Sokoine University of Agriculture

MSc Dissertation

Analysis of Formal Institutions and Power Relations Along Timber Value Chain in Liwale and Ruangwa Districts, Tanzania

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ANALYSIS OF FORMAL INSTITUTIONS AND POWER RELATIONS ALONG TIMBER VALUE CHAIN IN LIWALE AND RUANGWA DISTRICTS, TANZANIA

Dissertation Submitted to Sokoine University of Agriculture in Partial Fulfillment of the Requirements for the Degree of Master of Science in Environmental and Natural Resources Economics

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EXTENDED ABSTRACT

Timber is among rising highly value product worldwide. The utilization of timber can help in promoting jobs to as many people as possible through its value chain. In Tanzania, most past studies conducted on timber value chain concentrated on market analysis and illegal activities that are undertaken along the chain, fewer studies assessed the institutions and power relations along the chain. This study therefore analysed formal institutions and power relations guiding timber value chain in Liwale and Ruangwa districts. The study followed an institutional framework from which a sub framework of legal and regulatory framework was formed. Therefore, a definition provided by Douglass North on institutions was adopted. The study defines institutions as the rules of the game. The study also follows an Actors' interface framework which was developed by Norman Long an English socialist who studied the behaviours of actors in agriculture value chain context. In the theory, actors in the interface are characterized by discontinuities in interest, values and power. There are however power struggles that cannot be avoided in the actor's interface but they can be solved through negotiations and accommodations of all stakeholders thinking or ideas.

This study was conducted in Liwale and Ruangwa districts located in the southern part of Tanzania. The study adopted an exploratory cross sectional study design, in which qualitative data were collected through in- depth key informant interviews, formal and informal talks with people who are working along the timber value chain, focus group discussion (FGDs), researchers own observations and document reviews. Purposive and simple random sampling were used to select participants for this study. 20 timber dealers, 5 forest officers, 4 TFS agents, 15 members from the VNRCs, 3 representatives from MJUMITA, MCDI and TFCG and 2 representatives from FORVAC were involved in the study. Qualitative data were analysed following six steps of thematic analysis including transcribing interviews into text, going through the

text, coding the text, grouping the codes to form themes, reviewing the themes, describing the themes and assessing their relationships. Dedoose platform was used for qualitative data analysis. Findings show that institutions which are the rule and regulations created to guide value chain activities, largely affect the development of timber value chain in Liwale and Ruangwa districts. The government remains to be the sole regulator of the value chain through established rules and regulations. It was also discovered that all actors along the timber value chain in Liwale and Ruangwa districts operate under the same regulatory framework. Furthermore, the study finds that there are power relations that exist among the timber value chain actors in Liwale and Ruangwa districts respectively. These are institutional, strategic and supportive power relations.

In addition to that there are power struggles that exists among some of the timber value chain actors. For instance, the forest officers and the Tanzania Forest Service (TFS) agents experience power struggles among themselves this is mainly caused by the desire that these two sides have on getting the revenues collected from the timber dealers when sanctioned. Based on these findings, it is concluded that formal institutions and power relations have a great influence on the development of timber value chain in Liwale and Ruangwa districts. Therefore, the policy makers should include all actors in the timber value chain so as to avoid complaints and power imbalance that comes with the established rules and regulations.

Keywords: Timber, Timber value chain, Actors of the timber value chain, Institutions, Power relations

IKISIRI KUU

Mbao ni miongoni mwa bidhaa zenye thamani kubwa duniani kote. Mbao hutumikia madhumuni mengi kutoka kwa kutumika kama malighafi katika tasnia ya utengenezaji wa karatasi hadi tasnia ya ujenzi na fanicha. Utumiaji wa mbao unaweza kusaidia katika kukuza ajira kwa watu wengi iwezekanavyo kupitia mnyororo wake wa thamani. Nchini Tanzania, tafiti nyingi za awali zilizofanywa kuhusu mnyororo wa thamani wa mbao zilijikita zaidi katika uchanganuzi wa soko na shughuli haramu zinazofanywa kwenye mnyororo huo, tafiti chache zilitathmini taasisi na mahusiano ya mamlaka katika mnyororo huo. Kwa hiyo utafiti huu ulichambua taasisi rasmi na mahusiano ya madaraka yanayoongoza mnyororo wa thamani wa mbao katika wilaya za Liwale na Ruangwa. Utafiti ulifuata mfumo wa kitaasisi ambapo mfumo mdogo wa mfumo wa kisheria na udhibiti uliundwa. Utafiti unafafanua taasisi kama sheria. Utafiti huu pia unafuata mfumo uliotengenezwa na Norman Long mwanasoshalisti wa Kiingereza ambaye alichunguza tabia za watendaji katika muktadha wa mnyororo wa thamani wa kilimo.

Utafiti huu ulifanyika katika wilaya za Liwale na Ruangwa zilizoko kusini mwa Tanzania. Utafiti ulipitisha muundo wa utafiti wa sehemu mbalimbali, ambapo data zilikusanywa kupitia mahojiano ya kina, mazungumzo rasmi na yasiyo rasmi na watu wanaofanya kazi kwenye msururu wa thamani ya mbao, majadiliano ya vikundi lengwa, watafiti wanamiliki uchunguzi na ukaguzi wa hati. Mfumo wa Dedoose ulitumika kwa uchanganuzi wa ubora wa data. Matokeo ya utafiti yanaonyesha kuwa taasisi ambazo ni kanuni na sheria zilizoundwa kuongoza shughuli za mnyororo wa thamani, kwa kiasi kikubwa zinaathiri maendeleo ya mnyororo wa thamani wa mbao katika wilaya za Liwale na Ruangwa. Serikali inabaki kuwa mdhibiti pekee wa mnyororo wa thamani kupitia sheria na kanuni zilizowekwa. Pia iligundulika kuwa wahusika wote kwenye mnyororo wa thamani wa mbao katika wilaya za Liwale na Ruangwa wanafanya kazi chini ya mfumo huo wa udhibiti. Zaidi ya hayo, utafiti

umegundua kuwa kuna uhusiano wa kimamlaka uliopo kati ya wahusika wa mnyororo wa thamani wa mbao katika wilaya za Liwale na Ruangwa mtawalia. Haya ni mahusiano ya nguvu ya kitaasisi, ya kimkakati na ya kuunga mkono.

Mbali na hayo kuna vita vya kuwania madaraka vilivyopo miongoni mwa baadhi ya wahusika wa mnyororo wa thamani wa mbao. Kwa mfano, maofisa misitu na mawakala wa Wakala wa Huduma za Misitu Tanzania (TFS) hupata migogoro ya madaraka kati yao wenyewe kwa wenyewe, hii inasababishwa zaidi na hamu ya pande hizi mbili ya kupata mapato yanayokusanywa kutoka kwa wafanyabiashara wa mbao wanapoidhinishwa. Kutokana na matokeo hayo, inahitimishwa kuwa taasisi rasmi zina ushawishi mkubwa katika maendeleo ya mnyororo wa thamani wa mbao katika wilaya za Liwale na Ruangwa. Aidha, mahusiano ya mamlaka kati ya watendaji kwenye mnyororo wa thamani wa mbao yana ushawishi mkubwa katika kutekeleza shughuli zinazofanywa ndani na kando ya mnyororo. Kwa hiyo, watunga sera wanapaswa kujumuisha wahusika wote katika mnyororo wa thamani wa mbao ili kuepusha malalamiko na usawa wa madaraka unaotokana na sheria na kanuni zilizowekwa.

Neno kuu: Mbao, Mnyororo wa thamani wa Mbao, Watendaji, Taasisi, Mahusiano ya Nguvu.

DECLARATION

I, Mary Chuzi Magiri, do hereby declare to the Senate of the Sokoine University of Agriculture that, this dissertation is my original work done within the period of registration and that it has neither been submitted nor being concurrently submitted in any other institution.

…….. ……

Mary Chuzi Magiri Date
(MSc. Candidate)

The declaration is confirmed by;

…….. ……

Prof. Jumanne M. Abdallah Date
(Supervisor)

…….. ……

Dr. Greyson Z. Nyamoga Date
(Supervisor)

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DEDICATION

I dedicate this work to my late supervisor Dr. Leopold P. Lusambo, whose untimely demise took place while working hard with me in this study and all the informal actors in the forest value chain; whose day and night struggles pass unnoticed.

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LIST OF ABBREVIATIONS AND ACRONOMYS

BEE	Business Enabling Environment
CBFM	Community Based Forest Management
DFO	District Forest Officer
FAO	Food and Agriculture Organization
FGDs	Focus Group Discussions
FORVAC	Forest and Value Chain Developmental Program
GDP	Gross Domestic Product
ITTO	International Tropical Timber Organization
JFM	Joint Forest Management
LIMAS	Lindi Mtwara Agri-Business Support
MCDI	Mpingo Conservation and Development Initiative
MJUMITA	Mtandao wa Jamii wa Usimamiza wa Misitu Tanzania also known as The Community Forest Conservation Network of Tanzania
NGOs	Non-Governmental Organization (s)
SULEDO	Sunya Lerai and Dongo Community Forestry
TFCG	Tanzania Forest Conservation Group
TFS	Tanzania Forest Service Agency
UN	United Nations
URT	United Republic of Tanzania
VLFRs	Village Land Forest Reserves
VNRC	Village Natural Resource Committee
WB	World Bank
ZEC	Zonal Environmental Committee

CHAPTER ONE

1.0 General Introduction

1.1 Background Information

Globally, timber is considered to be among the forest products whose value is rising overtime (Emmanuel *et al.,* 2010). Studies indicate that due to rapid population growth especially in urban areas, the demand and flow of charcoal, sawn timber for construction and timber for household furniture has increased (Ribot, 1998). In Africa, timber is one of the most important commodities (FAO, 2000). It is evident that majority of the poor households particularly in rural areas depend largely on the forests to meet their requirements for shelter and basic house furniture. However, the supply of timber to various markets in towns has received little attention resulting to insufficient collection of revenues by the government from the timber sub-sector (Wells & Wall, 2005).

According to the International Tropical Timber Organization (ITTO), there's an increase in timber products trade, but the existing world natural forests cannot sustainably meet this soaring global demand of timber (ITTO, 2020). Tanzania is not an exceptional in this and therefore, the natural forests alone cannot satisfy peoples demand on timber (Ngaga & Solberg, 2000). Studies indicate that, the natural forest cover is estimated to decrease by 1% annually (FAO, 2018) due to climate change pressures and growth in urban areas (Arvola *et al.*, 2019). This increased pressure and hence demand, has encouraged the development of tree plantations in many parts of the world. As the result of the increased demand for forest products, many people from both urban and rural areas are now venturing into the forest and timber product industries. It is with this trend that the government has dedicated substantial efforts to improve the timber production through checking the constraints associated with the product alongside with its value chain and improve timber sub-sector (URT, 2018).

In the context of forestry development, value chains analysis has been used to explain the performance of forests from production stage to consumption stage. Value chain is used to describe the full range of activities that add value to a product at every single step in designing, producing and delivering a quality product to the customers (Zamora, 2016). Therefore, value chains involve actors and their respective activities that aim to improve products while linking commodity producers to processors and markets (William, 2014) which has also been a case in timber sub-sector. Value chains are said to perform the best when all actors along a particular chain work on the same goal of producing high quality products through the help of supporting institutions. In addition to that, the role of governance is important to make value chains functional (Dallas *et al.,* 2019) and promote power relation balance.

Institutions are then defined as the human devised that shape social interaction between people or groups of people (North, 1990). Institutions are categorized into formal and informal (Acemoglu, 2018; Menard and Shirley, 2008). In this study however, the emphasis has been kept on formal institutions which are reported to guide timber value chain (Martin, 2021) in Liwale and Ruangwa districts. Institutions which are defined as the rules of the game, play a greater role in promoting economic development and in managing and utilizing natural resources (Boliari and Topyan, 2007). They can influence the preferences of a certain product over the other and the structure of the market for certain products (Marsiliani and Renström, 2004). Therefore, institutions form a framework in which people act to reduce uncertainty and threats of daily life (Klein, 1999).

In Tanzania context, there are formal institutions which guide all the activities taking place in the forest sector including activities involved in the timber value chains. For example, there are policies, rules and regulations which are to be followed in order for a person to engage him/ herself in the timber business. These are found in the Forest

Regulations (2004) and in the National Forest Act (2002). There are also some organizations which aims to promote management of forest resources in the country. Tanzania Forest Service (TFS) Agency is one of the formal institution which was established in 2011, but its history can be traced back to 1899 when it started as a local forest bureau (URT, 2018). TFS is mandated to oversee management and control of forests activities, taking place in the country (URT, 2021). Also, Tanzania Forestry Research Institute deals with researches in forest sector; and come up with possible solutions to solve the challenges (URT, 2021).

The interventions of the institutions, could have both negative and positive effects (Torniainen and Saastamoinen, 2007) to the value chain of timber. However other things such as technology (Klein, 1999) tend to have a significant role to play in ensuring that every person in the chain get profit (Marsiliani and Renström, 2004; WB, 2020), Most of the Forests are perceived to be openly accessed therefore, its harvesting should not compromise the ability of the next generation to enjoy the services and tangible benefits (Kim, 2016; URT, 1998, 2008) and most affordable and cheapest common source of energy (Allison *et al.*, 2019; FAO, 2018). Despite people's perception towards forests and some challenges facing the forest sector such as illegal logging of timber and overexploitation of forest resources (URT, 2021; URT, 2015), the Bank of Tanzania (2019) recorded that, the forestry contribution to the national GDP grew by 4.8%. This means that, with proper intervention of rules in place then the government can make more revenue from the sector.

This study is focusing on the influence these formal institutions have on timber value chain development and power relations among actors along the timber value chain. Which help in the process of making proper intervention of rules and regulations without compromising the ability of the actors along the timber value chain in Liwale and Ruangwa districts.

1.2 Problem Statement and Justification of the Study

1.2.1 Problem statement

Following a literature review on the market system analysis of timber products, value chain analysis of timber products and illegal activities affect the timber sub-sector (Banikoi *et al.*, 2018; Kafakoma and Mataya, 2009; Mhapa, 2011; Milledge and Gelvas, 2007; Tah *et al.,* 2001). Despite the evident factors, there is limited information on the influence of formal institutions on the timber value chain development (URT, 2015). Formal institutions which are meant to protect the existing forest cover and sustain flow of goods and services obtained from the forests and reduce unfair competition in timber market from illegal sourced timber (UN, 2021). They are however, operating contrary to the intended aims and resulting into power relations imbalance (Balan, 2017). Hence, become barriers that constrict the growth of community forestry (Held *et al.*, 2017; UN, 2021). Timber dealers as among the actors in the timber value chain, have been facing institutional obstacles including legal and administrative problems as well as problems related to established practices (URT, 2018; Msamula *et al.,* 2018; UN, 2021). These problems prevent benefits flow to the local communities, as a result meagre profit is obtained (UN, 2021).However, little is known on whether the rules and regulations guiding timber value chain (URT, 1998) reflects to the efficiency of the political and economic institutions in place (Kafakoma and Mataya, 2009; Meshack, 2003).

1.2.2 Justification of the Study

This study is useful to academicians, scholars and other researchers because it contributes to the existing knowledge on timber value chain and to the efforts in achieving Sustainable Development Goals; specifically goals 1 and 16 on poverty reduction and promotion of inclusive societies and strong institutions at all levels respectively (UN, 2015). Further, findings from this study are essential in the achievement of the 2025 Tanzania Vision on sustainable utilization of forest resources timber and poverty eradication by 2025 (URT, 2000). Furthermore, the findings from the

study are useful in helping actors along the timber value chain in Liwale and Ruangwa districts to understand the power they have on the modification of the timber business and in the implicit rules and institutions which operate in the timber industry in the districts. The study findings provide recommendations which are useful to policy makers and researchers and in strengthening and improving of timber value chain in the country.

1.3 Objectives

1.3.1 Overall objective

The overall objective of this study was to assess how formal institutions and power relations affect the roles and relationships of actors along the timber value chain in Liwale and Ruangwa Districts.

1.3.2 Specific objectives

Specifically, this study aimed to;

i. Identify actors in the timber value chain in Liwale and Ruangwa districts.
ii. Assess the influence of formal institutions in the development of timber value chain in Liwale and Ruangwa districts.
iii. Analyse power relations that underlie timber value chain in Liwale and Ruangwa districts.

1.4 Research Questions

This study was guided by the following three research questions;

i. Who are the main actors of the timber value chain in Liwale and Ruangwa districts?
ii. What influence do formal institutions have in the development of timber value chain in Liwale and Ruangwa districts?
iii. What are the existing power relations among actors along the timber value chain in Liwale and Ruangwa districts?

1.5 Literature Review

1.5.1 Theoretical framework

The overall objective of this dissertation was to provide the in-depth understanding and analyse the roles of formal institutions and power relations in the development of timber value chain in Liwale and Ruangwa Districts, Tanzania. To achieve this objective, theories that explain value chain concept and the mechanisms that facilitate the development of value chains were considered to be necessary. Therefore, the objective of this study was achieved through theories which are the institutional framework, legal and regulatory framework and the actor's interface theory. The following is the description of the theories that are guiding this study.

1.5.2 The Institutional framework

In the context of value chain analysis, the institutional dimension is considered to be the fourth dimensions and one among the important ones. This framework helps in the identification of how local, national and international contexts influences the activities in value chains (Kaplinsky and Morris, 2001). Institutions have been defined in many ways by different scholars. Frances Clever (2012), defines institutions as the social arrangement that shape and regulate human behaviours, have some degree of permanency, purpose transcending individual human lives and intentions. This definition resembles the definition that this dissertation has adopted which was provided by (North, 1990) who define institutions as the rules of the game in a society which shape social interactions and behaviours between people or groups of people. He went far by categorizing institutions into formal (national laws, constitutions, regulations and rules) and informal institutions (codes of conduct and norms). The two categories are enforced differently.

In the context of Tanzania, a study conducted on the tobacco value chain (Ilembo *et al*., 2017) found that state institutions and leading firms play a great role in influencing the engagement of the actors in the value chain. Therefore, the engagement of the actors along

value chain is highly influenced by the institutions in place. For it is through the institutions that people get the rights to access the natural resources, some are excluded by the rules and regulations in place and lastly, some get the right to sit at the decision-making table. This theory is applicable to this study since it aimed to assess how formal institutions affects the activities performed in the timber value chain in Liwale and Ruangwa districts, Tanzania.

1.5.3 The legal and regulatory framework

This is another theory that was adopted in this dissertation where the formal institutions in place are drawn from. Perceptions of the ability of the government to formulate and implement sound rules and regulations in the context of value chains for the purpose of development and particular growth of the sector is checked. There are state officials who are in charge of enforcing the rules and regulations and ensure that people comply with the regulations in place.

Rules and regulations in the natural resource context, are also introduced to promote proper management and utilization of the resources. However, it is always not the case since they are always considered as aliens in the businesses they are introduced to guide. The rules and regulations are associated with some damages that can occur in the enforcement process as a result of not been controlled well to guide particular activities they are subjected to guide. In addition to that, the rules and regulations can be a completely new idea to the people working under the sector in question hence making them seen as burden. In Tanzania, there are forest regulations which create the business enabling environmental for the people working in the forest sector. Therefore, in order for one to consider working in the timber industry, then rules and regulations familiarization is important.

1.5.4 The actor interface theory

This is another theory that is used in this study. The theory was developed by a socio-scientist known as Norman Long. It explains power dynamics that occur in a social setting in the agricultural context. According to (Long, 1984) under the social system, there are power differences that co-exist among actors. This results into power dynamics which differentiate one group from the other along the interface. The interface is a point where power dynamics manifest and it is where varied and conflicting social fields intersect.

The theory is important in studying value chain governance with relation to spaces in which actors of that particular chain exercise their power. It is however, important to note that, the constraints of this theory are based on the fact that it is based on actors' behaviours. Therefore, it is focusing more on solving discontinuities among actors and not at the linkages. Considering the fact that, this study aimed to analyse power relations of the actors along the timber value chain in Liwale and Ruangwa districts, this theory is appropriate. Whereby, at every point in the chain, where a group of actors exist there is a manifestation of power that the group exert which in one way or the other affects other actors in the value chain.

1.5.5 Conceptual framework

The conceptual framework for this dissertation was formulated by building upon the theoretical frameworks presented in the preceding sections. It elucidates that the governance of value chain is dependent on institutions, which serves as the rules of the game and the power dynamics exhibited by various actors within the value chain. Regarding the matter of institutions, this study also takes into account variables such as human capital and its corresponding investments. Factors like investment in human resources and human capital are additionally explored in this particular case. Power being a multifaceted concept in the realm social sciences; manifests itself through various indictors decision-making, relationships and linkages, which are carefully observed and traced along the value

chain. The extent of power held by actors along the chain is measured through the roles performed by actors in the chain and the assessment of their relationships within the chain. This is due to the fact that, value chain depends on a well-linked actor's relationship.

In this study, there are some background variables which are actors' interest in their involvement in timber value chain, goals and appetency of actors in the value chain on their businesses. These background variables serve as the foundation for the indicators mentioned in the analysis of the ground for the independent variable, institutions, which play a significant role in shaping the dynamics of the value chain. The independent variable power relations among actors in the value chain, takes into account specific background variables considered are goals, perspectives and interests which significantly influence the configuration of power dynamics among these actors. Furthermore, these background variables offer insights into the degree and equilibrium of power held by various participants within the timber value chain. The portrayal of power balance among actors, as depicted by the aforementioned indicators, ultimately contributes to improved production and marketing, both crucial nodes within the value chain.

1.5.6 Empirical review

1.5.6.1 Assessment of formal institutions along the timber value chain in Liwale and Ruangwa districts, Tanzania

Institutions play an important role in governance and management of forests (Poteete & Ostrom, 2002); institutions may differ according to context so, it is important noting that, institutions together with other factors such as technology level, quality and financial resources affects the development of timber value chain (Msamula *et al.*, 2018).

In value chain development, studies show that there is an influence of institutions which are rules, regulations and cultural norms that facilitate the competitiveness of the industry and shape the forms

and actions of entities in the business enabling environment (Arrow, 1999). They facilitate interaction of the people along the timber value chain (Horton *et al.,* 2016).

It is important to include the Business Enabling Environment in studying institutions along the timber value chain. The physical entities including Government Agencies and Non-Governmental Organizations set forth rules and regulations that in one way or the other affects the activities along the chain (OECD, 2018). Studies show that, the Business Enabling Environment (BEE) creates resources to facilitate compliance with rules set by internal and external members of the value chain (Dallas *et al.*, 2019). However, this study focuses on the influence of institutions along timber value chain.

1.5.6.2 Analysis of power relations along timber value chain in Liwale and Ruangwa districts, Tanzania

Regarding power relations in the timber value chain, some studies define power as the ability of firm or organization to exert influence and control over other firms in the timber value chain (CIFR, 2010). This means that there's uneven bargaining relationships between firms more especially between lead firms and suppliers (Dallas *et al*., 2019). Power then is accumulated, held and wielded in different amount and ways along the chain.

It should be noted that, power can originate within the timber value chain whereby firms and their workers can be the source of power (Sturgeon, 2008). Or from outside the chain whereby, institutions created by the enabling environment and consumers are the source of power (Loconto, 2016). A study done by Gereffi Humphrey which focused on the power relations which are embedded in value chain analysis. That study shows that many chains are dominated by one party or some parties who determine the characteristics of the chain and as lead firm becomes responsible for upgrading activities within individual links and coordinating interaction between links (Gereffi *et*

al., 2005). This is the role of governance, and can be distinct in two types which are buyers driven commodity chain and producer driven commodity chain (Louis & Fabien, 2015).

Lastly, it should be noted that individuals and institutions have power which can be visible, hidden or invisible. This study however, focuses on the analysis of visible power of dominant institutions along the timber value chain in Liwale and Nachingwea districts.

1.6 General Methodology

1.6.1 Why Liwale and Ruangwa districts?

The study was conducted in 2 villages in Liwale district which are Mikunya and Likombola and in 2 villages in Ruangwa district which are Nandenje and Lichwachwa. The districts were chosen following a number of reasons. The study originally aimed to include actors of the timber value chain in Nachingwea and Liwale districts but following a reconnaissance study that was conducted prior to the data collection process, it was found that in Nachingwea district the timber business is performed in a very minimal scale, with seven registered timber dealers. While most of the people were working on charcoal business. Hence, it was replaced with Ruangwa district. Literature review that was conducted on forest product value chains provided the evidence that there was little information on how institutions and power relations among timber value chain actors, can influence timber value chain specifically, for the timber produced from Village Land Forest Reserves in Liwale and Ruangwa districts. This study is therefore focusing on the analysis of institutions and power relations along timber value chain in Liwale and Ruangwa districts, Tanzania.

1.6.1.1Description of the Study areas

This study was conducted between February 1st and April 7th 2022 in Liwale and Ruangwa districts in Lindi region, Southern Tanzania (Figure 1.1). The districts are endowed with typical Miombo flora of tall trees with shrubs and grasses on the forest floor. The Miombo

woodlands are characterized by large tree species diversity associated with species such as *Brachystegia sp., Julbernadia sp.,* and *pterocarpus angolensis* (Kusaga, 2010). The districts are having Village Land Forest Reserves which are doing well in the production of timber, which is the main focus of this study. Liwale district, which is considered to be the best supplier of timber from natural forests in Tanzania, has 72 village forest reserves of which 27 were benefiting from FORVAC program and a Non-Governmental Organization known as Mpingo Conservation Development Initiative (MCDI) based in Kilwa district. Among the 27 VLFRs, 13 constitute the great Angai VLFRs. Ruangwa on the other hand, has 5 village forests which were benefiting from FORVAC and they are doing well in production of timber.

The districts are characterized by two rainy seasons per year, over 2 and 3 months respectively in late November to January and March to May. Annual precipitation is in the range 600-1000 mm. During the whole period of data collection, it was raining in the villages and considering the fact that, the districts are having poor infrastructure, it was not easy to reach the villages for data collection.

According to the 2022 census, Liwale and Ruangwa districts had a population of 136,505 and 185,573 respectively (URT, 2022). Most of the households in these districts are poor and they are mostly engaged in cashew nuts cultivation and other subsistence agricultural activities. According to the village leaders, through the income that is drawn from the village forests, they are able to improve social services in the villages. This is because about 85% of all the income obtained from their Village Land Reserved Forests is directed to improve the social services of the people. Therefore, some of the social service facilities like functional health facilities, village offices and schools are in good condition compared to other places.

1.6.2 Research design

This study adopted a cross sectional research design which facilitates the assessment of different groups of people with specific characteristics and allow data collections at a single point in time. The advantages of this design are cost effective and it can be done fairly. In addition to that, the study adopted a more of a qualitative research approach; due to the fact that, the concepts of institutions and power relations are among the complex concepts in social sciences to be quantified.

1.6.3 Sample size and sampling techniques

The study population involved timber dealers, forest officers, members from the VNRC, village chairmen, officials from FORVAC, MCDI, MJUMITA and TFCG, Tanzania Forest Service agents and villagers from each district. From each district, a total of two villages were selected purposeful based on the results of the reconnaissance study which was conducted in five villages in each district. It was observed during the reconnaissance survey that, there were variations in the implementation of the rules and regulations among villages. Therefore, a total of four villages namely, Lichwachwa, Likombola, Nandenje and Mikunya were selected. The variations were mainly caused by the quality of the VNRC in place which is the reflection of the extension services that they receive from the supporting bodies. This was seen as a typical case for undertaking this study because the villages were known for having many actors that are involved in various nodes in the timber value chain. It should be noted that, this been a study that is based on value chain, it had to consider all nodes and every actor that is found in the particular node. So, some of the interviews had to be conducted outside the villages for instance, the ones that involved the forest officers, Tanzania Forest Service agents, 14 timber dealers and officials from the partners developmental programs and NGOs.

In selecting the respondents, purposive sampling and simple random sampling were applied. Heterogenous purposive sampling technique was applied to select key informants to obtain a range of cases with relevant knowledge in timber value chain. A total of fourteen key informants were involved in this study. Whereby, four field forest officers; two from each district, two district forest officers (DFOs); one from each district. Four village chairpersons, four representatives from TFCG, MJUMITA, FORVAC and MCDI. The engagement of these key informants based on the factor that they have the knowledge required for answering key questions regarding the timber value chain. Simple random sampling was used to select forty timber dealers who are registered to harvest timber in the financial year 2021/2022. Twenty timber dealers were selected from each district through a sampling frame that was obtained from the forest officers' office in Liwale and Tanzania Forest Service Agency office in Ruangwa.

Focus group discussions (FGDs) with members from the village natural resource committee and some few relevant actors who are timber dealers and villagers were conducted. A sampling technique used was purposive sampling; for the members from the Village Natural Resource Committee while, a simple random sampling was applied to select other identified actors who are timber dealers and villagers. A total of two FGDs were conducted in Likombola and Lichwachwa villages. Whereby, in Likombola village; the participants involved were the 30 villagers, 4 members from the VNRC and 2 timber dealers and in Lichwachwa village; the participants of the study involved were 30 villagers, 5 members from the VNRC and 3 timber dealers.

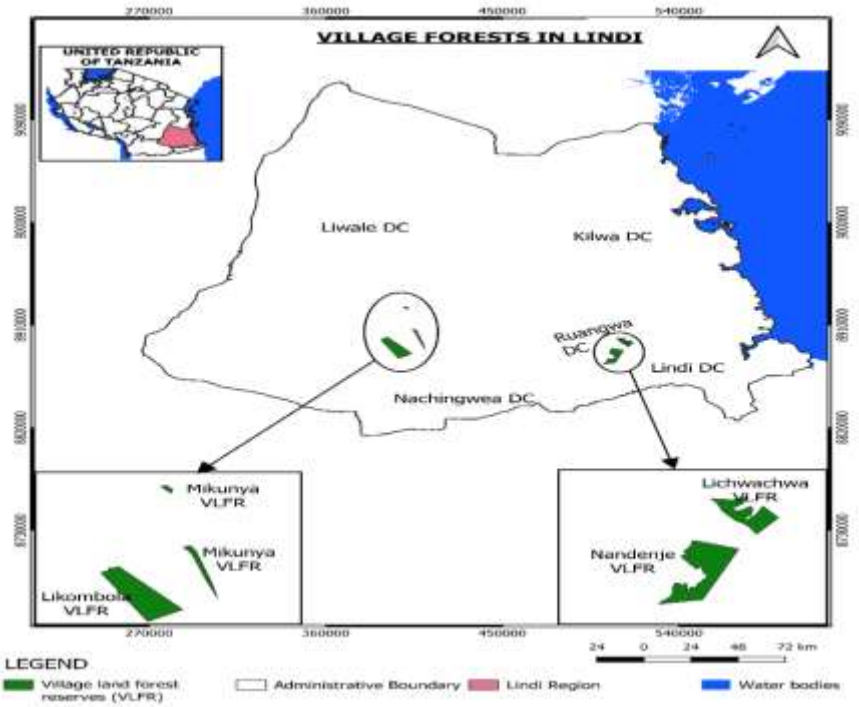

Figure 1.1: A map showing the study areas

1.6.4 Data collection

Primary data were collected through in-depth key informant interviews which was guided by a semi structured interview guide whereby, the interviews were conducted in respect to the roles that the key informant is playing along the value chain. Focus group discussions was another method that was used to collect data for this study. A checklist of questions was used to get the information in relation to timber value chain. A total of two FGDs were conducted in Lichwachwa and Likombola districts whereby each FGD was done involving 10 participants. It should be noted that, all the interviews and focused group discussions were conducted in Swahili so as, to set a common ground of understanding. They were also recorded to capture everything that was said during the data collection process.

For the observational data, photos were taken for further analysis and some information were jotted down in a notebook for further analysis. Secondary data were obtained from the government publications which are the 2004, 2019 and 2022 forest regulations, Forest Act (2002), Tanzania National Forest Policy (1998) and from records related to timber value chain.

1.6.5 Data analysis

Thematic analysis was done to analyse data. Whereby, the themes which are identified actors and nodes along the timber value chain, the levels of timber value chain based on the distribution of timber, the dominant institutions that guide timber value chain, power relations underlying timber value chain and power struggles among actors in the timber value chain for the paper on the analysis of power relations along the timber value chain in Liwale and Ruangwa districts. For the paper on the assessment of formal institutions along the timber value chain in Liwale and Ruangwa districts, themes that were created on awareness, enforcement, compliance and costs of the rules and regulations. These themes were formed with respect to the theories that were chosen to guide this study and the objectives of the study. The process of data analysis started by, transcribing all the recorded interviews and focused group discussions. The data were written on excel and the researcher had to get familiar with the data through reading and re reading the data. Then the data were uploaded to a platform called Dedoose which is used in analysing qualitative data. Then the coding process began, which resulted into formation of labels and lastly themes were created.

1.7 Organization of the Dissertation

This dissertation is organized into five chapters. Chapter one provides the general introduction of the theme that has been studied. The chapter presents and justifies the motivation behind the need for this study whereby it covers: the background, problem statement, justification of the study, main objective, specific

objectives, and research questions. Then the literature review containing a theoretical framework of the dissertation followed by the conceptual framework of the dissertation and the empirical studies and lastly, the general methodology. Chapter two is covered by a publishable manuscript which has being developed from specific objectives number one and three: which are on the identification of the main actors in the timber value chain in Liwale and Ruangwa districts and analysing power relations which underlie timber value chains in Liwale and Ruangwa Districts, respectively. Chapter three presents a publishable manuscript which was developed from specific objective number two; which was on the assessment of formal institutions which influence the development of timber value chain in Liwale and Ruangwa districts. While chapter four covers the general discussion for the whole dissertation. Lastly, chapter four contains the dissertation's general conclusion and recommendations.

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CHAPTER TWO

Manuscript One

2.0 Analysis of Power Relations on Timber Value Chain in Liwale and Ruangwa Districts, Tanzania.

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Abstract

The study intended to investigate power relations among dominant institutions guiding timber value chain in Liwale and Ruangwa districts, Lindi. It adopted across sectional research design whereby qualitative methods of data collection were used. The main objective of this study is to analyse power relations that underlie timber value chain and identify actors on the value chain. The specific objective for this study is to determine the existing power relations on the timber value chain in Liwale and Ruangwa districts. Data were collected through key informant interviews, focus group discussions, observations to answer the research questions and then analyzed using a DEDOOSE platform. The results indicated that, there were several actors in the timber value chain, including timber dealers, customers, village communities, Village Natural Resource Committees (VNRCs), district governments, forest officers, NGOs, and government agencies. Also, there are three levels of value addition which are community, district and national levels. These were associated with the customer demand from within the specific community, district and national wise. Apart from that the dominant institutions guiding timber value chain were the Tanzania National Forest Policy and the Forest Act which provide a timber value chain framework. Also, institutional, supportive and strategic power relations were the type of power relations that were identified to be underlying timber value chain. Furthermore, power struggles were observed to be existing among the Tanzania Forest Service (TFS) agents and the Forest Officers mainly on the issue of the revenue collected. The study recommends that, all actors in the timber value chain should play their roles in a way that they do not compromise the ability of other actors attain their goals. Also, to solve the issue of power struggles between the TFS and the local government Forest Officers then amendment of rules and regulations should be done.

Keywords: Timber value chain, power relations, dominant institutions, sustainability, Tanzania.

2.1 Introduction

Timber value chain is a concept used to describe the entire spectrum of activities that contribute quality to timber products (Zamora, 2016). Each node within this chain comprises of various actors, responsible for executing essential activities at their respective points. These actors collectively form a network, ensuring the successful formation and a targeted market reach of a particular product (Arvola *et al.,* 2019). To achieve this success, governance play an important role. Similar to social relations, value chains also feature leading firms or individuals who influence other actors in the chain to adopt specific behaviours (Lolila *et al.*, 2021). For the chain's sustainability, a delicate balance of power among actors is necessary. This equilibrium ensures that every participant in the chain remains steadfast in performing relevant activities. Consequently, power relations in the value chains dictate resource management, access rights and crucial decision-making processes (Mbeyale *et al.*, 2021).

With the rapid growth of Tanzania's economy, the demand for timber and timber products has increased (Martin, 2021), resulting in the decline of natural forests and the promotion of industrial and non-industrial timber plantations (URT, 1998). Previous researches have investigated the timber value chains based on non-industrial and industrial plantations (Arvola *et al.,* 2019; Martin, 2021). However, this paper focuses on timber value chains that source their timber from natural village land forests reserves in Liwale and Ruangwa districts, Tanzania.

In Tanzania, forest management is carried out through Participatory Forest Management (PFM) (URT, 2002), which falls under two categories: Joint Forest Management (JFM) and Community-Based Forest Management (CBFM) (URT, 2002). Under JFM, the government owns and manages the forest while sharing benefits with the community. In contrast, CBFM which is the focus of this study, grants ownership, usage, and management rights to local

communities (URT, 1998). In the CBFM approach, the local people have the authority to decide who can access their forest resources and make significant decisions on their behalf.

Timber value chains typically involve various actors, including the government (village and district level), middlemen, tree growers, customers, transporters, non-governmental organizations, and timber dealers (Lusambo *et al.,* 2021; Martin, 2021). In Liwale and Ruangwa districts, the timber value chains consist of village and district governments, timber dealers, villagers, non-governmental organizations, and other individuals. Each actor wields different forms of power in the forest utilization process. When power is imbalanced, conflicts arise among actors and hinder the development of the timber value chain (URT, 2004).

The high potential of forest resources in Mikunya, Lichwachwa, Nandenje, and Likombola VLFRs has led to the emergence of various actors with distinct interests. The balance of power among these actors has become a significant challenge. Power relation balance, defined as the asymmetries between two actors in their relative ability to exert power over others (Rolin, 2020), restricts benefits to certain stakeholders, such as timber dealers who face suppression due to established practices. Consequently, the growth of the CBFM is hampered (Held *et al.,* 2017; UN, 2021). This study aimed at investigating power relations among dominant institutions that guide the timber value chain in Liwale and Ruangwa districts. The process involved the identification of actors in the timber value chain, analysing existing power relations, and understanding power struggles within the study areas.

The understanding of power relations along the timber value chain, which sources timber from VLFRs in Lichwachwa, Mikunya, Nandenje, and Likombola, is crucial for promoting sustainable timber value chains. Additionally, it contributes to promoting equity among communities and other stakeholders involved in the value chain. The

findings of this study aids in endorsing a balanced power relation among timber value chain actors in Liwale and Ruangwa districts.

2.2 Methodology

2.2.1 The study areas

The study was conducted in Liwale and Ruangwa districts, Tanzania (Figure 1**)**. The districts are endowed with natural forests which are characterized by dry miombo tree species, dense forests and wet miombo with some highly valuable timber species of *Brachystegia sp., Julbernadia sp.,* and *Pterocarpus angolensis*

The two districts are characterized by two rainy seasons annually. Over 2 and 3 months respectively from November to January and March to May. Annual precipitation is ranging from 600-1000 mm.

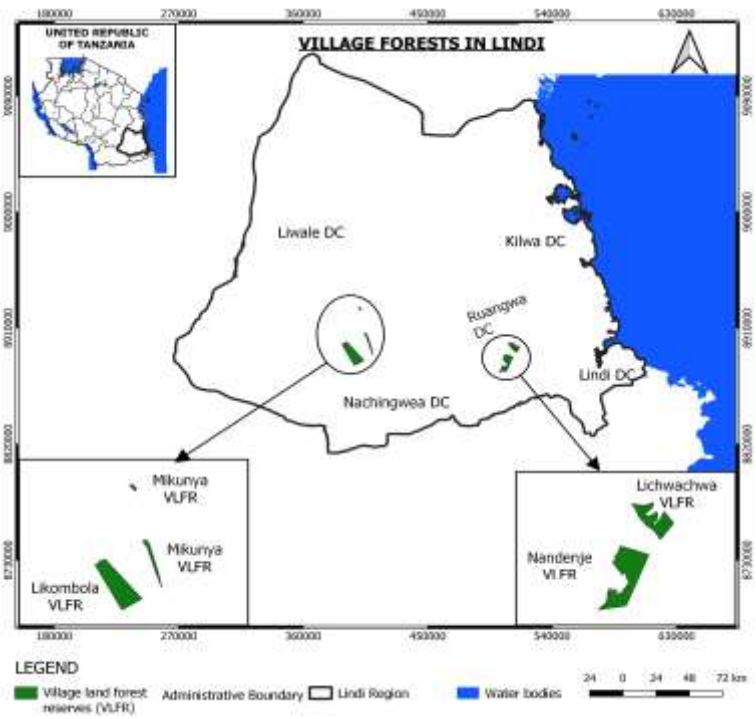

Figure 2.1: Map showing the study locations and the VLFRs.

2.2 Sample Selection and Data Collection

A purposive sampling approach was employed to select participants for this study who are working along the timber value chain in Liwale and Ruangwa districts. The sample for this study included 40 timber dealers. Data were collected from four villages in Liwale and Ruangwa districts, which are Mikunya and Likombola in Liwale district and Nandenje and Lichwachwa in Ruangwa district. Data collection was by using key informant interviews, focus group discussion and the researcher's own observations. To guide the collection of primary data from timber dealers, Forest Officers, Tanzania Forest Service (TFS) agents, village leaders and village residents, a checklist of open-ended question was used.

Prior to the beginning of each interview and focus group discussion. Each person was given a thorough explanation of the study, including how their identity would be secured and how the data they provided would be used and verbal free and informed consent from each participant was required. Participants were also informed that they could leave the study at any moment and have their personal information erased. The participants were also aware that they are free to not answer a question that they were not comfortable answering during the interview process.

Data collected were who are the actors along the timber value chain, the nodes they operate on, what are the dominant institutions, power relations exhibited by various actors along the chain and power struggle among actors along the value chain. The sample of timber dealers was obtained from a list of names provided by the district Forest Officer in Liwale and Tanzania Forest Service (TFS) agency in Ruangwa district. For the villagers, a sample frame of names was obtained from the village chairmen's offices.

It should be noted that the majority of the participants for this study were men, as is common in rural African communities (99%). A weakness for this study is the lack of women narratives on the

timber dealing activities involvement, which should be addressed in future research designs.

2.2.2 Data analysis

Qualitative data were analyzed by first transcribing all the recorded key informant interviews and focus group discussions. Then, the researcher had to get familiar with the data by reading and re-reading the data. A process that resulted in removing data that were out of scope for this study. The data were uploaded into a DEDOOSE platform form, and the labelling process began whereby paragraphs and sentences were labelled. The conveyed labels held a precise significance for each paragraph and sentence, effectively culminating in themes and sub themes when grouped together. These themes and subthemes encapsulated the essence pertaining to the research questions. Data on the distribution of timber which led to the formation of timber value chain levels, were further analyzed in R-studio to form a social network and the igraph package was employed to analyze the data.

2.3 Results

The data collected came up with five themes which were noted to resonate throughout the interviews and focus group discussions that were conducted in order to answer the research questions of the study. Identifying actors, levels of value addition, the dominant institutions that guide the timber value chain and power relations underlying the timber value chain are the key themes that were analyzed after data were analyzed. Thereafter the following are the results.

2.3.1 Identified actors and nodes along the timber value chain

A number of actors were identified (Table 2.1) to interact along the identified nodes in the value chain of timber (Figure 2.2). In (Figure 2.3) a map of their interaction at different nodes is shown.

Table 2.1: Actors along the timber value chain in Liwale and Ruangwa districts

SN	Actor	Category of Actor	Role and position of actors in the value chain
1	Timber dealers	Primary	Key actors in the timber value, they take the risk of utilizing the forest resources and take timber to the market.
2	Customers	Primary	Determine the type of timber to enter and quality the market.
3	Villagers from Lichwachwa, Likombola, Nandenje and Mikunya villages.	Primary	Primary decision makers on who gets access to the village land forest reserve. Manage the forest resources. Decide who gets the VNRC membership.
4	Village Natural Resource Committee (VNRC)	Primary	Responsible for making sure that the timber dealers get the right amount of timber as indicated on their permits.
5	District government	Secondary	Decision making body, which decides on the number of timber dealers to get license to harvest from forests within the district depending on the resources available.
6	Forest Officers	Secondary	Ensure that timber that is moving out of their jurisdictions is graded.
7	FORVAC program	Secondary	Provide financial support, technological support and facilitate capacity building to communities around the forests in order to enhance timber value chains.
8	Tanzania Forest Service Agency	Secondary	Responsible for offering licenses to the timber dealers.
9	Mpingo Conservation and Development Initiative (MCDI)	Secondary	Provision of technological support to promote value chain activities. Offered a mobile machine for timber processing in Lindi.
10	Tanzania Forest Conservation Group (TFCG)	Secondary	Provision of training on forest conservation.
11	The Community Forest Conservation Network of Tanzania (MJUMITA).	Secondary	Provision of training on forest conservation.

Source: Primary data collected in 2022.

Figure 2.2 Illustrates the nodes found in the timber value chain in Liwale and Ruangwa districts as well as the activities carried out at each node.

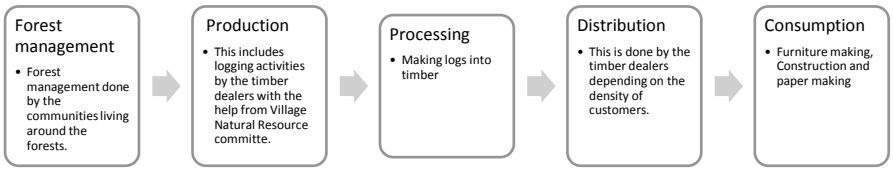

Figure 2.2: Identified nodes along the timber value chain. (Source: field data collected in 2022)

Forest management was the first node identified in the study areas. The actors found in this node were the villagers responsible for managing the forests. This is also done with the help of forest officers of the respective district. The forest officers are responsible for building capacity among VNRC members to better manage forests. In support of this one of the forest officers was quoted as saying *"through CBFM the communities living around the forest are 100% responsible for the management of the forest; All we do is equip to them with the necessary conservation knowledge."*

Production was the second node identified, with timber dealers being the major players in this particular node. They are responsible for timber logging of various tree species depending on market demand and their customers' choice as well as, what is stated in their harvesting permits. Most timber dealers have been quoted.

*"We harvest Millettia stulhmanii (*Mpangapanga)*, Afzelia quanzensis* (Mkongo) *and Pterocarpus (Mninga) hardwoods for that's what our customers prefer."*

This was supported by the forest officers who were quoted as saying "*Millettia stulhmanii* (Mpangapanga)*, Afzelia quanzensis (*Mkongo) and *Pterocarpus* (Mninga) *species are preferred mostly in our forests, although all timber species are almost of the same quality."*

Processing is the third identified node in which timber is processed and then distributed various markets.
The distribution of timber on different markets depends on the demand for timber products in each respective market. The last node identified was consumption, where consumers with different preferences were contacted. It was observed that, most of the timber is distributed to different destinations for furniture manufacturing and construction use.

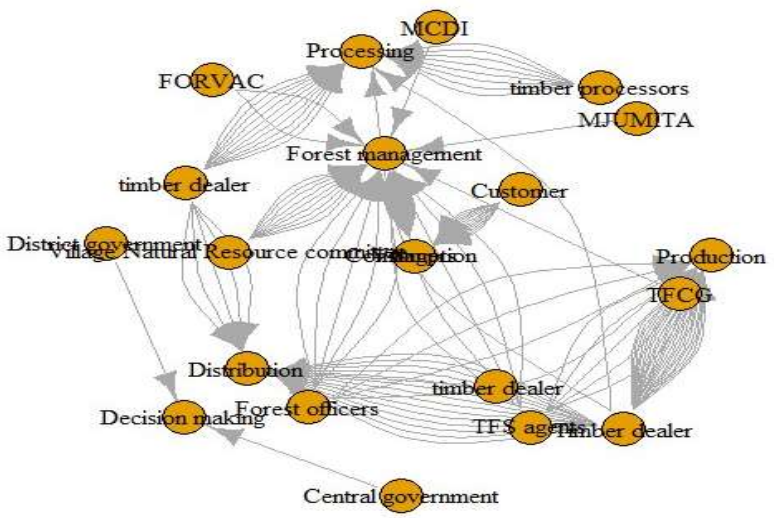

Figure 2.3: The value chain map of identified actors in the timber value chain. (Source: field data collected in 2022)
Arrowhead indicates the interaction of actors at a node, while the tail indicates the actor.

2.3.2 The levels of the timber value chain based on the distribution of timber

Based on the findings from the focus group discussions with timber dealers. The study shows different levels of value addition on timber, as presented in (Table 2). These levels are primarily influenced by two main factors.

The first factor being the significant influence exerted by certain actors within the value chain, such as NGOs and the government. Due to their power and authority, they are able to influence and shape the different levels of the timber value chain.

The second factor that contributes to the variation in value addition levels is customers' demand. Timber is routed to areas where customer demand is high, leading to increased value addition activities. Conversely, less timber is distributed to areas with lower demand, resulting in comparatively lower levels of value addition in such locations. A social network analysis (Figure 2.4) conducted on the distribution of timber based on customer demand supports the determined levels of value addition in Liwale and Ruangwa districts.

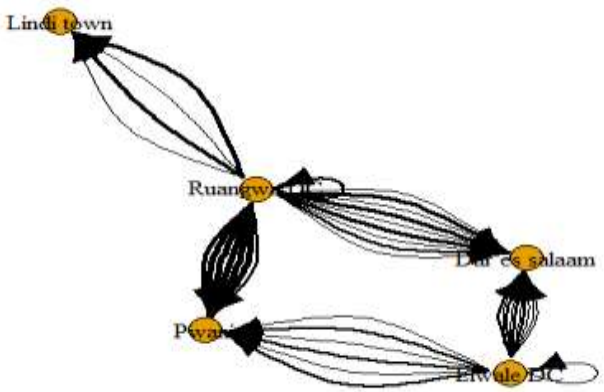

Figure 2.4: Source and destination of timber products

(**Source**: Field data collected in 2022)

Arrowhead indicates the product's destination, while the tail indicates the timber source. Arrow width indicates the timber product's extent (magnitude) from the source to the destination involved in the value chain.

The first level of value addition on timber is at community level. This involves a group of people working in the villages where there are VLFRs. They manufacture furniture and other timber products which are sold to the people in the village to meet their basic household and office needs. Findings from the key informant interview that was conducted in Likombola village with the village chairperson revealed that, there are community furniture making groups that were supported by FORVAC and MCDI technically.

"There are community groups supported by the FORVAC program and the MCDI technically, and they are very good at what they do for example the Likombola Furniture Group."

The second and third levels of value creation are the district and national levels. District level value added activities were noted to be carried out on a small scale in the study areas. Most of the people who work at this level, are the timber dealers themselves. Finally, the national level of value addition, in which there are many people working there, they collect timber produced from the village forests. These can be found in towns and cities like Dar es salaam. All of the timber dealers who participated in this study stated that they had customers outside of the Lindi Region.

Table 2.2: Levels of value chain addition on timber

SN	Level of value chain	Scale	Characteristics
1	Community level of timber value chain	Small	Fewer customers and financial constraints.
2	District level of timber value chain	Medium	Customers are not many that there are fewer furniture making industries in the districts. Most of the people working at this level are financially depending on themselves
3	National level of value chain	Large	There are a lot of customers, who are found outside of the Lindi region. And the social capital and financial capital is larger compared to the previous levels.

Source: field data collected in 2022

2.3.3 The dominant institutions that guide timber value chain in Liwale and Ruangwa Districts

The dominant institutions that guide value chain in Liwale and Ruangwa districts; include the rules and regulations which are mainly presented in a National Forest policy (1998) and the Forest Act (2002). They are established by the central government. In addition to that, there are by-laws which are specific to the study areas; they are provided in the five-year management plan. Furthermore, there are agencies like the Tanzania Forest Service (TFS) Agency.

The interviews conducted among timber dealers in Liwale and Ruangwa districts, are in support of this whereby, all of the timber dealers were referring to the rules and regulations that are provided in the government documents. For instance, there are rules and

regulations that are guiding timber value chain at different nodes. In the production node, the timber dealers were quoted saying: -

"You cannot legally log trees from the forest without having a license from Tanzania Forest Service."

That alone is not enough therefore, a timber dealer has to attend the village assembly in the village of interest. Where the villagers would hear him/ her out. And then decide whether the person can work in their village or not. It is then possible for the same villagers to do away with their initial decision.

The Tanzania National Forest policy (1998) provides a basis in which the international community and the NGOs can work with the communities around the forest in order to increase the productivity of the forest. The policies provide technical and financial framework to support the timber value chain.

One of the forest officers in Liwale acknowledged that: *"It was very hard for us to perform our works when the LIMAS program phased out for the support that the central government offered did not satisfy the needs to meet the supportive functions to the people in villages."*

The members of the Village Natural Resource Committee in Mikunya also affirmed the same. Whereby, one of the members in the VNRC was quoted saying:

"*When the LIMAS program phased out, we could not carry on with the activities that we hoped we could have done concerning our forest resources"*
These all have brought a conclusion that, the dominant institutions are the established rules and regulations.

2.3.4 Power relations underlying timber value chain in Liwale and Ruangwa districts

Table 2.3 summarizes the results on the existing power relations that underlay timber value chain in Liwale and Ruangwa districts.

Table 2.3: Power relations that underlie timber value chain

SN	Type of Power relation	Area of Manifestation
1	Institutional power	This is exercised by the Village and District Governments. Which perform their duties as cited by the Government Notice that: "*The District Committee chaired by the District Commissioner shall be responsible for receiving, considering and determining applications for endorsement and issuance of harvesting license of forest produce"* The village authority was noted to be working hand in hand with the district government. This implies that they cannot decide on their own on who gets the access to utilize forest resources unless the district government decides through the annual meeting done once a year. *"It is the district government which decides the number of timber dealers that are to be involved in the timber business for a year in our village forests depending on the resources available"*
2	Supportive power	From the data collected for this study, It was portrayed by NGOs like MCDI, MJUMITA and TFCG and also the FORVAC Program. They provide technical and financial support to promote sustainable utilization of the forest resources. And most important they conduct workshops aiming at building capacity of the timber traders. In February 2022, during the time for data collection, there was a workshop prepared by MCDI with the aim of building capacity of the people working in the forest sector in Liwale including the timber dealers.
3	Strategic power	This was manifested by the timber dealers. They all have desires on what they want to achieve in their businesses. According to the key informant interviews that were done 95% of timber dealers seemed determined to do anything to get their timbers to towns. 5% of the 95% even complained of about the inspectors at the checkpoints to be standing firm on the rules and the regulations. This is also portrayed by the village government and the district government, especially during the preparation of the harvesting plan. Which is in accordance to the management plan of the respective production forest and the district harvesting committee is responsible for reviewing applications and their endorsement.

Source: Field data collected in 2022 and the 2004 forest regulations.

2.3.5 Power struggles among actors in the timber value chain in Liwale and Ruangwa Districts

Power struggles were observed to be existing among the TFS agents and the forest officers operating in the study areas. Whereby, there was a tension between the two parties concerning the revenue collected from the timber dealers, especially on the fines and penalties that have been imposed. Some of the TFS agents who were interviewed on the issue. pointed fingers to the forest officers to be going against the regulations which instruct the revenue collected from the fines and penalties to be directed to the government. Instead, the forest officers have been misdirecting for the revenue to be going to the local government.

2.4 Discussion

Customers play a great role in timber value chain. Timber dealers harvest the common species of hardwoods which were a preference to their customers. The most preferred species were the *Millettia stuhlmannii* (Mpangapanga), *Afzelia quanzensis* (Mkongo) and *Pterocarpus angolensis* (Mninga). This confirms the results of the study done by (Sturgeon, 2008) and (Loconto, 2016) who portrayed that customers have power to influence what type of commodity goes to the market. However, these market's responsiveness to customers' demands could not be aligned with sustainable practices. Therefore, could lead to species extinction.

Additionally, the role of international community and NGOs as key actors in the timber value chain prompts reflection on the nature of their involvement. Similarly (Martin, 2021) reports that, the international community and NGOs through the operating programs offer help in promoting the development of timber value chain through the provision of financial and technical support. However, their involvement could be vested with dependency dynamics apart from empowering the local communities.

Furthermore, the established rules and regulations by the state which are the Tanzania National Forest policy (1998), the forest regulations and the National Forest Act (2002) were found to be the dominant institutions that guide the timber value chain. similarly, a study conducted by (Mulokozi, 2021) on power dynamics among actors in the groundnuts value chain found similar results. However, these regulations have been suppressing interests of some actors for instance, the timber dealers whose fees charged for different requirements to engage in the business, have been increasing over the years.

Also, the study reveals the existence of three distinct types of power relations within the study areas which were institutional, supportive and strategic power relations. Whereby, institutional power, is manifested by the district government and village government through the Village Natural Resource Committee which are in place to make sure that the rules and regulations are followed to promote sustainable value chain of timber. This confirms a study done by (Dallas *et al.,* 2019), which revealed that the local governments in which the raw materials are found have institutional power relation in value chains. Supportive and strategic power relations on the other hand, are manifested when the NGOs and partner's developmental programs in collaboration with the district forest officers, provide technical and financial support towards sustainable utilization of the forest resources. In addition to that, timber dealers manifest strategic power relations when they are determined to do everything in their power to excel in their businesses. A study by (Mbeyale *et al.,* 2021) found similar results, but these actors could in one way or the other be serving their hidden interests and not being truly collaborative hence, unsustainable management of resources.

Lastly, the issue of power struggles among actors in the timber value chain in the study areas which existed between the Tanzania Forest Service (TFS) agency and the local government forest officers on the issue of revenues collected from the fines and penalties. Raises the

issue of accountability and transparency whereby, the revenues could not be directed towards sustainable management of forests rather for some people gains. In the light of Norman Long' s theory (1984) on actor interface, which elucidates the inherent power struggles within institutional environments were compelled to critically analyze the structural inequalities and systematic barriers that underpin the timber value chain.

2.5 Conclusion and recommendations

2.5.1 Conclusion

Power relations cannot be avoided in the development of timber value chain. understanding power relations among actors along the timber value chain is an important step towards the improvement of the timber sub-sector. Actors in the chain however should play their roles as guided in the National Forest Policy, in a manner that they do not prevent other actors in chain from pursuing their goals and desires.

2.5.2 Recommendations

It is therefore recommended that, actors along the timber value chain should play their roles in a manner that, they do not compromise the ability of other actors to accomplish their goals. The government should consider increasing financial and technical support to the sector and the people working at the community level on the value addition. This will help in achieving the Sustainable Development Goal (SDG) number one which aims to end poverty in all its forms everywhere. The support in such forms will also help in implementing some of the important activities when programs like FORVAC have phased out. There should be a balanced phasing out strategy right from the establishment of these programmes. Lastly, in order to solve the power struggles between TFS and the local government forest officers, the regulation on the revenue collection should be amended to ensure that the local government also get some percentage.

2.6 Disclosure Statement

I Mary Magiri, declare that I have no conflicts of interest or financial relationships that could be perceived as influencing the research presented in this paper. The research paper titled "Analysis of Power Relations along the Timber Value Chain in Liwale and Ruangwa Districts, Tanzania" is an original work conducted with the utmost integrity and adherence to ethical principles. I have followed the guidelines and regulations set forth by my institution and the relevant governing bodies throughout the research process.

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CHAPTER THREE

Manuscript Two

3.0 Assessment of Formal Institutions along the Timber Value Chain in Liwale and Ruangwa Districts, Tanzania.

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Abstract

In developing an inclusive and sustainable timber value chain, institutions are important for structuring and governing the interactions of the actors to effect value creation and addition to timber products. Therefore, this study aims at assessing the rules and regulations awareness, enforcement, compliance and costs associated with the timber value chain in Liwale and Ruangwa districts, Tanzania. Data collection methods for this study includes key informant interviews, researcher's own observation and focus group discussions. Secondary Data were also gathered from various sources from within and outside the districts. Findings reveal that most people were aware of the rules and regulations involved in value chain but their level of awareness differed depending on factors like education level that an individual timber dealer had, time of exposure in the timber business and the goals that each one had on their business. Enforcement of the rules and regulations was found to be strong in Liwale compared to Ruangwa district. In addition, the compliance of the rules and regulations was high in Liwale than in Ruangwa. However, most of the actors who are timber dealers complained about high costs which is associated with compliance to the rules and regulations governing the business. Therefore, increasing awareness so that actors could comply with the laws and regulation could help to solve these challenges in Ruangwa district. Reducing costs and bureaucracy associated with the implementation of the rules and regulation governing timber value chain in both districts will increase benefits and efficiency in timber value chain Tanzania. Findings of this study may be beneficial to policy makers, developmental partners, other stakeholders and the people working along the timber value chain.

Key words: Institutions. Timber Value chains. Rules and Regulations. Awareness. Enforcement. Costs. compliance.

3.1 Introduction

Institutions have been recognized to play a greater role in economic development, management and utilization of natural resources (North, 2002). Institutions, which can be categorized into formal and informal, can have long-standing impacts on the activities which they are commissioned to guide (Mohan, 2016), both negatively and positively. The formal institutions which is the focus of this study, are rules and regulations which are designed to govern the interaction of the people in social settings (Richter, 2005). In the forest sector for instance, there forest regulations which guide all activities that are connected to forest resources. Including the activities that are associated with value addition in timber forest products. These rules and regulations are there to ensure not only that the forest resources are not depleted but also the produced products are of high quality and the revenue collected goes to right place. Formal institutions however, cannot hold water without a laid foundation of the informal institutions of that particular society (Clever, 2012).

In recent years, the global forests have been facing a lot of challenges including climate change, illegal logging and forests being considered as open accessed resource (Adams, 2020). In addition to that, wood is considered a cheap form of energy (Held *et al.,* 2017). As a result, the natural forest cover is decreasing whereby, the global forest cover is estimated to have decreased by 87.1 million hectares over the past 60 years (Estoque *et al.,* 2022). Furthermore, the forest sectors in developing countries Tanzania included, is said to be contributing less to the National GDP (FAO, 2020) despite having good rules and regulations that are in place. But with effective implementations of the rules, regulations as well as viable and continual support from the government, the forest sector could contribute much to the country's economy.

In the timber sub-sector, recent trends show that the value of timber product is rapidly increasing in the global market (Mhando *et al.*, 2022). In Tanzania, the product has not been fully utilized as a result

of low technology (Banikoi *et al.,* 2018). This has led to a mismatch between the amount of the trees harvested per annum and the income that the timber sub-sector is contributing to the national GDP (URT, 2021). On the other hand, there was not enough information on how formal institutions influence the timber value chain (Hulusjo, 2013) as a result they are seen as aliens in the development of timber value chain.

This paper provides evidence on how institutions can play important roles in the timber value chain in a micro level. The study focused on village forests in Liwale and Ruangwa districts, Lindi Tanzania. The districts provide a good setup for this study due to the fact that, they are among the timber producers from natural forests in Tanzania.

3.2 Conceptual and Theoretical Framework

The conceptual framework for this paper article was built upon the institutional and the legal and regulatory frameworks. The actors in the value chain are engaging themselves in the activities for the purpose of earning money. In the process, their behaviours and actions along the chain are dependent on the institutional environment. In this case the regulatory framework plays a vital role under the ground on which the actors operate. Regarding the institutions, human capital and investment in human are factors checked in this study.

In this study, there are some background variables which are actors' interest in their involvement in timber value chain, goals and appetency of actors in the value chain on their businesses. The background variables set ground for the existence of indictors mentioned on the factors that are considered on the independent variable, institutions. It should be noted that, there should be a balance in rules and regulations intervention so as to maximize profit along the chain.

3.2 Methodology

3.2.1 The Study Areas

The study was conducted in Liwale and Ruangwa districts, Tanzania (**Figure 3.1**). The districts are endowed with natural forests which are characterized by dry miombo tree species, dense forests and wet miombo with some highly valuable timber species of *Brachystegia sp., Julbernadia sp.,* and *pterocarpus angolensis.*

The districts are characterized by two rainy seasons per year, over 2 and 3 months respectively in November to January and March to May. Annual precipitation is in the range 600-1000 mm.

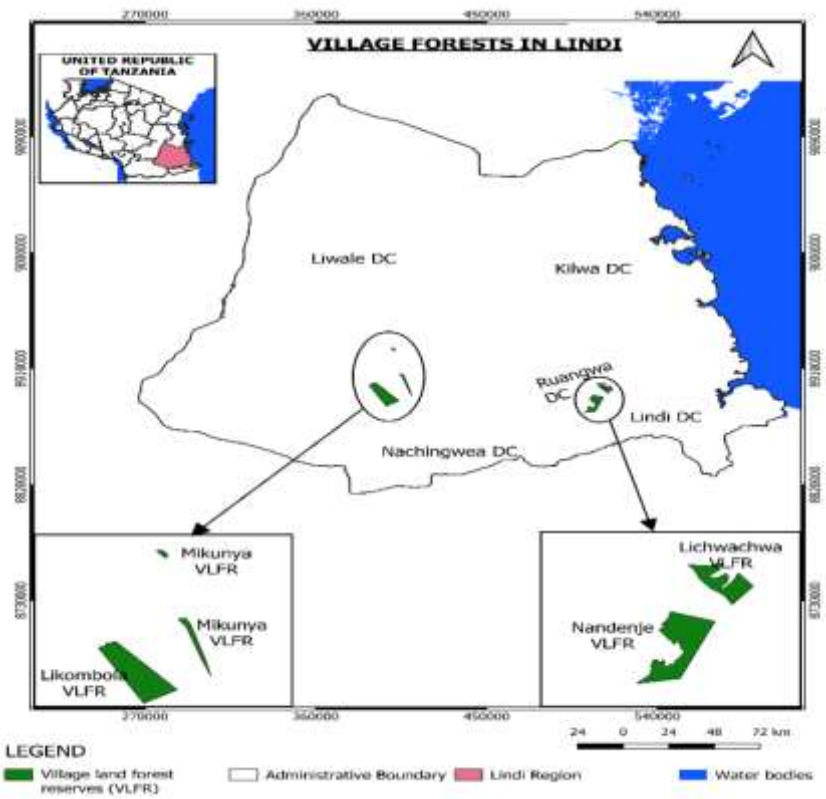

Figure 3.1: A map showing the study areas

3.2.3 Data collection

Data were collected from four villages in Liwale and Ruangwa districts, which were Mikunya and Likombola in Liwale district and Nandenje and Lichwachwa in Ruangwa district. Data were collected using interviews, secondary data and observations. Whereby, A checklist of questions of open-ended questions was used to guide collection of primary data from timber dealers, forest officers and villagers. Data collected were timber dealing experiences, socio-economic data, preferred tree species for timber and the rules and regulations that are guiding timber value chain. The sample of timber dealers was obtained from a list of names provided by the district forest officer in Liwale and Tanzania Forest Service agency in Ruangwa district. For the villagers, a sample frame of names was obtained from the village chairmen offices.

Prior the beginning of each interview, each person was given a thorough explanation of the study, including how their identity would be secured and how the data they provided would be used and verbal free and informed consent from each participant was required. Participants were also informed that they could opt out of the study at any moment and have their personal information erased. The participants were also aware that they are free to not answer a question that they were not comfortable answering during the interview process.

The majority of the participants for this study were men, as is usual in rural African communities (99%). A current weakness for this study is the lack of women narratives on the timber dealing activities involvement and hence the lack of women insights on the rules and regulations that guide timber value chain, which should be addressed in future research designs (Goldman *et al.,* 2021). The study also involved forest officers and Tanzania Forest Service TFS agents. Whereby, the data collected from them were on how they do the enforcement of the rules and regulations and how abiding are the timber dealers to the rules and regulations. The study also

involved village chairmen from the four villages and the village natural resource committees from the four districts. Data collected from the preceding groups were on the contribution of the timber business on the socio-economic aspect of the communities. Data collected from the villagers were how they benefit from the timber business industry and issues on management of the forest resources. Secondary data were collected from the 2004, 2019 and 2022 forest regulations and the National Forest Policy (1998). Data collected from the document were the fees for various requirements to make timber business successful.

All interviews were conducted and recorded in Swahili language by the researcher, then the researcher had to go through the recorded interviews and discussions and transcribe then then translate the replies into English language. The researcher was accompanied by one village resident who assisted in locating the villagers' residences. It should be noted that, each interview was conducted in a conservational fashion, which was more culturally relevant and helpful to put participants at ease.

3.2.5 Data analysis

This qualitative study aims to assess the formal institutions that guide activities along the timber value chain in Liwale and Ruangwa districts, Tanzania. Therefore, thematic analysis was done on the transcribed data. Institutional framework which is one among the important frameworks in analysing value chains, was used to come up with the themes for this study which are awareness, enforcement, compliance and costs of the rules and regulations that are guiding activities along the value chain.

Analysis started by transcribing all the recorded narratives, then the researcher had to review the transcriptions to ensure accuracy and remove any information that would not maintain the confidentiality. After that the researcher had to get familiar with the data by reading and re reading the data so as to gain a comprehensive

understanding of the content and what really happens in the Liwale and Ruangwa districts in relation to timber value chain.

After that, the researcher had to start creating initial codes by identifying and labelling initial concepts that emerge from the data in relation to the institutional framework. Then the researcher had to connect those concepts into broader themes. Then related codes were grouped together and patterns on the data were identified. The data were then condensed to focus on the meaningful findings.

On the first theme on the awareness on the rules and regulations, there were different factors that were noted to be in association with the level of awareness that the timber dealers had on the rules and regulations that guide them in their activities. Level of education was one of the themes that were identified. To analysis data for the particular section R-studio was applied to plot an association between the level of awareness on the rules and regulation and the level of education that timber dealers had. A gg-plot was employed in to come up with the association.

3.3 Results

The data collected for this study, came up with four themes which were noted to resonate throughout the data collection process in order to answer the research questions. The themes that emerged inductively from the interviews and focus group discussions include, rules and regulations awareness, enforcement, compliance, and costs.

3.3.1 Rules and regulations awareness

Under this theme, data were collected using interviews. Regarding this theme a binary scale of YES OR NO was made and the interviews revealed that, all the timber dealers were aware that there are rules and regulations that are guiding them in their activities. But their awareness seemed to differ and the difference lay on how they

were explaining the rules and regulations that are guiding them on their activities. Education, time of exposure in the timber business and appetency that individual timber dealers had concerning their business were factors that were noted to cause the variations in their awareness.

Regarding the education factor it was noted that, those with high education were more aware of the rules and regulations than those with low education. Most of the timber dealers who had tertiary level of education, gave explanations of the rules and regulations that are guiding them on the licences acquisition, production, transportation and trading nodes as provided under the Forest Act, No. 14 of 2002, unlike those with primary and secondary education (Figure 3.2).

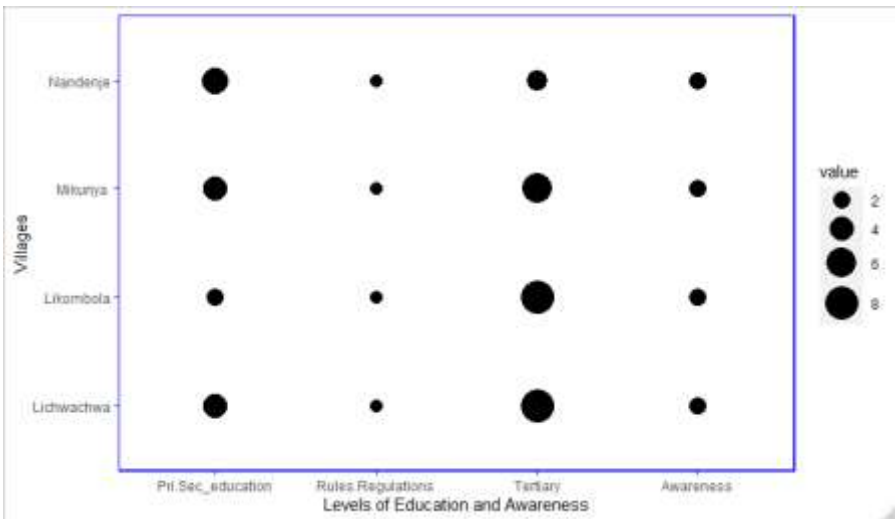

Figure 3.2: Frequency and levels of education and awareness of rules and regulations among Timber dealers

Rules and regulations awareness also varied with time of exposure that the timber dealer has been involved in the timber business, where those involved for the longest time starting from two years and more seemed to be more aware of the rules and regulations than

those new in the business. It should also be noted that, some of the new comers in the timber business seemed to have a lot of information concerning the rules and regulations based on the researches they conducted prior starting involving themselves in the timber business. Which didn't reflect the real situations that are faced timber business industry.

Lastly, the appetency that individual timber dealers had concerning their business was another factor that seemed to cause the difference on the awareness of the rules and regulations that are guiding timber dealers in their activities. Timber dealers who had high appetency concerning their businesses seemed to be more aware of the rules and regulations that are guiding their activities than those with low appetency.

> *"I expect to be involved in a timber exportation in two years to come, so to me understanding the rules and regulations is very important for the prosperity of my business and achieving my goals in the business"*

One of the timber dealers with high appetency in the timber business in Liwale district.

3.3.2 Rules and regulations enforcement

Regarding the enforcement of rules and regulations along the timber value chain, the interviews which were conducted among the four forest officers, Tanzania Forest Service agents and representatives from the village governments revealed that there are different initiatives that are taken to enforce the rules and regulations that are guiding actors of the value chain in the two districts. In both districts, it was found that they have a five years forest management plan which direct them towards sustainable utilization of the forest including timber harvesting.

This was common in all the four villages that I visited and a common thing that was quoted from the village natural resource committee was

> *"A five years management plan is prepared, considering the contexts and promotes sustainable use of the forest resources."*

It should be noted that, in order to facilitate easy rules and regulations enforcement these village natural resource committees had to be made to reduce a burden on the forest officers which had been there for years. The forest officers in Liwale and Ruangwa were quoted saying

> *"As a result of the decentralization, managing the forest resources has become easy compared to the past years where we were acting like polices, doing patrols around the forest areas. It was very hard for us considering the quantity of human resources that we had. Currently, it is the village government with its natural resource management committee who are responsible for the overall management of the forests."*

The natural resource committee in these villages are imparted with knowledge concerning sustainable use of forest resources and how they can be used to improve social service facilities in the villages. In Liwale, three forest officers were interviewed on how they equip the village natural resource committee in their jurisdiction and this is what they said

> *"Members in the committee are provided with the necessary knowledge concerning the forest resources and how they can sustainably use the forest resources especially the timber-based products to improve social services in the villages."*

While, the district forest officer in Ruangwa who was interviewed on the same issue said

> *"In each village, we have imparted knowledge into a group of people who are members of the village natural resource committee concerning the management of the forest resources and how sustainably these resources can be used to improve livelihood of the people in the villages"*

For the Tanzania Forest Service agents who were interviewed had this to say on the issue:

> *"We are responsible for providing business licenses to the timber dealers. And also, we have these checkpoints in which timber dealers have to pass through to be checked whether the amount of timber that they are transporting, matches with the amount of timber that is written on the transit pass and if it is found that the transported logs or timber exceeds the amount written then the exceeding amount is held behind, so it's only the amount written on the transit pass that gets to pass."*

In spite of the diligent efforts to enforce rules and regulations throughout the timber value chain, timber dealers voiced their concerns regarding certain stringiest regulations that they find burdensome and the impact of their enforcement on their businesses. One of the areas where the timber dealers seemed to encounter stringiest enforcement of the rules and regulations pertains to the TFS agents and forest officers stationed at the checkpoints. They are reputed for unwaveringly adhering to the rules and regulations, particularly when transporting logs to other regions. In case where the load exceeds the specified amount mentioned on the transit pass, penalties are imposed without hesitation.

3.3.3 Rules and regulation compliance

This is another theme that was created from the key informant interviews and focus group discussions that were conducted among timber dealers. There are a lot of rules and regulations that are governing timber value chain and expected to affect the behaviours of the actors along the value chain timber dealers specifically. Not only that but also, the key informant interviews that were conducted among the district forest officers and the village government officials were also used to confirm to what extent the timber dealers operating in their jurisdiction act according to the rules and regulations.

In complying with the rules and regulations, the timber dealers from both districts were said to be trying to abide with the rules and regulations that are guiding them in their activities. The timber dealers involved in this study were registered and during the time of data collection in Liwale district for instance, the timber dealers were seeking permits for removing logs from the village forests to industries where logs are processed into timbers. Also, some of the timber dealers were seeking transit passes for transporting their timbers to Pwani a place called Ikwiriri (Rufiji) and Dar es Salaam where they said they have customers and some said they own saw mills for furniture making.

The District Forest Officer (DFO) of Liwale acknowledged an improvement in compliance with rules and regulations compared to previous years. However, he also highlighted the challenges faces. There are instances where some timber dealers transport non degraded timbers which is considered an offense under the timber regulations guidelines, leading to penalties. In contrast, in Ruangwa district, the DFO confirmed that timber dealers are making sincere efforts to adhere to the rules and regulations but there’s cases where still some timbers are caught transported to other regions, these timbers are usually exceeding the amount written on the transit pass.

On the processing node however, it was noted that the compliance level on both sides is sometimes low as a result of the use of chainsaws in producing sawn timber which is not allowed since it results to production of low-quality timber.

3.3.4 Rules and regulations costs

These are the costs that are incurred by timber dealers at the identified nodes in the areas of study which are: harvesting, processing, distribution and consumption. The costs are brought about by either adhering to the rules and regulations or failure in adhering to the rules and regulations. The costs that are related to adherence of the rules and regulations include the registration of the business, attainment of the business license, permits and transits passes, these costs have increase as portrayed in (**Table 3.1**) below. On the other hand, penalties and fines are costs connected to lack of compliance to the rules and regulations.

Table 3.1: Fees Charged for Various Requirements per Forest Regulations Regarding Timber

	2004 (TSHS)	2019 (TSHS)	2022 (TSHS)
Permit for felling trees per m^3	70,000 for class I	70,000 for class I	350,000 for class IA 290,000 for class IB
Registration fee for harvesting	100,000	100,000	200,000
Registration license for large wood industries/ sawmill	200,000	200,000	800,000
Registration license of small wood industries/ furniture making/ wood works	30,000	30,000	400,000
Grading fee for commercial consignments such as timber	2,500 per tonne	2,500 per tonne	100,000 per less or equal to 20 m^3
Transit pass for a 7-ton vehicle or less Above 7-ton vehicle		Same as provided in the 2004 forest regulations document	15,000 20,000

Source: 2004, 2019 and 2022 Timber regulations

Following the key informant interviews that were conducted among timber dealers, some complained about the regulation which instruct them to pay for a 100% of the tree of which its only 70% of the tree that they obtain, the 30% of the tree, is composed of withies. So, to them it's a loss and they occasionally have to incur other costs on their way to other regions. This regulation seemed to be an open for corruption. The village government officials were also interviewed on the matter and they had a say which is summarized and presented in **Table 3.2**. Tanzania Forest Service agents were also interviewed on the issue for some of the complaints pointed to them directly in the timber value chain and they too had something to say:

> *"As Tanzania Forest Service (TFS) we have formulas that help us to calculate the volume of the timbers that are passed through our checkpoints. So, if it happens that the volume of timber exceeds the written amount then the timber dealer will have to leave the exceeding amount of the timbers at the checkpoint".*

Table 3.2: Complains on the costs that they incur following the regulation on the 100% payment of the tree

Sn	**Village**	**Description On the Complain**
1	Mikunya (1 person)	"*Yes, it is true that this issue is contradicting, for the timber dealer always pay for 100% of the tree but to them, the branches and roots are of no value. So, the recovery percent is always 70%, and we get complaints from the timber dealers that we sometimes have to give them the 30% from another stand tree. In some years back, when we didn't know well about the issue of value addition, the withies were left to decay in forest areas, but now we can use them for furniture making in our timber value addition community industry to make chairs for offices and our health facility."*
2	Likombola (1 person)	*"We offer our clients, the amount of timber that is written on their harvesting permits, but also, they always do not take the branches and roots of the tree that they are buying from us since it's a burden to them so, they only take 70% of the tree."*
3	Lichwachwa (1 person)	*"We are selling our clients' the amount that their permits require them to take and most of the time they leave the withies behind that we use them for other activities like making chairs for offices like these ones we are seating on."*
4	Nandenje (1 person)	*"The trees are sold in cubic meters as it is written on the client's harvesting permit and we give them the same amount that their permit show."*

3.4 Discussion

Difference in the awareness of the rules and regulations among timber dealers was noted to be attributed by factors such as in education level that individual timber dealers had. Those with tertiary education level seemed to be more aware of the rules and regulations compared to those who had secondary and primary education levels. The length of exposure to the timber business and goals that individual timber dealers had toward their businesses were also other factors that were studied. The study by Jasinta Msamula *et al.* (2017) supports these findings by highlighting that awareness of rules and regulations can be influenced by factors such as the education level of actors in the value chain. It should however be noted that, being aware of the rules and regulations doesn't mean that actors' compliance would be higher. This could also imply that, the timber dealers determined to know the rules and regulations so

that they can find alternative ways to carry out their activities in a manner that favours them.

Efforts to enforce the rules and regulations in both districts involve capacity building activities conducted by forest officers in collaboration with Non-Governmental Organizations like MJUMITA and TFCG and partner development programs. However, despite these enforcement efforts, challenges persist due to the emphasis kept on following the regulations for instance, the issue that most of the timber dealers complained on strictness that the forest officers and TFS agents on checkpoints are when they transit the logs. As a result, some costs are increased along the value chain and the timber dealers obtain a meagre profit. A study conducted by Respikius Martin (2021) along the timber value chain in the Southern highland region of Tanzania, also found the same results.

Compliance among timber dealers in the value chain was found to be balanced, due to the fact that, following every rule and regulation set to guide them jeopardize their ability to get profit and also not following some rules would make them penalized and sometimes make a room for corruption loopholes. Timber dealers also recognized the costs incurred due to bureaucratic systems associated with following the rules and regulations. This finding aligns with the results of Martin's (2021) study, which revealed that timber dealers face challenges in their activities at different nodes along the value chain and may feel compelled to engage in corruption due to the bureaucratic hurdles they encounter.

3.5 Conclusion and Recommendations

Understanding the formal institutions that guide timber value chain is one among the essential efforts in ensuring sustainable utilization of the timber forest product. However, educational and awareness programs should be considered to be conducted more in Ruangwa district so as to increase the efficiency of the Village Natural Resources Committee in doing their activities. Not only that but also,

the government should make sure that there is conducive environment for the rules and regulations on timber value chain to operate. This will help in closing the loopholes of corruption. Hence, help the timber dealers get the profit they deserve. Formal institutions which are established rules and regulations have a great influence in the activities that are taking place along the timber value chain. Importantly, the government should ensure that intervention of these rules and regulations are done in such a way that it does not negatively affect the activities taking place along the timber value chain.

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CHAPTER FOUR

4.0 General Discussion

The results of this dissertation are organized into two chapters, chapter two and chapter three. In chapter two, the roles of formal institutions are assessed on their contribution to the timber value chain in Liwale and Ruangwa districts. While in chapter 3 power relations among timber value chain actors in Liwale and Ruangwa districts are analysed. The following is the presentation of the discussion based on chapters.

4.1 Analysis of Power Relations along the Timber Value Chain in Liwale and Ruangwa Districts

Chapter three of this dissertation is covered by a manuscript on the analysis of power relations along the timber value chain in Liwale and Ruangwa districts. Power been considered as a complex concept in social science, the chapter identifies first different actors that are found in the timber value chain in Liwale and Ruangwa districts. Additionally, the roles that each group of actors in the value chain were checked so as, to find out the influence they have in influencing other value chain actors to perform their respective activities at their particular nodes. Timber dealers, transporters, timber processor, villagers, government officials from the district and village councils, NGOs and forest officers are the groups of actors that were identified in the timber value chain in Liwale and Ruangwa districts. All groups of actors perform activities depending on their position in the value chain and they exhibit different types of power to meet their set goals and interests. Additionally, power struggle among the timber dealers, and the TFS, whereby the timber dealers were complaining on the issue of paying for 100% while in really sense they take 70% of the tree. A study conducted by Magessa *et al.* (2013), which was done in SULEDO VLF. The findings of the study also revealed power struggle which occurred between the ZEC and villagers. Whereby, the villagers complained that they were the distribution of the income from the forest resources was done

unfairly (Magessa, 2013). Another power struggle was between the local government forest officers and the TFS on the issue of who is to get the revenues collected from the penalties and fines set when a timber dealer is caught on the wrong side. This created tension between the two sides, but the regulation on the revenues provides that, the collected fines and penalties should be directed to the central government. The theory of Actor's interface by Long (`1984) suggests that, negations should be made between actors of the value chain to create a fair ground.

The results of this study also revealed that, there are different types of power relations that exist in the study areas, these are institutional, strategic and supportive power relations. These types of power relations are existing as the outcome of the roles played by actors in the value chain in the Liwale and Ruangwa districts. This results confirms that of (Mbeyale *et al.,* 2021) who found that there was a manifestation of supportive power in the timber value chain. In this case however the supportive power relation is manifested from the NGOs and program's technical and financial support and capacity building.

Furthermore, this study finds that there are levels of value chain addition on timber which are existing in the study areas which are the result of power relation among actors along the timber value chain in Liwale and Ruangwa districts. The levels are community level of value addition, district level of value addition and national level of value addition. This have been observed and they are resulted from the power that customers have on the influencing the timber dealers. Also, the supportive power that NGOs and the partner developmental program have along the value chain.

4.2 Assessment of formal Institutions on the Development of Timber Value Chain in Liwale and Ruangwa Districts

Chapter two is covered by a manuscript on the role that institutions have on the development of timber value chain in Liwale and

Ruangwa districts. The chapter concentrated on state laws and the by-laws that are guiding timber value chain in the two districts. Through the assessment of the awareness on the rules and regulations and the costs that comes with disobeying the rules and regulations, ways in which these rules and regulations are enforced and lastly, the level of compliance of the rules and regulations that guide activities taking place in the timber value chain. The study shows that, most of the timber dealers are aware of the rules and regulations that guide them in their activities. Additionally, they know the costs of not following the rules and regulations. The study also finds that, there are rules and regulations that suppress the timber dealer for instance, the regulation that require them to pay for the whole standing tree but only 70% is taken away. This reflects the definition that (North, 1990) gave on institutions as the rules of the game. Therefore, in order for one to play well the game (in this case timber business) then, there's no way that the state regulations and rules are going to be neglected. Lastly, the study finds that due to a small number of forest officers in the two districts the issue of rules enforcement is hard, despite the presence of the VNRC which could have incompetent personnel. This confirms the study of Martin (2021) who find the same results along the timber value chain in the southern highland of Tanzania.

CHAPTER FIVE

5.0 General Conclusion and Recommendation

This chapter presents a conclusion and provides recommendations based on the findings of this study. The main objective for this study was to assess how formal institutions and power relations affect the roles and relationships of actors along the timber value chain in Liwale and Ruangwa districts. Specifically, the study intended to, (i) Identify actors along the timber value chain in Liwale and Ruangwa districts, (ii) Assess the influence of formal institutions in the development of timber value chain in Liwale and Ruangwa districts and (iii) Analyse power relations that underlie timber value chain in Liwale and Ruangwa districts.

5.1 Conclusion

Based on the findings of this study, it is concluded that formal institutions have a great influence on the development of timber value chain in Liwale and Ruangwa districts. In addition to that, each group of identified actors in the study areas have power to influence the activities taking place in the timber value chain. Therefore, power relations of the actors along the timber value chain should be well balanced so as to accommodate the power struggles that are existing the timber value chain.

5.2 Recommendations

Therefore, based on the conclusion and the findings of this study; the following are the recommendations

i. In forming the rules and regulations, all groups of actors along the timber value chain should be involved so as, to avoid complains on the established rules and regulations that are present.

ii. Outdated regulations that do not reflect the actual contexts of the environment in which they are applied should be updated. For instance, the Tanzania Forest Service agent who

answered on the issue of formulars that are used to calculate the volume of timber in check points claimed that, they were formed during the colonial era.

iii. A platform should be created to ensure that knowledge on value chain addition on timber reaches many people along the country, this will help in solving the problem worldwide problem on unemployment in our country.

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