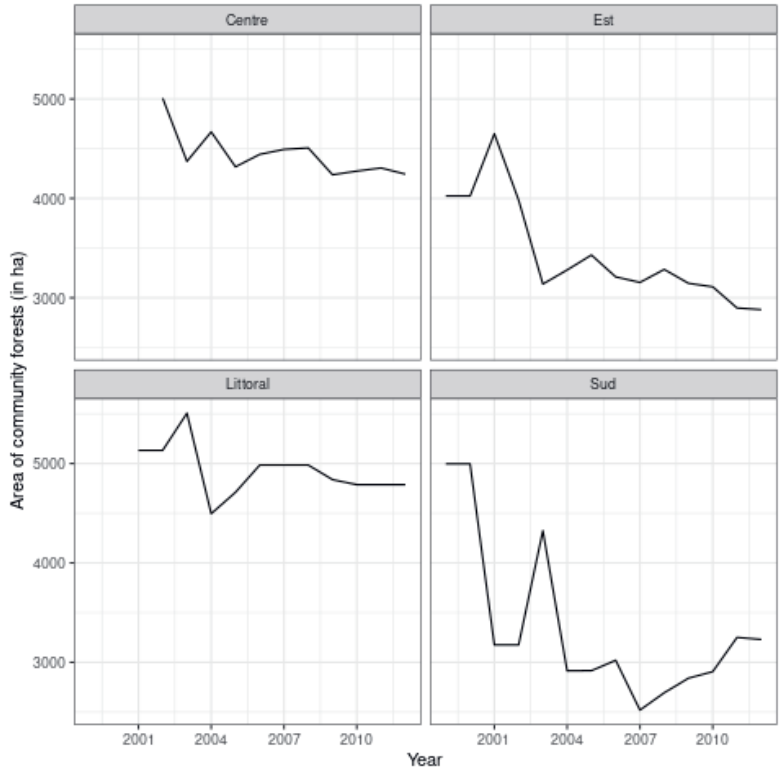


**Figure 2.19:** Average surface of community forests in each region measured in hectares (ha). The downward trends signify that community forests created at the beginning of the reform are on average larger than more recently created once.


*Author: Luseni Kallon. Artistic representation of the study area in Sierra Leone.*

Chapter 3

# Accountability Beyond Democracy: Examining Citizen Sanctions on Traditional Leaders in Sierra Leone

***Rens Chazottes and Junisa Nabieu*** [1]

## 3.1 Introduction

An estimated 30% of the global population resides under customary laws and traditional governance structures (Baldwin & Holzinger, 2019), underscoring their prevalence across continents. Examples include the Zulu kingdom in South Africa, village councils in Afghanistan (Baldwin & Holzinger, 2019), customary systems in Mexico (Magaloni et al., 2019), and chieftaincies in Sierra Leone (Acemoglu et al., 2014). Despite the absence of regular elections, emerging literature suggests that traditional leaders can play positive roles in enhancing democratic accountability, facilitating collective action, and brokering government resources (Baldwin, 2016; Honig, 2017; Murtazashvili & Murtazashvili, 2016). This study builds on existing research to examine traditional authorities (chieftaincies) in rural Sierra Leone, who hold significant power. A critical gap remains: how these leaders are held accountable by their communities. Understanding this is essential for designing inclusive and effective development and conservation initiatives.

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Widespread corruption and development leaks plague low- and middle-income countries (Hope, 2020). This issue manifests at all levels, from national to local (Handoyo et al., 2023). Strengthening community participation and accountability mechanisms, particularly where projects directly impact end-users, has been a common approach (Winters, 2010; Fox, 2015). However, research suggests limited effectiveness when these mechanisms rely solely on externally imposed accountability structures, such as electoral systems (Humphreys et al., 2019). A comprehensive understanding of accountability dynamics within traditional governance structures is likely to improve the design of such programs and fostering nuanced perspectives on inclusive decision-making and socio-economic development.

Do citizens sanction undemocratic traditional leaders, and how?[2] Recent developments in political science literature have underscored the significance of traditional institutions in public goods provision in Africa (Baldwin, 2016), particularly when these institutions exhibit features such as competitive selections (Acemoglu et al., 2014), inclusive decision-making processes (Magaloni et al., 2019; Börzel & Risse, 2021), and leaders being embedded in their communities (Baldwin & Holzinger, 2019; Baldwin, 2016). Less attention has been given to accountability relationships (Baldwin & Holzinger, 2019). In the absence of term limits, the role of electoral accountability diminishes. However, other forms of accountability exist.

Foundational works posit that non-elected local officials are mostly accountable to their political superiors (McCubbins & Schwartz, 1984; Banks & Weingast, 1992). However, recent experimental studies in non-electoral settings challenge this notion, demonstrating responsiveness to citizen pressure as well (Tsai, 2007a; Meng & Su, 2021; Lu & Tsai, 2017; Fox, 2015). Although these studies reveal a responsiveness to both citizen pressures (bottom-up) and hierarchical controls (top-down), existing evidence suggests that top-down influences may generally hold greater sway over the behavior of non-elected officials (Zhong & Zeng, 2024). Research on traditional leaders in Africa remains limited, with a notable exception by Carlson & Seim (2020) who found Malawian village chiefs responsive to citizen monitoring during the allocation of development resources.

This research expands on existing scholarship by examining whether citizens view sanctioning village chiefs as a justified response when those leaders neglect the community's interests. We aim to identify the range of sanctions - *the political repertoire* - available to hold these chiefs accountable. Our work builds upon Chen et al. (2016), who demonstrated that citizens can lever-

[2] It might be surprising to label traditional leaders as undemocratic. While it is true that in some situations, traditional leaders are elected, in the majority of cases, there are no regular opportunities to change the incumbent, rendering their authority undemocratic (Lipset, 1959)). Specifically, in Sierra Leone, once elected, the traditional leaders holds the position for a lifetime or until retirement.

age both bottom-up and top-down pressures to influence local officials. We similarly differentiate between two accountability mechanisms: indirect sanctions (complaints to higher authorities) and direct sanctions. When leaders are well-embedded in their communities, community members can use a wider variety of socio-economic channels, such as public blames or withholding labor from the chief, to sanction and hold them accountable.

The study takes place in the Southern province of Sierra Leone, in 77 small communities where town chiefs are deeply embedded in their communities. We deployed a survey experiment in April and May 2023 with pre-registered hypotheses. The household survey experiment tests whether village members state they would directly or indirectly sanction their town chief when they hypothetically steal money from a community project. It also explores how chiefs' councilors (the elders in the community), who generally serves as mediator between community members and the chief, moderate sanctioning preferences. By aggregating answers across treatment arms at the village level, we measure the strength of the village-level sanctioning preferences. We then explore how these village-level preferences are associated with community institutions and public good provision.

Our study shows that community members demonstrate a willingness to sanction their chiefs, primarily through indirect complaints to higher authorities and secondarily through direct actions like public blame and economic pressure which echoes findings from Zhong & Zeng (2024). Notably, councilors' blame broadens the range of sanctions deemed legitimate, suggesting their role in coordinating social order. At the village level, we observe a strong inverse relationship between indirect sanctions and inclusive participatory decision-making but a strong positive relationship between indirect sanctions and lower conflict frequency, a notable insight in a context where town chiefs have a significant role in maintaining peace within the village.

This study makes three contributions. First, it helps understand how chiefs may be accountable in traditional political institutions (Baldwin & Holzinger, 2019), offering broader insights on social accountability in authoritarian settings (Tsai, 2007b; Chen et al., 2016). Socio-economic institutions can both hinder (Mattingly, 2016) or enable (Tsai, 2007b) citizens pressures on local leaders. Our results suggest that citizens have non-electoral tools to ensure traditional leaders remain responsive to community interests even without elections. We delineate the array of political measures available to community members for disciplining their leaders - *political repertoire* - and augment existing theoretical frameworks by categorizing these sanctions based on the source of accountability they represent, distinguishing between top-down and bottom-up accountability mechanisms. Second, our research enriches the growing literature concerning village advisory councils (Baldwin et al., 2022). We demonstrate that chiefs' councilors play a

significant role in shaping community members' sanctioning preferences. Their participation reinforces the community's willingness to sanction the chief when the councilors themselves also impose sanctions. Third, we contribute methodologically to the discipline by using a novel experimental approach for measuring non-electoral accountability mechanisms. Finally, our results also speak to common-pool resources theory (Ostrom, 1990) by offering a new instance where community-level informal institutions might be effective in delivering public goods.

## 3.2 Theory and hypotheses

Traditional political institutions, also labelled chieftaincies in the study area, are defined "as institutions whose legitimacy is partly based on their association with customary modes of governing a community. These institutions are political because they make decisions regulating and providing for the collective. They are traditional in the sense that they are popularly believed to be connected to custom" (Baldwin & Holzinger, 2019: p 1758). The role of chieftaincies in allocating land, resolving local disputes and governing common resources is widespread across African countries (and beyond) (Boone, 2014).

Due to their colonial history and their vertical structures promoting top-down accountability, initial research characterized chiefs as products of colonialism, acting as authoritarian figures (Mamdani, 1996). They emphasized their low popular support (Ribot, 2002) sustained by a lack of institutional alternatives for the population (Ntsebeza, 2004). They also indicate a failure to guarantee equal rights, particularly regarding land access for women and higher tenure insecurity for minorities (Fonjong et al., 2013; Honig, 2017). The classic provided explanation is the lack of electoral accountability (Acemoglu et al., 2014). Leaders may be selected or elected, yet once they assume office, their tenure is lifelong. As a consequence, traditional leaders have been categorized as undemocratic, aligning with the conventional definition in political science (Lipset, 1959).

Nevertheless, the assertion that traditional leaders act as despots due to their absence of electoral accountability stems from a conceptual framework rooted in democratic theory. Yet, this conceptual framework is not without its challenges (Neupert-Wentz et al., 2022). This conceptual stretching (Sartori, 1970; Lührmann et al., 2020) might give a truncated vision on what basis chiefs are accountable to their community members. When fair and competitive, elections are a tool to select representative leaders and punish those with bad records or poor outcomes (Przeworski et al., 1999). Nevertheless, many traditional leaders are selected in rural Africa and rule for life. Being removed from office is an exception, not the rule. Furthermore, Logan (2013) showed that empirical findings do not fully support the "chief-as-despot" view.

Using Afrobarometer data from 19 countries, she finds that traditional leaders "enjoy widespread popular legitimacy, and most believe that traditional authorities have an important role to play in local governance (Logan, 2013)".

On the other hand, recent works acknowledge that chiefs can behave as development brokers with a positive impact on their community (Baldwin, 2016). The characteristic of the decision-making process, electoral and non-electoral sanctions are key elements providing accountability in chieftaincies. Baldwin et al. (2022) emphasizes the significance of advisory councils in shaping decision-making. Chiefs' decisions are not solely individual but are the product of consultations and discussions with advisers. They show evidence that chiefs can be persuaded by alternative views put forward by their advisers.

Aside from the decision-making process, other accountability channels may explain the development broker model (Baldwin & Holzinger, 2019). Acemoglu et al. (2014) study whether a higher number of ruling families in a chieftaincy leads to increased political competition and constraints on the power of the ruling chief. The case takes place in southern Sierra Leone, where families form alliances to secure votes in chief elections. The presence of multiple ruling families requires successful candidates to satisfy a broader range of interests. Empirical results indicate a positive relationship between the number of ruling families and outcomes such as education, economic development, child health, and social capital. They also highlight that places with fewer ruling families may have a dysfunctional civil society captured by elites.

In addition, even in the absence of electoral accountability, leaders can be responsive to a wide share of stakeholders (Carlson & Seim, 2020). In this paper, we aim to extend our knowledge on the accountability mechanisms by exploring how non-electoral sanctions are used by citizens to punish underperforming town chiefs. Drawing on observations, existing literature, and insights from focus group discussions, we develop a comprehensive conceptual framework to explain accountability mechanisms in non-electoral settings. We draw a distinction between indirect and direct sanctions. Indirect sanctions are formal and institutionalized non-electoral sanctions that exert pressure on chiefs higher in the hierarchy, compelling them to formally sanction the town chief. They have the potential to activate top-down accountability channels. On the other hand, a more informal channel is to directly sanction the town chief through socio-economic institutions (Tsai, 2007a). The presence of reciprocity norms in communities where chiefs are well embedded gives birth to this latter type of sanctions (Tsai, 2007a). In rural China, strong community groups built on shared values and interests (solidary groups) encourage residents to recognize and reward local officials who effectively deliver public goods (Tsai, 2007b). We call them direct sanctions and have the potential to activiate bottom-up accountability channels. Indirect and

direct sanctions activate accountability mechanisms when they are effective in disciplining chiefs' behavior (Chen et al., 2016).

### 3.2.1 Indirect sanctions as an activation of top-down accountability mechanisms

In case of severe transgressions, the town chief can face temporary suspension or removal from office. Figure 3.1, diplayed in section 3, illustrates a simplified version of the structure of chieftaincy authorities in Sierra Leone. The Paramount Chief exercises governance over section chiefs, who, in turn, exercise authority over town chiefs. In instances where conflicts arise between the village chief and the community, the section chief assumes the initial responsibility to mediate and resolve the dispute. Should the dispute persist, the involvement of the Paramount Chief becomes necessary. Consequently, when a chief has committed a theft, citizens could inform these authorities, who can formally sanction the chief (Baldwin, 2016).

At the village level, the main traditional structure comprises the town chief and the councilors (the council of elders). The latter has an essential role in advising the chief in making decisions. Pressuring the council of elders can be an effective means for ordinary citizens to pressure the town chief.

### 3.2.2 Direct sanctions and bottom-up accountability mechanisms

Citizens can directly exert pressures on their leaders via a range of strategies (Arnall et al., 2013), and by resistance, portrayed as the "weapon of the weak" by Scott (1985). Nevertheless, the *repertoire* of legitime political actions available by ordinary citizens is not yet fully understood.

Tsai (2007a) underlines that chiefs well embedded in their community can lead to good governance. When social groups encompass political spheres, especially in authoritarian system, it creates shared obligations between the political elites and ordinary citizens. Chiefs must comply with those shared obligations to gain social, political, and economic status in their community and beyond. When such obligations are not met by the town chiefs, community members have the agency to directly impose sanctions on their chief. Such sanction will directly impact the chief socio-political status and wealth. We underline three main forms that are mutually reinforcing.

Village members could jeopardize the chief's access to community-based reciprocal institutions. Communities rely on collective organization for farming and fishing activities, where cooperation is essential. An illustrative example is the rotational labor groups employed for rice harvesting, where individuals work on each other's farms with the expectation of reciprocal assistance (Bulte et al., 2018). When trust in an individual diminishes, the community restricts their access to these reciprocal institutions. Consequently, when the chief fails to act in the best interests of the

community, it is anticipated that community members will cease their labor contributions to the chief's endeavors.

The second form of sanctions leverages marriage institutions. By establishing familial connections with other households, individuals seek to acquire resources and influence. In instances where the chief loses respect or standing, community members may refuse to enter into matrimonial alliances with the chief's family. They preserve their family from potential scandals and reduce the chief's overall influence.

The third set of sanctions targets, more specifically, the chief. The chief is a figure of authority within the village. When the chief is respected, it has the legitimacy to fulfill its duty. It can organize collective labor for village purposes, collect taxes, resolve conflicts, and implement and enforce by-laws. Questioning the chief's authority and not following its order is a strong message and has a significant negative impact on its power. Existing research suggests non-compliant behaviors can function as a means of communicating policy feedback and critiques, ultimately aiming to improve the alignment between policies and local realities (Tsai, 2015). Therefore, blaming the chief publicly, threatening the chief physically, refusing to pay local taxes, or working for collective labor are sanctions that threathen chiefs' power (Bulte et al., 2018; Arnall et al., 2013).

### 3.2.3 Expectations

We expect non-electoral sanctions to either pressure chiefs higher in the hierarchy to formally sanction the town chief (activation of top-down accountability channels)[3] or directly sanction the town chief through complex socio-economic institutions[4].

*Hypothesis 1: Village members sanction town chiefs if they do not behave in the interest of their community.*[5]

Do ordinary citizens prefer indirect or direct sanctions? There are different mechanisms that could lead citizens to choose indirect sanctions preferably over direct sanctions. First, opting for direct sanctions make you identifiable to the chief, whereas indirect sanctions are potentially anonymous. Due to the fear of retaliation, citizens might be more reluctant to use direct sanctions. Similarly, the use of indirect sanctions may also be perceived as less burdensome or costly in terms of implementation. Finally, it is also plausible that chiefs occupying higher

[3] This includes complaining to the elders, the Section Chief, and the Paramount Chief.

[4] This includes blaming and threatening the chief, refusing to work for the town chief, refusing to participate in collective labor, not paying local tax, and refusing to marry a chief member of the family.

[5] Hypotheses 1 to 3 are pre-registered. Deviations from the pre-analysis plan are explained in Appendix B5

positions within the hierarchical structure may be more effective in imposing sanctions upon town chiefs compared to individual community members.

The council's sanctions against the chief might serve as a sufficient deterrent, reducing the need for further community action. Prior research has revealed that the pressure exerted by councilors effectively shapes and influences the behavior of town chiefs (Baldwin et al., 2022). Consequently, when councilors have already taken action, the efficacy of community members' pressure is diminished, leading us to expect their abstention from participating in such actions.

*Hypothesis 2: community members will be less willing to sanction the chief actively if the council of elders already blamed the chief for their action.*

Chieftaincies, in certain contexts, have been found to be deeply unequal in terms of social and economic rights. For example, higher customary status individuals tend to have greater land security (Honig, 2017), and women have weaker rights under customary justice systems compared to state legal systems (Baldwin et al., 2022; Clayton, 2014). Consequently, we expect male, wealthy citizens, and community member with voting rights to more openly sanction their leaders compare to female, poor, and community members with no voting rights.

If a village chief does not act in the interest of their town, we expect community members to sanction him or her through various channels. The effectiveness of the sanctions is a function of two parameters. First, the more and the more diverse sanctions are employed, the greater the influence and pressure, as the cost of such behavior increases for the town chief. When the diversity of sanctions increases, it is also less likely the chief will be able to escape the sanctions. Second, at the village level, these sanctions are likely to be effective only when a large share of community members share the same *sanctioning preferences* and coordinate their actions. In this paper, a village is characterized by *strong village-level sanctioning preferences* when a high proportion of community members indicate they would sanction their chief through a variety of measures. Furthermore, villages will differ in the strength of direct and indirect sanctioning preferences. What are the consequences of strong direct or indirect sanctioning preferences on leaders' behavior? When sanctioning preferences are strong, the relative cost for leaders to undertake actions for their private gains increase. Therefore, we expect that it incentives pro-social leadership (Kosfeld & Rustagi, 2015). A field experiment in china revealed that threats of bottom-up collective action (direct sanctions) and specific reports to higher authorities (indirect sanctions) significantly increase responsiveness of local authorities in providing information in online forums (Chen et al., 2016).

Building on this literature, we study how village-level sanctioning preferences are associated with a key institutional feature: the inclusiveness of participatory decision-making. Participatory

decision-making is the village-level political arena where important decisions about land use are made, typically involving the town chief and the elites. When the elites represent the diversity of social groups in the village, there is a high level of inclusive participatory decision-making. However, this political arena can also be captured by the chiefs' families, a significant issue reported in development settings and participatory development projects. If town chiefs are responsive to the level of sanctioning preferences, they might devise more inclusive participatory decision-making.

*Hypothesis 3: There is a positive correlation between village-level sanctioning preferences and levels of inclusion in participatory decision-making.*[6]

In this paper, we also investigate whether sanctioning preferences are linked to the provision of public goods, particularly peace, which holds significant importance in our context for two primary reasons. Firstly, town chiefs bear the primary responsibility of upholding social order by addressing local conflicts, enforcing existing laws, and occasionally introducing new regulations. Secondly, the study area, being post-conflict, experienced heightened tensions within and between communities in the 90s. Town chiefs, through promoting peace within villages, can play a crucial role in preventing the resurgence of such conflicts. Robust evidence shows the importance of monitoring and sanctioning institutions to maintain common-pool resources (Kahsay & Bulte, 2021; Ostrom, 1990; Walker, 2009). We assess whether the theory holds in the case of a broader set of bottom-up accountability mechanisms.

*Hypothesis 4: Villages with stronger sanctioning preferences have higher provision of public goods.*[7]

## 3.3 Institutional context

The research takes place in the Southern province of Sierra Leone, specifically in the Bonthe and Moyamba districts, encompassing 12 chiefdoms where data was gathered from 77 villages. It involved four teams of three enumerators between the $1^{st}$ of April and the $18^{th}$ of May 2023. In rural Sierra Leone, chiefdoms constitute the fundamental units of local governance, overseen by Paramount Chiefs (depicted in Figure 3.1) elected by tribal authorities. Each chiefdom further comprises sections, led by Section Chiefs who hold a higher hierarchical position than town chiefs. Town chiefs play a role in maintaining village peace, resolving local disputes, collecting taxes,

[6] Pre-registered hypotheses do not distinguish between direct and indirect sanctions and mention a wider range of institutional variables. We include the results in the Appendix B11.

[7] Pre registered hypotheses only include deforestation and do not distinguish between direct and indirect sanctions.

and promoting local development. In our sample, 41% and 31% of town chiefs also express their commitment to forest and biodiversity preservation.

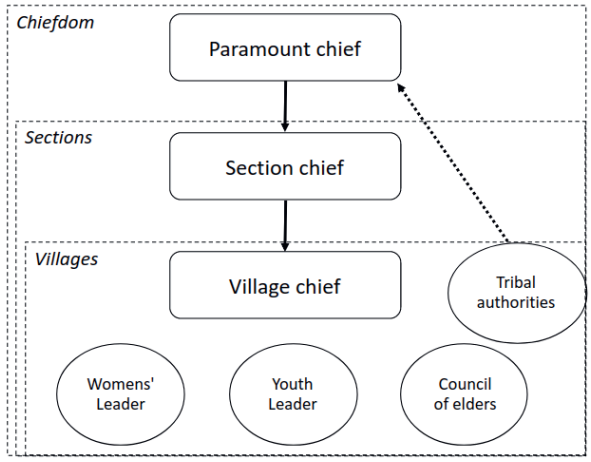


**Figure 3.1:** Diagram of the chieftaincy structure in Sierra Leone.

Town chiefs are supported by councilors in 87% of the sampled cases (see Table 3.1). They are formally labelled as the council of elders. This council consists of heads from major descent groups (Leach, 2022). Major descent groups are influential landholding entities that legitimize their status based on their historical arrival within the territory, with firstcomers being accorded greater legitimacy to claim positions of power within the region. Elders within these groups allocate land usage rights and discuss land-use decisions with the town chief (Leach, 2022). In addition to the chiefs, youth leader and the women leader are two notable leadership roles. These positions carry the responsibility of coordinating communal activities and advocating for the concerns and grievances of their respective groups.

Since the end of the civil war, there has been a trend toward using elections as the means to select town chiefs (Bulte et al., 2018). Families who own land and pay local taxes are granted the right to participate in these elections for town chief. However, many impoverished families may lack the financial means to pay these taxes, leading to other families paying on their behalf and thus gaining the voting privilege (Bulte et al., 2018). This dynamic explains the disparity between the number of landowning families and those with the right to vote. In approximately half of our sampled villages, the entire population is eligible to vote for the town chief. Nevertheless, in a quarter of the villages, fewer than 58% of families possess this voting right, potentially impacting the quality of leadership.

Town chiefs hold lifelong positions. Nevertheless, within our sample of villages, a quarter of the town chiefs assumed their roles after replacing a chief who had been suspended by a higher authority. Although we lack specific information regarding the circumstances leading to such suspensions, it underscores the real threat of being suspended by higher authorities. Therefore, indirect channels for sanctioning town chiefs may exert significant influence. Furthermore, our sample highlights the experience of town chiefs. Half have held office for more than eight years, starting their terms before 2015. Succession intervals between chiefs vary significantly across villages, with a median duration of eight months.

**Table 3.1:** Institutional and town chiefs' political characteristics

| | Mean | Median | SD | Min | Max |
|---|---|---|---|---|---|
| **Leadership positions at the village level** | | | | | |
| Council of elders (in %) | 86.84 | - | - | - | - |
| Youth leader (in %) | 100 | - | - | - | - |
| Women leader (in %) | 100 | - | - | - | - |
| **Village chiefs' political characteristics** | | | | | |
| Previous town chief was suspended (in %) | 23.94 | - | - | - | - |
| Number of Paramount Chief ruling families | 2.68 | 3 | 0.68 | 2 | 5 |
| Number of village landowning families | 4.37 | 3 | 3.54 | 0 | 17 |
| Number of families having right to vote | 7.89 | 6 | 5.62 | 1 | 30 |
| Proportion of families having right to vote | 0.85 | 1 | 0.23 | 0.12 | 1 |
| Date of chief election | 2012 | 2015 | 10 | 1982 | 2023 |
| Sucession period (in months) | 11.05 | 8 | 14.11 | 0 | 84 |

*Notes:*
The table presents descriptive statistics of key institutional variables within our sample. The leadership position at the village level indicates the proportion of villages that have such a position. For instance, 86.84% of villages in the sample have a council of elders. We also provide the proportion of villages where a chief was suspended. It's important to note that families do not share the same political status in the study area. For each chiefdom (12 in total), we report the number of families eligible to compete for the role of Paramount Chief (Paramount Chief ruling families). At the village level (79 in total), we present the number of families that own land or can vote for the town chief, along with their respective percentages. Additionally, we include information on the date of the town chief election and the duration of the succession period.

The Sherbro ethnic group predominates in most villages, with a smaller portion being of Mende ethnicity. The area is characterized by a fishing population with limited arable land for agriculture. Livelihoods are heavily dependent on mangrove forests, as the population smokes fish for preservation, which requires substantial wood consumption. Poor road quality and the high cost of sea transportation hamper access to markets and cities. Despite the society's stratified structure, there are no large socio-economic disparities between town chiefs and the average citizen. Town chiefs tend to have slightly higher levels of education, more children, greater employment rates, larger farms, or a higher number of livestock (see Appendix B2.5). Nevertheless, their material wealth is relatively similar to that of their fellow citizens.

## 3.4 Research design

We investigate whether and how community members sanction their leaders when deciding against their interests. This investigation faces various methodological challenges. First, the absence of official records and formal documentation about sanctions received by village chiefs complicates the task of tracing and analyzing sanctioning incidents. Second, if the channels for imposing sanctions prove to be effective in disciplining leaders, instances of theft and subsequent sanctions may be relatively infrequent. This scarcity of observable events poses a challenge in evaluating the impact of sanctions on leader behavior. Third, the region's history of civil conflicts, potentially linked to the historical exclusion of local voices from institutions (Peters, 2011), suggests a possible reluctance among political actors to openly discuss these sensitive behaviors. This reticence among key stakeholders further complicates data collection efforts. To surmount these methodological impediments, we employ a novel approach that centers around a unique survey experiment designed to measure individual sanctioning preferences and the efficacy of non-electoral sanctions at the village level. Our methodological framework is distinguished by its comprehensive array of data collection instruments, encompassing focus groups, interviews, experimental survey tools, and real-world behavioral observations recorded in the field.

Communities were randomly selected based on their proximity to mangrove resources and their population. Given our research focus on villages where the chief exhibits a high degree of integration within the community, in accordance with the stipulated scope conditions of our theoretical framework, we opted to exclude villages with over 200 households from our analysis. Additionally, we excluded smaller villages with fewer than 20 households because the research involved multiple components (beyond the scope of this paper) necessitating the recruitment of over 20 participants.

In each village, we randomly selected 12 heads of households to conduct the survey experiment. This sampling procedure uses two steps: 1) a listing survey (census) of heads of household, and 2) a stratified sampling on gender based on that list. Stratification ensures an even gender balance in the survey, which was crucial for examining gender-based variations in preferences for sanctioning chiefs. Moreover, the town chief is specifically chosen to participate in a village-level survey, during which questions about chiefdom characteristics and the developmental status of the village were posed.

### 3.4.1 Household survey experiment

This study employs a vignette survey experiment using five hypothetical scenarios. Our aim is to identify the types of sanctions considered legitimate by community members and explore how the hypothetical behavior of chiefs' councilors influences their sanctioning preferences.

We devise a scenario aimed at representing typical actions taken by village chiefs that are not in the interest of community members. In the context of development initiatives, numerous projects are implemented by non-governmental organizations (NGOs) in the form of monetary funds or tangible resources such as cookstoves, agricultural inputs, and mini-grids. A substantial body of literature in the field of development has examined the allocation (or misallocation) of these resources by elite figures (Platteau & Abraham, 2002). The leakage of development funds or tangible resources for personal benefits is an important issue across sectors such as education (Mbiti, 2016; Reinikka & Svensson, 2002), health (Azfar & Gurgur, 2008; Njong & Ngantcha, 2013), or development goods (Carlson & Seim, 2020). These leakages are hard to track and prevent. Nevertheless, accountability mechanisms have been identified as mitigating the threat of personal appropriation (Carlson & Seim, 2020). Consequently, we constructed a scenario centered around a community project initiated by an NGO (a neutral actor) in which the chief appropriates a portion of the project's funds for personal gain. Despite the fact that many NGO projects provide materials rather than direct monetary funds, we chose to simplify the scenario by focusing on the misappropriation of funds for ease of comprehension. The scenario employs neutral language, and we explicitly instructed enumerators not to use the word "steal" in their local languages to prevent any potential bias in respondents' answers.

Each participant faces one treatment condition[8]. Table 3.2 summarizes the treatment conditions. The control condition represents a situation where the chief managed well the community project. Treatment 1 adds that the chief took a small portion of the money for his use during the project[9]. Treatments 2 and 3 mention the behavior of the council of elders. Finally, treatment 4 is similar to treatment 1, but the money taken is larger. Treatment 1 and Treatment 4 are designed to investigate the identification of the spectrum of politically acceptable actions - the

[8] In the registered pre-analysis plan, two scenarios were mentioned: a community project and a land deal scenario. For the latter, a crucial observation made during the fieldwork stage was the inconsistency between the scenario presented and the prevailing contextual realities. Specifically, it was determined that the sale of lands, which formed the basis of the scenario, does not align with customary practices (lands can only be leased) and land transactions typically involve consultation with the Paramount Chief. Second, the scenario lacks a pure control, thus limiting the ability to isolate and assess the specific effects of the variables under investigation. As a result, in adherence to the registered pre-analysis plan, the detailed results of the land deal scenario are presented in Appendix B5.1

[9] Initially, we wanted to quantify the amount taken, but it led to a higher share of respondents not understanding the scenario.

*repertoire* of actions taken by citizens to punish their chiefs. Additionally, they explore whether this spectrum is contingent upon the severity of the theft in question. Treatment 2 and Treatment 3, on the other hand, are geared towards discerning whether citizens' preferences are influenced by the behavior of councilors.

**Table 3.2:** Description of the control and treatment conditions.

| Conditions | Details |
|---|---|
| **Control** | *In a village in Sierra Leone, an NGO developed a project for the development of the community. The town chief played a key role in managing the project at the village level.* |
| **Treatment 1** | ***Control*** *+ During the project, the town chief* ***took a very small part of the money*** *for his benefit.* |
| **Treatment 2** | ***Treatment 1*** *+ The elders in the village went to the chief and sermoned him.* |
| **Treatment 3** | ***Treatment 1*** *+ The elders in the village did not sermon the chief.* |
| **Treatment 4** | ***Control*** *+ During the project, the town chief* ***took half of the money*** *for his benefit.* |

*Notes:*
*Enumerators read the scenarios to participants in local languages (Sherbro, Mende, or Krio) using tablets.*

Subjects are randomly assigned to one of the treatment conditions, with a block randomization on gender to ensure an equal share of males and females in each treatment arm. This strategy increases the precision of the estimates and allows for the exploration of heterogeneous effects based on gender.

In Appendix B3, the table shows the balance test for 13 covariates representing a range of socioeconomic and political variables. Overall, there is an overall great balance with none of the F test being statistically significant at the 5% level. However, there are some important exceptions. Respondents receiving treatment 1 are, on average, less trustful toward the chief and less employed than those in the control condition. Respondents receiving treatment 2 are, on average older than those in Treatment 3. Considering this source of imbalances, we add these covariates in additional tests in appendix B8.

To ensure the quality of the measurement, we asked two comprehension questions to assess whether the respondents understood the amount of money taken by the chiefs and the behavior of the elders. The analysis is undertaken only with the respondents who understood the scenarios. Appendix B4 presents data on the comprehension of the scenarios, including both the number and proportion of respondents who grasped the details. In general, 95% of respondents

comprehended the specific amount of money stolen by the chief, and approximately 92% of respondents understood the actions of the elders within the scenario[10].

After reading the scenario, enumerators ask five questions to the respondents:

- Outcome 1: to rate on a 1-5 scale, how much the respondent agrees with the chief behavior;
- Outcome 2: to state whether the citizens of that village should take any actions in response (dummy);
- Outcome 3: if yes, to specify the type of actions (for half the sample - open ended question);
- **Outcome 4 (main outcome) - legitimacy of the sanctions**: count of the number of sanctions that are legitimate, and the one they would be able to undertake themselves from the following list of nine sanctions (six direct and three indirect sanctions): 1) blame the chief directly, 2) threaten the chief directly, 3) complain to an elder, 4) complain to the section chief, 5) complain to the Paramount Chief, 6) refuse to participate in collective labor, 7) refuse to work in the chiefs' farm, 8) refused to get married to a member of the chief's family, and 9) refuse to pay local tax. The order of the items is randomized.
- **Outcome 5 (main outcome) - self reported capacity to execute these sanctions**: Count of the number of sanctions that respondents would be able to undertake themselves from the provided list of nine sanctions.

This compilation of sanctions is derived from two primary sources of information: a) a review of existing literature, and b) focus group discussions conducted in the field, involving two separate groups consisting of 10 and 20 respondents, respectively. The literature review identifies instances where citizens took actions to penalize their chief, as well as sources of power held by these chiefs. It's worth noting that the number of articles available for this purpose is limited, which led us to refrain from formalizing the outcomes of this review. The sources of power identified were transformed into potential leverage points held by the citizens. For example, the number of wives was viewed as a symbol of wealth and symbolic power. Consequently, refusing to marry the town chief could have a negative impact on the chief's authority. During our fieldwork, we engaged key informants familiar with the region and asked them to review the list of sanctions, suggesting additions or deletions for actions they considered implausible. The analysis of the open-ended question allowed us to identify any significant actions that might have been omitted from our list. The results of this question, categorized for clarity, are provided in Appendix B6. Most

[10] At the end of the experimental section, after the outcome measures, we asked the two questions testing the respondent's comprehension of the scenario.

of the actions identified were already incorporated into our list. However, notable actions that emerged, such as "mobilize citizens in the village" (mentioned by 3% of respondents), "Report to the police" (4% of respondents), "Bring the case to court" (2% of respondents), and "Report to an NGO" (2% of respondents), were not included. Given the proportions of these responses, we believe that their absence is unlikely to substantially impact our results. In addition, we hold five focus groups with elders in the field to identify the preceived relative cost of each of these nine actions (table in Appendix B2.6).

We made a deliberate differentiation between the perceived legitimacy of actions (outcome 4) and the self-reported capacity to execute those actions (outcome 5) for three primary reasons. Firstly, due to the substantial influence wielded by chiefs in the southern region of Sierra Leone, it was our supposition that respondents might be reticent to openly declare their intent to impose sanctions on their town chiefs. Consequently, we employed an indirect phrasing. This approach aimed to alleviate the potential for null findings arising from social desirability bias. Secondly, within the field of research on traditional political institutions, there exists a limited comprehension of non-electoral sanctions enacted by rural inhabitants to discipline their town chiefs. The *repertoire* of political actions is only partially documented. Therefore, the legitimacy question serves to appraise the spectrum of politically sanctioned actions, or the *repertoire* of available actions accessible to villagers for penalizing their town chiefs. The ability question (Outcome 5) provides a more refined evaluation of whether the respondent would feel sufficiently empowered, or possess the agency, to undertake these actions.

The summary statistics and the details of the measurement strategy are shown in Appendix B2.2, B2.3, and B2.4. To test hypotheses 1 and 2, we aggregate the number of legitimate sanctions by type (direct and indirect).

For hypotheses 3 and 4, there is a need to proxy the strength of the sanctioning preferences at the village level. To measure such a concept, we average the individual responses in the survey experiment and, more precisely, the aggregated number of direct and indirect sanctions that community members are able to undertake. We use only the ability question (and not the legitimate one) as it is closer to real behavior. But robustness check includes measure using the legitimacy question. These measures are used as independent variables. As elucidated in the theoretical framework section, indirect sanctions represent a formal and institutionalized method for penalizing local leaders within the region. As a consequence, the mean count of indirect sanctions selected at the village level can be interpreted as the percentage of residents within that village who possess an awareness of their political entitlements and assert their capacity to exercise these rights. On the other hand, the average number of direct sanctions chosen can be

understood as the strength of direct sanctioning preferences at the village level, i.e. the strength of villagers' resistance against leaders' malevolance.

### 3.4.2 Measuring inclusiveness in participatory decision-making

The study employs an innovative real-behavior measurement strategy to proxy the level of inclusiveness in participatory decision-making related to land use. To assess this aspect, we conducted a land planning activity, which, although not detailed in this paper, aimed to solicit preferences regarding development patterns and deforestation regulations. It was made explicit that the output of the land-planning activity will be shared with a donor that would develop development activities in the coming four years. The town chief was tasked with convening four community leaders to participate in the land planning activity. The proportion of these community leaders sharing family ties with the paramount or the town chief constitutes the measurement of social inclusion. A high share of those community leaders sharing ties with the town chief or the Paramount Chief indicates a low level of inclusive participatory decision-making.

### 3.4.3 Measuring public good provision

Hypothesis 4 posits a positive relationship between village-level sanctioning preferences and public good provision. The most important public good provided by the chief is village peace. To measure the level of peace, we consider the stated frequency of conflicts within the village, as reported by the town chief.

### 3.4.4 Empirical strategy

We estimate the effect of providing information about leaders' malevolence on attitudes towards the legitimacy of sanctioning behavior with an average treatment effect estimand. As there is covariate balances between the control and the treatment group, we use the following estimator, for respondent $j$:

$$GSI_j = \beta_0 + \beta_1 Z_j + \gamma_g + \gamma_v + \epsilon_j \tag{3.1}$$

With $GSI_j$, the outcome variable, is the number of direct or indirect sanctions chosen by the respondent $j$, $\beta_1$ is the Average Treatment Effect, and $Z_j$ is a dummy variable indicating whether the participant $j$ belongs to the treatment group 1 or the control group for the hypothesis 1 or the treatment arm 3 or 2 for the hypothesis 2. $\gamma_g$ and $\gamma_v$ are gender and village fixed effects accounting for the block randomization strategy. We use robust HC2 standard errors (Aronow &

Middleton, 2013). Robustness check includes cluster standard errors at the village level, along with the inclusion of covariates that were not balanced (Appendix B8).

To test Hypotheses 3 and 4, which posit a positive relationship between village-level sanctioning preferences and both inclusive decision-making and public good provision, we use the following OLS regression:

$$Y_k = \beta_0 + \beta_1 S_{dir} + \beta_2 S_{indir} + \beta_3 X_k + \gamma_g + \epsilon_k \tag{3.2}$$

With $Y_k$ being either a proxy of inclusion in participatory decision-making (for testing hypothesis 3), or village-level conflict frequency (for testing hypothesis 4) for village $k$. $\beta_1$ and $\beta_2$ are the effects of the strength of the direct and indirect sanctioning preferences, and $X_k$ are the set of control variables - population size, the proximity with the Paramount Chief, the number of ruling family, the year of the leader's selection, the proportion of the population with voting rights, inequality, and wealth, and $\gamma_c$ chiefdom fixed effects. Appendix B5 summarizes the devations from the pre-analysis plan. Furthermore, robustness checks include additional outcome variables (results in appendix B11). We use robust standard errors in all empirical strategies.

## 3.5 Results

### 3.5.1 Citizens do sanction their leaders

**General pattern**

Table 3.4 presents the results of the formal statistical tests of the first hypothesis using village and block fixed effects. When comparing treatment 1 (stealing a small part of the community project money) with the control condition, we see a sharp increase in the number of legitimate sanctions of about 3.1 (for a detailed analysis of each sanction, see Figure 3.2). When disaggregating by the type of sanctions, the effect size is approximately 1.2 for direct sanctions and 1.9 for indirect sanctions. All differences are statistically significant at the 0.1% level. Moreover, we also compare treatment 4 (stealing half of the community project money) with treatment 1 (stealing a very small part), to understand whether the number of sanctions considered as legitimate is dependent of the gravity of the theft. We see an increase in the number of legitimate sanctions of about 0.7. When breaking down by the type of sanctions, the effect size is about 0.3 and 0.4 for the direct and indirect sanctions. The differences are statistically significant at the 0.1% level for the general and indirect measures, and significant at the 1% level for the direct measures. The consistency of the findings extends to the use of alternative outcomes such as whether citizens agree with the chief behavior and whether citizens should take any actions against the chief. The majority of respondents deem a diverse range of sanctions as acceptable, with a noticeable inclination to penalize the chief more frequently in cases of more significant theft (treatment 4 vs treatment 1).

Taken together, the results are firmly in line with our first hypothesis: citizens do find that sanctioning their leaders - using a variety of channels, direct and indirect - as legitimate behavior. The results also underline that the more serious the theft is, the more sanctions are considered as legitimate.

**Table 3.4:** Average treatment effects of chief malevolance on the total number of legitime sanctions, the number of direct and indirect legitime sanctions against the town chief

| | T1 - C | | | T4 - T1 | | |
|---|---|---|---|---|---|---|
| | **General** | **Direct** | **Indirect** | **General** | **Direct** | **Indirect** |
| Treatment | $3.14^{***}$ | $1.2^{***}$ | $1.93^{***}$ | $0.7^{***}$ | $0.33^{**}$ | $0.37^{***}$ |
| | (0.17) | (0.09) | (0.1) | (0.14) | (0.11) | (0.08) |
| Control mean | 0.59 | 0.1 | 0.49 | 3.66 | 1.26 | 2.39 |
| | (0.1) | (0.03) | (0.08) | (0.14) | (0.08) | (0.08) |
| DV range | $\{0, 9\}$ | $\{0, 6\}$ | $\{0, 3\}$ | $\{0, 9\}$ | $\{0, 6\}$ | $\{0, 3\}$ |
| Observations | 362 | 362 | 362 | 332 | 332 | 332 |
| $R^2$ | 0.57 | 0.41 | 0.59 | 0.45 | 0.35 | 0.33 |

*Notes:*
Three outcome variables are used: general, direct and indirect. General is the total sum of sanctions considered as legitimate. Direct is the sum of sanctions considered as legitimate targeting directly the chief. Indirect is the sum of sanctions considered as legitimate targeting an higher authority. T1-C tests Treatment 1 where the quantity of money stolen is very small vs the control group, and T4-T1 tests Treatment 4, where half of the money is stolen vs Treatment 1 (hypothesis 1). village and block fixed effects are used. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

**Indirect sanctions are the most frequently reported sanctions**

We dig now into the questions of what type of sanctions are preferred by the respondents. Figure 3.2 illustrates in the panel A, the mean of the number of total, direct, and indirect sanctions considered as legitimate. In panel B, it displays the share of respondents who perceive the nine sanctions as legitimate across the control, treatment 1 and 4. These findings offer an important insight. Citizens state that they prefer to call higher authorities rather than sanctioning their leaders directly. The most widely chosen sanctions by around 75% of the respondents in the treatment groups are those where the citizen complains to a higher authority (the community elder, the section chief, or the Paramount Chief). Then, blaming the chief directly or stopping working on their farm is the second most widely sanction chosen. Conversely, despite occasional references in the existing literature, the employment of more severe measures such as threatening the chief physically (Richards, 2021; Bulte et al., 2018), refraining from paying local taxes, or avoiding marital ties with members of the chief's family remains illegitimate sanctions among community members.

This evidence is also supported by the open ended survey question. For a random subset of the respondent, we asked how they would react if they were in such a situation. All the respondents raise an indirect channel: they would either complain to a tribal authority, an elder, or the Section/Paramount Chief.

In Appendix B2.6, the table presents the relative costs of each sanction, derived from focus group discussions with elders in selected communities within the study area. The findings indicate

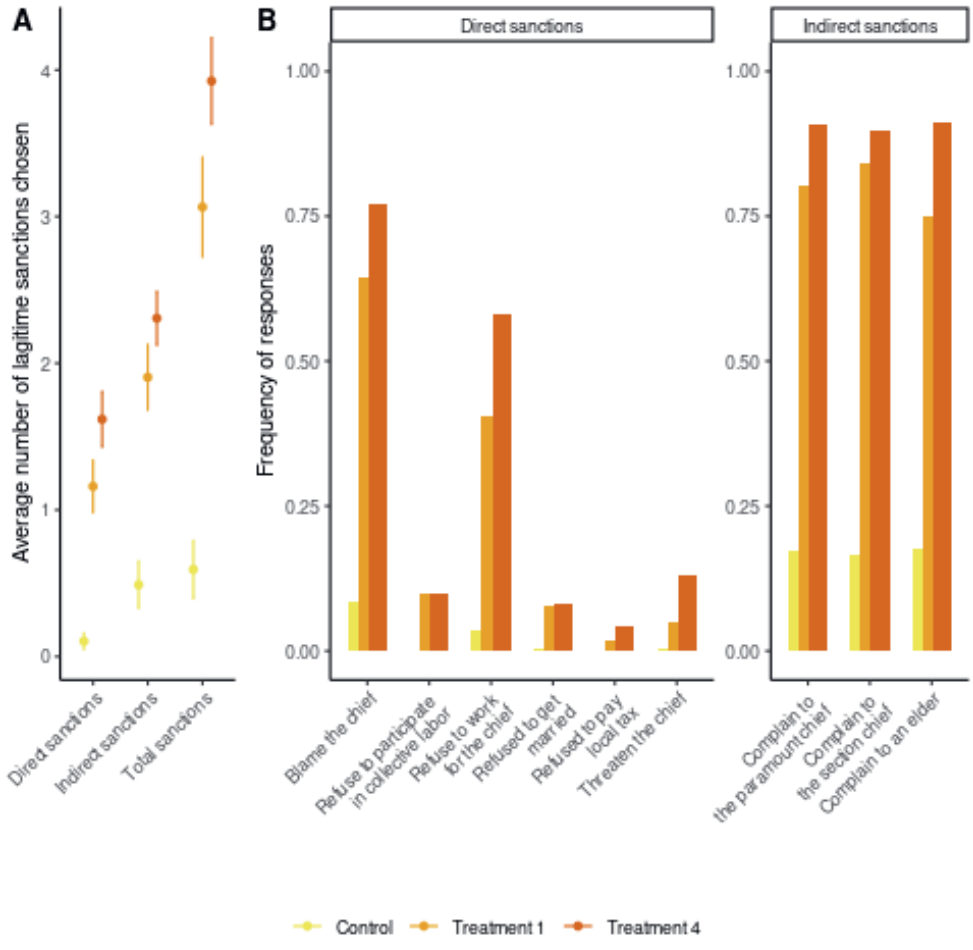


**Figure 3.2:** Proportion of total, direct and indirect sanctions by treatment arm

Notes: Panel A presents the average values of total, direct, and indirect sanctions considered as legitimate in the control, treatment 1, and treatment 4 conditions, with the dots representing these averages. The bars illustrate two standard errors. In Panel B, the figure displays the average legitimate sanctions per sanction type and treatment condition. Since the outcome in this case is a binary variable, no standard errors are shown. Treatment 1 corresponds to the scenario where the chiefs steal a very small portion of development funds while treatment 4 represents a scenario where half of the money is stolen.

that the inclination toward indirect sanctions can be attributed to their lower costs for community members. Unlike direct sanctions, indirect measures carry a reduced risk of retaliation.

**Social groups differ in their preferences towards sanctioning the town chief**

We examine whether community members possess similar preferences with regard to the quantity of direct and indirect legitimate sanctions by comparing the treatment 1 with control, and the treatment 2 with treatment 3 (moderating effects of elders). Specifically, we investigate the heterogeneous effects of gender, wealth, and political rights, which encompass the right to vote for the town chief. These variables represent our secondary hypotheses, which have been pre-registered.

Appendix B10 presents the outcomes of the heterogeneity analysis and the results of a formal statistical test of the heterogeneous effects. Overall, we found that men are more likely to find a wider range of sanctions as legitimate. Furthermore, contrary to our expectation, when the quantity of money stolen is small, poorer respondents are more likely to find a wider range of sanctions as legitimate. When the quantity of money stolen increases, the results reverse suggesting that wealthy people are more tolerant to small theft. Finally, the right to vote emerges as a significant predictor of an individual's attitudes towards direct and indirect legitimate sanctions. Community members possessing voting rights tend to consider on average 1 more direct sanction and around 0.5 indirect sanction as legitimate.

The heterogeneity in sanctioning preferences across social groups poses potential adverse outcomes, particularly in our context where men, individuals of higher socioeconomic status, and those with political rights demonstrate elevated sanctioning preferences. In this scenario, if the town chief and the elders respond to sanctioning pressures, their responsiveness might be disproportionately biased towards these groups. This observation is consistent with previous research that highlights a bias among traditional authorities against women and groups characterized by limited political rights or lower income levels (Honig, 2017; Clayton, 2014; Muriaas et al., 2019). However, formally testing whether these sanctioning preferences drive inequalities between social groups goes beyond the scope of our study.

### 3.5.2 The role of the elders

In this section, we aim to clarify the role of the elders (behaving as chiefs' councilors) and understand whether sanctioning preferences of village mambers depend on the elders' behavior. The analysis of the open-ended question indicates that a significant number of respondents views the elders as the appropriate figures to address when the town chief's behavior is not in the community's best interest. Rather than taking action themselves, many respondents express a

preference for encouraging or awaiting the elders' intervention when it comes to sanctioning the chief, as the following quotes suggest.

> "Nothing much because the town Chief is the head of the village, only the elders will talk on behalf [of] us, the villagers." – One respondent receiving treatment 3

> "Will talk to the youth leader about the chief's behavior hopefully he (the youth leader) will take up the matter to the elders." – One respondent receiving treatment 4

To more formally test such patterns and dig deaper into potential mechanisms, we conducted an analysis to investigate the potential influence of elders on the sanctioning preferences of ordinary citizens, employing two comparisons. Firstly, we compared the responses between treatment 2, where the council of elders expressed blame towards the chief, and treatment 3, where the council of elders did not express blame towards the chief. Comparing treatments 2 and 3 allows us to explore whether respondents' perspectives on the legitimacy of sanctions are contingent upon the behavior of elders. Secondly, we compared treatment 2 with treatment 1, which did not mention the behavior of the elders, as a robustness check analysis.

Contrary to our initial expectations, we did not find any evidence indicating that community members find a smaller quantity of sanctions as legitimate when the elders had already reprimanded the chief. Surprisingly, as displayed by Table 3.5, the direction of the effects was opposite to what was anticipated. When comparing treatment 2 with treatment 3, the effect size for the number of total sanctions considered as legitimate was 0.5, statistically significant at the 1% level. The majority of this effect was driven by an increase in indirect sanctions preferences, approximately 0.3, which was also statistically significant at the 1% level. Although the effect size for the direct sanctioning measure was positive, it did not reach statistical significance. Overall, the effect sizes were 0.24 for both direct and indirect sanctions. The results are robust when using the sub-sample of villages that have a council of elders (approximately 90% of the sample).

For the second comparison, the effect sizes were relatively smaller. The general measure, the total number of sanctions considered as legitimate, yielded an effect size of approximately 0.3, with effect sizes of 0.2 for direct sanctions and 0.1 for indirect sanctions. Among these, only the effect sizes for the general measure and direct sanctions reached statistical significance at the 10% level. The reduced disparities between treatment 2 and treatment 1 can be attributed to the possibility that the societal significance of elders is relatively diminished within these communities. Nevertheless, the prominence of the first action emphasized by respondents, particularly their tendency to initially advocate addressing concerns with elders in open-ended questions, renders

that explanation less tenable. A more plausible explanation is that survey participants may assume that the council of elders will intervene, even when not explicitly specified in the scenario. Overall, the findings align with prior scholarly investigations that underscore the significance of the elites for sustaining cooperation and mobilization (Goist & Kern, 2018).

**Table 3.5:** Average treatment effects of elders' behavior on the total number of legitime sanctions, the number of direct and indirect legitime sanctions against the town chief

| | **T2 - T3** | | | **T2 - T1** | | |
|---|---|---|---|---|---|---|
| | **General** | **Direct** | **Indirect** | **General** | **Direct** | **Indirect** |
| Treatment | $0.48^{**}$ | 0.19 | $0.29^{**}$ | $0.29^{+}$ | $0.2^{+}$ | 0.09 |
| | (0.16) | (0.13) | (0.09) | (0.15) | (0.1) | (0.09) |
| Control mean | 0.59 | 0.1 | 0.49 | 3.66 | 1.26 | 2.39 |
| | (0.14) | (0.1) | (0.09) | (0.14) | (0.09) | (0.08) |
| DV range | $\{0, 9\}$ | $\{0, 6\}$ | $\{0, 3\}$ | $\{0, 9\}$ | $\{0, 6\}$ | $\{0, 3\}$ |
| Observations | 310 | 310 | 310 | 331 | 331 | 331 |
| $R^2$ | 0.37 | 0.18 | 0.35 | 0.44 | 0.37 | 0.33 |

*Notes:*
Three outcome variables are used: general, direct and indirect. General is the total sum of sanctions considered as legitimate. Direct is the sum of sanctions considered as legitimate targeting directly the chief. Indirect is the sum of sanctions considered as legitimate targeting an higher authority. T2-T3 tests Treatment 2 (where the elders do sermon the chief) vs Treatment 3 (where the elders do not sermon the chief), and T1-T3 tests Treatment 1 vs Treatment 3 (hypothesis 2). village and block fixed effects are used. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

### 3.5.3 Legitimation and covering mechanisms

The observed pattern in our data can be attributed to a combination of two mechanisms[11]. The information-legitimation mechanism, and the covering mechanism, are not mutually exclusive but rather complementary. The first mechanism proposes that when elders take action against the town chief, it sends a signal to the villagers regarding the legitimacy of their grievances. Consequently, the villagers are more likely to feel justified in expressing their concerns. The second mechanism, the covering mechanism, posits that when villagers take collective actions, these actions are less likely to be perceived as isolated incidents and, therefore, less susceptible to retaliation by the town chief.

We explore the significance of these mechanisms by comparing the effect sizes of treatment 2 vs treatment 3 on the two outcomes (see figure 3.3): a) the number of sanctions considered as legitimate (outcome 4), and b) the number of sanctions the respondents feel able to undertake (outcome 5). The outcome 4 expresses the significance of the legitimation mechanism while the outcome 5 illustrates the potential importance of the covering mechanism. If the effect is only

[11] we express our gratitude to Dylan Groves for inspiring the development of this section

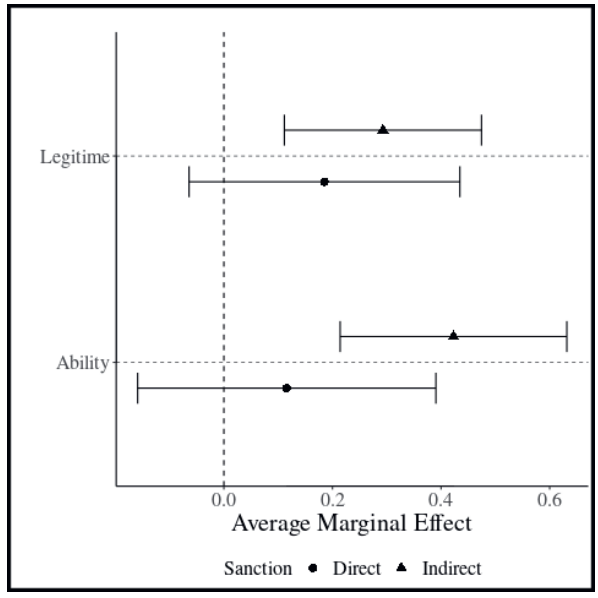


**Figure 3.3:** Average treatment effects of elders' behavior on sanctioning preferences

Notes: The figure presents the average treatment effects of elders' behavior on the number of direct and indirect sanctions considered legitimate (top) and the number of direct and indirect sanctions the respondent would feel able to undertake (bottom). Bars represent 95% confidence intervals.

present for the outcome 4, it suggests that the legitimation mechanism might be at play while the covering mechanism not.

Figure 3.3 displays the results. We find that the effect of elders is particularly important for indirect sanctions. Secondly, the effect is significant for both outcomes suggesting that the legitimation and the covering mechanisms could be at play.

We find evidence supporting the validity of these mechanisms in select quotes from the open-ended questions, where the support of elders emerges as a crucial factor in shaping collective efforts aimed at maintaining social order. Respondents do not only condition their preferences on elders' action, but also their (stated) behaviors.

> "I will report home to the elders and I will join the elders to sermoned the chief" – One respondent receiving treatment 4

> "I alone will not take any action because he is our chief, but if we came as one in the village we will take the action together" – One respondent receiving treatment 4

The importance of the mobilization of fellow citizens was underlined by a women leader in a community we visited when asked what she would do in a case the elders did not blame the town chief.

> "If I am in similar situation , I will mobilize my fellow women to complain to the section Chief, if the section Chief fails to take action against the town Chief, we will report he (the section Chief) for not taking action against the town Chief. The money is meant for community project and not any body's personal gain. Nevertheless, if the town Chief had been good to the community, we will visit him and ask the reason for his action, but if he is that kind that doesn't care and don't respect the community people, we directly go to authorities higher than him to report the action."
> – One respondent receiving treatment 3

Our research reveals that the behavior of the elders shape respondents action when confronting to chiefs malevolence. Such individuals play a central in counterbalancing power dynamics in the case of elite capture of formal institutions (Shapland et al., 2023). In the next section, we study whether sanctioning preferences are associated with inclusive decision-making and greater public-good provision.

### 3.5.4 Limitations

Systematic errors in survey methodologies have been the subject of extensive debate in the social sciences (Nederhof, 1985). We discuss the robustness of our results to experimenter demand effects, which occur when subjects infer the expectations of researchers and adjust their behavior accordingly (Mummolo & Peterson, 2019). Our survey experiment was embedded within a one-hour household survey primarily focused on understanding livelihood activities and deforestation patterns in these communities. This design provides strong reason to believe that respondents were unlikely to discern the experimenter's intentions, thereby reducing the likelihood of such effects. Nonetheless, our empirical strategy addresses this concern in two ways. First, we compare two scenarios where the demand effect is likely to be similar: treatment four, where half of the money is taken by the chief, and treatment one, where a small portion of the money is taken. We found results consistent with our hypothesis. Second, previous studies have found demand effects to be either negligible (Mummolo & Peterson, 2019) or relatively small (de Quidt et al., 2018). We apply a bounding estimation strategy, accounting for these effects using the 0.1 to 0.3 standard deviation range reported by de Quidt et al. (2018). The results are displayed in B8. Sensitivity analysis of hypothesis 1 demonstrates that the results are robust to all experimenter demand effect sizes, while for hypothesis 2, small experimenter demand effects could explain the findings.

In the next section, we examine whether sanctioning preferences are associated with inclusive decision-making and increased public-good provision.

## 3.6 Relationships between village-level measures, leaders' quality and decision-making outcomes

Do sanctioning preferences correlate with improved institutions and enhanced village-level public good provision? Extensive literature underscores the significance of well-structured institutions for economic prosperity (Acemoglu et al., 2002), highlighting accountable leadership, fostered by fair and competitive elections, as a key institutional feature. However, the effectiveness of non-electoral sanctions in replicating these outcomes remains uncertain. Should sanctioning preferences effectively influence leaders' conduct, villages with more pronounced sanctioning preferences would likely see more accountable leadership and, consequently, better socio-economic conditions. Our study's design precludes testing this hypothesis directly. Nevertheless, we can approximate accountability by measuring sanctioning preferences at the village level and examining their relationship with critical outcomes: inclusive participatory decision-making and conflict frequency. In the absence of competition in chiefs' elections, civil society spaces are susceptible to elite capture, leading to a lack of representation of citizens in community-level structures (Acemoglu et al., 2014). We measure this lack of inclusive decision-making using an innovative behavioral measure. During a land planning activity, we asked the town chief to invite four community leaders. We measured the share of those leaders with family ties to either the Paramount Chiefs or the town chiefs. The higher the number of family-involved leaders, the stronger the representation of chiefs' interests. Taking the inverse measure, these two indicators proxy inclusion of participatory decision-making at the village level. Second, since town chiefs primarily maintain social order and peace in the village, we examine the association with the reported level of conflicts within the village.

As described in the measurement strategy, we measured village-level preferences by aggregating responses pertaining to respondents' ability to apply sanctions directly and indirectly against their leaders. The decision to differentiate between direct and indirect sanctioning preferences is based on the conceptual distinction in the channels of accountability. Direct sanctions imply responsiveness of chiefs to individual citizens, whereas indirect sanctions involve responses to both citizens and higher-level chiefs within the hierarchy. Figure 3.4 displays the distribution of village-level preferences toward directly and indirectly sanctioning the chief. It shows a wide heterogeneity in sanctioning preferences across villages. For direct sanctioning, the village-level measure range from 0 to 3 direct legitimate sanctions with a great variance. For indirect sanctioning, there is less heterogeneity. The measure ranges from 1 to 3 indirect legitimate sanctions. Overall, the variation between villages is significant, especially considering the relatively small size of the

study area and the fact that communities are culturally homogeneous. The findings resonate with feedback gathered during interviews and informal discussions with enumerators, highlighting that in specific areas, ordinary citizens exhibit reluctance to voice concerns against the town chief, and report to elders, or higher-level chiefs. This hesitancy contributes to a lower level of indirect sanctioning preferences. The scatter plot in Appendix B11 illustrates the relationship between direct and indirect sanctions at the village level, indicating a positive linear correlation.

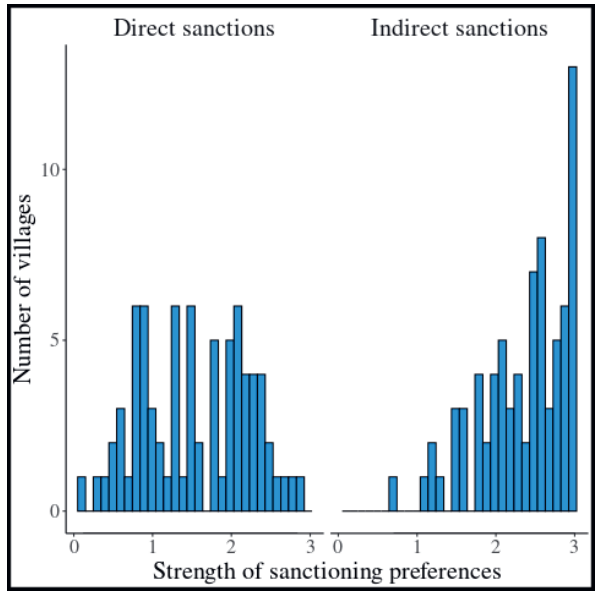


**Figure 3.4:** Histogram of the strength of direct and indirect sanctioning preferences at the village level.

Notes: The figure presents the distribution of direct and indirect sanctioning preferences at the village level. To compute these measures, we averaged the responses across Treatments 1 to 4, differentiating between direct and indirect sanctions. For village-level direct sanctioning preferences, the measure could hypothetically range from 0 to 6. For village-level indirect sanctioning preferences, the measure could hypothetically range from 0 to 3.

The results of the statistical associations are shown in Table 3.6. Appendix B11 display the results for additional political variables. For both outcome variables, we control for the share of inhabitants with voting rights, population, a measure of wealth, inequality, and connectedness with the chiefdom headquarter. We also use chiefdom fixed effects for the conflict frequency outcome (multicollinearity issues arise for the inclusive decision-making variable).

In villages where attitudes towards indirect sanctions are pronounced, the inclusivity of land planning leaders diminishes, as evidenced by an increase in the proportion of individuals from the town chief and Paramount Chief families participating in land planning activities. The effect size is substantial, with each unit increase in the independent variable corresponding to an 0.4 and

**Table 3.6:** OLS regression between direct, indirect sanctioning preferences, and inclusive decision-making and conflict frequency

| | **Inclusive decision making** (*inverse measure*) | | | | **Conflict frequency** | |
|---|---|---|---|---|---|---|
| | **TC** | **TC** | **PC** | **PC** | **(1)** | **(2)** |
| Direct sanctions | $-0.28^{*}$ | $-0.12$ | 0.03 | 0.02 | $0.27^{*}$ | 0.17 |
| | (0.13) | (0.14) | (0.12) | (0.18) | (0.13) | (0.13) |
| Indirect sanctions | $0.45^{***}$ | $0.42^{**}$ | $0.34^{***}$ | $0.26^{+}$ | $-0.37^{**}$ | $-0.59^{***}$ |
| | (0.13) | (0.14) | (0.10) | (0.13) | (0.12) | (0.12) |
| Control | No | Yes | No | Yes | No | Yes |
| Chiefdom FE | No | Yes | No | Yes | No | Yes |
| Adj. $R^2$ | 0.13 | 0.20 | 0.11 | 0.20 | 0.08 | 0.33 |
| N | 76 | 73 | 76 | 73 | 76 | 74 |

*Notes:* Dependent variables are continuous and standardized. Independent variables are also standardized. TC and PC refer to the share of town chief (TC) or Paramount Chief (PC) family members selected for the land planning activity. Positive values indicate lower inclusive participatory decision-making. Columns (1) and (2) refer to the stated number of conflicts revealed by the town chief, measured on a scale from 1 to 5, and this variable is standardized. Controls include population size, the share of families with voting rights for the town chief, the stated frequency of meetings between the town chief and the Paramount Chief (measured using a dummy variable that equals 1 if meetings occur at least once a month), an index of infrastructure development, and income inequality between the chief and the average household. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

0.3 standard error reduction in the inclusive decision-making outcomes, a statistically significant finding at the 1% and 10% significance level. Furthermore, an increase in indirect sanctioning preferences is sharply associated with a reduction in the stated conflict frequency at the village level, a one point increase in independent variables decrease the outcome variable of 0.6 standard deviation, a result statistically significant at the 0.1% level.

On the other hand, an increase in direct sanctioning preferences is correlated with a reduction in the share of invited town chief family members in the land planning activity of 0.1 standard errors. But the results fail to reach statistical significance.

This preliminary statistical analysis is subject to omitted variable biases and reverse causation. Nevertheless, the identification of significant correlations between actual behavior observed in the field and the preferences for indirect and direct sanctions at the village level suggests that such preferences may serve as an indicator of a noteworthy political phenomenon, namely, non-electoral accountability mechanism. These correlations can be understood within various interpretative frameworks. Town chiefs may respond to indirect citizens' pressure. In anticipation of potential sanctions from higher-ranking authorities, chiefs may seek to appease them by involving their family members in decision-making processes. Our descriptive findings reveal that a quarter of the surveyed villages have experienced the removal of a town chief, suggesting that the threat is real. When direct pressure is high, they reduce the proportion of their own family members to

broader the inclusion of decision-making spaces. The results is also consistent with a narrative suggesting that top-down accountability channels are stronger than bottom-up accountability channels. But for both channels, citizens are able to activate them. In light of the tangible threat posed by higher-ranking figures within the chiefdom, the performance of town chiefs appears to improve in villages where preferences for indirect sanctions are more pronounced, as evidenced by the reduced instances of local-level conflicts.

Nevertheless, our findings do not contradict an opposing narrative supported by the results presented by Acemoglu et al. (2014). These authors underscore that in chiefdoms characterized by low levels of political competition, civil society often becomes subject to elite capture. The observed increase in the involvement of Paramount Chief families in land planning activities within villages where preferences for indirect sanctions are more prevalent underscores the potential for such capture. In response to the fear of repression, villagers may avoid conflicts at the village level.

## 3.7 Conclusion

This study examines the extent to which ordinary citizens impose sanctions on their leaders and the methods they employ. Through a survey experiment, we found that citizens engage in sanctioning their leaders, predominantly opting for indirect channels rather than direct approaches, corroborating the findings of (Zhong & Zeng, 2024). This preference for indirect sanctions can be partially attributed to the lower costs associated with this form of reprimand. Norms dictating acceptable behavior also play a crucial role in shaping the legitimacy of political conduct, influencing the preference for indirect sanctions.

We explored the relationship between the heterogeneity in sanctioning preferences at the village level and inclusive participatory decision-making and public goods provision. Our findings indicate a strong inverse relationship between indirect sanctions and inclusive participatory decision-making, as well as a positive relationship between indirect sanctions and reduced conflict frequency. This is significant in contexts where town chiefs are crucial in maintaining village peace.

Our research enhances the understanding of how chiefs can be held accountable within traditional political institutions (Baldwin & Holzinger, 2019), providing broader insights into social accountability in authoritarian settings (Tsai, 2007b; Chen et al., 2016). Socio-economic institutions can both impede (Mattingly, 2016) and facilitate (Tsai, 2007b) citizen pressures on local leaders. Our findings suggest that citizens have non-electoral tools to ensure traditional leaders remain responsive to community interests, even without elections. We outline the political measures available to community members for disciplining their leaders—referred to as the political repertoire—and enhance theoretical frameworks by categorizing these sanctions based on their source of accountability, distinguishing between top-down and bottom-up mechanisms. Our results also suggest that the type of sanctions (direct or indirect) likely shapes leaders' behavior differently. Examining the determinants of sanctions and their evolution over time is of theoretical interests. The heterogeneous effects by gender, wealth, and voting rights could expand our understanding of how variations in enforcing norms through sanctions shape inequalities and power distribution.

Furthermore, our results indicate that the council of elders plays a role in initiating bottom-up sanctions. When the elders themselves sanction a town chief, ordinary citizens are more likely to impose sanctions on their town chief. We contribute to the growing literature on village advisory councils (Baldwin et al., 2022) by highlighting two mechanisms by which advisory councils shape community members' sanctioning preferences: a legitimating mechanism that

shapes what behaviors are deemed right or wrong, and a covering mechanism that highlights the potential for protecting community members engaged in sanctioning behavior.

Overall, this study underscores the significance of non-electoral accountability mechanisms in contexts where chiefs are well-embedded within their communities. Unpacking the mechanisms of accountability in traditional political institutions is essential to improving the quality of such institutions. Future research should further investigate bottom-up accountability mechanisms, with stronger research designs enabling the identification of causal effects to understand how chiefs respond to sanctioning preferences.

# Appendix B: Supplementary Materials

## B1 Village elections, corruption, development and social capital

**Table 3.7:** OLS regression between the presence of village election for selecting the town chief and development and corruption outcomes

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Village election | −0.09 | 0.02 | −0.03 | −0.03 | 0.05 | 0.01 | 0.05 | −0.09 | 0.04 | 0.03 | 0.06* |
| | (0.07) | (0.03) | (0.07) | (0.07) | (0.07) | (0.03) | (0.09) | (0.21) | (0.06) | (0.12) | (0.03) |
| No election mean | 0.12 | 0.04 | 0.50 | 0.51 | 0.32 | 0.96 | 0.70 | 3.08 | 0.24 | 3.21 | 0.78 |
| DV range | $\{0, 0.5, 1\}$ | $\{0, 1\}$ | $[0, 1]$ | $[0, 1]$ | $[0, 1]$ | $[0, 1]$ | $\{0, 1\}$ | $[1, 5]$ | $[0, 3]$ | $[1, 4]$ | $[0, 1]$ |
| Covariates | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Chiefdom FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adj. $R^2$ | 0.33 | 0.09 | 0.27 | 0.28 | 0.33 | 0.26 | 0.14 | 0.15 | 0.15 | 0.15 | 0.05 |
| Num. obs. | 1606 | 2499 | 2451 | 2451 | 2612 | 2612 | 2612 | 2612 | 2587 | 2446 | 2550 |
| N Clusters | 143 | 221 | 217 | 217 | 231 | 231 | 231 | 231 | 231 | 231 | 231 |

*Notes:*
The table displays the results of OLS regressions between the presence of village election and development outcomes. The independent variable takes the value 1 (village chief elected) when there is election and at least 50% of the households are allowed to vote. We use 11 outcome variables:
(1): Development goods distributed in Casey et al. (2012) used for private purposes. In percentage.
(2): The community has problem with corruption in the past 2 years (dummy).
(3): Quality index of the village development plan (numeric). Higher value indicates higher quality.
(4): Alternative quality index of the village development plan (numeric). Higher value indicates higher quality.
(5): Town chief has the most influence over the allocation of development goods. Numeric index. Higher value indicates higher town chief influences.
(6): Community meetings are organized to decide over the allocation of development goods. Numeric index. Higher value indicates more community meetings organized.
(7): The community has implemented a development project in the past 3 years.
(8): Community wealth relative to others. Higher value indicate lower wealth. Numeric value.
(9): Only the town chief or the town chief with the big ones are considered to decide the allocation of development goods by households. Numeric index.
(10): Scale of chief influence during development community meetings. Lower values indicate higher chief influence. Household answers. Numeric index.
(11): Proportion of community meeting organized to decide the allocation of development goods. Household answers. Percentage.
Control variable includes the village size, the frequency of paramount chief visits, the relative wealth of villages (despite for column 8), respondents' gender, education level, religion, ethnicity, whether the respondent has a paid job and work in agriculture, respondents' political participation, inclusion in group, and level of conflicts. District and chiefdom fixed effect included. Cluster robust standard error at the village in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

**Table 3.8:** OLS regression between the presence of village election for selecting the town chief and social capital outcomes

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| Village election | $0.07^{*}$ | $0.03^{*}$ | $0.04^{+}$ | 0.04 | $-0.08$ | $-0.04$ | $-0.11$ | $-0.06^{+}$ | 0.07 | $0.23^{+}$ |
| | (0.03) | (0.01) | (0.02) | (0.04) | (0.06) | (0.03) | (0.09) | (0.03) | (0.05) | (0.12) |
| No election mean | 0.11 | 0.92 | 0.84 | 2.70 | 3.45 | 0.28 | 0.59 | 0.84 | 0.40 | 1.56 |
| DV range | $\{0, 1\}$ | $\{0, 1\}$ | $\{0, 1\}$ | $[0, 3]$ | $[0, 4]$ | $\{0, 1\}$ | $\{0, 1\}$ | $\{0, 1\}$ | $\{0, 1\}$ | $[0, 7]$ |
| Covariates | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Chiefdom FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adj. $R^2$ | 0.08 | 0.02 | 0.06 | 0.06 | 0.05 | 0.07 | 0.05 | 0.06 | 0.09 | 0.19 |
| Num. obs. | 2613 | 2612 | 2611 | 2653 | 2648 | 2637 | 498 | 2660 | 2649 | 2636 |
| N Clusters | 231 | 231 | 231 | 231 | 231 | 231 | 195 | 231 | 231 | 231 |

*Notes:*
The table displays the results of OLS regressions between the presence of village election and social capital outcomes. The independent variable takes the value 1 (village chief elected) when there is election and at least 50% of the households are allowed to vote. We use 10 household level outcome variables:
(1): The current town chief fine people too much or unfairly (Yes=1).
(2): Satisfied with the current town chief (Yes=1).
(3): If an election were hold tomorrow, you would vote for the current town chief (Yes=1).
(4): Participation in the past national and local elections. Numeric index. Higher values indicate higher participation.
(5): Index for peaceful environment measured as household having their livestock, household items, or money stolen, or involved in physical fighting. Numeric index. Higher value lower peaceful environment.
(6): The respondent has been to the town chief to resolve a conflict (Yes=1).
(7): Respondent having a conflict regarding money brought the conflict to the town chief (Yes=1).
(8): People from your village can be believed (Yes=1).
(9): Participation in road brushing or town cleaning in the past two months (Yes=1)
(10): Number of membership to village groups (credit or saving, labor sharing gang, school, social clubs, religious groups, group saving for major events, or traditional society)
Control variable includes village size, the frequency of paramount chief visit, the relative wealth of the village compared to other around, the respondent gender, age, education level, religion, ethnicity whether the respondent has a paid job, is a farmer, and level of wealth. District and chiefdom fixed effect included. Cluster robust standard error at the village in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

## B2 The study area, measurement strategy and summary statistics

### B2.1 Study area

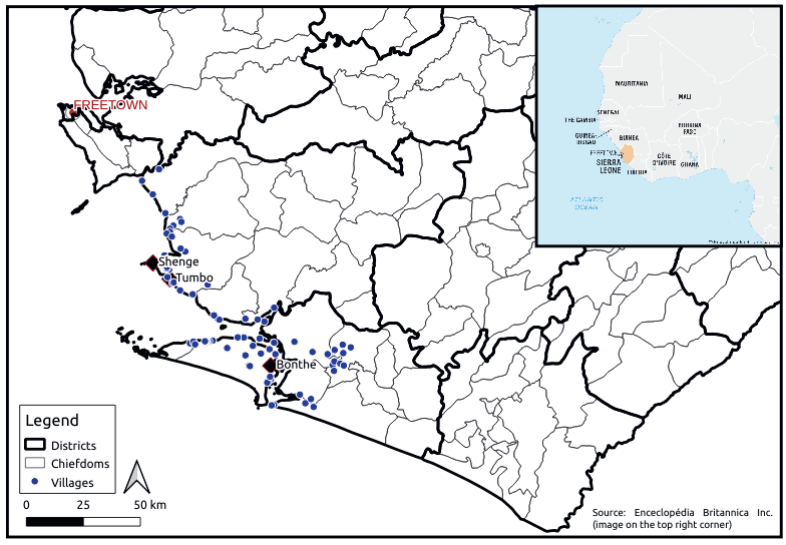


**Figure 3.5:** Map of Sierra Leone, with a focus on the study area, blue dots are the villages sampled.

### B2.2 Dependent variables used to test hypothesis one and two

**Table 3.9:** Table of the measurement strategy for the main dependent variables used to test the hypotheses 1 and 2

| Type | Name | Survey question | Range |
|---|---|---|---|
| DV 1 | Number of direct legitime sanctions | *[After reading one of the five experimental scenario]* Some members of the village reacted in this way. In your opinion, is it legitimate? *Among the list of six actions, select all the answers that the respondents considered as legitimate* | $\{0, 1, 2, 3, 4, 5, 6\}$ |
| DV 2 | Number of indirect legitime sanctions | *[After reading one of the five experimental scenario]* Some members of the village reacted in this way. In your opinion, is it legitimate? *Among the list of three actions, select all the answers that the respondents considered as legitimate* | $\{0, 1, 2, 3\}$ |

### B2.3 Independent and dependent variables used to test hypotheses 3, and 4

**Table 3.11:** Table of the measurement strategy for the main dependent and independent variables used to test the hypotheses 3 to 5

| Type | Name | Survey question | Range |
|---|---|---|---|
| IV 1 | Village-level direct sanctioning preferences | Average of the number of direct legitime sanctions in each village across treatment 1 to 4 | $[0; 6]$ |
| IV 2 | Village-level indirect sanctioning preferences | Average of the number of indirect legitime sanctions in each village across treatment 1 to 4 | $[0; 3]$ |
| DV 1 | Trust in the chief | Standardized Average of the answers in the household survey: "How much do you trust your village chief on a scale from one to four?" | Numeric |
| DV 2 | Leader responsiveness | Standardized difference in support for a land deal when endorsed by the Paramount Chief compared to when supported by community members | Numeric |
| DV 3 | Representativeness of councilors chosen by the town chief in a land planning activity | The town chief was asked to select 4 community members to participate in a land activity. We report the number of those members that are part of the town or Paramount Chief family. | Numeric |
| DV 4 | Conflicts frequency | Standardized measure of the question: How frequent conflicts are in the village on a scale from 1 to 4? | Numeric |
| DV 5 | Deforestation between 2015 and 2020 (6-km buffer from the village) | From vancutsem (2021), we measured the difference of primary forest cover and regrown forest between 2015 and 2020 divided by 2015 forest. The measure is standardized. | Numeric |

### B2.4 Descriptive statistics of the participants and the sampled villages

**Table 3.13:** Descriptive statistics of the participants and the sampled villages

| Variable | N | mean | min | Q1 | Q2 | Q3 | max | NA |
|---|---|---|---|---|---|---|---|---|
| **Household level variables** | | | | | | | | |
| Number of legitime sanctions | 907 | 3.27 | 0.00 | 1.00 | 4.00 | 5.00 | 8.00 | 0 |
| Number of legitime direct sanctions | 907 | 1.19 | 0.00 | 0.00 | 1.00 | 2.00 | 5.00 | 0 |
| Number of legitime indirect sanctions | 907 | 2.08 | 0.00 | 1.00 | 3.00 | 3.00 | 3.00 | 0 |
| Annual income (log) | 907 | 3.64 | 0.00 | 3.43 | 3.72 | 3.95 | 4.78 | 0 |
| Wealth | 907 | 7.66 | -4.07 | -0.07 | 5.93 | 11.93 | 72.93 | 0 |
| Age | 905 | 39.64 | 18.00 | 30.00 | 38.00 | 48.00 | 85.00 | 2 |
| Education | 890 | 1.48 | 0.00 | 0.00 | 0.00 | 0.00 | 14.00 | 17 |
| Muslim | 907 | 0.91 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0 |
| Employed | 906 | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1 |
| Female | 907 | 0.37 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0 |
| Right to vote | 906 | 0.78 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1 |
| **Village level variables** | | | | | | | | |
| Direct sanction preferences | 77 | 1.54 | 0.12 | 0.88 | 1.50 | 2.12 | 2.83 | 0 |
| Indirect sanction preferences | 77 | 2.34 | 0.71 | 1.96 | 2.50 | 2.79 | 3.00 | 0 |
| Leader responsiveness | 76 | -0.84 | -3.00 | -2.00 | -1.00 | 0.00 | 3.00 | 1 |
| Annual number of community meetings | 76 | 7.08 | 2.00 | 3.75 | 6.00 | 10.00 | 20.00 | 1 |
| Prize for resolving local conflicts | 76 | 3.21 | 0.00 | 3.04 | 3.43 | 3.93 | 5.30 | 1 |
| Trust in the town chief | 77 | 3.63 | 2.33 | 3.50 | 3.75 | 3.83 | 4.00 | 0 |
| Inclusiveness 1 | 75 | 0.27 | 0.00 | 0.00 | 0.25 | 0.50 | 0.75 | 2 |
| Inclusiveness 2 | 75 | 0.60 | 0.00 | 0.25 | 0.75 | 0.94 | 1.00 | 2 |
| Deforestation rates between 2015 and 2020 | 76 | 0.06 | 0.00 | 0.03 | 0.05 | 0.07 | 0.27 | 1 |
| Paramount-town Chief meeting frequency | 77 | 0.71 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0 |
| Proportion of voters | 77 | 0.78 | 0.25 | 0.67 | 0.83 | 0.92 | 1.00 | 0 |
| Year of election | 77 | 0.00 | -1.00 | -1.00 | 0.00 | 0.00 | 4.00 | 0 |
| Population | 77 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0 |
| Index of access to basic services | 77 | 0.00 | -1.30 | -0.55 | -0.29 | 0.18 | 4.07 | 0 |
| Income inequality | 77 | 0.34 | 0.11 | 0.26 | 0.33 | 0.40 | 0.57 | 0 |

*Notes:*

Descriptive statistics (mean, first, second, third quartile, minimum and maximum) of the main variables used to test the hypotheses. The household-level numbers of sanctions are the outcome variables used to test hypotheses 1 and 2. The other household-level variable refers to co-variates. Village-level sanctioning preferences are the two independent variables used to test hypotheses 3 and 4. The other village-level variables are either outcome variables or control variables.

### B2.5 Summary statistics of inequalities between citizens and town chiefs in the study area

**Table 3.14:** Citizens and town chiefs' socio-economic characteristics and inequality measures.

| | **Citizens** | **Chiefs** | **Inequality** |
|---|---|---|---|
| N | 907 | 76 | - |
| Age | 39.64 | 49.41 | 12.8 |
| | *(12.78)* | *(13.94)* | - |
| Education (in year) | 1.48 | 1.49 | 1.34 |
| | *(3.47)* | *(3.39)* | - |
| Number of children | 3.16 | 4.11 | 1.28 |
| | *(2.2)* | *(2.34)* | - |
| Employed | 0.13 | 0.21 | 0.18 |
| | *(0.33)* | *(0.41)* | - |
| Farm size (in ha) | 1.91 | 2.39 | 0.76 |
| | *(2.32)* | *(2.29)* | - |
| House quality index | 1.37 | 1.25 | 0.12 |
| | *(0.91)* | *(1.16)* | - |
| Material wealth index | 1.35 | 0.97 | -0.43 |
| | *(0.75)* | *(0.4)* | - |
| Number of livestock | 8.52 | 11.77 | 5.07 |
| | *(8.89)* | *(12.95)* | - |

*Notes:*
The citizens and chiefs columns diplay the average of the socio-economic indicators. Standard errors are in parenthesis. The inequality column represents the average of the difference between the chief indicator and the median of the citizen indicator in the same village.

### B2.6 Summary statistics of the outcomes of the focus group discussions

We deployed five focus group discussions with elders of the communities in various villages of the study area. During these focus group discussions they were asked to give a costs associated to the 9 sanctions understudy. The average cost is displayed for each sanction in the following table.

**Table 3.15:** Table of the cost of sanctions

| **Sanction** | **Cost** |
|---|---|
| **Indirect sanctions** | |
| Complain to the elders | *2.25* |
| Complain to the Section Chief | - |
| Complain to the Paramount Chief | *1.25* |
| **Direct sanctions** | |
| Blame the chief directly | *1.25* |
| Threaten the chief directly | *4.5* |
| Refuse to get married to the chief family | *5* |
| Refuse to pay local taxes | *5* |
| Refuse to work for the chief | *2.25* |
| Refuse to participate to collective labour | *3.75* |

*Notes:*
The table represents the average costs of sanctions measured on a 1 to 5 scale, 5 being high cost. The measure comes from focus groups discussions undertaken by elders in 4 communities. The measure does not include complain to the section chief.

## B3 Covariate balances

**Table 3.16:** Randomization integrity

| | Average | | | | | Std. mean diff. | | |
|---|---|---|---|---|---|---|---|---|
| | C | T1 | T2 | T3 | T4 | T1-C | T2-T3 | T4-T1 |
| **Variable level test** | | | | | | | | |
| Wealth | 0.09 | 0.06 | -0.03 | -0.14 | 0.01 | -0.04 | 0.11 | -0.04 |
| Tenure insecurity | 3.19 | 2.98 | 3.02 | 3.24 | 3.3 | -0.21 | -0.22 | 0.32 |
| Income | -2.71 | -2.67 | -2.69 | -2.78 | -2.65 | 0.05 | 0.09 | 0.01 |
| Muslim | 0.89 | 0.91 | 0.9 | 0.91 | 0.91 | 0.02 | -0.01 | 0 |
| Sherbro | 0.52 | 0.44 | 0.49 | 0.49 | 0.51 | -0.08 | 0 | 0.08 |
| Trust in the chief | 3.72 | 3.56 | 3.62 | 3.59 | 3.63 | -0.16** | 0.02 | 0.07 |
| Trust in others | 1.31 | 1.3 | 1.28 | 1.29 | 1.31 | -0.01 | -0.02 | 0.01 |
| Employed | 0.15 | 0.08 | 0.12 | 0.14 | 0.13 | -0.06* | -0.02 | 0.05 |
| Female | 0.4 | 0.34 | 0.38 | 0.39 | 0.35 | -0.05 | 0 | 0.01 |
| Cash emergency | 0.69 | 0.72 | 0.78 | 0.74 | 0.71 | 0.04 | 0.04 | -0.01 |
| Age | 37.75 | 39.45 | 43.41 | 39.46 | 38.36 | 1.7 | 3.95*** | -1.09 |
| Education | 1.25 | 1.22 | 1.63 | 1.34 | 1.96 | -0.02 | 0.29 | 0.74* |
| Voting rights | 0.73 | 0.74 | 0.81 | 0.81 | 0.8 | 0.01 | 0 | 0.06 |
| **Global F test** | | | | | | | | |
| F-test | | | | | | 1.61 | 1.09 | 1.14 |
| p-value | | | | | | $0.08^{+}$ | 0.37 | 0.33 |

*Notes:*
This table presents means across treatment arms (columns C to T4) and difference in means and two-sided t-tests for difference in means (columns T1-C to T4-T1) for a set covariates. P-values are unadjusted for multiple hypotheses testing. A global F-test and p-value are also provided at the bottom of the tables. +p¡0.1, *p¡.05, **p¡.01, ***p¡.001.

### B4 Share of respondents who understand the scenarios

**Table 3.17:** Total number and share of respondents who understood the experimental conditions

| | Control | T1 | T2 | T3 | T4 | Total |
|---|---|---|---|---|---|---|
| **Quantity of money stolen** | | | | | | |
| | 192 | 170 | 177 | 160 | 162 | 861 |
| | *97 %* | *96 %* | *99 %* | *94 %* | *88 %* | *95 %* |
| **Behavior of the elders** | | | | | | |
| | 191 | 161 | 175 | 143 | 168 | 838 |
| | *97 %* | *91 %* | *98 %* | *84 %* | *91 %* | *92 %* |

*Notes:*
This table displays the number and proportion of respondents who understood the experimental conditions. After answering the outcome questions, respondents were asked to recall the amount of money taken by the town chief, if any, and the behavior of the elders, if any.

### B5 Deviation from the pre-analysis plan

**Table 3.18:** Table of the main deviation from the pre-analysis plan. The pre-registered hypotheses are laid out with their results using the specification described in the pre-analysis plan.

| Pre-registered hypotheses | Test | Deviation from the PAP | PAP | Current |
|---|---|---|---|---|
| **H1:** *When undemocratic village leaders do not behave in the interest of the community they represent, citizens sanction them through a variety of social, economic, and political channels, preferably choosing the low cost ones* | $H_1 > H_0$ | The current analysis includes village and gender fixed effects to account for the randomization strategy. Those fixed effects where not included in the PAP. | $p < .01$ | $p < .01$ |
| **H2:** *When the council of elders takes an active role in sanctioning the chief, ordinary citizens will be less willing to take an active role in sanctioning the chief. On the contrary, when the council of elders do not take any action, citizens will sanction their chief through a variety of social, economic, and political channels. Horizontal and bottom-up accountability mechanisms would substitute for each other.* | $H_1 < H_0$ | The current analysis includes village and gender fixed effects to account for the randomization strategy. Those fixed effects where not included in the PAP. | $p < .95$ | $p < .99$ |
| **H3:** *Villages with a higher ability to sanction their chiefs are associated with higher responsive leaders.* | $H_1 > H_0$ | In the current specification, the indepent variable is disaggregated between direct and indirect sanctions. The current analysis does not use chiefdom fixed effects. It also focuses mostly on the second measure of leader responsiveness (easier to interpret) | (1) $p < .71$<br>(2) $p < .13$ | |
| **H4:** *Villages with a higher ability to sanction their chiefs are associated with higher leadership quality* | $H_1 > H_0$ | In the current specification, the indepent variable is disaggregated between direct and indirect sanctions. The current analysis does not use chiefdom fixed effects. | (1)$p < .19$<br>(2)$p < .99$<br>(3)$p < .91$<br>(4)$p < .65$ | |
| **H5:** *Villages with a higher ability to sanction their chiefs are associated with lower deforestation rates* | $H_1 < H_0$ | In the current specification, the indepent variable is disaggregated between direct and indirect sanctions. | (1)$p < .07$ | |

### B5.1 Main results using the land deal survey experiment

In the registered pre-analysis plan, two scenarios were mentioned: a community project and a land deal scenario. For the latter, a crucial observation made during the fieldwork stage was the inconsistency between the scenario presented and the prevailing contextual realities. Specifically, it was determined that the sale of lands, which formed the basis of the scenario, does not align with customary practices (lands can only be leased) and land transactions typically involve consultation with the Paramount Chief. Second, the scenario lacks a pure control, thus limiting the ability to isolate and assess the specific effects of the variables under investigation. As a result, in adherence to the registered pre-analysis plan, the detailed results of the land deal scenario are presented in the appendices for reference. The results remain consistent with the one reported in the main text. More specifically, the scenarios were as followed:

- ***Control arm:*** *In a village in Sierra Leone, villagers' livelihood was strongly tied to forest resources. The town chief, in consultation with landowning families, sells a small part of the forested land for a conservation project. The land sold could not be used anymore by villagers.*

- ***Treatment 1:*** *In a village in Sierra Leone, villagers' livelihood was strongly tied to forest resources. The town chief, in consultation with landowning families, sells most of the forested land for a conservation project. The land sold could not be used anymore by villagers.*

- ***Treatment 2:*** *In a village in Sierra Leone, villagers' livelihood was strongly tied to forest resources. The town chief, in consultation with landowning families, sells most of the forested land for a conservation project. The land sold could not be used anymore by villagers. The elders in the village went to the chiefs and sermoned him.*

- ***Treatment 3:*** *In a village in Sierra Leone, villagers' livelihood was strongly tied to forest resources. The town chief, in consultation with landowning families, sells most of the forested land for a conservation project. The land sold could not be used anymore by villagers. The elders in the village did not sermon the chief.*

**Test for hypothesis 1**

**Table 3.20:** Average treatment effects of chief malevolance on the total number of legitime sanctions, of direct and indirect sanctions during the land deal survey experiment

| | Number of legitime sanction | | | | | |
|---|---|---|---|---|---|---|
| | General | | Direct | | Indirect | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Treatment | $0.58^{***}$ | $0.63^{***}$ | $0.41^{***}$ | $0.45^{***}$ | 0.17 | $0.19^{+}$ |
| | (0.17) | (0.17) | (0.10) | (0.09) | (0.11) | (0.10) |
| Control mean | 3.18 | 3.18 | 0.991 | 0.991 | 2.19 | 2.19 |
| DV range | $\{0, 9\}$ | | $\{0, 6\}$ | | $\{0, 3\}$ | |
| Block FE | No | Yes | No | Yes | No | Yes |
| Adj. $R^2$ | 0.02 | 0.14 | 0.04 | 0.18 | 0.00 | 0.13 |
| Num. obs. | 441 | 441 | 441 | 441 | 441 | 441 |

*Notes:*
Three outcome variable are used: the total sum of sanctions considered as legitimate (column 1 and 2), the total sum of direct sanctions considered as legitimate (column 3 and 4) and the total sum of indirect sanctions considered as legitimate (column 5 and 6). Treatment refers to a dummy comparing the scenario where the town chief sells half of the forested land for a conservation project compared to a scenario where the chief sells only a small part. The specification from the pre-analysis plan is used in column 1, 3, and 5. Village and block fixed effects are added in column 2, 4, and 6. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

**Test of the hypothesis 2**

**Table 3.21:** Average treatment effects of elders blaming the town chief on the total number of legitime sanctions, of direct and indirect sanctions during the land deal survey experiment

| | Number of legitime sanction | | | | | |
|---|---|---|---|---|---|---|
| | General | | Direct | | Indirect | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Treatment | 0.15 | 0.15 | 0.01 | 0.01 | 0.13 | 0.14 |
| | (0.16) | (0.16) | (0.09) | (0.09) | (0.10) | (0.10) |
| Control mean | 3.69 | 3.69 | 1.28 | 1.28 | 2.42 | 2.42 |
| DV range | $\{0, 9\}$ | | $\{0, 6\}$ | | $\{0, 3\}$ | |
| Block FE | No | Yes | No | Yes | No | Yes |
| Adj. $R^2$ | −0.00 | 0.00 | −0.00 | 0.05 | 0.00 | 0.04 |
| Num. obs. | 413 | 413 | 413 | 413 | 413 | 413 |

*Notes:*
Three outcome variable are used: the total sum of sanctions considered as legitimate (column 1 and 2), the total sum of direct sanctions considered as legitimate (column 3 and 4) and the total sum of indirect sanctions considered as legitimate (column 5 and 6). Treatment refers to a dummy comparing the scenario where the town chief sells half of the forested land for a conservation project and the elders do blame the chief compared to a scenario where the chief sells half of the forested land and the elders do not blame the chief. The specification from the pre-analysis plan is used in column 1, 3, and 5. Village and block fixed effects are added in column 2, 4, and 6. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

**B6 Summary statistics of the open question outcome: "What actions would you take if you were in a similar situation?"**

**Table 3.22:** Categorized Responses to the Open Question - What Would You Do in a Similar Situation?

| Variable | N | Frequency | Percentage |
|---|---|---|---|
| **Collective Actions** | | | |
| Mobilize citizens | 404 | 13 | 3 % |
| Town meetings | 404 | 5 | 1 % |
| **Direct actions** | | | |
| Force give back money | 404 | 80 | 20 % |
| Blame directly | 404 | 49 | 12 % |
| Refuse to take orders | 404 | 17 | 4 % |
| Vote against him | 404 | 5 | 1 % |
| Attack the chief | 404 | 4 | 1 % |
| Remove him from the project | 404 | 3 | 1 % |
| Stop working for him | 404 | 2 | 0 % |
| Fine him | 404 | 1 | 0 % |
| **Indirect actions** | | | |
| Report to elders | 404 | 97 | 24 % |
| Report to Paramount Chief | 404 | 55 | 14 % |
| Report to Section Chief | 404 | 53 | 13 % |
| Report to higher authorities | 404 | 48 | 12 % |
| Report to village authorities | 404 | 41 | 10 % |
| Ask for suspension | 404 | 40 | 10 % |
| Report to police | 404 | 16 | 4 % |
| Bring case to court | 404 | 10 | 2 % |
| Report to NGO | 404 | 8 | 2 % |
| **No actions** | | | |
| No actions | 404 | 71 | 18 % |
| Preference for the chief giving back the money | 404 | 37 | 9 % |
| Not understandable | 404 | 1 | 0 % |

*Notes:*
For half of the sample (N=404), after receiving the scenario, we asked an open question: What would you do in a similar situation? We categorized the actions into the categories reported in the table with the absolute and relative frequency.

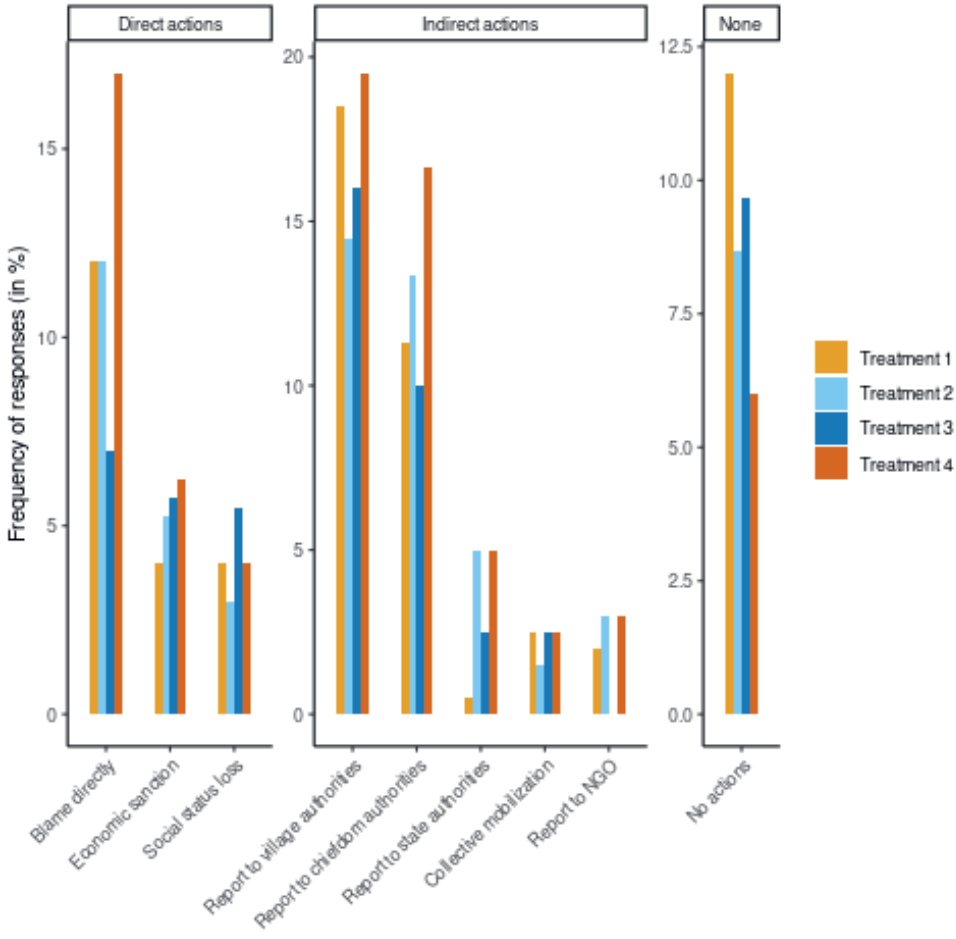


**Figure 3.6:** Categorized Responses grouped to the Open Question 'What Would You Do in a Similar Situation?' by scenario

## B7 Analysis of the perception of the chiefs behavior and adequate responses by community members

### B7.1 Outcome 1: on a scale from 1 to 5, how much the respondent agree with the chief behavior

**Treatment 1 vs. Control arm**

**Table 3.23:** Treatment effects on how much respondents disagree with the chief's behavior

| | Disagree with chiefs behavior | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | $2.83^{***}$ | $2.85^{***}$ | $2.85^{***}$ | $2.81^{***}$ |
| | (0.11) | (0.11) | (0.11) | (0.11) |
| Control mean | 1.46 | 1.46 | 1.46 | 1.51 |
| DV range | | $\{1, 2, 3, 4, 5\}$ | | |
| Block FE | No | Yes | Yes | Yes |
| Observations | 362 | 362 | 362 | 374 |
| $R^2$ | 0.64 | 0.69 | 0.69 | 0.68 |

*Notes:*
The outcome variable refers to a 1-5 scale about how much citizens disagree with chiefs' behavior. The table shows the analysis comparing the treatment 1 with the control group. The treatment 1 refers to a scenario where the chief takes a small part of the money for his own benefit. Robust standard errors in parenthesis. Column 1 refers to the empirical specification from the pre-analysis plan. Block fixed effects are used in column 2, 3, and 4. Robust cluster standard errors at the village level are used in column 3. Column 4 represents the specification where no observations were dropped. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

**Treatment 2 vs. Treatment 3**

**Table 3.24:** Treatment effects on how much respondents disagree with the chief's behavior

| | Disagree with chiefs behavior | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | 0.07 | $0.15^{+}$ | $0.15^{+}$ | 0.07 |
| | (0.1) | (0.08) | (0.08) | (0.08) |
| Control mean | 4.42 | 4.42 | 4.42 | 4.43 |
| DV range | | $\{1, 2, 3, 4, 5\}$ | | |
| Block FE | No | Yes | Yes | Yes |
| Observations | 310 | 310 | 310 | 349 |
| $R^2$ | 0.001 | 0.21 | 0.21 | 0.22 |

*Notes:*
The outcome variable refers to a 1-5 scale about how much citizens disagree with chiefs' behavior. The table shows the analysis comparing the treatment 2 with the treatment 3. The treatment 2 refers to a scenario where the chief takes a small part of the money for his own benefit with the elders sermoning the chief. The treatment 3 refers to a scenario where the chief takes a small part of the money for his own benefit with the elders did not sermon the chief. Robust standard errors in parenthesis. Column 1 refers to the empirical specification from the pre-analysis plan. Block fixed effects are used in column 2, 3, and 4. Robust cluster standard errors at the village level are used in column 3. Column 4 represents the specification where no observations were dropped. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

**Treatment 4 vs. Treatment 1**

**Table 3.25:** Treatment effects on how much respondents disagree with the chief's behavior

| | Disagree with chiefs behavior | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | $0.46^{***}$ | $0.45^{***}$ | $0.45^{***}$ | $0.37^{***}$ |
| | (0.09) | (0.08) | (0.07) | (0.08) |
| Control mean | 4.29 | 4.29 | 4.29 | 4.32 |
| DV range | | $\{1, 2, 3, 4, 5\}$ | | |
| Block FE | No | Yes | Yes | Yes |
| Observations | 332 | 332 | 332 | 361 |
| $R^2$ | 0.07 | 0.29 | 0.29 | 0.27 |

*Notes:*
The outcome variable refers to a 1-5 scale about how much citizens disagree with chiefs' behavior. The table shows the analysis comparing the treatment 4 with the treatment 1. The treatment 4 refers to a scenario where the chief takes half of the money for his own benefit. The treatment 1 refers to a scenario where the chief takes a small part of the money for his own benefit. Robust standard errors in parenthesis. Column 1 refers to the empirical specification from the pre-analysis plan. Block fixed effects are used in column 2, 3, and 4. Robust cluster standard errors at the village level are used in column 3. Column 4 represents the specification where no observations were dropped. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

### B7.2 Outcome 2 (Yes=1): do citizens of that village should take any actions in response?

**Treatment 1 vs. Control arm**

**Table 3.26:** Treatment effects on how much respondents disagree with the chief's behavior

| | Citizens should take action | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | $0.74^{***}$ | $0.75^{***}$ | $0.75^{***}$ | $0.74^{***}$ |
| | (0.04) | (0.03) | (0.04) | (0.03) |
| Observations | 362 | 362 | 362 | 374 |
| $R^2$ | 0.56 | 0.64 | 0.64 | 0.62 |
| Control mean | 0.06 | 0.06 | 0.06 | 0.07 |
| DV range | | $\{0, 1\}$ | | |
| Block FE | No | Yes | Yes | Yes |

*Notes:*
The outcome variable refers to a dummy indicating whether the respondent think that the citizens of that village should take any action against the town chief. The table shows the analysis comparing the treatment 1 with the control arm. The treatment 1 refers to a scenario where the chief takes a small part of the money for his own benefit. Robust standard errors in parenthesis. Column 1 refers to the empirical specification from the pre-analysis plan. Block fixed effects are used in column 2, 3, and 4. Robust cluster standard errors at the village level are used in column 3. Column 4 represents the specification where no observations were dropped. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

**Treatment 2 vs. Treatment 3**

**Table 3.27:** Treatment effects on how much respondents disagree with the chief's behavior

| | Citizens should take action | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | 0.02 | 0.04 | 0.04 | 0.03 |
| | (0.04) | (0.03) | (0.03) | (0.03) |
| Control mean | 0.87 | 0.87 | 0.87 | 0.86 |
| DV range | | $\{0, 1\}$ | | |
| Block FE | No | Yes | Yes | Yes |
| Observations | 310 | 310 | 310 | 349 |
| $R^2$ | 0 | 0.25 | 0.25 | 0.27 |

*Notes:*
The outcome variable refers to a dummy indicating whether the respondent think that the citizens of that village should take any action against the town chief. The table shows the analysis comparing the treatment 2 with the treatment 3. The treatment 2 refers to a scenario where the chief takes a small part of the money for his own benefit with the elders sermoning the chief. The treatment 3 refers to a scenario where the chief takes a small part of the money for his own benefit with the elders did not sermon the chief. Robust standard errors in parenthesis. Column 1 refers to the empirical specification from the pre-analysis plan. Block fixed effects are used in column 2, 3, and 4. Robust cluster standard errors at the village level are used in column 3. Column 4 represents the specification where no observations were dropped. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

**Treatment 4 vs. Treatment 1**

**Table 3.28:** Treatment effects on how much respondents disagree with the chief's behavior

| | Citizens should take action | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | $0.15^{***}$ | $0.15^{***}$ | $0.15^{***}$ | $0.12^{***}$ |
| | (0.04) | (0.03) | (0.03) | (0.03) |
| Control mean | 0.79 | 0.79 | 0.79 | 0.8 |
| DV range | | $\{0, 1\}$ | | |
| Block FE | No | Yes | Yes | Yes |
| Observations | 332 | 332 | 332 | 361 |
| $R^2$ | 0.05 | 0.25 | 0.25 | 0.27 |

*Notes:*
The outcome variable refers to a dummy indicating whether the respondent think that the citizens of that village should take any action against the town chief. The table shows the analysis comparing the treatment 4 with the treatment 1. The treatment 4 refers to a scenario where the chief takes half of the money for his own benefit. The treatment 1 refers to a scenario where the chief takes a small part of the money for his own benefit. Robust standard errors in parenthesis. Column 1 refers to the empirical specification from the pre-analysis plan. Block fixed effects are used in column 2, 3, and 4. Robust cluster standard errors at the village level are used in column 3. Column 4 represents the specification where no observations were dropped. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

### B8 Robustness check for the statistical test of hypotheses 1

#### B8.1 Comparison of treatment 1 with the control arm

**Table 3.29:** Robustness check for hypothesis 1 comparing the treatment 1 with the control arm. Treatment effects on the total number of legitime sanctions, the number of direct and indirect legitime sanctions.

| ***Outcome: total sum of legitime sanctions*** | | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | 3.07*** | 3.14*** | 3.20*** | 3.04*** |
| | (0.17) | (0.24) | (0.24) | (0.23) |
| Control mean | 0.59 | 0.59 | 0.59 | 0.65 |
| Adj. $R^2$ | 0.48 | 0.57 | 0.57 | 0.54 |
| Number of observations | 362 | 362 | 362 | 374 |
| ***Outcome: sum of direct legitime sanctions*** | | | | |
| | (1) | (2) | (3) | (4) |
| Treatment | 1.16*** | 1.20*** | 1.18*** | 1.15*** |
| | (0.09) | (0.12) | (0.12) | (0.12) |
| Control mean | 0.10 | 0.10 | 0.10 | 0.13 |
| Adj. $R^2$ | 0.34 | 0.41 | 0.41 | 0.38 |
| Number of observations | 362 | 362 | 362 | 374 |
| ***Outcome: sum of indirect legitime sanctions*** | | | | |
| | (1) | (2) | (3) | (4) |
| Treatment | 1.90*** | 1.93*** | 2.02*** | 1.89*** |
| | (0.11) | (0.14) | (0.13) | (0.14) |
| Control mean | 0.49 | 0.49 | 0.49 | 0.52 |
| Adj. $R^2$ | 0.44 | 0.59 | 0.61 | 0.57 |
| Number of observations | 362 | 362 | 362 | 374 |
| Block FE | No | Yes | Yes | Yes |
| Cluster SE | No | Yes | Yes | Yes |
| Covariates | No | No | Yes | No |
| Observation dropped | Yes | Yes | Yes | No |

*Notes:*
Treatment tests treatment 1 against the control group with the treatment 1 being the scenario where the chiefs take a small part of the money for its own benefit. Four robustness check strategies are used. The first column is the PAP empirical strategy without block fixed effects. The second column uses cluster robust standard error at the village level. The third column adds covariates that were not balanced (employment rates and trust to the chief), and the fourth column adds respondents that did not understand the scenario. Village and block fixed effects are used in the last three columns. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

### B8.2 Comparison of treatment 4 with the treatment 1

**Table 3.30:** Robustness check for hypothesis 1 comparing the treatment 4 with the treatment 1. Treatment effects on the total number of legitime sanctions, the number of direct and indirect legitime sanctions.

| ***Outcome: total sum of legitime sanctions*** | | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | 0.86*** | 0.70*** | 0.65*** | 0.54*** |
| | (0.18) | (0.14) | (0.14) | (0.13) |
| Control mean | 3.66 | 3.66 | 3.66 | 3.64 |
| Adj. $R^2$ | 0.06 | 0.45 | 0.43 | 0.44 |
| Number of observations | 332 | 332 | 324 | 361 |
| ***Outcome: sum of direct legitime sanctions*** | | | | |
| | (1) | (2) | (3) | (4) |
| Treatment | 0.46*** | 0.33** | 0.28* | 0.27* |
| | (0.12) | (0.11) | (0.11) | (0.10) |
| Control mean | 1.26 | 1.26 | 1.26 | 1.25 |
| Adj. $R^2$ | 0.04 | 0.35 | 0.34 | 0.34 |
| Number of observations | 332 | 332 | 324 | 361 |
| ***Outcome: sum of indirect legitime sanctions*** | | | | |
| | (1) | (2) | (3) | (4) |
| Treatment | 0.40*** | 0.37*** | 0.37*** | 0.27*** |
| | (0.09) | (0.08) | (0.08) | (0.08) |
| Control mean | 2.39 | 2.39 | 2.39 | 2.40 |
| Adj. $R^2$ | 0.05 | 0.33 | 0.33 | 0.29 |
| Number of observations | 332 | 332 | 324 | 361 |
| Block FE | No | Yes | Yes | Yes |
| Cluster SE | No | Yes | Yes | Yes |
| Covariates | No | No | Yes | No |
| Observation dropped | Yes | Yes | Yes | No |

*Notes:*
Treatment tests treatment 4 against the treatment 1 with the treatment 4 being the scenario where the chiefs take half of the money for its own benefit and treatment 1 where the chiefs take only a small part of the money of its own benefit. Four robustness check strategies are used. The first column is the PAP empirical strategy without block fixed effects. The second column uses cluster robust standard error at the village level. The third column adds covariates that were not balanced (education level), and the fourth column adds respondents that did not understand the scenario. Village and block fixed effects are used in the last three columns. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

### B8.3 Sensitivity analysis to experimenter demand effect (EDE)

de Quidt et al. (2018) bound the experimenter demand effect from 0.1 to 0.3 standard deviation of the outcome variable. As a consequence, we used three sensitivity analysis. We standardized the outcome variable and reduce of respectively 0.1, 0.2, and 0.3 the measured outcome in the treatment group to account for potential experimenter demand effect.

**Table 3.31:** Sensitivity analysis to different strength of experimenter demand effect (EDE) for hypothesis 1 comparing the treatment 1 with the control arm.

| | ***Outcome: total sum of legitime sanctions*** | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | 1.46*** | 1.36*** | 1.26*** | 1.16*** |
| | (0.11) | (0.11) | (0.11) | (0.11) |
| Strength of the EDE (in std. dev.) | 0 | 0.1 | 0.2 | 0.3 |
| Adj. $R^2$ | 0.57 | 0.54 | 0.50 | 0.47 |
| Num. obs. | 362 | 362 | 362 | 362 |

*Notes:*
Treatment tests treatment 1 against the control group with the treatment 1 being the scenario where the chiefs take a small part of the money for its own benefit. Three sensitivity analysis are used (column 2 to 4). The first column is the main empirical strategy with the outcome variable being standardized. The second, third and fourth column use an experimenter demand effect of 0.1, 0.2, and 0.3 standard deviation respectively. Cluster robust standard error at the village level. Village and block fixed effects are used in the last three columns. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

### B9 Robustness check for the statistical test of hypotheses 2

**Table 3.32:** Robustness check for hypothesis 2 comparing the treatment 2 with the treatment 3. Treatment effects on the total number of legitime sanctions, the number of direct and indirect legitime sanctions.

| ***Outcome: total sum of legitime sanctions*** | | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | 0.31 | 0.48** | 0.47** | 0.37* |
| | (0.19) | (0.17) | (0.18) | (0.17) |
| Control mean | 3.84 | 3.84 | 3.84 | 3.81 |
| Adj. $R^2$ | 0.01 | 0.37 | 0.37 | 0.34 |
| Number of observations | 310 | 310 | 309 | 349 |
| ***Outcome: sum of direct legitime sanctions*** | | | | |
| | (1) | (2) | (3) | (4) |
| Treatment | 0.10 | 0.19 | 0.18 | 0.13 |
| | (0.13) | (0.14) | (0.14) | (0.13) |
| Control mean | 1.44 | 1.44 | 1.44 | 1.44 |
| Adj. $R^2$ | −0.00 | 0.18 | 0.17 | 0.18 |
| Number of observations | 310 | 310 | 309 | 349 |
| ***Outcome: sum of indirect legitime sanctions*** | | | | |
| | (1) | (2) | (3) | (4) |
| Treatment | 0.21+ | 0.29** | 0.30** | 0.24** |
| | (0.11) | (0.09) | (0.09) | (0.09) |
| Control mean | 2.40 | 2.40 | 2.40 | 2.36 |
| Adj. $R^2$ | 0.01 | 0.35 | 0.35 | 0.29 |
| Number of observations | 310 | 310 | 309 | 349 |
| Block FE | No | Yes | Yes | Yes |
| Cluster SE | No | Yes | Yes | Yes |
| Covariates | No | No | Yes | No |
| Observation dropped | Yes | Yes | Yes | No |

*Notes:*
Treatment tests treatment 2 against the treatment 3. The treatment 2 is a scenario where the elders did blame the town chief. The treatment 3 is a scenario where the elders did not blame the town chief. Four robustness check strategies are used. The first column is the PAP empirical strategy without block fixed effects. The second column uses cluster robust standard error at the village level. The third column adds covariates that were not balanced (education level), and the fourth column adds respondents that did not understand the scenario. Village and block fixed effects are used in the last three columns. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

### B9.1 Sensitivity analysis to experimenter demand effect (EDE)

de Quidt et al. (2018) bound the experimenter demand effect from 0.1 to 0.3 standard deviation of the outcome variable. As a consequence, we used three sensitivity analysis. We standardized the outcome variable and reduce of respectively 0.1, 0.2, and 0.3 the measured outcome in the treatment group to account for potential experimenter demand effect.

**Table 3.33:** Sensitivity analysis to different strength of experimenter demand effect (EDE) for hypothesis 2 comparing the treatment 2 with the treatment 3.

| | ***Outcome: total sum of legitime sanctions*** | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | 0.22** | 0.12 | 0.02 | −0.08 |
| | (0.08) | (0.08) | (0.08) | (0.08) |
| Strength of the EDE (in std. dev.) | 0 | 0.1 | 0.2 | 0.3 |
| Adj. $R^2$ | 0.37 | 0.37 | 0.37 | 0.37 |
| Num. obs. | 310 | 310 | 310 | 310 |

*Notes:*
Treatment tests treatment 2 against the treatment 3. The treatment 2 is a scenario where the elders did blame the town chief. The treatment 3 is a scenario where the elders did not blame the town chief. Four robustness check strategies are used. The first column is the main empirical strategy with the outcome variable being standardized. Three sensitivity analysis are used (column 2 to 4). The second, third and fourth column use an experimenter demand effect of 0.1, 0.2, and 0.3 standard deviation respectively. Cluster robust standard error at the village level. Village and block fixed effects are used in the last three columns. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

**B10 OLS regression of the heterogeneous effect by gender, income, and voting rights**

**B10.1 Gender**

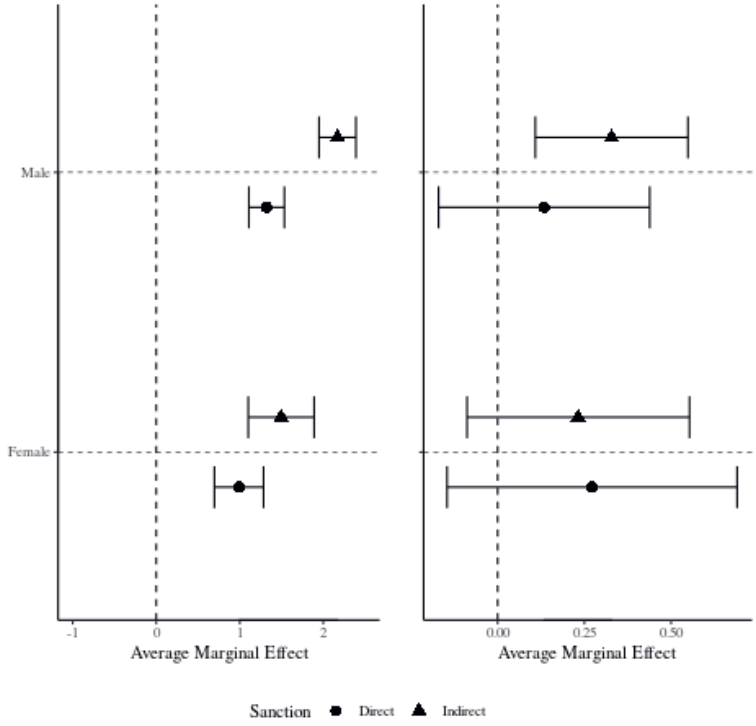


**Figure 3.7:** Plot of the estimated average treatment effects of chief malevolance on the number of direct and indirect sanction considered as legitimate by gender.

Notes: Plot of the estimated average treatment effects of chief malevolance on the number of direct and indirect sanction considered as legitimate by gender. The left panel compares Treatment 1, where the quantity stolen is very small, with the control arm. The right panel compares Treatment 4 where half of the money is stolen with the Treatment 1. Models include block randomization fixed effects and robust standard errors. 95% confidence intervals are displayed.

**Table 3.34:** Heterogeneous treatment effects on the number of legitime sanctions by gender

| | General | | Direct | | Indirect | |
|---|---|---|---|---|---|---|
| | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
| T1-C | $3.14^{***}$ | $3.49^{***}$ | $1.22^{***}$ | $1.33^{***}$ | $1.93^{***}$ | $2.16^{***}$ |
| | (0.16) | (0.18) | (0.09) | (0.11) | (0.10) | (0.11) |
| T4-C | $3.89^{***}$ | $4.10^{***}$ | $1.57^{***}$ | $1.71^{***}$ | $2.31^{***}$ | $2.39^{***}$ |
| | (0.14) | (0.18) | (0.09) | (0.11) | (0.08) | (0.10) |
| Female | | 0.28 | | 0.12 | | 0.16 |
| | | (0.22) | | (0.10) | | (0.14) |
| T1-C * Female | | $-1.00^{**}$ | | $-0.33^{+}$ | | $-0.67^{**}$ |
| | | (0.35) | | (0.19) | | (0.22) |
| T4-C * Female | | $-0.55^{+}$ | | $-0.35^{+}$ | | $-0.20$ |
| | | (0.31) | | (0.21) | | (0.17) |
| Adj. $R^2$ | 0.63 | 0.64 | 0.45 | 0.45 | 0.65 | 0.66 |
| Num. obs. | 524 | 524 | 524 | 524 | 524 | 524 |

*Notes:* Three outcome variables are used: general, direct and indirect number of legitimate sanctions. General is the total sum of sanctions considered as legitimate. Direct is the sum of sanctions considered as legitimate targeting directly the chief. Indirect is the sum of sanctions considered as legitimate targeting an higher authority. T1-C tests Treatment 1, where the quantity of money stolen is very small vs the control group, and T4-C tests Treatment 4, where the half of the money was stolen vs Treatment 1. The models include a factor for the treatment comparison and a dummy for gender. Village and block fixed effects are used. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

### B10.2 Income

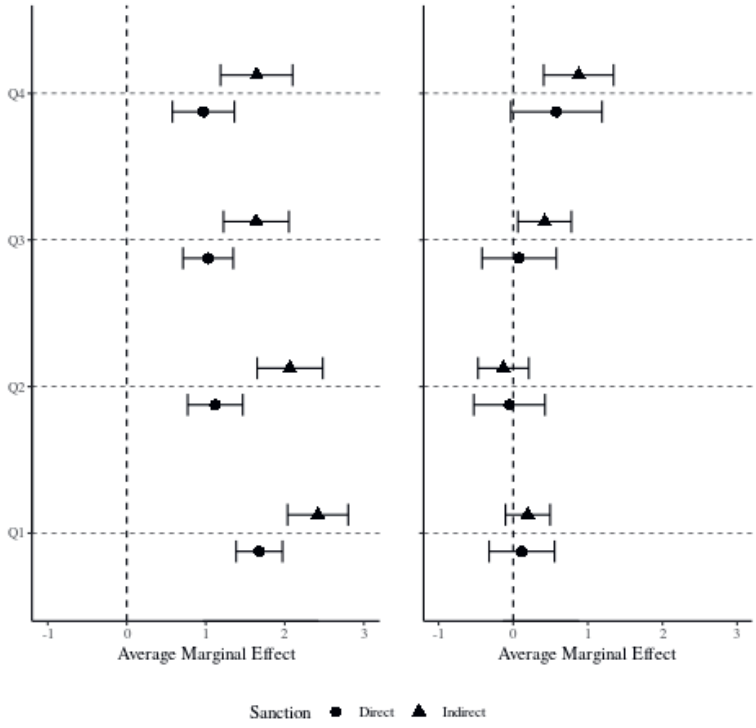


**Figure 3.8:** Plot of the estimated average treatment effects of chief malevolance on the number of direct and indirect sanction considered as legitimate by income.

Notes: Plot of the estimated average treatment effects of chief malevolance on the number of direct and indirect sanction considered as legitimate by income quartile. The left panel compares Treatment 1, where the quantity stolen is very small, with the control arm. The right panel compares Treatment 4 where half of the money is stolen with the Treatment 1. Models include block randomization fixed effects and robust standard errors. 95% confidence intervals are displayed.

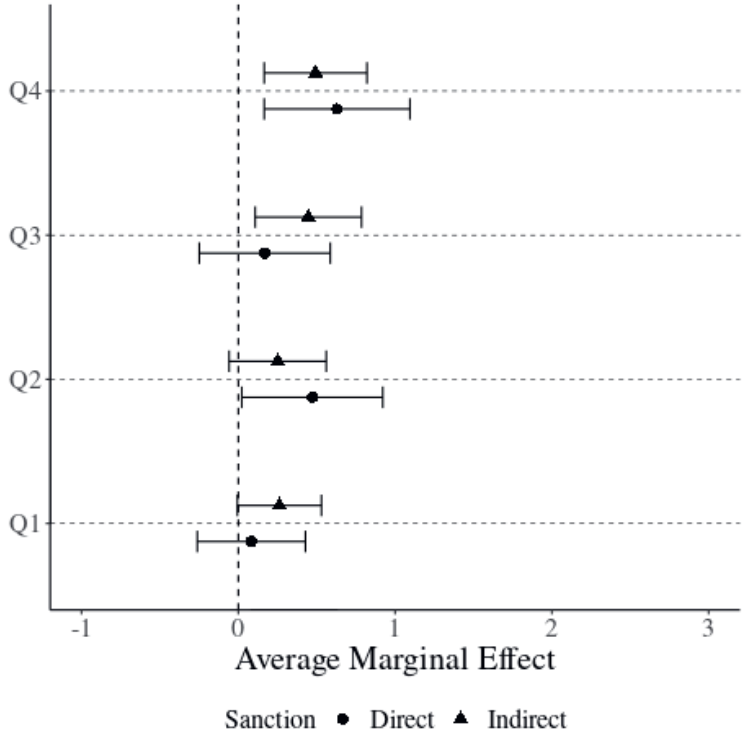


**Figure 3.9:** Plot of the estimated average treatment effects of elders behavior on the number of direct and indirect sanction considered as legitimate by income.

Notes: The plot shows the estimated average treatment effects of elders' behavior (Treatment 2 compared to Treatment 3) on the number of direct and indirect sanctions considered legitimate, categorized by income quartile. Models include block randomization fixed effects and robust standard errors. 95% confidence intervals are displayed.

**Table 3.35:** Heterogeneous treatment effects on the number of legitime sanctions by income

| | General | | Direct | | Indirect | |
|---|---|---|---|---|---|---|
| | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
| T1-C | $3.14^{***}$ | $4.04^{***}$ | $1.22^{***}$ | $1.64^{***}$ | $1.93^{***}$ | $2.40^{***}$ |
| | (0.16) | (0.30) | (0.09) | (0.16) | (0.10) | (0.19) |
| T4-C | $3.89^{***}$ | $4.48^{***}$ | $1.57^{***}$ | $1.72^{***}$ | $2.31^{***}$ | $2.76^{***}$ |
| | (0.14) | (0.23) | (0.09) | (0.15) | (0.08) | (0.13) |
| income (Q2) | | $0.58^{+}$ | | $0.29^{+}$ | | 0.28 |
| | | (0.31) | | (0.15) | | (0.18) |
| income (Q3) | | $0.69^{*}$ | | $0.31^{+}$ | | $0.38^{*}$ |
| | | (0.31) | | (0.16) | | (0.19) |
| income (Q4) | | $1.15^{***}$ | | $0.52^{***}$ | | $0.63^{**}$ |
| | | (0.32) | | (0.16) | | (0.22) |
| T1-C * income (Q2) | | $-0.88^{+}$ | | $-0.49^{*}$ | | $-0.39$ |
| | | (0.45) | | (0.24) | | (0.28) |
| T4-C * income (Q2) | | $-0.41$ | | $-0.00$ | | $-0.40^{+}$ |
| | | (0.41) | | (0.28) | | (0.22) |
| T1-C * income (Q3) | | $-1.24^{**}$ | | $-0.52^{*}$ | | $-0.72^{**}$ |
| | | (0.43) | | (0.23) | | (0.27) |
| T4-C * income (Q3) | | $-1.10^{**}$ | | $-0.41^{+}$ | | $-0.69^{**}$ |
| | | (0.36) | | (0.23) | | (0.22) |
| T1-C * income (Q4) | | $-1.53^{***}$ | | $-0.75^{**}$ | | $-0.78^{**}$ |
| | | (0.44) | | (0.25) | | (0.28) |
| T4-C * income (Q4) | | $-0.87^{*}$ | | $-0.20$ | | $-0.67^{**}$ |
| | | (0.41) | | (0.26) | | (0.24) |
| Adj. $R^2$ | 0.63 | 0.64 | 0.45 | 0.46 | 0.65 | 0.66 |
| Num. obs. | 524 | 518 | 524 | 518 | 524 | 518 |

*Notes:* Three outcome variables are used: general, direct and indirect number of legitimate sanctions. General is the total sum of sanctions considered as legitimate. Direct is the sum of sanctions considered as legitimate targeting directly the chief. Indirect is the sum of sanctions considered as legitimate targeting an higher authority. T1-C tests Treatment 1, where the quantity of money stolen is very small vs the control group, and T4-C tests Treatment 4, where the half of the money was stolen vs Treatment 1. The models include a factor for the treatment comparison and a factor for the income category classified into four quartiles. Village and block fixed effects are used. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

### B10.3 Voting rights

**Table 3.36:** Heterogeneous treatment effects on the number of legitime sanctions by voting right

| | General | | Direct | | Indirect | |
|---|---|---|---|---|---|---|
| | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
| T1-C | $3.14^{***}$ | $2.05^{***}$ | $1.22^{***}$ | $0.53^{**}$ | $1.93^{***}$ | $1.51^{***}$ |
| | (0.16) | (0.33) | (0.09) | (0.16) | (0.10) | (0.22) |
| T4-C | $3.89^{***}$ | $2.97^{***}$ | $1.57^{***}$ | $0.93^{***}$ | $2.31^{***}$ | $2.05^{***}$ |
| | (0.14) | (0.32) | (0.09) | (0.22) | (0.08) | (0.19) |
| Right to vote | | $-0.76^{**}$ | | $-0.44^{***}$ | | $-0.32^{+}$ |
| | | (0.27) | | (0.13) | | (0.16) |
| T1-C * Right to vote | | $1.50^{***}$ | | $0.93^{***}$ | | $0.57^{*}$ |
| | | (0.39) | | (0.20) | | (0.25) |
| T4-C * Right to vote | | $1.22^{***}$ | | $0.85^{***}$ | | $0.36^{+}$ |
| | | (0.36) | | (0.26) | | (0.21) |
| Adj. $R^2$ | 0.63 | 0.64 | 0.45 | 0.47 | 0.65 | 0.65 |
| Num. obs. | 524 | 524 | 524 | 524 | 524 | 524 |

*Notes:* Three outcome variables are used: general, direct and indirect number of legitimate sanctions. General is the total sum of sanctions considered as legitimate. Direct is the sum of sanctions considered as legitimate targeting directly the chief. Indirect is the sum of sanctions considered as legitimate targeting an higher authority. T1-C tests Treatment 1, where the quantity of money stolen is very small vs the control group, and T4-C tests Treatment 4, where the half of the money was stolen vs Treatment 1. The models include a dummy indicating whether the respondent has the right to vote for the town chief. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

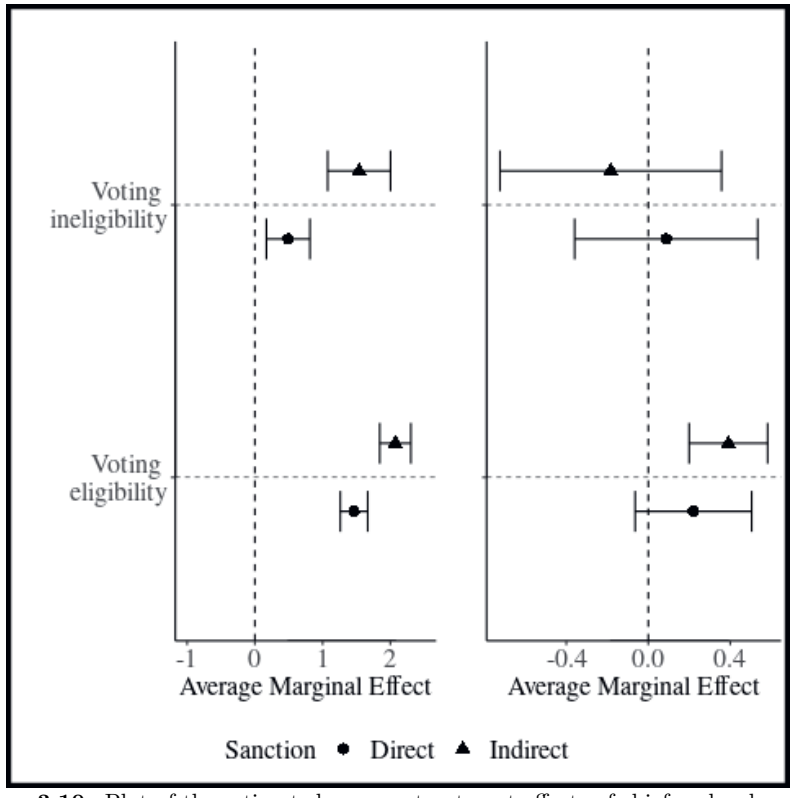


**Figure 3.10:** Plot of the estimated average treatment effects of chief malevolance (T1 vs. Control for the left plot and T4 vs. T1 for the right plot) on the number of direct and indirect sanction considered as legitimate by voting right.

Notes: Plot of the estimated average treatment effects of chief malevolance on the number of direct and indirect sanction considered as legitimate by voting right. The left panel compares Treatment 1, where the quantity stolen is very small, with the control arm. The right panel compares Treatment 4 where half of the money is stolen with the Treatment 1. Models include block randomization fixed effects and robust standard errors. 95% confidence intervals are displayed.

### B11 Statistical results for hypotheses 3, 4, and 5

**Table 3.37:** OLS regression between direct and indirect sanctions and 10 political outcomes

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| Direct sanctions | $-0.29^{+}$ | 0.34 | 0.08 | −0.06 | −0.18 | 0.18 | 0.16 | −0.02 | 0.04 | 0.04 |
| | (0.17) | (0.23) | (0.15) | (0.21) | (0.14) | (0.19) | (0.16) | (0.04) | (0.06) | (0.11) |
| Indirect sanctions | 0.14 | −0.16 | −0.21 | −0.12 | −0.03 | $0.42^{*}$ | $0.58^{**}$ | 0.03 | −0.02 | −0.22 |
| | (0.14) | (0.19) | (0.15) | (0.15) | (0.11) | (0.19) | (0.19) | (0.03) | (0.06) | (0.15) |
| Control | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Chiefdom FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adj. $R^2$ | 0.27 | −0.04 | 0.22 | 0.17 | 0.32 | 0.28 | 0.40 | 0.09 | 0.32 | 0.18 |
| Num. obs. | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 73 | 73 | 74 |

*Notes:* (1): Town chief responsiveness measure 1, (2): Town chief responsiveness measure 2, (3): Number of community meetings organized in the past year (standardized measure), (4): Cost of conflict resolution (standardized measure), (5) Participation rates in community meetings (standardized measure), (6): trust in the town chief (standardized measure), (7): Shared interest with the town chief (standardized measure), (8): Shared policy preferences between leaders and the youth (in %), (9): leaders willingness to take action against deforestation, and (10) deforestation rates between 2015 and 2020 in a 6-km radius. Chiefdom fixed effects and socio-demographic and institutional controls included. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

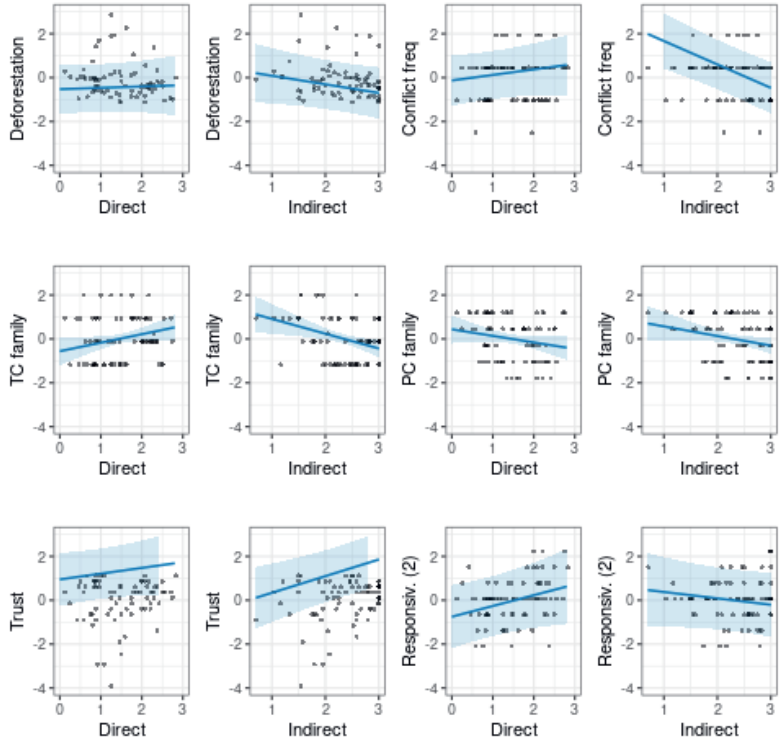


**Figure 3.11:** Scatter plot of the relationships between Direct and Indirect Sanctioning and 6 Political Variables

Notes: The figures displays a scatter plot of the bivariate relationships between village-level direct and indirect sanctioning preferences and 6 political variables. The lines is the results of a model controlling for covariates (eq. 2, section 4.2) and using chiefdom fixed effects. Responsiv. (2) denotes the variation in support for a land deal, comparing scenarios where the Paramount Chief or community members oppose it. TC family represents the share of town chief family members selected for land planning activity, inverse measure. PC family represents the share of Paramount Chief family members selected for land planning activity, inverse measure. Conflict frq signifies the frequency of conflicts at the village level.

## B12 Robustness check for the statistical results for hypotheses 3, 4, and 5

### B12.1 Analysis with direct and indirect sanctioning preferences included separately in models

**Table 3.38:** OLS regression between direct sanctioning preferences, and inclusive decision-making and conflict frequency

| | **Inclusive decision making** (*inverse measure*) | | | | **Conflict frequency** | |
|---|---|---|---|---|---|---|
| | **TC** | **TC** | **PC** | **PC** | **(1)** | **(2)** |
| Direct sanctions | −0.03 | 0.05 | 0.21$^{+}$ | 0.13 | 0.08 | −0.06 |
| | (0.12) | (0.14) | (0.11) | (0.18) | (0.11) | (0.15) |
| Control | No | Yes | No | Yes | No | Yes |
| Chiefdom FE | No | Yes | No | Yes | No | Yes |
| Adj. $R^2$ | −0.01 | 0.09 | 0.03 | 0.17 | −0.01 | 0.10 |
| N | 76 | 73 | 76 | 73 | 76 | 74 |

*Notes:* Dependent variables are continuous and standardized. The independent variable is also standardized. TC and PC refer to the share of town chief (TC) or Paramount Chief (PC) family members selected for the land planning activity. Positive values indicate lower inclusive participatory decision-making. Columns (1) and (2) refer to the stated number of conflicts revealed by the town chief, measured on a scale from 1 to 5, and this variable is standardized. Controls include population size, the share of families with voting rights for the town chief, the stated frequency of meetings between the town chief and the Paramount Chief (measured using a dummy variable that equals 1 if meetings occur at least once a month), an index of infrastructure development, and income inequality between the chief and the average household. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

**Table 3.39:** OLS regression between indirect sanctioning preferences, and inclusive decision-making and conflict frequency

| | **Inclusive decision making** (*inverse measure*) | | | | **Conflict frequency** | |
|---|---|---|---|---|---|---|
| | **TC** | **TC** | **PC** | **PC** | **(1)** | **(2)** |
| Indirect sanctions | 0.31$^{**}$ | 0.38$^{**}$ | 0.36$^{***}$ | 0.27$^{*}$ | −0.24$^{*}$ | −0.54$^{***}$ |
| | (0.10) | (0.14) | (0.09) | (0.13) | (0.10) | (0.11) |
| Control | No | Yes | No | Yes | No | Yes |
| Chiefdom FE | No | Yes | No | Yes | No | Yes |
| Adj. $R^2$ | −0.01 | 0.09 | 0.03 | 0.17 | −0.01 | 0.10 |
| N | 76 | 73 | 76 | 73 | 76 | 74 |

*Notes:* Dependent variables are continuous and standardized. The independent variable is also standardized. TC and PC refer to the share of town chief (TC) or Paramount Chief (PC) family members selected for the land planning activity. Positive values indicate lower inclusive participatory decision-making. Columns (1) and (2) refer to the stated number of conflicts revealed by the town chief, measured on a scale from 1 to 5, and this variable is standardized. Controls include population size, the share of families with voting rights for the town chief, the stated frequency of meetings between the town chief and the Paramount Chief (measured using a dummy variable that equals 1 if meetings occur at least once a month), an index of infrastructure development, and income inequality between the chief and the average household. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### B12.2 Analysis using the variables from the experiment 2

**Table 3.40:** OLS regression between the average number of indirect and direct sanctions considered as legitimate in the land planning experiment, and inclusive decision-making and conflict frequency

| | **Inclusive decision making** (*inverse measure*) | | | | **Conflict frequency** | |
|---|---|---|---|---|---|---|
| | **TC** | **TC** | **PC** | **PC** | **(1)** | **(2)** |
| Direct sanctions | $-0.39^{**}$ | $-0.44^{*}$ | $-0.04$ | $-0.19$ | $0.33^{**}$ | $0.33^{*}$ |
| | (0.15) | (0.18) | (0.11) | (0.15) | (0.10) | (0.14) |
| Indirect sanctions | $0.38^{***}$ | $0.37^{**}$ | $-0.01$ | 0.01 | $-0.07$ | 0.02 |
| | (0.09) | (0.13) | (0.12) | (0.16) | (0.12) | (0.15) |
| Control | No | Yes | No | Yes | No | Yes |
| Chiefdom FE | No | Yes | No | Yes | No | Yes |
| Adj. $R^2$ | 0.17 | 0.22 | $-0.03$ | 0.16 | 0.08 | 0.16 |
| N | 76 | 73 | 76 | 73 | 76 | 74 |

*Notes:* Dependent variables are continuous and standardized. The independent variable is also standardized and are the average of respondents answers for the number of legitime sanctions in the land planning experiment. TC and PC refer to the share of town chief (TC) or Paramount Chief (PC) family members selected for the land planning activity. Positive values indicate lower inclusive participatory decision-making. Columns (1) and (2) refer to the stated number of conflicts revealed by the town chief, measured on a scale from 1 to 5, and this variable is standardized. Controls include population size, the share of families with voting rights for the town chief, the stated frequency of meetings between the town chief and the Paramount Chief (measured using a dummy variable that equals 1 if meetings occur at least once a month), an index of infrastructure development, and income inequality between the chief and the average household. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### B12.3 Analysis using an average from the experiment 2 and experiment 1

**Table 3.41:** OLS regression between the average number of indirect and direct sanctions considered as legitimate in both survey experiments, and inclusive decision-making and conflict frequency

| | **Inclusive decision making** (*inverse measure*) | | | | **Conflict frequency** | |
|---|---|---|---|---|---|---|
| | **TC** | **TC** | **PC** | **PC** | **(1)** | **(2)** |
| Direct sanctions | $-0.31^{*}$ | $-0.31$ | 0.04 | $-0.08$ | $0.31^{**}$ | $0.35^{*}$ |
| | (0.13) | (0.21) | (0.12) | (0.20) | (0.11) | (0.13) |
| Indirect sanctions | $0.43^{***}$ | $0.39^{**}$ | 0.14 | 0.08 | $-0.15$ | $-0.17$ |
| | (0.09) | (0.13) | (0.10) | (0.13) | (0.12) | (0.17) |
| Control | No | Yes | No | Yes | No | Yes |
| Chiefdom FE | No | Yes | No | Yes | No | Yes |
| Adj. $R^2$ | 0.15 | 0.18 | $-0.00$ | 0.15 | 0.06 | 0.14 |
| Num. obs. | 76 | 73 | 76 | 73 | 76 | 74 |

*Notes:* Dependent variables are continuous and standardized. The independent variable is also standardized and are the average of respondents answers for the number of legitime sanctions in both survey experiments. TC and PC refer to the share of town chief (TC) or Paramount Chief (PC) family members selected for the land planning activity. Positive values indicate lower inclusive participatory decision-making. Columns (1) and (2) refer to the stated number of conflicts revealed by the town chief, measured on a scale from 1 to 5, and this variable is standardized. Controls include population size, the share of families with voting rights for the town chief, the stated frequency of meetings between the town chief and the Paramount Chief (measured using a dummy variable that equals 1 if meetings occur at least once a month), an index of infrastructure development, and income inequality between the chief and the average household. Robust standard errors in parenthesis. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

*Author: Luseni Kallon. Artistic representation of a community meeting in a village dependent to mangrove forests.*

Chapter 4

# Do powerful elites undermine political participation by youth? Experimental evidence from rural Sierra Leone.

***Rens Chazottes, Niccolo Meriggi, and Maarten Voors***[1]

## 4.1 Introduction

In many low-income countries, state capacity is weak and faces critical challenges in providing basic services and goods to its constituents. International development aid is often politicized (Andersen et al., 2022), creating uneven impacts across societies (Jablonski, 2014; Briggs, 2014). In these contexts, particularly in rural areas, traditional authorities—who are often older, less educated, and predominantly male—play a crucial role in overseeing rural development, judicial matters and land use allocation (Boone, 2003; Baldwin, 2020). Their often exclusionary ruling practices have resulted in inefficient service provision (Acemoglu et al., 2014), negatively impacting land security for women and youth with low-status backgrounds (Honig, 2017), and detrimentally affecting women's political participation (Clayton, 2014).

The predominant donor response to these challenges has been to propose participatory and community-driven development projects. These aim to build new local institutional capacity and structures to manage development aid or natural resources more effectively and equitably by

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promoting an inclusive, transparent, and highly participatory approach to local decision-making (Baldwin et al., 2023; Casey, 2018; Ferraro & Agrawal, 2021). Participatory approaches have been found effective in ensuring user satisfaction in service delivery (Olken, 2010) and improving the provision of public goods (Casey, 2018; Madajewicz et al., 2021). Despite early enthusiasm about their potential to increase social capital (Fearon et al., 2015) and improve institutional quality (Casey et al., 2012), meta-analyses and field experiments have shown very limited results in empowering groups excluded from decision-making spaces (Casey, 2018; Humphreys et al., 2019; Voors et al., 2018). Multiple studies have shown failures in targeting the poor, thereby contributing to existing inequalities (Saguin, 2018; Grillos, 2017).

Why are standard participatory approaches failing to empower groups excluded from the decision-making process? Using a framed field experiment, this study aims to empirically test the "empowerment hypothesis" within the context of participatory nature conservation approaches. The hypothesis posits that low-status groups, traditionally excluded from village decision-making processes, can only achieve meaningful representation through participatory mechanisms when their inclusion significantly disrupts the power dynamics held by village elites. This research seeks to investigate the conditions under which participatory approaches empower marginalized groups and effectively challenge existing power structures within rural communities. Elite power can come from the degree to which they have to compete for their position, as in the case of Paramount Chiefs in Sierra Leone (Acemoglu et al., 2014; Voors et al., 2018). Elite power can also stem from village socio-economic heterogeneity. Cultural diversity and economic inequalities can worsen collective action, increasing elite control, and enabling elite capture (Saguin, 2018; Grillos, 2017).

Less attention has been dedicated to how participatory approaches interact to the broader socio-political context (Dasgupta & Beard, 2007; Baldwin et al., 2023). Village and subregional institutions do not exist in a vacuum (Nathan, 2023). Interactions between village and higher-level institutions can influence the power of village elites. Local authorities with strong community ties can use their trusted positions to promote compliance with higher-level authorities and effectively target noncompliance using their social networks (Hassan et al., 2022). We extend this argument by examining how direct ties between village elites and Paramount Chiefs explain patterns of exclusion and inclusion within villages. Sierra Leone is divided into 149 chiefdoms, each led by a Paramount Chief. These Paramount Chiefs are elected for life by a tribal authority composed of local notables. Within their chiefdoms, Paramount Chiefs wield significant influence, enjoying considerable autonomy over tax collection, the judicial system, and land allocation (Fanthorpe, 2006). They also played a key role in reducing the spread of the Ebola virus during

the Ebola crisis (van der Windt & Voors, 2020). In hierarchical societies where networks and clientelistic behavior are common, having ties with higher-level elites might render village leaders less accountable and responsive to their village counterparts.

Our study examines the exclusion of youth from land use decisions in Sierra Leone, focusing on mangrove-dependent communities in coastal areas. The case selection is motivated by two empirical insights.

Firstly, youth marginalization is significant in Sierra Leone, highlighted by analyses suggesting it played a key role in fueling the civil war of the 1990s (Mokuwa et al., 2011). Presently, youth marginalization persists due to a complex mix of social, political, and economic factors. Research indicates that established figures, including politicians and village chiefs, are often criticized by the youth for corruption and self-interest, pointing to a generational rift (Peters, 2011). Customary laws exacerbate this by limiting youth participation in elections for chiefs and Paramount Chiefs (Peters, 2011). This exclusion also affects community matters where young people openly criticize mandatory community labor (Peters, 2011). Furthermore, a sense of political disenfranchisement among the youth is evident in the country. Deep-seated governance and representational issues contributed to the marginalized position of Sierra Leonean youth and created a core motivation for the civil war (Humphreys & Weinstein, 2008). They also typically have less access to land and rely more on forest resources for their livelihood (Bangura et al., 2023; Maconachie, 2014).

Secondly, the economic implications of inaction in climate change mitigation and adaptation are unevenly distributed across social groups, with younger generations likely to incur the greatest impact. Hence, the inclusion of younger demographics in the formulation of environmental policies is not just beneficial but essential for the efficacy of such strategies. This study investigates the mechanisms of youth representation within land-use decision-making processes, focusing on deforestation strategies and alternative livelihoods. In Western Africa, youth face a disproportionate risk from the effects of climate change across two critical dimensions. Firstly, issues of prioritization arise, as the socio-economic devastation forecasted under current global warming trajectories. West Africa is expected to face a 20% loss in welfare (Cruz & Rossi-Hansberg, 2024), making it the most acute impacted region worldwide (Baarsch et al., 2020). However, political arenas controlled by older generations may display a lack of urgency, delaying essential climate interventions (Debus & Himmelrath, 2022). Secondly, the execution of climate mitigation and adaptation strategies, predominantly through forest conservation efforts, introduces its own set of challenges. These policies often involve restricting access to natural resources in exchange for compensatory measures. Given their reliance on forest resources for sustenance and a notable gap

in political representation, youth are at risk of disproportionately suffering from the repercussions of such conservation initiatives (Brown, 2021). This concern gains further relevance against the backdrop of international commitments to protect 30% of the Earth's terrestrial and aquatic ecosystems, with a renewed emphasis on mangrove forests, as outlined by the United Nations in 2022. These implementation challenges risk exacerbating conflicts (Schmid, 2023) and undermine the effectiveness of conservation efforts (Tegegne et al., 2022). As depicted in Figure 4.1, in Sierra Leone, there has been a significant decline in mangrove forests over the past two decades, drawing increased attention from conservation practitioners to the issue of forest protection. Currently, numerous projects are being implemented across various regions of the country to address this concern.

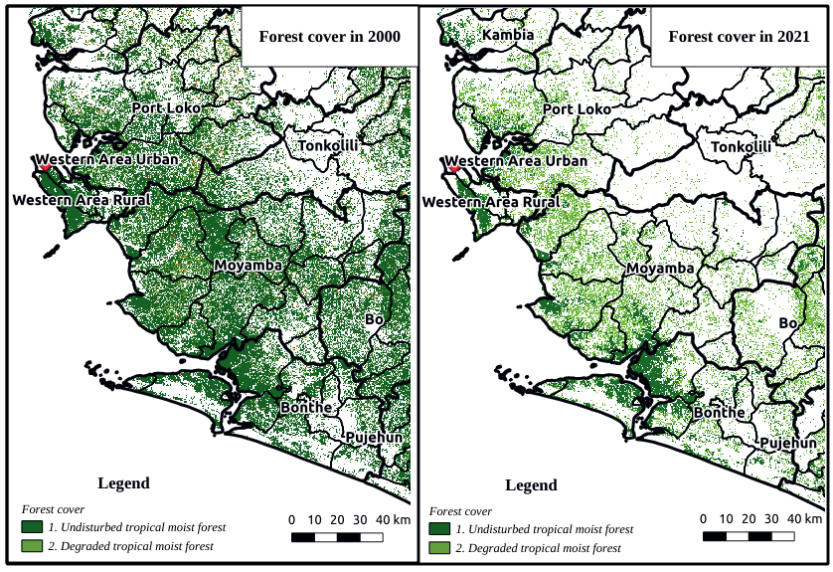


**Figure 4.1:** Maps of forest cover in 2000 and 2021 in the coastal area of Sierra Leone

Notes: The figures shows two maps of primary forests (dark green) and degraded forests (light green) in the coastal area of Sierra Leone where the study takes place for the year 2000 and 2021. Vancutsem data (Vancutsem et al., 2021) are used. It illustrates a sharp decrease in forest cover over the past two decades justifying the increasing interests of conservation stakeholders to implement projects in the zone.

To test the empowerment hypothesis, we design a framed field experiment. The experiment is a land-planning activity aiming at mimicking decisions made during a conservation projects: drafting alternative livelihood strategies and actions to take against deforestation. Our experimental variation is the group composition. In the control arm, we aim to reproduce a standard participatory approach where representatives of marginalized groups (low status youth), alongside the town chief and two village elites participate in the land planning activity. In the treatment

group, we replace the two village elites with two randomly selected low status youth. We test whether the additional inclusion of youth increases their policy representation.

Our experimental findings demonstrate that the inclusion of young men and women improves the policy representation of these groups by 10% compared to standard participatory approaches. We also find that such inclusion has no effect on the quality of the planning. The effect is largely driven by villages where the elites have strong direct family ties with the Paramount Chief, the head of the chiefdom. In the control arm, villages with connected elites have lower youth policy representation. This confirms a narrative suggesting that when village elites have ties with higher-level leaders, they might be more accountable to those figures, more influential, and therefore better able to disregard inputs from groups generally excluded from decision-making. In the treatment group, however, there are no differences in youth policy representation between villages with strong and weak ties to Paramount Chiefs. This implies that in contexts where strong political control exists, the empowerment of groups generally excluded from decision-making occurs only when the power of village elites is significantly limited.

Our study makes two contributions. First, we highlight the conditions under which participatory approaches of development and conservation can improve the representation of youth (Casey, 2018; Samii, 2023). Second, a vast literature has investigated issues of elite capture and power in local chieftaincy settings (Baldwin et al., 2023; Dasgupta & Beard, 2007). We extend this literature by underscoring the importance of vertical accountability mechanisms between village elites and higher-level leaders in shaping patterns of inclusion and exclusion.

The rest of the paper is structured as follows. The next section discusses the literature and theory on which our hypotheses are built. Then, the Sierra Leonean context is presented. Fourth, we highlight the empirical design. Finally, we present and discuss the results.

## 4.2 Political representation, conservation, and institutional engineering

### 4.2.1 Participatory approaches, descriptive representation in chieftaincy systems

Participatory approaches of development or conservation also referred as community-driven development and community-based natural resources management projects became mainstream approaches in the late 1990s particularly through initiatives developed by the World Bank (Mansuri & Rao, 2013; Ostrom et al., 2007). They remain widely used in conservation and development settings, with 190 active community-driven development projects in 78 countries supported by the World Bank in 2018 (Wong & Guggenheim, 2018). Unlike top-down approaches,

community-driven development strategies give communities financial and operational control over public projects while ensuring inclusive participation through measures like quotas for marginalized groups (Casey, 2018). Quotas have been implemented in electoral democracies (Pande, 2003; O'brien & Rickne, 2016). Recent empirical findings suggest that such measures not only enhance the representation and economic standing of marginalized groups but also positively impact conservation outcomes (Gulzar et al., 2024). By fostering participation from needs identification to implementation, these projects aim to create sustainable solutions that address community priorities, build social capital, and strengthen local governance (Casey, 2018).

The rational of participatory approaches of conservation and development was also rooted in descriptive representation theory. The discourse on descriptive representation has been a sustained theme in political science for decades, predicated on the belief that leaders who mirror the demographics of their constituents not only enhance the legitimacy of their governance but also strengthen the bond between citizens and the state (Mansbridge, 1999). Predominantly, empirical studies have concentrated on the political representation of women in consolidated democracies, examining its influence on policy representation and political engagement. Policy representation encapsulates the extent to which politicians' stances align with those of their constituents across various policy issues. Political engagement is usually measured by voter turnout and, to a lesser extent, party affiliation. For instance, research has shown that female politicians frequently embody distinct perspectives and priorities upon assuming office (Clayton et al., 2019a; Persson et al., 2024). Moreover, women's descriptive political representation has been linked to increased political participation (Goyal & Sells, 2023; Barnes & Burchard, 2013) and enhanced the legitimacy of electoral bodies (Clayton et al., 2019b). A recent study suggests that the benefits of descriptive representation might extend beyond democratic regimes, excluding the most autocratic ones (Mechkova & Edgell, 2023). Such findings hint at the potential relevance of descriptive representation principles to traditional chieftaincy systems, where chiefs typically hold lifelong positions once elected. The gender of chiefs is posited to play a significant role in representing the interests of specific groups, suggesting that female chiefs might more effectively advocate for their female constituents (Bauer, 2016). In Malawi, a survey experiment examining the impact of traditional authorities' gender on women's rights advocacy found that these leaders significantly influence citizen attitudes, with this influence varying according to gender and lineage (Muriaas et al., 2019).

Empirically, participatory approaches effectively improve public goods provision, even in challenging contexts, but they often fall short in empowering marginalized groups (Casey, 2018). In a study focusing on a public grant competition, Casey et al. (2023) explored the

impact of different management arrangements: traditional, technocratic, and community-driven development. Despite 5 years of community-driven development program implementation, the results suggest that those villages are not inherently more inclusive or efficiently governed. This aligns with findings from projects that created local "electoral bodies" in villages in the DRC (Humphreys et al., 2019). One reason for this might be that contexts where community-driven development projects are implemented do not always experience a deficiency in social inclusion or policy representation (Samii, 2023). An additional insight is that merely including discriminated and marginalized groups in community meetings does not guarantee their representation. Focusing on women, Kahsay et al. (2021) emphasize that effective representation of women occurs when they are genuinely empowered in the decision-making process, a sentiment echoed by Devkota (2020). Powerful traditional elite may also work to undermine empowered marginalized groups in these programs Voors et al. (2018).

We extend this literature in two regards. First, the representation of low-status young adults has received comparatively scant attention in the literature. This is surprising since in many hierarchical societies, such groups tend to be excluded from political decisions giving rise to grievances. There is a pronounced discrepancy between the average age of elected officials and the median age of their constituencies, a gap that becomes even more significant in nations with younger populations, notably in Africa. Research indicates that age markedly affects one's likelihood of election (Eshima & Smith, 2022; McClean & Ono, 2024). Therefore, understanding to what extent participatory approaches can help reduce that gap is critical. Second, we aim to formally test the "empowerment hypothesis," which suggests that low-status youth excluded from decisions in their village can only be represented through participatory approaches when their inclusion sufficiently challenges the village elites.

We test two forms of participatory approaches that have been employed in conservation and development projects over the past decades against each other. The mainstream approach empowers groups excluded from decision-making by eliciting their preferences and selecting a representative to participate in decision-making with other elite figures, a co-management decision. This approach echoes recent experiments aimed at improving the representativeness of village chiefs' advisory councils (Baldwin et al., 2022). A more extreme version of empowerment excludes a high proportion of elite figures and replaces them with groups previously excluded from decision-making. Research indicates that the latter is more promising for including and empowering such groups.

Our study seeks to contribute to these discussions by examining whether the participation of youth in a framed field experiment, where a high share of elites has been excluded, enhances

their representation compared to a lighter participation scenario where a youth representative is included, and chiefs and their councilors are fully informed of the youth's policy preferences.

*Hypothesis 1: Youth participation increases their representation*

### 4.2.2 Participatory approaches and elite capture in chieftaincy systems

Participatory approaches has been found effective in ensuring user satisfaction in service delivery (Olken, 2010) and improving the provision of public goods (Casey, 2018; Madajewicz et al., 2021). Despite early enthusiasm about its potential to increase social capital (Fearon et al., 2015) and improve institutional quality (Casey et al., 2012), meta-analyses and field experiments have shown mixed results (Casey, 2018; Humphreys et al., 2019; Voors et al., 2018).

Elite capture, where powerful individuals within communities misuse resources, is a significant challenge that limits the effectiveness of participatory approaches. Community-driven development's impact on empowering the poor and fundamentally changing local power structures may be limited. Reforms alongside community-driven development to empower marginalized groups and ensure their voices are heard may be necessary (Bardhan, 2002). The focus on project design enhancing participation within formal institutions has overlooked the role of power, norms, and social networks (Cleaver, 1999).

Power dynamics within communities are key determinants of elite capture in participatory approaches (Dasgupta & Beard, 2007). These dynamics are influenced by group size, social cohesion, and the community's capacity for collective action. Within chieftaincies, the power of the chief is assessed using multiple approaches. A first approach uses the selection mechanism and the degree of competition in chiefs' selection, measured by the number of families eligible for the chief position. Higher competition implies stronger checks and balances, requiring chiefs to accommodate a more diverse range of interests. Acemoglu et al. (2014) highlighted the significance of such mechanisms in explaining variations in public good provision in Sierra Leonean chieftaincies. High competition reduces elite capture. Conversely, Voors et al. (2018) found elite backlash occurs when leadership is challenged by fewer families. Another approach addresses domain congruence. The power of traditional chiefs is limited to "the degree to which the activity matches the leaders' geographic scope and field of expertise" (Baldwin et al., 2024). A third approach looks at how inclusive formal decision-making spaces are within the villages. Villages chiefs generally take decisions involving advisors and councilors (Baldwin, 2020). Using experiment evidence, Baldwin et al. (2022) founds that increasing the plurality of advisors improve the decision-making process making it more inclusive to a broader set of interests. Finally, cultural diversity and economic inequalities can exacerbate collective action problems,

facilitating elite capture and increasing elite discretion in decision-making (Cleaver, 2005; Naidu, 2009; Andersson & Agrawal, 2011; Lund & Saito-Jensen, 2013; Peterson, 2017). In China, the integration of lineage leaders into village political institutions has undermined villagers' land rights (Mattingly, 2016). Using survey data, Mattingly (2016) show that the involvement of lineage elites in village politics increases the probability of land expropriation by 14 to 20 percent, highlighting the importance of social institutions for top-down political control.

These approaches face limitations by conceptualizing power in isolation from the broader socio-political context. Village-level participatory spaces do not operate in a vacuum (Cleaver, 1999; Nathan, 2023). Interactions between village and higher-level institutions can mitigate or exacerbate the power of village elites. For instance, in the case of Colombia, Persha & Andersson (2014) found that stronger ties with external NGOs limit the power and capacity of local elites to capture forest revenues. State institutions may exercise great control over local intermediaries and shape local institutional development, a well-defined mechanism in the political control literature (Hassan et al., 2022). Political control can be exercised through various strategies, including the infiltration of strong social networks (Hassan et al., 2022). In cases where such networks did not exist, colonial states often created infiltrators to facilitate indirect rule. For example, in Ghana, colonial authorities established the role of Paramount Chief in societies that historically lacked such figures (Nathan, 2023). Local authorities who have close ties to their local communities can use their positions of trust and authority to encourage compliance with and support for state policies (Hassan, 2020). These authorities can leverage their social network positions to gain better information on social compliance and more effectively target and sanction those who do not comply (Hassan et al., 2022). In hierarchical societies, connections with higher level groups such as political parties, patrons, and national elites can significantly empower village elites. Accountability relationships between village leaders and community members cannot be fully understood without considering these broader connections (Dasgupta & Beard, 2007). Recent discussions have emphasized the importance of social networks and co-partisanship in explaining the success of participatory approaches in mitigating elite capture. Baldwin et al. (2023) found that participatory approaches positively affected political participation, but only in areas with strong co-partisanship with government incumbents.

Building on this literature, we assess how village elites direct ties with higher level authorities impact the effectiveness of participatory approaches. If village elites are supported by powerful higher level figures (such as Paramount Chiefs), they might more able to disregard the inputs of low-status groups. Especially in hierarchical society, village elites might be more responsive

to national elites interests rather than local groups generally excluded from decision-making. Following this argument we draw the following hypothesis.

*Hypothesis 2: Increasing youth representation is larger in villages where elites have strong ties with Paramount Chief*

## 4.3 The Sierra Leonian institutional contexts in mangrove-dependent communities

Rural Sierra Leone is governed by traditional political institutions (Baldwin & Holzinger, 2019), called chieftaincies that hold considerable authority over marriage, judicial matters, land and access to natural resources. In 1896, British colonial authorities established Paramount Chiefs as the sole local government authority in the newly formed Sierra Leone Protectorate. These chiefs, along with subchiefs and headmen, held exclusive local government power until 2004 when elected local councils were introduced by the World Bank (Acemoglu et al., 2014). De facto, chieftaincies are still the political institution governing rural areas (Labonte, 2012). How chiefs exercise power, who they represent and how they are held accountable remains unclear. They have been characterized by their exclusionary nature (Ece et al., 2017; Mamdani, 1996) because of a dual challenge: while chiefs are typically elected, their tenure extends for a lifetime (until death or retirement). Paramount chiefs are elected for life by a "Tribal Authority" composed of local notables, and only individuals from designated "ruling families," created by the British in 1896, are eligible for these positions (Acemoglu et al., 2014). Chiefs do not descriptively mirror their communities as they tend to be disproportionately comprised of older males from so called ruling families. Therefore, development and conservation practitioners fear that chiefs would fall short in representing and including all social groups within the communities, particularly women and the youth (Ribot, 2002; Honig, 2017). In the Ghanaian context, Baruah (2017) show that traditional authorities (chieftaincies) were given authority in community-based forestry programs. However, these authorities do not consistently represent local needs and are rarely accountable to the local population. The author claims that recognition of traditional elites in such contexts opens the door to elite capture. In Nigeria, Nuesiri (2017) makes a similar argument, suggesting that chieftaincies, at best, serve as symbolic representatives of their community.

### 4.3.1 Conservation projects in West Africa

Our research is informed by the archetype of conservation projects implemented in Western Africa. These initiatives, regardless of their specific nature—be it national parks, community-based

projects, or REDD+ schemes—uniformly consist of two principal components. Initially, decisions are made regarding the access to forest resources. The projects typically impose restrictions on the availability of such resources, which may extend to complete prohibition within certain national parks, alongside the establishment of enforcement mechanisms to ensure compliance with the newly instituted regulations. These policies invariably impose a burden on local communities. Consequently, a second component is incorporated within these projects to mitigate the impact of these conservation efforts on the communities. This facet usually revolves around the development of alternative livelihood policies, promoting new economic activities and technologies intended to alleviate pressure on forest resources and/or compensate for the restricted access to forest products.

However, it is often observed that communities are not monolithic in their dependence on mangrove resources or their attitudes towards conservation policy, specifically regarding their desire to preserve the forest. Social groups reliant on mangrove resources for their livelihood may disproportionately bear the brunt of conservation projects in comparison to other groups.

Accordingly, we identify two primary sources of bias: a) variability in conservation preferences, and b) differences in the extent to which social groups depend on mangrove forests for their livelihoods.

### 4.3.2 Local institutions

The research is conducted in the Southern province of Sierra Leone, specifically in the Bonthe and Moyamba districts, encompassing 12 Chiefdoms where data is gathered from 79 villages. Chiefdoms serve as the primary political entities in rural Sierra Leone and are overseen by Paramount Chiefs (see figure 4.2). Within each chiefdom, there are sections led by section chiefs, who hold a hierarchical position superior to the town chiefs (also called village leaders). Town chiefs play a crucial role in maintaining village peace, resolving local disputes, collecting taxes, and promoting local development. Moreover, in our sample of villages, 41% and 31% of village leaders express their commitment to forest and biodiversity preservation respectively.

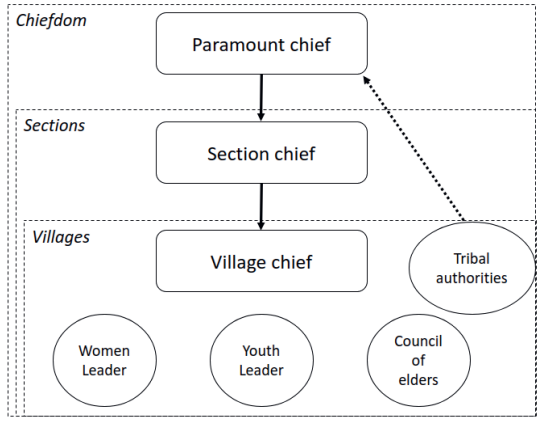


**Figure 4.2:** Organizational structure of chiefdoms in Sierra Leone.

Notes: The diagram illustrates the organizational structure of chiefdoms in Sierra Leone. Paramount chiefs wield authority over the chiefdoms, overseeing land management and significant dispute resolutions. The election of a Paramount Chief involves tribal authorities, one for each pool of 20 taxpayers. Chiefdoms are further subdivided into sections and villages. Within each village, the village chief, along with the council of elders, assumes primary responsibilities for tasks such as tax collection, dispute resolution, and coordination of communal labor. Additionally, leaders representing the youth and women are entrusted with the task of advocating for their respective social groups and coordinating communal labor activities.

Village leaders are typically supported by a council of elders (see table 4.1). This council consists of heads from major descent groups, influential landholding entities that legitimize their status based on their historical arrival within the territory, with firstcomers being accorded greater legitimacy to claim positions of power within the region (see Leach (2022)). Elders within these groups allocate land usage rights, mediate disputes related to land use, and represent the village in elections for new Paramount Chiefs (Leach, 2022). In each village, two additional notable leadership roles are the youth leader and the mummy queen. These positions carry the responsibility of coordinating communal activities and advocating for the concerns and grievances of their respective groups. Further descriptions on the population characteristics can be found in appendix C2.

**Table 4.1:** Descriptive statistics of the institutional context in the sampled villages

| | N | Mean | Min | Median | Max | SD |
|---|---|---|---|---|---|---|
| Town chief election year | 77 | 2012 | 1982 | 2015 | 2023 | 10 |
| Succession period in days | 77 | 72.8 | 0 | 8 | 720 | 145 |
| Previous town chief suspended | 77 | 0.24 | 0 | 0 | 1 | 0.43 |
| Council of elders exists | 77 | 0.87 | 0 | 1 | 1 | 0.34 |
| Women leader exists | 77 | 1 | 1 | 1 | 1 | 0 |
| Youth leader exists | 77 | 1 | 1 | 1 | 1 | 0 |
| Proportion of town chief voters | 77 | 0.78 | 0.25 | 0.83 | 1 | 0.2 |
| Number of community meetings (last year) | 77 | 7.08 | 2 | 6 | 20 | 4.24 |
| Meeting attendance rates | 77 | 0.81 | 0.42 | 0.83 | 1 | 0.16 |
| Trust outsiders | 77 | 2.5 | 1.67 | 2.42 | 3.42 | 0.39 |
| Distance to headquarters (in hours) | 77 | 4 | 0 | 3 | 18 | 4.35 |

Note: The table presents descriptive statistics of key institutional variables at the village level. The variables are as follows: Town chief election year: the year in which the town chief was elected; Succession period: the time lapse (in days) for the town chief to be officially designated; Previous town chief suspended: a dummy variable indicating whether the succession was due to the suspension of the previous town chief; Council of elders, Women leader, and Youth leader exists: dummy variables indicating whether these authorities exist in the village; Proportion of town chief voters: the percentage of families in the village allowed to vote for the town chief; Meeting attendance rates: the proportion of households that participated in at least one community meeting last year; Trust outsiders: the average trust in outsiders, measured using a 4-point Likert scale.

In Sierra Leone, the outbreak of civil wars has been partly attributed to the marginalization of non-status young men, often coerced into farm labor by chiefs or other village elites (Mokuwa et al., 2011). More recently, it has been emphasized that they continue to lack political rights in many communities and disproportionately bear the burden of communal labor, which is often managed solely by chiefs. (Peters, 2011).

Social groups not only vary in their access to political power but also in their livelihood strategies. Appendix C2 illustrates the most significant livelihood activity by social groups (leaders, young men, and young women). The two primary livelihood strategies are farming, fishing and fishing processing. Then, trading, logging, and the processing of agricultural goods are reported. Youth men reports relying more on logging activities than the other social groups (around 70% compared to around 50% for youth women and the leaders). Youth women reports relying more on trades (65% vs. 55%) and the processing of agricultural goods (50% vs. 40%) compared to the youth men and leaders. In 82% of the villages, leaders and young men report the same primary livelihood activity, compared to 69% between leaders and young women, and 68% between young men and young women.

## 4.4 Research design

### 4.4.1 Intervention

We test whether the the inclusion of youth compared to a classic participatory community-driven development scenario, increases the policy representation of low-status youth groups. To do so, we design a framed field experiment aimed at reproducing decisions made in typical conservation projects (e.g., REDD+) where alternative livelihood and deforestation policies need to be drafted. Framed field experiments combine elements of traditional laboratory experiments with the natural environment of field studies (Harrison & List, 2004). Unlike lab experiments, framed field experiments take place in real-world situations where people normally encounter the decision being studied, allowing researchers to observe behavior closer to what might happen naturally.

In our case, participants are asked to draft a land planning strategy, setting the priority on which livelihood needs to be developed, determining whether deforestation is an issue, and if it is, the types of actions that need to be taken to reduce deforestation. These decisions are typical when conservation projects are implemented. We made it clear to participants that the land planning outputs would be shared with donors to increase the stakes of the experiment.

As figure 4.3 shown, the experiment is conducted in two steps. In the first step, focus group discussion separately with a) the town chief and the three selected elders, b) the youth leader and the three randomly selected young men, and c) the women leader and the three randomly selected young women help gather information regarding preferred deforestation and livelihood policies.

During the second step, we experimentally manipulate the group composition that made the conservation plan to study how an increased share of youth, replacing the village elites, impacts the quality of the decision-making process and youth policy representation. The experimental design consists of two arms with different group compositions. In the control arm, we replicate the typical participatory approach of development and conservation projects. Here, two representatives of 'the excluded group', namely the youth leader and the women leader, are included, and full information about youth preferences is disclosed to two village elites and the town chief. In the treatment condition, we mimic radical youth empowerment by introducing a random inclusion of a young man and a young woman, replacing two village elites. The treatment group consists of the town chief, the youth leader, the women leader, and two randomly chosen youths. During the land planning activity, participants are asked to display resources, land uses, preferred livelihood strategies, and deforestation policies.

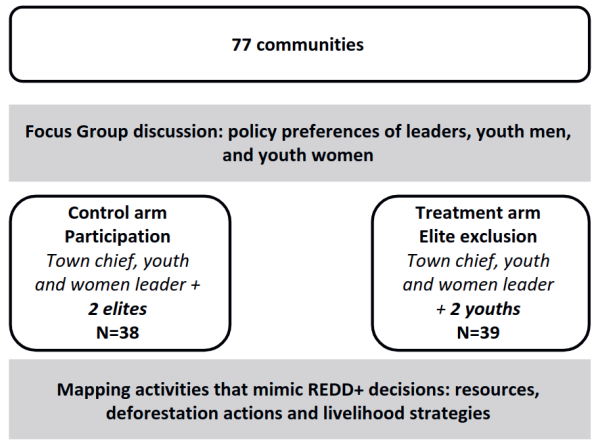


**Figure 4.3:** Framed field experiment design

The nature of the treatment lies on the replacement of two elites with two random low social status youth member of the village. Table 4.2 summarises the difference in socio-demographic characteristics between the village elites and the youth. The averages are calculated for the population of elite members and youth on which we randomly sampled participants in the framed field experiment [2]. Half of the elites sampled possess a formal status in the community compared to only 10% of the youth. Only 10% of them are female compared to approximately half of the youth we sampled. 94% of the elders are married and 79% of them own land. On the other hand, only 67% of the youth were married and 57% were formally owning lands. Math ability of elites is also statistically higher than the one of the youth. These differences are likely to shape political attitudes and preferences regarding land planning decision-making.

[2] Because of data collection issues, we did not track the actual individuals participating in the land planning decision-making. However, because participants are randomly sampled, we do not expect systematic differences with the population average.

**Table 4.2:** Average socio-demographic characteristics of the elites and the youth replacing the elites during the framed-field experiment.

| | Elites | Youth | Diff. |
|---|---|---|---|
| Status in the community (in %) | 0.551 | 0.060 | -0.49*** |
| Female (in %) | 0.093 | 0.473 | 0.4*** |
| Math ability (0-4 index) | 2.943 | 2.352 | -0.72*** |
| Reading ability (0-4 index) | 0.827 | 0.888 | 0.15 |
| Education (in years) | 3.741 | 2.607 | -0.92 |
| Illiterate (in %) | 0.718 | 0.612 | -0.08 |
| Married (in %) | 0.942 | 0.666 | -0.28*** |
| Land owner (in %) | 0.785 | 0.568 | -0.13** |
| Mangrove dependence index | −0.197 | −0.071 | $0.1^{+}$ |
| Conservation preference index | 0.063 | 0.031 | -0.02 |

Note: The table presents the average values of 10 socio-demographic variables for elites and the youth who are replacing elites in the treated villages during the framed field experiment. The variables are as follows: 1) Status in the community: a dummy variable equal to 1 if the participant has any recognized status within the community; 2) Female: a dummy variable equal to 1 if the participant is female; 3) Math ability: an index ranging from 0 to 4, representing the number of correct answers in a math test; 4) Reading ability: an index ranging from 0 to 4, representing the number of correct answers in a reading test; 5) Education: the number of years the participant has spent in the school system; 6) Illiterate: a dummy variable equal to 1 if the participant is illiterate; 7) Married: a dummy variable equal to 1 if the participant is married; 8) Land owner: a dummy variable equal to 1 if the participant owns land; 9) Mangrove dependency index: a standardized measure with positive values indicating a livelihood dependent on mangroves; 10) Conservation preference index: a standardized numeric index with positive values indicating stronger conservation preferences. The third column displays the differences using a dummy variable for elites or youth, village fixed effects, and robust cluster standard errors to assess whether the differences are statistically significant. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

Our experimental approach suffers from two limitations. First, we face implementation limitations. Initially enumerators were asked to include two pre-defined youth, one woman and one man, in each treated village during the land planning activity. However, compliance with the instruction was not perfect. One team of enumerators never included the women during the treated land planning activity. Another team of enumerators did not include the reach the youth from the census. Second, our experimental designs focus on the short-term effects of radical participatory approaches. They do not allow for an assessment of what happens after deliberation. The excluded elites may reject the plan because it does not fully integrate their views and interests. Radical participatory approaches can lead to elite pushback and worsen outcomes compared to a status quo scenario (Voors et al., 2018). The plan might also fail

because the included participants lack the information that village elites possess, resulting in worse outcomes during the implementation phase. Finally, we did not assess how village members perceive the legitimacy and efficacy of the plans, which could also be affected by our experimental approach.

### 4.4.2 Randomization strategy

We employ a random allocation of villages into control and treatment groups, leveraging three blocking variables: forest cover, distance to the main river, and distance to the sea. This approach allow us to account for variations in livelihood strategies across types of villages, thereby enhancing the precision of our estimates. Appendix C4 provides detail regarding the number of villages per blocks and treatment conditions. We used a Wald statistic for the hypothesis that all the coefficients on the covariates are zero (Wooldridge, 2010). We followed the permutation procedure suggested by Lin & Green (2016) and failed to reject the null hypothesis, as shown in appendix C5.

Nevertheless, the treatment was not perfectly delivered to all initially targeted villages. Access issues prevented us from reaching one village. Additionally, two villages were mistakenly included by our team of enumerators. The names and locations of villages on Sherbro Island were approximate, leading to errors in identifying target villages. Finally, due to a communication breakdown in the field, one village received the treatment arm instead of the designated control arm.

### 4.4.3 Data collection

Our research encompassed 77 communities [3] within Sierra Leone's coastal area, conducted by twelve enumerators divided into four teams, from April 1 to May 18, 2023. To target communities most likely suitable for future conservation initiatives, we selected those situated near mangrove ecosystems with populations between 20 and 250 settlements, avoiding both very small and very large settlements. We selected participants through a census of all household in the village allowing us to randomly select youth members with no specific social status. We define youth as any village member aged 18 to 30, which is a middle-range definition between the 15-24 age range commonly used by international organizations such as the UN (Gyampo & Anyidoho, 2019) and the 14-35 age range used in other influential research on youth political participation (Abbink, 2005). We excluded minor for ethical reasons. We also asked the village chief to select

[3] We visited 80 communities during the fieldwork including 2 pilot villages, 77 targeted villages, and two villages that were mistakenly visited.

three leaders in their community with which to discuss land use related issues. It was explicit that the outcomes of the discussion will be shared with donors.

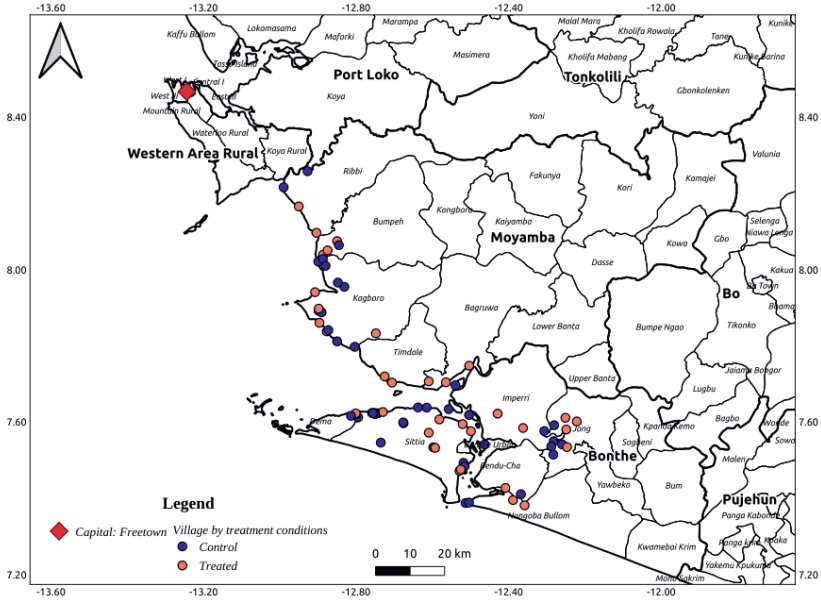


**Figure 4.4:** Maps of the villages sampled by treatment conditions in the framed field experiment.

Notes: The map shows the sampled villages in the coastal area of Sierra Leone and their treatment status in the framed field experiment. Blue dots represent treated villages (inclusion of youth in the land planning experiment), while red dots represent control villages (consultation of youth in the land planning experiment).

### 4.4.4 Measurement strategy

Appendix C1 shows the protocol and the measurement strategy used. The first outcome we are interested in is youth policy representation, which refers to the extent to which the policies chosen in the framed field experiment represent the preferences of the youth. To measure this outcome, we elicit the preferences of the youth (separately for women and men) and the leaders during the focus group phase on two issues: the livelihood activities to promote in the village and, if considered an issue, the deforestation actions to undertake. For both topics, open questions were asked, and enumerators recorded the answers. For the livelihood activities, we ask: 'What are the livelihood activities you would like to develop/promote in your village?' For the deforestation actions, enumerators ask: 'What actions would you like to take against deforestation?' A research assistant, blinded to treatment status, then categorized the answers into 19 livelihood categories and 11 deforestation categories.

The same questions were asked during the framed field experiment. Youth policy representation was measured as the percentage of livelihood and deforestation policies selected during the land-use activity (the last stage of the framed field experiment) that align with the choices made by youth in separate focus groups for young men and women. We calculate an aggregate representation index, which is our main outcome. We also measure a representation index separately for lhe livelihood policy and the deforestation policy, and for youth men and youth women.

The second outcome we are interested in is land planning quality. We computed an index based on three dimensions: the coherence of the answers, their exhaustiveness, and the effectiveness of the policies. For coherence, we assessed the number of inconsistencies between land-use activities and their related threats, as well as between existing land-use activities and the livelihood activities to promote. Exhaustiveness was determined by the number of livelihood activities and resources discussed during the planning. Finally, the effectiveness of the policy was measured on a scale of 1 to 4, with 1 indicating a plan where either deforestation was considered an important problem but no action was suggested, or deforestation was not considered an important problem but costly actions were suggested (e.g., no access to forest resources). A score of 4 indicated a plan where deforestation was either not considered an issue and no actions were suggested, or it was considered an issue and a coherent set of actions were suggested.

Finally, to test hypothesis 2, we measure the extent to which the elites in the village have ties with higher-level elites. We operationalize this measure by asking, for each village elite chosen by the town chief to participate in the land use activity, whether they have family ties with the Paramount Chief, the head of the chiefdom. We then computed a median split indicating whether a high share of village elites chosen by the town chief share ties with the Paramount Chief.

### 4.4.5 Empirical strategy

We use an Intent-to-Treat Estimand (ITT) and a Local Average Estimand (LATE). This approach allows us to assess whether the effects are robust to the misallocation of the treatment in one village and the inclusion of a village not initially part of the sample. As there is covariate balance between the control and the treatment group, we use the following estimator, for village $j$:

$$Y_j = \beta_0 + \beta_1 Z_j + \gamma_b + \epsilon_j \tag{4.1}$$

With $Y_j$, the outcome variable, for village $j$ a proxy for the proportion of policies chosen by the youth, or an index for planning quality, $\beta_1$ estimates the ITT, and $Z_j$ is a dummy

variable indicating whether the village $j$ belongs to the treatment group or the control group (for the ITT). $\gamma_b$ is the fixed effects accounting for the block randomization strategy. We use robust HC2 standard errors (Samii et al., 2014). We use an instrumental variable strategy to estimate the local average treatment effect (LATE) of the framed field experiment accounting for non-compliance issues[4].

We include multiple robustness check strategies to account for the heterogeneity in the implementation of the treatment reported in Appendix C7. The first alternative strategy drops low-quality data, with results. To account for the two individual covariates that were unbalanced between the control and the treated groups, we use a covariate adjustment strategy following the suggestion in Lin & Green (2016).

To test hypothesis 2, we run interaction models to estimate the heterogeneous effect of youth inclusion in villages with high and low numbers of elites tied to the Paramount Chief. We estimate the following model:

$$Y_j = \beta_0 + \beta_1 Z_j + \beta_2 X_j + \beta_3 Z_j X_j + \gamma_b + \epsilon_j \tag{4.2}$$

With $Y_j$, the outcome variable, for village $j$ a proxy for the proportion of policies chosen by the youth, or an index for planning quality, $\beta_1$ estimates the average treatment effect of the inclusion of youth among villages who do have a low share of elites with family ties with the Paramount Chief, $Z_j$ is a dummy variable indicating whether the village $j$ belongs to the treatment group or the control group, $X_j$ is a dummy for whether a high share of the elites have family ties with the Paramount Chief, $\beta_1 + \beta_3$ estimates the average treatment effect of the inclusion of youth among villages who do have a high share of elites with family ties with the Paramount Chief. $\gamma_b$ is the fixed effects accounting for the block randomization strategy. We use robust HC2 standard errors (Samii et al., 2014). The experimental design does not randomize ties with Paramount Chiefs. Consequently, the results can only be considered suggestive evidence and do not provide definitive causal evidence.

### 4.4.6 Manipulation check

We assess whether the treatment changed the number of participants and the group compositions during the land planning exercise. Table 4.3 summarises the results. The number of participants did not change significantly between the treatment and control arms (column 1). However, the group composition did change. In the treatment condition, there are 2 additional youth

[4] We have one-side compliance issues. Three villages were in treatment groups instead of the control group because of communication issue in the field.

participants (an increase of 40%) and approximately 0.5 additional women participants (an increase of 10%).

**Table 4.3:** Effect of the inclusion of youth on group composition during the framed field experiment

| | Participants | Youth | Women | Youth (%) | Women (%) |
|---|---|---|---|---|---|
| Treatment | 0.01 | 2.05*** | 0.52** | 0.41*** | 0.10** |
| | (0.01) | (0.23) | (0.15) | (0.05) | (0.03) |
| Control means | 4.99 | 0.4 | 1.02 | 0.08 | 0.206 |
| DV value range | Integer | Integer | Integer | [0; 1] | [0; 1] |
| block FE | Yes | Yes | Yes | Yes | Yes |
| Adj. $R^2$ | 0.01 | 0.48 | 0.07 | 0.48 | 0.07 |
| Num. obs. | 76 | 76 | 76 | 76 | 76 |

Note: The table presents the Intent-to-Treat (ITT) Effect of including youth in the framed field experiment. The outcome variables are: the total number of participants (column 1), the number of youth participants (column 2), the number of women participants (column 3), the proportion of youth participants (column 4), and the proportion of women participants (column 5). The analysis incorporates block randomization fixed effects, and robust standard errors are reported in parentheses. The sample size includes 76 villages, as one village could not be reached due to logistical challenges. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

Appendix C8 shows that the duration of the framed field experiment is about an hour with no significant differences between the treated and the control group.

## 4.5 The impact of youth inclusion on youth representation and planning quality

### 4.5.1 Baseline youth representation

During the focus group phase, approximately 53% of youth policies were selected in collaboration with the leaders. Overall, the groups exhibited broadly similar policy preferences, which may be attributed to the small size of the sampled communities. A more detailed analysis of the deforestation and livelihood policies selected by leaders, young men, and young women is provided in Appendix C6. The preferred livelihood policies include improved mechanized fishing and farming, business and trade, and the processing of agricultural goods. Leaders and young men tend to prioritize fishing, while young women show a stronger preference for business and trade. Regarding deforestation policies, leaders favor stricter regulations, whereas youth emphasize both stricter rules and the development of alternative economic activities. The groups' top deforestation policies are then stricter enforcement, harsher sanctions, and financial compensation for the non-use of timber products.

### 4.5.2 Youth participation and representation

Our main results are presented in Table 4.4. There is a significant increase in the degree of youth participation during the planning activity. The inclusion in deliberative processes (Table 4.3) does of course not guarantee active engagement in discussions and contributions to the final conservation plan. In control villages, by design, I excluded youth. Nevertheless, even when youth were included (potentially because some elite figures were also youth), they hardly ever spoke (scoring 0 or 1 on a 6-point Likert scale capturing their involvement). This increases to about 4 out of 6 points. Our findings indicate that even youths without specific social status in their communities are willing to engage actively in dialogues when involved in experimental setups alongside village chieftaincy authorities. Appendix C8 presents a similar analysis for women's participation, revealing a negligible increase of 0.3 points on the same Likert scale, resulting in a total score of 3.2 for the treatment group—approximately 1 point lower than that for youth participation.

Does active participation by the youth result in greater representation in the final decisions made?

To assess youth representation, we analyze the proportion of policies related to deforestation and livelihood that were chosen during the youth men and women focus group discussions before the land-planning exercise and also selected in the subsequent land planning activity. Column 5-6

show large increase in youth policy representation, ranging from 8 to 10%p. We further investigate whether the effects are different for deforestation and livelihood policies. The tables are displayed in appendix C8. Overall, the patterns are similar across policies. The treatment does increase youth representation of 4 to 7%p when focusing on deforestation policy and of around 9 to 13%p on livelihood policy although none of those effects are statistically significant, suggesting that the treatment is especially effective on an aggregate level. These findings indicate that when the village elites are partially excluded, youth inclusion can enhance youth representation.

**Table 4.4:** Causal effects of additional youths in the land planning activity on the participation of youths, the land planning quality, and youth policy representation.

| | Youth participation | | Policy rep. (in %) | | Planning quality | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Treatment | $4.24^{***}$ | $4.58^{***}$ | $0.08^{+}$ | $0.10^{+}$ | 0.02 | 0.02 |
| | (0.32) | (0.28) | (0.05) | (0.05) | (0.02) | (0.02) |
| Control mean | 0.79 | 0.42 | 0.50 | 0.49 | 0.83 | 0.83 |
| DV range | $\{1, 2, ..., 6\}$ | | $[0, 1]$ | | $[0, 1]$ | |
| Block FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Estimand | ITT | LATE | ITT | LATE | ITT | LATE |
| Adj. $R^2$ | 0.68 | 0.81 | 0.20 | 0.05 | 0.03 | 0.01 |
| Num. obs. | 76 | 76 | 76 | 76 | 76 | 76 |

Note: The table presents the results from a regression analysis using block randomization fixed effects and robust cluster standard errors. Outcome variables are youth participation assessed by enumerators using a 6-points Likert scale, planning quality which is measured using an index averaging three dimensions: complexity, comprehensiveness, and coherence, and policy representation is the percentage of policies chosen by the youth during the focus group that are also chosen during the land mapping activity. We use an instrument variable strategy to estimate the LATE. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

We assess whether the results are driven by higher inclusion of youth men or youth women which is plausible as women tends to be more excluded from village decision-making than men. To do so, we evaluate the impact of youth inclusion on the representation of men and women separately to discern if one group dominates the deliberative space over the other. Secondly, we examine the extent to which the outcomes of the decision-making process align with the social optimum, defined as the selection of policies that are mutually favored by both young men and women.

For the initial analysis, results presented in Appendix C8 indicate consistent patterns across subgroups. The intervention led to an increase in policy representation for young men by 7 to 10%p and for young women by 4 to 12%p, with statistical significance at the 10%p level for young men and 5%p level for young women in one of the specifications. In the second analysis,

the control group have, on average, the choice of approximately one common policy, whereas the treatment group selected between 1.3 and 1.4 common policies. Using a dummy variable to identify whether all mutually preferred policies were chosen, we observe that the proportion of social optimum outcomes is notably high in the control group, ranging from 74% to 79%. In the treatment group, social optimum outcomes are achieved in 80% to 84% of cases, although the differences between these groups are not statistically significant.

Overall, when the village elites are partially excluded, our analysis demonstrates that randomly included youth in a land planning improve both youth men and youth women policy representation.

Does including youth impact the land planning quality? Table 4.4 outlines the results of this analysis, with block fixed effects, intent-to-treat or local average treatment effect estimations. The comparison between the treatment and control groups reveals no significant differences between control and treatment group, with 0.01 to 0.02 changes in the overall quality index. The control group average is relatively high, with a quality index ranging from 0.83 to 0.85. The inclusion of randomly chosen youth does not hinder the planning quality that is put in place, with an index remaining high.

We examine the effect of youth inclusion on the capacity of plans to address deforestation patterns. By counting the number of plans lacking explicit deforestation actions, we found that in the control arm, just under a third of the villages chose not to implement any deforestation measures. This figure significantly decreases in the treatment arm, with only 11% to 23% of villages opting out of deforestation actions, depending on the specification. The average reduction ranges from 7% to 17%, with the larger effect being statistically significant at the 10% level.

While the overall quality of the plans, as measured by their complexity and coherence, remains consistent across the control and treatment arms, our findings suggest that the inclusion of randomly selected youth in the land-planning deliberative experiment effectively reduces the likelihood of inaction against deforestation.

## 4.6 Leaders' power and youth representation

We formally assess hypothesis 2 positing that the effect of youth inclusion with partial village elite exclusion on youth policy representation is higher for villages with family ties with the Paramount Chief, the head of the chiefdom, a powerful figure in Sierra Leone (Acemoglu et al., 2014). The balance of power between social groups has been highlighted as an important factor explaining the success of participatory approaches in development or conservation projects (Dasgupta & Beard, 2007). Figure 4.5 shows the density of the youth policy representation outcome based on leaders' relationships with the Paramount Chief (PC) for the control and treatment groups. In

the control group, which represents a standard scenario of community-driven development, the distribution of youth policy representation differs between villages with leaders having ties to the Paramount Chief and those without such ties. Specifically, when leaders have ties to the Paramount Chief, youth policy representation is significantly lower. In contrast, in the treated villages, there are no apparent differences in the distribution of youth policy representation.

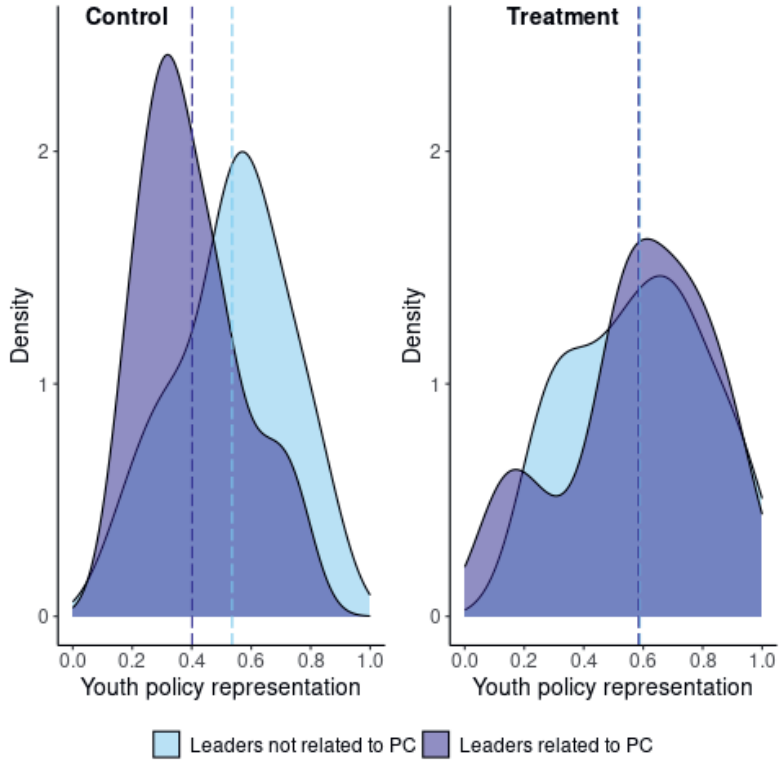


**Figure 4.5:** Density of the youth policy representation outcome by leaders relationship with the Paramount Chief (PC).

Note: The figure represents the density of the youth policy representation outcome based on leaders' relationships with the Paramount Chief (PC). The dashed line displays the average for each group. Dark colors represent villages with a high share of leaders with family ties to the Paramount Chief. In the left panel, the density is shown for villages in the control group, while in the right panel, the density is shown for the treatment group.

Table 4.5 presents the results of a formal test assessing differences in treatment effect between villages with leaders who have ties to the Paramount Chief, our proxy for leaders' power, and those who do not. We use two specifications, the first two specification use the percentage of policies chosen in the framed field experiment that are preferred by the youth. The third and fourth specification use a dummy variable indicating whether at least 50% of youth policies were chosen in the framed field experiment (columns 3 and 4 of Table 4.5).

Across the four specifications, using block fixed effects and cluster robust standard errors, villages in the control group with villages elites having family ties with the Paramount Chief exhibit significantly lower youth policy representation. The effect size 12% and statistically significant at the 10% levels. When using the threshold at 50%, the results are even stronger, showing a 33% decrease in youth policy representation when leaders have ties to the Paramount Chief. These results are statistically significant at the 5% level. As a consequence, the treatment has a larger effect among villages where elites have ties to the Paramount Chief. This is particularly evident when using the dummy indicating at least 50% youth policy representation. The results appear to be driven by the lower baseline level of youth policy representation in such villages.

**Table 4.5:** Causal effects of additional youths in the land planning activity on youth policy representation and land planning quality with heterogeneous effect by villages with leaders having strong ties with the Paramount Chief (PC)

| | Youth policy representation | | Planning quality |
|---|---|---|---|
| | (1) | (2) | (3) |
| Treatment | 0.02 | 0.03 | 0.01 |
| | (0.06) | (0.14) | (0.02) |
| Leaders' ties with PC | $-0.12^{+}$ | $-0.33^{*}$ | 0.00 |
| | (0.06) | (0.14) | (0.03) |
| Treatment * Leaders' ties with PC | 0.13 | $0.43^{*}$ | 0.01 |
| | (0.09) | (0.20) | (0.04) |
| DV range | $[0, 1]$ | $\{0, 1\}$ | $[0, 1]$ |
| Block FE | Yes | Yes | Yes |
| Estimand | ITT | ITT | ITT |
| Adj. $R^2$ | 0.22 | 0.26 | $-0.00$ |
| Num. obs. | 75 | 75 | 75 |

Note: The table presents the results from an OLS regression analysis using block randomization fixed effects and robust cluster standard errors. Outcome variables are youth policy representation (column 1 and 2) as the percentage of policies chosen by the youth in both the framed field experiment and the focus group discussion in column 1. Column 2 measures youth policy representation as a dummy with 50% of policies chosen as a threshold. Planning quality is measured using an index averaging three dimensions: complexity, comprehensiveness, and coherence. All models use an intent-to-treat effect estimand. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

Finally, the results indicate that there are no differences in planning quality between villages where leaders have ties to the Paramount Chief and those where leaders do not share such ties.

The control arm simulates a standard community-driven project where the youth are consulted, all information regarding youth preferences is shared with the village elites, and representatives of the youth (the youth and women leaders) participate in decision-making. Youth policy

representation remains low when leaders have ties to the Paramount Chief. In these villages, leaders may feel covered by higher-ranking chiefs, giving them sufficient power to disregard the inputs of groups generally not represented in decision-making. It is only when the elites are excluded that youth policy representation increases.

## 4.7 Discussion

This section explores potential alternative explanations for the previously presented findings. We employ the same empirical strategy, but with alternative outcome variables to investigate different mechanisms that might be at play. The increased youth representation observed could be attributed to changes in group dynamics, activity duration, group size, or the quality of the focus group discussion summary (the initial step in the land-use planning activity). Appendix C9 presents the detailed results of these analyses.

Our investigation identified no statistically significant impact of including additional youth on group dynamics, activity duration, or group size. These elements remained comparable between treatment and control groups. Similarly, no significant change was detected in the quality of summaries produced from women's youth focus groups. However, the results suggest a noteworthy improvement in the quality of summaries generated by youth leaders for the men's youth focus groups when youth were included in the land-use planning activity. Specifically, the presence of youth led to an improvement of approximately 0.2 points on a 1-to-5 Likert scale ($p < 0.05$) in the summaries produced by youth leaders. While this improvement is statistically significant, it is unlikely to fully explain the observed increase in youth representation. This is because the baseline summary quality was already relatively high (average of 4 on a 5-point Likert scale). However, it does suggest a potential shift in the behavior of youth leaders when youth are incorporated into the group.

Finally, we acknowledge the possibility that leaders might disengage from the land-use planning activity if the group composition deviates significantly from a typical local decision-making scenario. It is conceivable that leaders might not fully engage in such an activity when faced with a high proportion of young and potentially lower-status individuals. To mitigate this concern, we explicitly communicated that the outcomes of the land-use planning activity would be shared with relevant donors and policymakers in the area.

## 4.8 Conclusion

In conclusion, our study aimed to empirically test the "empowerment hypothesis" within the context of participatory development approaches, particularly focusing on the inclusion of marginalized youth in decision-making processes. We hypothesized that low-status groups, traditionally excluded from village decision-making, can achieve meaningful representation through participatory mechanisms when their inclusion significantly disrupts the power dynamics held by village elites. Our experimental findings demonstrate that including young men and women improves the policy representation of these groups by 10% compared to standard participatory approaches, though it does not impact the quality of the planning. Notably, the effect is driven by villages where elites have strong family ties with higher-level leaders, highlighting the importance of vertical accountability mechanisms.

Our study contributes to the literature by identifying conditions under which participatory approaches in development and conservation can improve youth representation and by extending the understanding of elite capture and power in local chieftaincy settings. We underscore the significance of connections between village elites and higher-level leaders in shaping inclusion and exclusion patterns.

# Appendix C: Supplementary Materials

## C1 Measurement strategy

### C1.1 Individual survey

In this section we develop the survey items used to proxy conservation attitudes and mangrove dependencies.

**Measuring mangrove dependencies**

Answer yes or no to the following item:

- Cutting down trees in the mangrove forest increases my vulnerability to storms and flood
- Cutting down trees in the mangrove forest results in soil erosion
- Cutting down trees in the mangrove forest reduces the habitat for wild animal species to live
- Tree planting is an important activity to conserve mangrove forest
- Cutting down trees in the mangrove forest provides me with firewood
- Cutting down trees in the mangrove forest reduce food and medicine availability
- Cutting down trees in the mangrove forest provides me with an income

**Measuring conservation preferences**

Answer yes or no to the following item:

- Local people or visitors should be allowed to freely cut down trees in mangrove forests(e.g.,bamboo, medicinal plants)
- Mangrove areas should be maintained and conserved for future generations
- Certain mangrove areas can be developed for non-forest purposes such as farming or infrastructure (road, etc. . . )
- People in the village want to be allowed to freely cut down trees in mangrove forests
- How much deforestation of mangrove forest is a problem on a scale of 1 (not at all a problem) to 5 (Very much a problem)?

### C1.2 Focus group discussion

The following questions were asked by enumerators during the focus group discussions:

- **Question 1:** Mention up to five livelihood activities and rank the livelihood activities by importance
- **Question 2:** For each of those livelihood activities, determine on a scale from 1 to 5, how related they are to mangrove resources (1 being, completely independent from mangrove to 5 strictly dependent to mangrove resources)
- **Question 3:** What are the livelihood activities you would like to develop / promote in your village?
- **Question 4:** How much deforestation of mangrove forest is a problem in a scale of 1 (not at all a problem) to 5 (Very much a problem)?
- **Question 5:** Should your community take any actions against deforestation?
- **Question 6:** What actions would you like to take against deforestation? (the enumerator should give the following example of actions: i. stricter rules, ii. stricter enforcement, iii. stricter sanction, iv. development of alternative economic activities, v. shift in landownership: national protected area, vi. payment against the non utilization of mangrove timber)
- **Question 7:** What livelihood activities would you promote to reduce deforestation? Please mention maximum 3 livelihood activity
- **Question 8:** Which best describes how the group eventually came to a conclusion?

### C1.3 Framed field experiment

The following questions were asked by enumerators during the framed field experiment:

- **Question 1:** *(for enumerators only)* Can you rate the quality of the focus group discussion summary done by the Women leader?
- **Question 2:** *(for enumerators only)* Can you rate the quality of the summary of the focus group discussion done by the Youth leader?
- **Question 3:** What are the five most essential resources for your community?
- **Question 4:** What are the five most critical land-use and livelihood activities
- **Question 5:** What are the threat over resources in the community? (depletion, conflict, extreme whether events. . . )?
- **Question 6:** What livelihood activities would you like to promote in your community?
- **Question 7:** What are the decision-making process you would like to use to develop this land use activities (who is involved, who decide, and how?
- **Question 8:** How much deforestation of mangrove forest is a problem in a scale of 1 (not at all a problem) to 5 (Very much a problem)?
- **Question 9:** What actions would you like to take against deforestation? (the enumerator should give the following example of actions: i. stricter rules, ii. stricter enforcement, iii. stricter sanction, iv. development of alternative economic activities, v. shift in landownership: national protected area, vi. payment against the non utilization of mangrove timber)
- **Question 10:** What livelihood activities would you promote to reduce deforestation?
- **Question 11:** *(for enumerators only)* How would you rate the quality of the mapping output?
- **Question 12:** *(for enumerators only)* Which best describes how the group eventually came to a conclusion?
- **Question 13:** *(for enumerators only)* In your opinion, how actively did women participate in the deliberation compared to men?
- **Question 14:** *(for enumerators only)* In your opinion, how actively did youth participate in the deliberation compared to non-youth?

- **Question 15:** *(for enumerators only)* In your opinion, how actively did non leaders participate in the deliberation compared to leaders?

### C1.4 Framed field experiment protocol

**STEP 1: GATHERING**

Gather the town chief, the mummy queen, the youth leader, and the six randomly selected participants. Ask the town chief to select four elders that represent the communities for participating for this half-day activity about land-use.

**STEP 2: INTRODUCTION**

Greetings and welcome to all of you. My name is ... and I am .... I am here for a research project concerning livelihood activities and their relationships with mangrove resources in the Sherbro River Estuary. We want to undertake a land planning activity with you for this research project. We are interested in understanding the livelihood activities undertaken in this area and how they relate to mangrove forests. We would also like to know your preferred development path and the activities you want to promote in your village. We do not have the power to develop and give anything to your community. We are here for research purposes. However, we will inform private stakeholders and NGOs about your wishes. Before proceeding with the land activity, we would like your consent to participate in this exercise and ask you some questions regarding yourself and your preferences.

**STEP 3: SEEK CONSENT OF THE PARTICIPANTS**

Reed informed consent sheet

**STEP 4: CONDUCT INDIVIDUAL SURVEY**

**STEP 5: CONDUCT FOCUS GROUP DISCUSSION**

Note for the enumerators: Each enumerator, including the team leader, will facilitate one focus group discussion in this step. Make three groups (leaders, women, and men youth), and start the exercise. Each enumerator will be allocated to a group and will report the answers

- Explanation: We are going to proceed to a focus group discussion. I am going to facilitate the focus group. The discussion will last for about 30 minutes. The objective of this group discussion is to gather your opinion on several questions regarding livelihood activities, your relationships with mangroves, and your preferences regarding the development of your village. I am going to ask several questions. You will be asked to discuss those questions and agree on an answer. If it helps you, you can keep track of your answer by reporting them (writing or drawing) on this paper. Do take your time when discussing. Do you have

any questions? (answer all the questions and then begin with the focus group). Before beginning, I would like you to think about the ground rules for this group discussion. Any suggestion? If the participants don't provide any rules suggest: anyone allowed to express his opinion and change its mind; everyone participate, no one dominates; try to avoid unnecessary discussion; be respectfull...

- Focus group discussion: The enumerator should help them and facilitate the exchanges during the exercise. Ensure that every member in the focus group has the opportunity to speak and that everyone agrees on the answers provided. If no consensus can be found, mention it in the answer sheet on the tablets. Also, the enumerator is expected to help record the answers on paper by drawing and/or writing the answers. We are going to start with the discussion. Each time you agree on an answer, please provide it to me. I will report these answers on this answer sheet. The enumerator should help them and facilitate the exchanges during the exercise. Ensure that every member in the focus group has the opportunity to speak and that everyone agrees on the answers provided. If no consensus can be found, mention it in the answer sheet on the tablets. Also, the enumerator is expected to help record the answers on paper by drawing and/or writing the answers.
  - a) What are the main livelihood activities that your social group (leaders OR young women OR young men) depend on? A1) Please, agree on the five most important livelihood activities. A2) Please, rank them by order of importance.
  - b) For each of those livelihood activities, determine on a scale from 1 to 5 how related they are to mangrove resources (1 being completely independent of mangrove to 5 strictly dependent on mangrove resources)
  - c) Do you have any difficulties to undertake those activities? If yes, explicit...
  - d) What livelihood activities would you like to develop or see more in your village? Please state 3 of them and rank them by order of importance.
  - e) How much deforestation of mangrove forests is a problem on a scale of 1 (not at all a problem) to 5 (very much a problem)? If yes, should your community take any actions against deforestation?
  - f) What actions would you like to take against deforestation? (*the enumerator should give the following example of actions: i) stricter rules, ii) stricter enforcement, iii) stricter sanction, iv) development of alternative economic activities, v) shift in landownership: national protected area, vi) payment against the non-utilization of

mangrove timber... When the group chooses an action, ask them to develop it as much as possible*)

- g) What livelihood activities would you promote to reduce deforestation? Please mention a maximum of three livelihood activity

**STEP 6: CONDUCT THE LAND MAPPING ACTIVITY**

When all the focus group discussions are finished, thank everyone for participating. Check whether the village is in the group A or in the group B.

**FOR THE GROUP A**

- Note for the enumerators: The team leader will facilitate the land planning activity. The other enumerators will fill out the answer sheet. We are going to start the land planning activity. This activity aims to understand better where the livelihood activities are undertaken around the village and how you would like to promote the development of the village. Before you conduct this activity, you will be informed about the output of the two other focus group discussions.

- Information: in this first phase, gather the town chief, and the two of the four elders around the table where they will conduct the land planning exercise. Ask the women leader to come and summarize the output of the focus group discussion in 5 minutes. Then, ask the youth leader to do the same.

- Land planning activity: We are going to proceed to the land planning activity. I am going to facilitate it. The activity will last about 1 hour to 1 hour and a half. The objective of this activity is to gather your opinion on several questions regarding livelihood activities, land use, and your preferences regarding the development of your village. In the first part of this activity, you will be asked to draw a map of the land use in your village. We will guide you step by step to draw this map. We will give the instruction step by step. You will be asked to discuss this instruction and agree collectively before drawing it on the map. Do take your time when discussing. Do you have any questions? (answer all the questions and then begin with the activity)

- Provide the instruction for the land planning exercise to the group of leaders. In the mapping exercise, incentives for the use of different symbols and colors. Follow the steps:

  - a) Map the main roads, the community meeting or headmen's house, the school, and the health center if they are present in the village;
  - b) Map the coastline, the river, and the forests;

- c) Map the essential resources for the community and indicate who has access to it;
- d) Map the most critical land-use and livelihood activities and where they take place;
- e) Ask whether there are any threats over resources.
- f) Discuss and agree on the main land use activities that should be promoted in the village in the coming years;
- g) What is the decision-making process you would like to use to develop these land use activities (who is involved, who decide, and how);
- h) How much deforestation of mangrove forests is a problem on a scale of 1 (not at all a problem) to 5 (very much a problem)?
- i) What actions would you like to take to reduce threats over mangrove resources? (*the enumerator should give the following example of actions: i) stricter rules, ii) stricter enforcement, iii) stricter sanction, iv) development of alternative economic activities, v) shift in landownership: national protected area, vi) payment against the non-utilization of mangrove timber... When the group chooses an action, ask them to develop it as much as possible*)
- j) How much land would you like to set aside for conservation purposes? It means you would only be allowed to collect NTFP using the scale: 1 - None to 5 - all. Youth empowerment as old trees' gatekeepers?

**FOR THE GROUP B**

- The team leader will facilitate the land planning activity. The other enumerators will fill out the answer sheet. We are going to start the land planning activity. This activity aims to understand better where the livelihood activities are undertaken around the village and how you would like to promote the development of the village. Before you conduct this activity, you will be informed about the output of the two other focus group discussions.
- Information: Gather the leader, the women leader, the youth leader, and a randomly selected youth woman and youth man around the table where we will conduct the land planning exercise. Thanks to the other participants for their efforts in joining the activities. Ask the women leader to summarize the output of the focus group discussion in 5 minutes. Then, ask the youth leader to do the same.
- Land planning activity: We are going to proceed to the land planning activity. I am going to facilitate it. The activity will last about 1 hour to 1 hour and a half. The objective of

this activity is to gather your opinion on several questions regarding livelihood activities, land use, and your preferences regarding the development of your village. In the first part of this activity, you will be asked to draw a map of the land use in your village. We will guide you step by step to draw this map. We will give the instruction step by step. You will be asked to discuss this instruction and agree collectively before drawing it on the map. Do take your time when discussing. Do you have any questions? (answer all the questions and then begin with the activity) Provide the instruction for the land planning exercise to the group of leaders. In the mapping exercise, incentives for the use of different symbols and colors. Follow the steps:

- a) Map the main roads, the community meeting or headmen's house, the school, and the health center if they are present in the village;
- b) Map the coastline, the river, and the forests;
- c) Map the essential resources for the community and indicate who has access to it;
- d) Map the most critical land-use and livelihood activities and where they take place;
- e) Ask whether there are any threats over resources.
- f) Discuss and agree on the main land use activities that should be promoted in the village in the coming years;
- g) What is the decision-making process you would like to use to develop these land use activities (who is involved, who decide, and how);
- h) How much deforestation of mangrove forests is a problem on a scale of 1 (not at all a problem) to 5 (very much a problem)?
- i) What actions would you like to take to reduce threats over mangrove resources? (the enumerator should give the following example of actions: i) stricter rules, ii) stricter enforcement, iii) stricter sanction, iv) development of alternative economic activities, v) shift in landownership: national protected area, vi) payment against the non-utilization of mangrove timber... When the group chooses an action, ask them to develop it as much as possible)
- j) How much land would you like to set aside for conservation purposes? It means you would only be allowed to collect NTFP using the scale: 1 - None to 5 - all. Youth empowerment as old trees' gatekeepers?

## C2 Descriptive statistics table

### C2.1 Village characteristics

**Table 4.6:** Descriptive statistics of the sociological and economic contexts in the villages sampled

| | N | Mean | Min | Median | Max | SD |
|---|---|---|---|---|---|---|
| Population | 77 | 220 | 21 | 165 | 760 | 169 |
| Muslim | 77 | 0.91 | 0 | 1 | 1 | 0.29 |
| Mende | 77 | 0.29 | 0 | 0 | 1 | 0.46 |
| Distance to health center (in hour) | 77 | 2.01 | 0 | 1.25 | 18 | 3.12 |
| Distance to market (in hour) | 77 | 3.99 | 0 | 3 | 18 | 3.85 |
| Distance to 2nd school (in hour) | 77 | 4.14 | 0 | 3 | 18 | 4.42 |
| Infrastructure development index | 77 | 6.78 | 0 | 4.85 | 70.7 | 8.79 |
| Income inequality | 77 | 0.34 | 0.11 | 0.33 | 0.57 | 0.1 |
| Forest cover in 2000 | 77 | 0.42 | 0.05 | 0.43 | 0.87 | 0.19 |
| Forest cover in 2020 | 77 | 0.27 | 0.02 | 0.25 | 0.72 | 0.17 |
| Deforestation rates between 2015 and 2020 | 77 | 0.06 | -0.08 | 0.05 | 0.38 | 0.07 |

Note: The table provides descriptive statistics on the sociological and economic contexts within the study area. 'Population' refers to the number of village inhabitants as determined by the census, collected by the author. 'Muslim' is a binary variable indicating whether the respondent is Muslim. 'Mende,' the primary tribe in the region, is a binary variable indicating whether the respondent is Mende. The 'Infrastructure Development Index' is calculated by summing the inverse distances to key facilities such as schools, roads, and health centers, and summing the presence of phone coverage, electricity, radio, cement, crop stores, rice mills, and water wells. 'Income Inequality' is measured by the GINI coefficient of household income at the village level. 'Forest Cover' indicates the percentage of forested area within a 4km buffer around the village in both 2000 and 2020.

### C2.2 Descriptive statistics by social groups

**Table 4.7:** Descriptive statistics of the main participants by social group

| | | N | Min | Mean | Median | Max | SD |
|---|---|---|---|---|---|---|---|
| Youth | No status | 327 | 0 | 0.96 | 1 | 1 | 0.20 |
| | Age | 327 | 18 | 24.50 | 25 | 61 | 4.95 |
| | Youth | 327 | 0 | 0.98 | 1 | 1 | 0.13 |
| | Female | 327 | 0 | 0.48 | 0 | 1 | 0.50 |
| | Education | 327 | 0 | 3.48 | 0 | 14 | 4.36 |
| | Reading ability | 327 | 0 | 0.87 | 0 | 4 | 1.41 |
| | Math ability | 327 | 0 | 2.45 | 2 | 4 | 1.33 |
| Town chief | Age | 72 | 26 | 50.75 | 50 | 97 | 13.94 |
| | Female | 72 | 0 | 0.01 | 0 | 1 | 0.12 |
| | Education | 72 | 0 | 1.79 | 0 | 14 | 3.77 |
| | Reading ability | 72 | 0 | 0.61 | 0 | 4 | 1.18 |
| | Math ability | 72 | 0 | 3.14 | 4 | 4 | 1.12 |
| Women leader | Age | 75 | 22 | 40.89 | 40 | 65 | 10.24 |
| | Female | 75 | 0 | 0.99 | 1 | 1 | 0.12 |
| | Education | 75 | 0 | 1.85 | 0 | 10 | 3.23 |
| | Reading ability | 75 | 0 | 0.89 | 0 | 4 | 1.43 |
| | Math ability | 75 | 0 | 3.03 | 3 | 4 | 1.19 |
| Youth leader | Age | 77 | 20 | 33.71 | 33 | 59 | 6.38 |
| | Female | 77 | 0 | 0.00 | 0 | 0 | 0.00 |
| | Education | 77 | 0 | 4.44 | 4 | 14 | 4.63 |
| | Reading ability | 77 | 0 | 0.99 | 0 | 4 | 1.37 |
| | Math ability | 77 | 0 | 2.86 | 3 | 4 | 1.11 |

Note: The table presents descriptive statistics of the primary participants' socio-demographic characteristics. The sample is divided into four groups: Youth, Town Chief, Women, and Youth Leader. 'No Status' is a binary variable indicating whether the youth holds any particular status within the community, with 1 representing no status. 'Youth' is a binary variable indicating whether the participant is under 30 years old. 'Education' reflects the number of years spent in the educational system. 'Reading Ability' is an integer ranging from 0 to 4, representing the number of correct answers in a reading test. 'Math Ability' is also an integer from 0 to 4, indicating the number of correct answers in a math test.

### C2.3 Age distribution

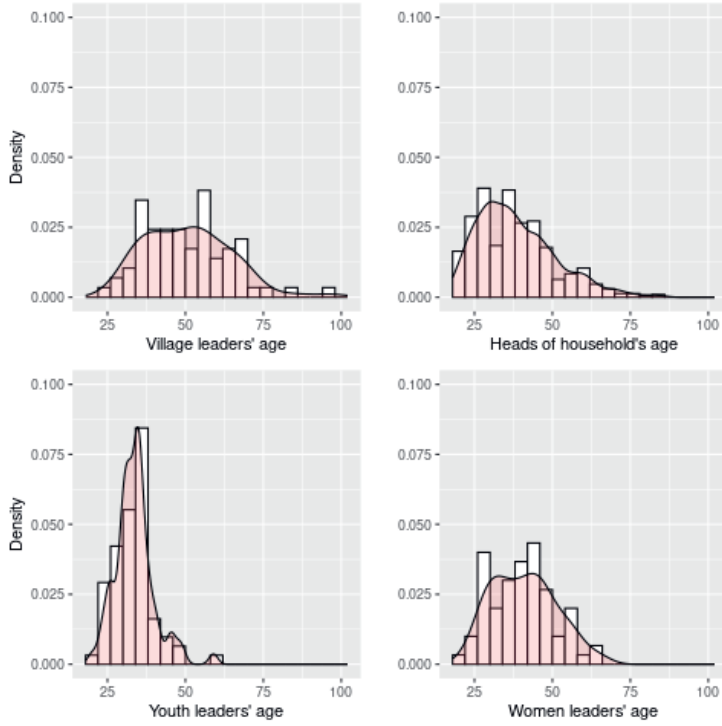


**Figure 4.6:** The four plots represent the age distribution for the town chiefs (upper-left panel), a representative set of heads of households (upper-right panel), the youth leaders (bottom left), and the women leaders (bottom right).

### C2.4 Livelihood activities

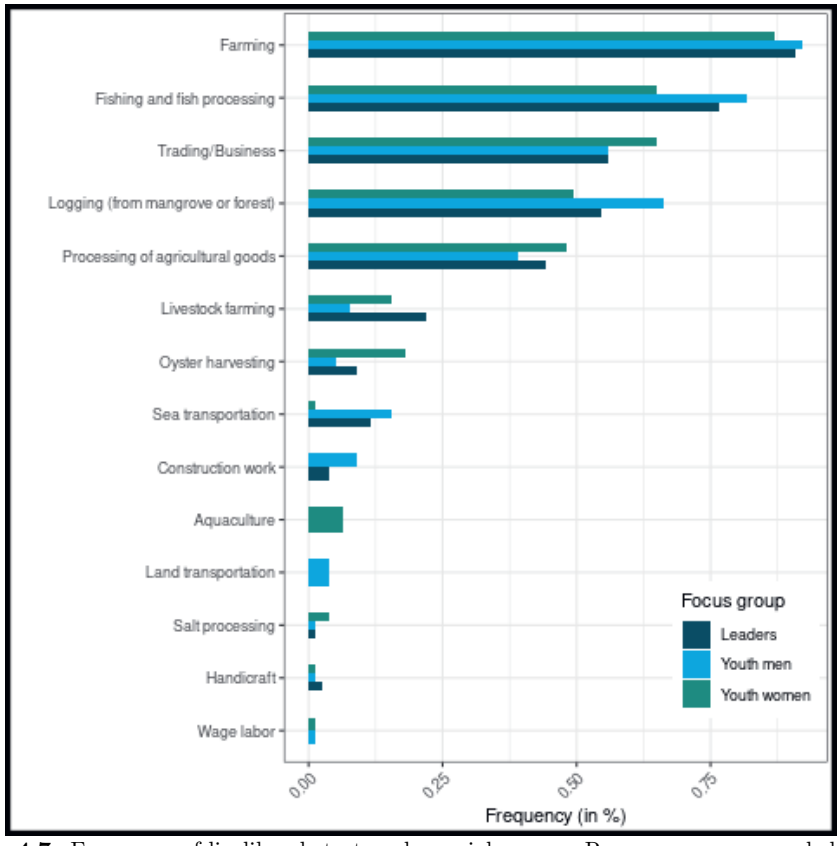


**Figure 4.7:** Frequency of livelihood strategy by social groups. Responses were recorded during focus group discussions. Leaders encompass the town chief and village elders, men represent the youth leader and young men, and women represent the women leader and young women.

## C3 Determinants of conservation preferences and mangrove dependence

### C3.1 Conservation preferences and socio-demographic characteristics

**Table 4.8:** Statistical association between conservation preferences and socio-demographic characteristics of the respondents

| | Conservation preferences | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Youth | 0.10 | 0.28 | 0.29 | $0.36^{*}$ | 0.28 |
| | (0.21) | (0.15) | (0.22) | (0.16) | (0.17) |
| Female | $-0.61^{***}$ | $-0.44^{***}$ | $-0.52^{***}$ | $-0.43^{***}$ | $-0.52^{***}$ |
| | (0.12) | (0.09) | (0.12) | (0.09) | (0.09) |
| Youth * Female | 0.04 | −0.19 | 0.03 | −0.16 | −0.06 |
| | (0.15) | (0.11) | (0.15) | (0.11) | (0.12) |
| Control | No | No | Yes | Yes | Yes |
| Village FE | No Yes | | No | Yes | No |
| Chiefdom FE | No | No | No | No | Yes |
| Adj. $R^2$ | 0.07 | 0.49 | 0.10 | 0.51 | 0.43 |
| Num. obs. | 917 | 917 | 913 | 913 | 913 |

Note: The table presents the results of an OLS regression between the socio-demographic characteristics of individual respondents and conservation preferences. The outcome variable is a standardized numeric measure. Control variables include math and reading ability, land ownership, social status, married status, right of becoming town chief and relationship with the Paramount Chief. The analysis incorporates the control variables for the last three estimation, and village fixed effects for the second and fourth estimation. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### C3.2 Mangrove dependence and socio-demographic characteristics

**Table 4.9:** Statistical association between mangrove dependence and socio-demographic characteristics of the respondents

| | Mangrove dependence | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Youth | $0.64^{**}$ | $0.56^{***}$ | $0.53^{*}$ | $0.61^{***}$ | $0.56^{**}$ |
| | (0.21) | (0.16) | (0.21) | (0.17) | (0.19) |
| Female | $-0.25^{*}$ | $-0.39^{***}$ | $-0.29^{*}$ | $-0.42^{***}$ | $-0.32^{**}$ |
| | (0.11) | (0.08) | (0.12) | (0.09) | (0.11) |
| Youth * Female | $-0.34^{*}$ | $-0.19$ | $-0.28$ | $-0.21$ | $-0.22$ |
| | (0.15) | (0.11) | (0.15) | (0.11) | (0.14) |
| Control | No | No | Yes | Yes | Yes |
| Village FE | No | Yes | No | Yes | No |
| Chiefdom FE | No | No | No | No | Yes |
| Adj. $R^2$ | 0.05 | 0.42 | 0.04 | 0.42 | 0.21 |
| Num. obs. | 904 | 904 | 900 | 900 | 900 |

Note: The table presents the results of an OLS regression between the socio-demographic characteristics of individual respondents and their dependence on mangrove. The outcome variable is a standardized numeric measure. Control variables include math and reading ability, land ownership, social status, married status, right of becoming town chief and relationship with the Paramount Chief. The analysis incorporates the control variables for the last three estimation, and village fixed effects for the second and fourth estimation. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### C3.3 Conservation norms, and socio-demographic characteristics

**Table 4.10:** Statistical association between conservation norms and socio-demographic characteristics of the respondents

| | Conservation norms | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Youth | 0.18 | 0.37* | 0.20 | 0.29 | 0.19 |
| | (0.21) | (0.16) | (0.22) | (0.16) | (0.18) |
| Female | −0.21 | −0.02 | −0.11 | −0.02 | −0.11 |
| | (0.13) | (0.10) | (0.13) | (0.10) | (0.11) |
| Youth * Female | −0.14 | −0.40** | −0.13 | −0.37** | −0.24 |
| | (0.16) | (0.12) | (0.16) | (0.12) | (0.13) |
| Control | No | No | Yes | Yes | Yes |
| Village FE | No | Yes | No | Yes | No |
| Chiefdom FE | No | No | No | No | Yes |
| Adj. $R^2$ | 0.02 | 0.49 | 0.04 | 0.49 | 0.37 |
| Num. obs. | 904 | 904 | 900 | 900 | 900 |

Note: The table presents the results of an OLS regression between the socio-demographic characteristics of individual respondents and their belief about others' belief regarding logging behavior (what we call conservation norm). The outcome variable is a standardized numeric measure. Control variables include math and reading ability, land ownership, social status, married status, right of becoming town chief and relationship with the Paramount Chief. The analysis incorporates the control variables for the last three estimation, and village fixed effects for the second and fourth estimation. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### C4 Randomization strategy

**Table 4.11:** Block randomization strategy and units by block

| Block 1 | Block 2 | Block 3 | Treatment | N |
|---|---|---|---|---|
| Mangrove buffer | Coastal | Low forest | Control | *6* |
| | | | Treated | *6* |
| | | High forest | Control | *3* |
| | | | Treated | *4* |
| | Non coastal | Low forest | Control | *6* |
| | | | Treated | *7* |
| | | High forest | Control | *2* |
| | | | Treated | *3* |
| Mangrove heart | Coastal | Low forest | Control | *8* |
| | | | Treated | *8* |
| | | High forest | Control | *7* |
| | | | Treated | *7* |
| | Non coastal | Low forest | Control | *1* |
| | | | Treated | *0* |
| | | High forest | Control | *4* |
| | | | Treated | *4* |

Note: The table presents the number of units in each randomization block. We employed three strata: (1) distance to mangrove, categorizing villages as either in the buffer zone or within the core mangrove areas; (2) a binary indicator for coastal location; and (3) a binary indicator for forest cover, categorizing villages as having either high or low forest cover.

### C5 Covariates balance

**Table 4.12:** Covariates balance: standardized differences for stratified comparisons between control and treatment

| | Control | Treatment | adj.diff | std.diff | z |
|---|---|---|---|---|---|
| Education | 2.93 | 2.33 | -0.60 | -0.26 | -1.18 |
| Leaders' education | 3.02 | 2.53 | 0.62 | -0.18 | -0.79 |
| Leaders' ability | 0.48 | 0.46 | -0.02 | -0.17 | -0.76 |
| Leaders math ability | 3.03 | 3.00 | -0.03 | -0.04 | -0.16 |
| Leaders reading ability | 0.87 | 0.73 | -0.14 | -0.20 | -0.86 |
| Youth education | 2.88 | 2.21 | -0.67 | -0.26 | -1.19 |
| Youth math ability | 2.44 | 2.36 | -0.08 | -0.10 | -0.45 |
| Youth reading ability | 0.95 | 0.66 | -0.29 | -0.37 | -1.63 |
| Income inequality (GINI) | 0.33 | 0.34 | 0.01 | 0.06 | 0.24 |
| Infrastructure development index | -0.01 | 0.04 | 0.05 | 0.05 | 0.24 |
| Youth youth leaders | 0.18 | 0.41 | 0.23 | 0.51 | 2.19** |
| Town chief year in office | 2011.52 | 2011.66 | 0.14 | 0.01 | 0.07 |
| Length of the succession period | 57.54 | 90.71 | 33.17 | 0.23 | 0.98 |
| Previous chief suspended | 0.24 | 0.22 | -0.02 | -0.05 | -0.23 |
| Distance to chiefdom head quarter | 4.03 | 4.19 | 0.15 | 0.04 | 0.16 |
| Distance to health center | 1.45 | 2.63 | 1.18 | 0.39 | 1.65$^{+}$ |
| Distance to closest market | 3.66 | 4.44 | 0.79 | 0.20 | 0.89 |
| Deforestation rates | 0.06 | 0.06 | 0.00 | 0.00 | 0.01 |
| Population | 226.07 | 215.60 | -10.48 | -0.06 | -0.26 |

Note: The table present the average of 19 village-level covariates in control and treatment group with their unadjusted differences, adjusted differences for the block randomization strategy, its standardized differences and the z-score of whether the differences is significantly different from 0. The p-value of the overall test is 0.777. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

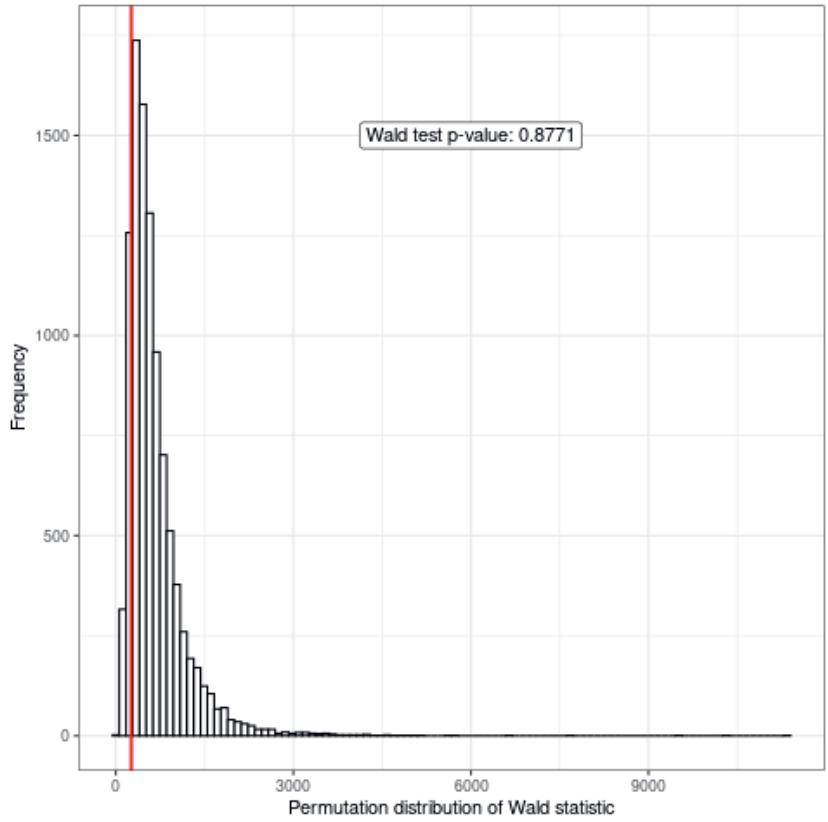


**Figure 4.8:** Observed heteroskedasticity-robust Wald statistic with the red line and distribution of Wald statistics using permetutation test.

Notes: The null hypothesis is that the slope coefficients are all zero following Wooldridge (2010). We followed the permutation test proposed by Alexander Coppock:
https://alexandercoppock.com/Green-Lab-SOP/Green_Lab_SOP.pdf

## C6 Descriptive statistics of the policy chosen during the focus group and the treatment arms

### C6.1 Alternative livelihood policies

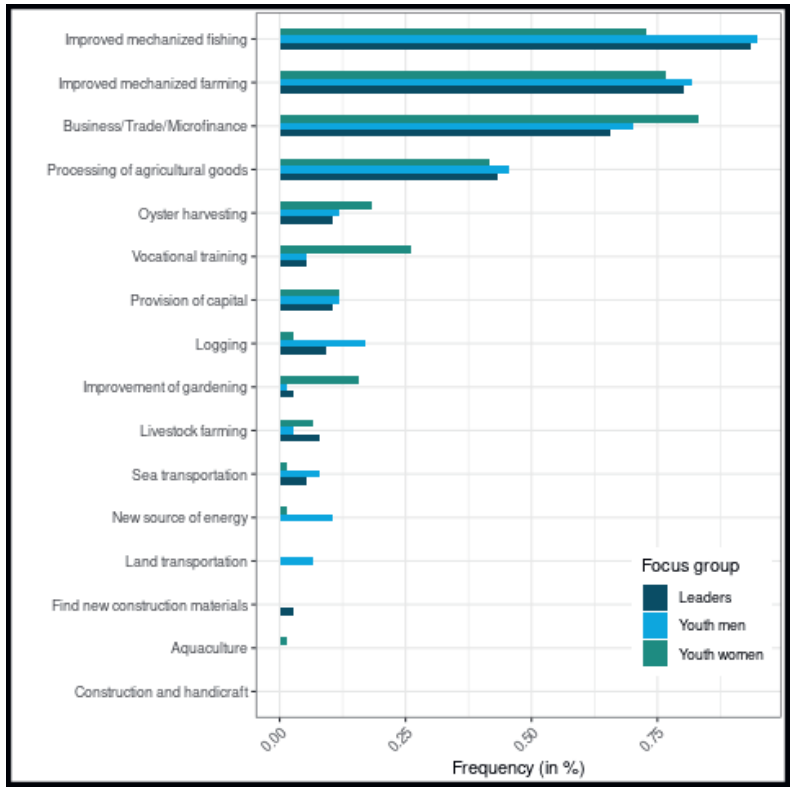


**Figure 4.9:** Frequency of the livelihood chosen to develop in priority by focus group discussion

Note: The figure represents the frequency of the livelihood policy chosen during the focus group phase (before the land planning activity). Three focus groups were organized in each village: one with the leaders, one with the youth leader and the youth men, one with the women leader and the youth women.

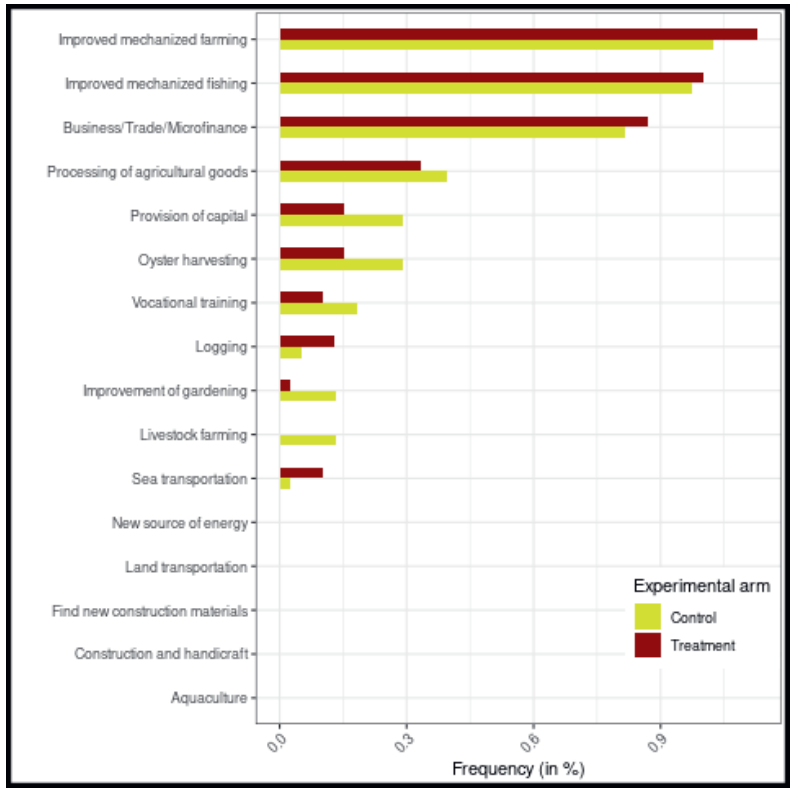


**Figure 4.10:** Frequency of the livelihood chosen to develop in priority by experimental arm

Note: The figure represents the frequency of the livelihood policy chosen during the land planning activity by experimental arm.

### C6.2 Deforestation policy

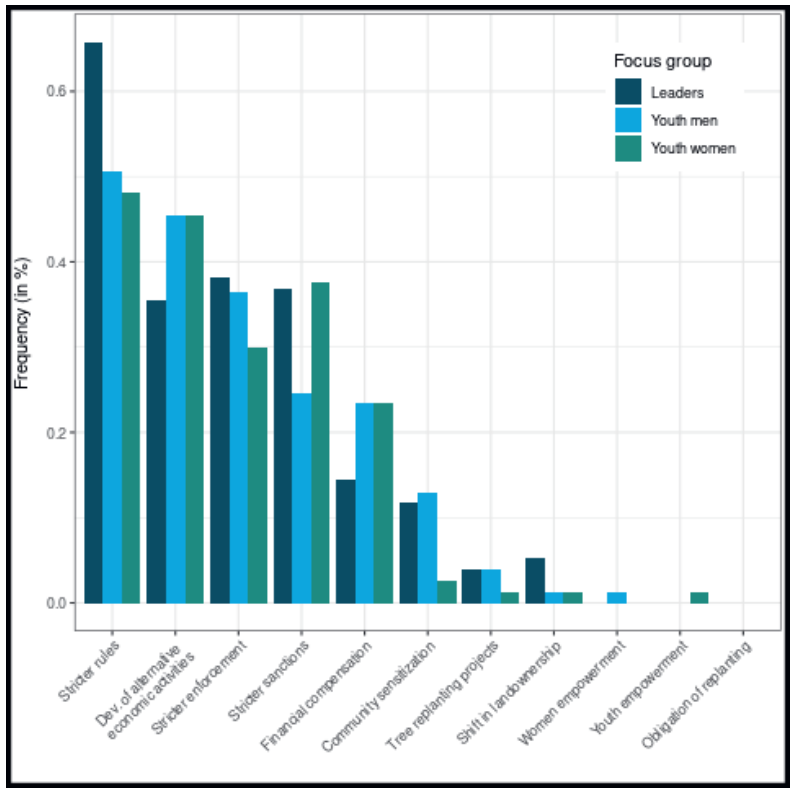


**Figure 4.11:** Frequency of the deforestation policy chosen to develop in priority by focus group discussion

Note: The figure represents the frequency of the deforestation policy chosen during the focus group phase (before the land planning activity). Three focus groups were organized in each village: one with the leaders, one with the youth leader and the youth men, one with the women leader and the youth women.

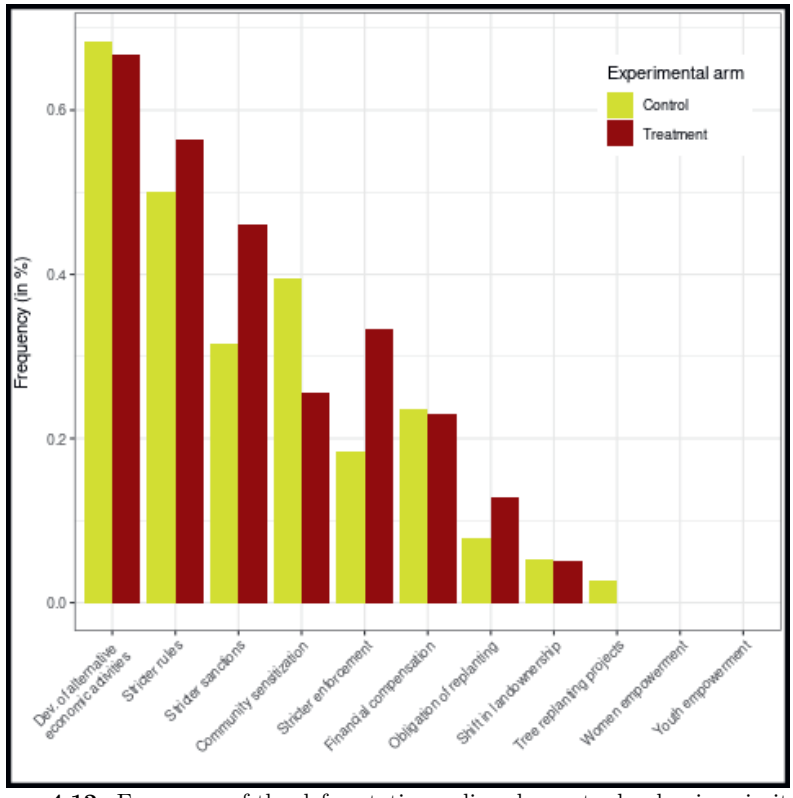


**Figure 4.12:** Frequency of the deforestation policy chosen to develop in priority by experimental arm

Note: The figure represents the frequency of the deforestation policy chosen during the land planning activity by experimental arm.

## C7 Framed field experiment robustness check

### C7.1 Main results with covariates adjustment

**Table 4.13:** Causal effects of additional youths in the land planning activity on youth participation, youth policy representation and land planning quality.

| | Youth participation | | Policy rep. (in %) | | Planning quality | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Treatment | $4.06^{***}$ | $4.77^{***}$ | 0.05 | $0.10^{+}$ | 0.01 | 0.01 |
| | (0.50) | (0.25) | (0.07) | (0.05) | (0.02) | (0.02) |
| Block FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Covariates | Yes | Yes | Yes | Yes | Yes | Yes |
| Estimand | ITT | LATE | ITT | LATE | ITT | LATE |
| Adj. $R^2$ | 0.70 | 0.86 | 0.15 | 0.04 | −0.00 | −0.00 |
| Num. obs. | 74 | 74 | 74 | 74 | 74 | 74 |

Note: The table presents the results from an OLS regression analysis using block randomization fixed effects, covariate adjustment, and robust cluster standard errors. The covariates added are distance to health center and the age of the youth leader interacted with the treatment dummy as suggested by Lin & Green (2016). Outcome variables are participation, youth policy representation (column 3 and 4) as the percentage of policies chosen by the youth in both the framed field experiment and the focus group. Planning quality is used as an outcome variable in column 5 and 6 measured using an index averaging three dimensions: complexity, comprehensiveness, and coherence. All models use both an intent-to-treat effect estimand and a local average treatment effect estimand estimated with an instrumental variable strategy. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### C7.2 Main results and dropping low quality data

**Table 4.14:** Causal effects of additional youths in the land planning activity on the participation of youths, the land planning quality, and youth policy representation. Low quality data dropped.

| | Youth participation | | Policy rep. (in %) | | Planning quality | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Treatment | 4.42*** | 4.83*** | 0.06 | 0.07 | 0.01 | 0.01 |
| | (0.37) | (0.28) | (0.05) | (0.06) | (0.02) | (0.02) |
| Control mean | 0.67 | 0.22 | 0.52 | 0.50 | 0.85 | 0.84 |
| DV range | $\{1, 2, ..., 6\}$ | | $[0, 1]$ | | $[0, 1]$ | |
| Block FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Estimand | ITT | LATE | ITT | LATE | ITT | LATE |
| Low quality data dropped | Yes | Yes | Yes | Yes | Yes | Yes |
| Adj. $R^2$ | 0.68 | 0.87 | 0.16 | 0.02 | 0.04 | 0.01 |
| Num. obs. | 59 | 59 | 59 | 59 | 59 | 59 |

Note: The table presents the results from a regression analysis using block randomization fixed effects and robust cluster standard errors. Outcome variables are youth participation assessed by enumerators using a 6-points Likert scale, planning quality which is measured using an index averaging three dimensions: complexity, comprehensiveness, and coherence, and policy representation is the percentage of policies chosen by the youth during the focus group that are also chosen during the land mapping activity. We use an instrument variable strategy to estimate the LATE. Low quality data dropped. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

## C8 Framed field experiment additional analysis

### C8.1 The impact on elites representation

**Table 4.15:** Causal effects of additional youths in the deliberative land planning exercise on elites representation

| | Livelihood policy | | Deforestation policy | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | −0.02 | −0.03 | 0.05 | 0.06 |
| | (0.05) | (0.05) | (0.06) | (0.07) |
| Control mean | 0.71 | 0.69 | 0.56 | 0.52 |
| DV range | | | $[0, 1]$ | |
| Block FE | Yes | Yes | Yes | Yes |
| Estimand | ITT | LATE | ITT | LATE |
| Adj. $R^2$ | −0.03 | −0.01 | −0.00 | −0.01 |
| Num. obs. | 74 | 74 | 71 | 71 |

Note: The table presents the results from a regression analysis using block randomization fixed effects and robust cluster standard errors. Outcome variable is the proportion of livelihood policy chosen both during the land planning activity and the focus group discussion (in %). We use an instrument variable strategy to estimate the LATE. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### C8.2 The impact on women participation

**Table 4.16:** Causal effects of additional youths in the deliberative land planning exercise on the women participation

| | Women participation | |
|---|---|---|
| | (1) | (2) |
| Treatment | −0.13 | −0.12 |
| | (0.33) | (0.33) |
| Control mean | 2.84 | 2.97 |
| DV range | $\{1, 2, ..., 6\}$ | |
| Block FE | Yes | Yes |
| Estimand | ITT | LATE |
| Adj. $R^2$ | −0.08 | −0.00 |
| Num. obs. | 76 | 76 |

Note: The table presents the results from a regression analysis using block randomization fixed effects and robust cluster standard errors. Outcome variable is the women participation in the framed field experiment measured by the enumerators at the experiment on 6-points Likert scale. We use an instrument variable strategy to estimate the LATE. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### C8.3 The impact by policy

**Table 4.17:** Causal effects of additional youths in the deliberative land planning exercise on the policy representation of youth measured separately for deforestation and alternative livelihood policies

| | Deforestation policy | | Livelihood policy | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | 0.11 | 0.14 | 0.05 | 0.06 |
| | (0.08) | (0.09) | (0.04) | (0.05) |
| Control mean | 0.47 | 0.45 | 0.53 | 0.53 |
| DV range | | $[0, 1]$ | | |
| Block FE | Yes | Yes | Yes | Yes |
| Drop low quality data | No | No | No | No |
| Estimand | ITT | LATE | ITT | LATE |
| Adj. $R^2$ | 0.19 | 0.02 | 0.03 | 0.02 |
| Num. obs. | 76 | 76 | 76 | 76 |

Note: The table presents the results from a regression analysis using block randomization fixed effects and robust cluster standard errors. Outcome variables are youth deforestation policy representation and youth livelihood policy representation. There are the percentage of deforestation and livelihood policies chosen by the youth during the focus group that are also chosen during the land mapping activity. We use an instrument variable strategy to estimate the LATE. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### C8.4 The impact on youth men and youth women policy representation

**Table 4.18:** Causal effects of additional youths in the deliberative land planning exercise on the policy representation of youth men and youth women, measured separately

| | Youth men representation | | Youth women representation | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | 0.09 | $0.11^{+}$ | 0.07 | 0.09 |
| | (0.06) | (0.06) | (0.05) | (0.06) |
| Control mean | 0.49 | 0.48 | 0.50 | 0.50 |
| DV range | | | $[0, 1]$ | |
| Block FE | Yes | Yes | Yes | Yes |
| Drop low quality data | No | No | No | No |
| Estimand | ITT | LATE | ITT | LATE |
| Adj. $R^2$ | 0.08 | 0.04 | 0.21 | 0.02 |
| Num. obs. | 76 | 76 | 76 | 76 |

Note: The table presents the results from a regression analysis using block randomization fixed effects and robust cluster standard errors. Outcome variables are youth men policy representation and youth women representation. They are measured as the percentage of youth men or youth women policies chosen during the focus group that are also chosen during the land mapping activity. We use an instrument variable strategy to estimate the LATE. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### C8.5 The impact of the treatment on reaching the social optimum of youth representation

The analysis was solely undertaken for the livelihood policy as the number of choices was restricted to three. Adding such a restriction, a trade-off appears in the ability to reach social optimum outcomes for the youth.

**Table 4.19:** Causal effects of additional youths in the deliberative land planning exercise on the number of common policies chosen by both youth women and youth men and whether they reach the social optimum.

| | Number of common policies | | Social optimum (Yes=1) | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | 0.31 | $0.36^{+}$ | 0.06 | 0.09 |
| | (0.18) | (0.20) | (0.10) | (0.11) |
| Control mean | 1.00 | 1.03 | 0.74 | 0.77 |
| DV range | | $0, 1, 2, 3$ | | $[0, 1]$ |
| Block FE | Yes | Yes | Yes | Yes |
| Drop low quality data | No | No | No | No |
| Estimand | ITT | LATE | ITT | LATE |
| Adj. $R^2$ | 0.01 | 0.04 | 0.07 | −0.01 |
| Num. obs. | 76 | 76 | 66 | 66 |

Note: The table presents the results from a regression analysis using block randomization fixed effects and robust cluster standard errors. Outcome variables are the number of common policies for youth men and youth women chosen during the land planning activity for column 1 and 2. The column 3 and 4 uses a dummy for whether the social optimum was reached during the land planning activity. We use an instrument variable strategy to estimate the LATE. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### C8.6 Impact of the treatment on the probability of taking actions against deforestation

**Table 4.20:** Causal effects of additional youths in the deliberative land planning exercise on the deforestation inaction, the proportion of strict regulations and economic regulations chosen related to deforestation.

| | Deforestation inactions | | Strict regulations | | Economic regulations | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Treatment | −0.07 | −0.08 | 0.02 | 0.03 | −0.03 | −0.05 |
| | (0.10) | (0.11) | (0.09) | (0.09) | (0.09) | (0.09) |
| Control mean | 0.30 | 0.32 | 0.38 | 0.35 | 0.45 | 0.47 |
| DV range | | | $[0, 1]$ | | | |
| Block FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Estimand | ITT | LATE | ITT | LATE | ITT | LATE |
| Adj. $R^2$ | 0.09 | 0.00 | 0.00 | −0.01 | −0.03 | −0.01 |
| Num. obs. | 76 | 76 | 76 | 76 | 76 | 76 |

Note: The table presents the results from a regression analysis using block randomization fixed effects and robust cluster standard errors. Outcome variables are whether they took actions against deforestation, the percentage of strict regulation deforestation policies chosen, and the percentage of economic incentives deforestation policies chosen. We use an instrument variable strategy to estimate the LATE. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### C8.7 Impact of the treatment on the power of the town chief and community members in future development-related decision-making

**Table 4.21:** Causal effects of additional youths in the deliberative land planning exercise on the quality of the future decision-making power on development issues of the town chief and community members.

| | Town chief power | | Community members power | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | −0.02 | −0.03 | 0.05 | 0.06 |
| | (0.05) | (0.05) | (0.06) | (0.07) |
| Control mean | 0.51 | 0.51 | 0.50 | 0.51 |
| DV range | | | $[0, 1]$ | |
| Block FE | Yes | Yes | Yes | Yes |
| Estimand | ITT | LATE | ITT | LATE |
| Adj. $R^2$ | −0.03 | −0.01 | −0.00 | −0.01 |
| Num. obs. | 74 | 74 | 71 | 71 |

Note: The table presents the results of a regression analysis using block randomization fixed effects and robust cluster standard errors. Participants in the framed field experiments had to agree on a decision-making process for development issues. Based on their responses, a research assistant coded the answers on a scale from 0 (no power at all in decision-making) to 5 (unilateral power in decision-making). Two variables were computed: the decision power of the town chief and that of the community members. The variables were then standardized on a 0 to 1 scale, with 0 representing the minimum and 1 representing the maximum of the answer range. We use an instrument variable strategy to estimate the LATE. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

## C9 Framed field experiment mechanisms

### C9.1 Impact of additional youth on the quality of the focus group summary

**Table 4.22:** Causal effects of additional youths in the deliberative land planning exercise on the quality of the summary from youth men and youth women focus groups.

| | Youth men summary | | Youth women summary | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Treatment | 0.22* | 0.22* | 0.15 | 0.13 |
| | (0.09) | (0.10) | (0.12) | (0.13) |
| Control mean | 4.04 | 4.06 | 4.18 | 4.17 |
| DV range | | | $[0, 5]$ | |
| Block FE | Yes | Yes | Yes | Yes |
| Estimand | ITT | LATE | ITT | LATE |
| Adj. $R^2$ | 0.05 | 0.04 | 0.11 | 0.00 |
| Num. obs. | 76 | 76 | 76 | 76 |

Note: The table presents the results of a regression analysis using block randomization fixed effects and robust cluster standard errors. The outcome variables are the quality of the summary undertaken by the youth leader for the youth men focus groups and the quality of the summary of the women leader for the youth women focus group. The dependent variable ranges from 0 to 5 with higher values corresponding to higher summary quality. We use an instrument variable strategy to estimate the LATE. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

### C9.2 Impact of additional youth on the duration, the number of participants, and group dynamics

**Table 4.23:** Causal effects of additional youths in the deliberative land planning exercise on the deforestation inaction, the proportion of strict regulations and economic regulations chosen related to deforestation.

| | Num. participants | | Duration | | group dynamic | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Treatment | 0.01 | 0.01 | 0.05 | 0.28 | 0.05 | 0.28 |
| | (0.01) | (0.01) | (4.14) | (4.37) | (4.14) | (4.37) |
| Control mean | 4.99 | 4.99 | 60.82 | 61.48 | 3.90 | 3.90 |
| DV range | Numeric | | Numeric | | $[1, 6]$ | |
| Block FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Estimand | ITT | LATE | ITT | LATE | ITT | LATE |
| Adj. $R^2$ | 0.02 | 0.00 | −0.05 | −0.01 | −0.05 | −0.01 |
| Num. obs. | 76 | 76 | 76 | 76 | 76 | 76 |

Note: The table presents the results from a regression analysis using block randomization fixed effects and robust cluster standard errors. Outcome variables are the number of participants, the length of the framed field experiment, and the group dynamics. Group dynamics were measured by enumerators from a scale of 1, one person gave inputs to 5, all group members participated equally. We use an instrument variable strategy to estimate the LATE. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$

Chapter 5

# Conclusion

This dissertation was motivated by both empirical and theoretical questions. In an era where fostering actions against climate change is becoming increasingly urgent, there are vivid debates regarding the political institutions most suited for such a purpose. Specifically, in sub-Saharan Africa, debates about combating deforestation have been largely dominated by a mainstream 'blueprint' approach to institutions. This approach advocates for universal instruments such as democratic institutions, property rights, and protected areas to address deforestation.

The dissertation takes a strong position against the blueprint approach to democratic institutions. This approach oversimplifies the complex socio-ecological dynamics of forest ecosystems, fails to account for local norms and the intricate relationships within resource systems, and overlooks diverse political-economic contexts. Promoting 'blueprint' instruments to foster democratic institutions, such as local elections, without considering local patterns of accountability and political legitimacy can contribute to the emergence of extractive elites who are not accountable to community members and who negatively impact forest ecosystems.

The central theoretical problem addressed in this dissertation is the following puzzle: Why, in settings where leaders are not elected, are some leaders held accountable by the majority of their population while others are not, even when exposed to standard participatory approaches?

To answer this puzzle, one must depart from the classic binary distinction between democratic and autocratic systems prevalent in political science. This dichotomy is too simplistic to capture the realities of how leaders are incentivized to provide public goods like forest conservation. The proposed solution is a context-specific approach that prioritizes understanding local power dynamics, accountability mechanisms, and the vested interests of various social groups. This approach argues for a nuanced examination of how leaders are held accountable within different governance frameworks, particularly in non-electoral contexts like traditional chieftaincies in rural Africa. By focusing on the actual mechanisms of representation and accountability in specific settings, the dissertation advocates for policies and conservation efforts that are tailored to the unique social, political, and ecological contexts they are meant to serve. This includes a

more profound consideration of non-electoral forms of accountability and the roles that local leaders play in fostering or hindering conservation efforts.

The dissertation builds upon a growing body of literature developing such an approach. It is structured into three independent chapters. I summarize the main findings in the following section and then discuss a research agenda.

## 5.1 Summary of the main findings

### 5.1.1 Chapter 2

Chapter 2 focuses on the causal effects of decentralization in forest management through the example of Cameroonian community forests and their impact on forest degradation and deforestation. The primary research question explores the conservation impacts of reforms that neglect local institutional settings and empower groups unaccountable to other community members. The methodology employed is a staggered difference-in-difference design with matching, analyzing forest cover changes from 1994 to 2015 to assess the impact of community forest implementation. The results reveal that the implementation of community forests, particularly in the Southern region of Cameroon, has not significantly curbed deforestation or forest degradation. In fact, it has led to increased forest degradation. Further evidence aligns with a narrative suggesting that the increased forest pressure was driven by both elite capture and higher economic opportunities for timber extraction in the Southern region. The study contributes to the discourse on forest management by providing empirical evidence that decentralized management, without adequate consideration of local contexts and power dynamics, may not yield the expected conservation outcomes. It emphasizes the importance of culturally adapted legitimacy and accountability processes in forest conservation efforts. This research also highlights the broader implications of property rights regimes on environmental outcomes, suggesting the need for nuanced approaches that account for local institutional and economic contexts.

This chapter faces multiple limitations. First, the main empirical analysis is based on a staggered difference-in-difference approach, with a sample size too limited to detect small effect sizes. While the results indicate that the reform has likely had an overall null effect on forest conservation and degradation, I cannot rule out the possibility of a small negative impact on forest conservation outcomes. Second, the empirical analysis lacks micro-data on local institutions to support the main argument. During my fieldwork in June and July 2022, I was unable to gather historical data on local institutions. Instead, I collected anecdotal evidence from case studies, remote sensing data, and national surveys.

### 5.1.2 Chapter 3

The chapter 3 focuses on the accountability mechanisms within traditional governance structures, specifically examining how town chiefs in rural Sierra Leone are held accountable by their communities. The central research question explores whether and how citizens sanction undemocratic traditional leaders when they neglect community interests. Employing a survey experiment involving 77 communities, the methodology tests both direct and indirect sanctioning methods available to citizens, with the hypothesis that community members would engage in both types to discipline their leaders. The findings indicate that citizens are inclined to use both direct and indirect sanctions, with a stronger preference for indirect methods, such as reporting to higher authorities, due to perceived lower costs and risks. Direct sanctions include public blame and economic pressures. The results also reveal that the presence of councilors, who serve as a bridge between the chief and the community, can influence the range of sanctions considered legitimate by the community members. The chapter makes several contributions. First, it provides empirical evidence on the non-electoral mechanisms through which citizens in traditional governance settings hold leaders accountable, offering a deeper understanding of accountability beyond electoral systems. Second, it enhances the theoretical framework concerning non-electoral accountability by categorizing sanctions into direct and indirect types and exploring their differential impacts on leader behavior and community dynamics. Last but not least, methodologically, the use of a survey experiment to explore sanctioning preferences in a non-electoral context is highlighted as a novel approach, particularly valuable in contexts where formal electoral accountability is absent.

The chapter relies on a survey experiment to elicit the norm in place regarding sanctioning practices. Such a method is unsuited to test the actual behavior of villagers. Furthermore, to hold accountable their leaders, citizens need to have full information on the behavior of their leaders which is not an element taking into account by the design of the survey experiment. Corruption practices are often difficult to be observed by the average citizens. The chapter underlines substantial heterogeneity in village-level sanctioning preferences. Nevertheless, the design does not allow for identifying the causal effect of higher village-level sanctioning preferences on institutional quality and public good provision outcomes.

### 5.1.3 Chapter 4

The last chapter critically examines the effectiveness of participatory development approaches in empowering marginalized youth within the context of Sierra Leone, particularly in mangrove-dependent coastal communities. The central research question addresses why standard participa-

tory methods often fail to disrupt entrenched power dynamics that exclude low-status groups from decision-making processes. It aims to test the empowerment hypothesis that posits that excluded groups can only be empowered when the power of the elites get sufficiently challenged. The methodology involves a framed field experiment randomly varying group compositions in a land-planning activity. The control arm represented a typical participatory approach with village leaders and youth representative included and the treatment arm represented a radical youth inclusion scenario with some village elites excluded from the experiment. The experiment's goal is to determine if increased youth inclusion affects policy decisions during conservation projects. The results show that including more youths improves their policy representation by 10% compared to standard participatory setup, without altering the quality of the planning outcomes. Notably, the impact of youth inclusion is most significant in villages where elites have strong familial ties to Paramount Chiefs, suggesting that such connections can hinder the effectiveness of standard participatory approaches by enabling elite capture and reducing bottom-up accountability. The chapter contributes to the broader discourse on participatory development by highlighting the conditions necessary for these approaches to truly empower traditionally excluded groups. Community driven development and participatory approaches to conservation have largely acknowledged the limitations of current project in empowering marginalized groups. Previous research has explained such shortcoming by highlighting the power dynamics happening at the village level. This chapter extends this trends by showing how the links between local and national elites can shape village-level institutional outcomes, especially in settings where hierarchical traditional authorities wield significant influence. Those findings have considerable implications for developmental and conservation policies.

The chapter suffers from multiple limitations. First of all, the design does not allow to draw causal evidence from the relationship between the effectiveness of standard participatory approaches and village leaders' ties with Paramount Chief family. Second, the results focus only on the short term effect of youth inclusion on selection and the priority of policies. It is likely that policies that are against leaders interests would be challenged during the implementation phase.

## 5.2 Lessons learned for policy-makers

Chapters 3 and 4 are grounded in extensive fieldwork conducted in Sierra Leone. The data collection process also served to share insights on livelihood and conservation strategies with stakeholders interested in investing in mangrove ecosystem protection through REDD+ schemes. A summary of these findings is provided by Chazottes et al. (2023).

While the dissertation was not specifically designed to generate direct practical insights for the development of REDD+ programs, some broader lessons can still be drawn for policymakers and practitioners. With more time, I would have liked to explore the practices of REDD+ practitioners more deeply, particularly in terms of how they integrate communities and their various social actors into policy design. Such an exploration would have allowed for a more meaningful dialogue between the findings of this study and the practical needs of REDD+ implementation. Nonetheless, the following three insights offer valuable guidance for those involved in drafting inclusive policies and projects:

- **Limited Impact of Short-Term Projects:** Exogenous institutional changes are unlikely to stem from short-term development or conservation initiatives on the ground. Sustainable change requires long-term engagement and a deep understanding of local contexts.
- **Existing Checks and Balances:** Despite the absence of formal electoral processes, there is a significant diversity of checks and balances that can hold local leaders accountable. These mechanisms are embedded within various social institutions and are particularly effective when a chief's social and economic well-being is closely tied to the community.
- **Contextual Complexity in Political Dynamics:** Community political dynamics do not function in isolation, especially in societies where systems of patronage and clientelism play a key role in accessing socio-economic and political resources. Therefore, the success of local participatory spaces in empowering marginalized groups largely depends on how well these communities are connected to higher political and economic networks.

## 5.3 Implications and future research agenda

Understanding traditional political institutions is essential for implementing political reforms that are contextually adapted and achieve their intended objectives. However, the field of traditional political institutions remains largely understudied. We lack critical descriptive knowledge on the functioning of these institutions and organizations. Theories of political control and accountability in non-electoral settings have been mostly advanced in the Chinese context. How these theories apply in different contexts remains to be seen. Finally, by taking seriously the contextual approach to political institutions and how it shapes patterns of exclusion and representation, I argue for a deeper epistemological shift in comparative politics.

Most research on traditional political institutions takes the rules of leader selection and organizational structures (horizontal vs. vertical) as given. However, my fieldwork in both Cameroon and Sierra Leone has suggested deep and rapid evolution in the structure of traditional

governance. In Cameroon, specifically in the East, Center, and South regions, pre-colonial governance was horizontal, with no vertical political authority exercising power over multiple villages and town chiefs. During colonization, the colonizers imposed a vertical structure based on three layers. However, after independence, only the village-level layer is still considered a traditional political authority. Higher-level chiefs have become administrative units mostly seen as state figures. Nevertheless, to combat the erosion of their authority, there has been a movement to federate village chiefs and organize them. These federations initially served as a way to share knowledge and provide training, but also to gain organizational power when presenting grievances to the state. Local chiefs' associations have arisen in many places across these three regions, marking a substantial evolution in political institutions. Better understanding how vertical organization emerges and affects patterns of accountability and legitimacy could be an area for further research.

In Sierra Leone, two figures play an important role in organizing the daily life of villages: the Youth Leader and the Women Leader. They are generally tasked with raising the grievances of their groups, sharing information about new by-laws devised by chiefdom authorities, and organizing communal labor. We found suggestive evidence that the age of these authorities matters (not reported in the main text). When these authorities were younger, young men and women tended to participate significantly more in community meetings. More research should delve into the role of such authorities, their quality, and how they shape patterns of political expression and participation. This is especially important as it is becoming more common for section and chiefdom levels to create Youth Leader positions.

Chapter 3 has highlighted the *repertoire* of political actions available to community members to discipline their town chiefs. Further research should clarify in which situations these actions are used, how effective they are, and what drives such preferences. Two approaches could be used to gain this insight. First, in the study area, we found that 25% of villages have a history of chiefs being revoked for misconduct. Qualitative evidence and process tracing could be relevant methods to shed light on these cases and the role of the population and political intermediaries in sanctioning leaders. Second, we found strong heterogeneity in village-level sanctioning preferences. Collecting longitudinal data on these preferences could help assess their causal effect on institutional quality. Finally, the theoretical scope conditions suggest that leaders well embedded in their communities are more vulnerable to peer pressure. These scope conditions need to be clarified. Which political economies are more conducive to bottom-up accountability? It also suggests that in places where the socio-economic ties between leaders and their constituents are eroded, the likelihood of checks and balances is significantly reduced.

In the case of Sierra Leone, how Paramount Chiefs make decisions and how their authority is balanced by popular pressure or other elites should be further clarified.

In Chapter 4, we found that standard participatory approaches failed to empower youth groups when village elites have family ties with the Paramount Chief. It is only when the power of village elites is significantly challenged that youth groups achieve a significant increase in their policy representation. This finding calls for a better understanding of how links between Paramount Chiefs and political intermediaries, such as village elites, shape patterns of political inclusion in villages. Furthermore, it remains unclear how political control is exercised by Paramount Chiefs in the specific context of Sierra Leone. Further research should investigate these elements more in depth. Experimental research could, for example, randomize the salience of these links in a comparable framed field experiment and assess how elite behavior changes. Last but not least, our findings also speak to the burgeoning literature on advisory councils in traditional political institutions. How changes in the composition of such councils can be accepted among the elites, impact a broader range of policies, and affect the provision of public goods remains to be further clarified.

The hybridization of the arenas of authority framework and the political settlement approach seems useful and promising to understand societal power dynamics, institutional change and outcomes. Through both a bottom-up and a top-down perspectives, those frameworks help clarify how power is built, shape and is shaped by institutional changes. Further work could further explain how the two frameworks could be merged, setting up an ambitious research agenda across social science disciplines. Those frameworks appear to also be powerful tool for policy-makers, development and conservation practitioner that aim to build and implement effective policies.

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