

# SOKOINE UNIVERSITY OF AGRICULTURE

TRANSFORMING AGRICULTURE AND NATURAL RESOURCES  
FOR SUSTAINABLE DEVELOPMENT TO ATTAIN INDUSTRIAL  
ECONOMY IN TANZANIA



DIRECTORATE OF POSTGRADUATE STUDIES,  
RESEARCH, TECHNOLOGY  
TRANSFER AND CONSULTANCY

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## Governance structures in domestic value chain of non-industrial timber in Njombe district, Tanzania.

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### Abstract

*Although governance structure of the value chain influences the incomes of chain actors, it has received limited attention in domestic value chains literature. To bridge the gap, this paper is set to analyse the governance structure of non-industrial timber in Njombe district in Tanzania. Non-industrial private forestry (NIPF) is the main livelihood activity among smallholders in Njombe district and a heart of district's revenue. The research adopted an exploratory cross-sectional study design where purposive and snowball sampling was used to obtain respondents. Data were collected through observation, semi-structured in-depth interviews with key informants and the respondents. Analysis was done using deductive thematic analysis. Study findings show that value chain actors of non-industrial timber use both vertical and horizontal governance structures. While smallholders earn more income when a combination of structures is used, modular governance gives more returns when one structure is used. Market uncertainty, incentive to spread risk, institutional environment, trust and financial capability of both the buyers and suppliers determine the governance patterns. In addition, findings show that even though a centralized or global governance structure is absent, informal quality standards are emerging and have far-reaching implication to the incomes of chain actors. The paper concludes that both vertical and horizontal governance structures play an important role of linking value chain actors to markets. Therefore, efforts to improve smallholders' income should be geared toward improving both vertical and horizontal structures because they play a complementary role.*

**Key words:** Non-industrial timber, value chains, Governance, Tanzania

### Introduction

In Tanzania grown timber can be categorized as non-industrial and industrial timber plantations. While the non-industrial timber is characterized by individual ownership, the industrial timber is own by the government and corporations (Harrison *et al.*, 2002; Zhang *et al.*, 2005; PFP, 2015; Pedersen 2017). The two types of timber can also be distinguished based on the types of market where the product is sold. While about 15% of sawn timber is exported outside the country, more than 75% of this comes from the industrial plantations implying that most of timber from NIPF is sold to the domestic markets (Indufor, 2011; (Mwamakimbullah, 2016; TPS, 2017). This scenario brings us to the concept of domestic value chain where in this paper it refers to the value chains of the product which is produced and consumed within the country borders. On the other hand, value chain governance refers to the authority and power relationships that determine how financial, material and human resources are allocated and flow within a chain (Gereffi, 1994). It can also be used to describe the coordination system within the value chain (Zamora, 2016). Analysis of governance of the value chain can be done by

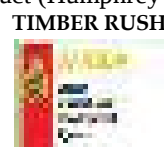


examining three main aspects: institutions (encompassing the formal and informal), private standards and the market governance structures (Gereffi *et al.*, 2005; Ponte and Gibbon, 2005; Akyoo *et al.*, 2017; Mishra, 2018). All aspects of value chain governance play a double-edged sword role; they may facilitate or impede equitable distribution of benefits among the actors of the value chain (Altenburg, 2006; Nielson and Pritchard, 2009; Henson and Humphrey, 2010; Trebbin, 2014).

NIPF is the main livelihood activity to the smallholders in Njombe district of Tanzania and is a heart of revenue where it contributes to more than 70% of its total revenue (*Personal communication DED, 11<sup>th</sup> January 2019*). The contribution of NIPF to household income is also significant in other districts in the Southern highlands. For example, in Mufindi, Nkwera (2010) observed that NIPF contributed 61% of the households' income and 73% percent of households' physical assets. Despite enormous contribution to the economy, the potential of NIPF is not yet fully exploited (Singunda, 2010). Literature on value chain undoubtedly points out that smallholder farmers are better positioned to benefit from what they produce if are well integrated into value chains (Weinberger and Lumpkin, 2007). Integration into domestic value chain is a precursor for integration into global value chain (Beverelli *et al.*, 2017). Although governance of domestic value chains is regarded as a stepping stone to global value chain integration (Watabaji *et al.*, 2016; Beverelli *et al.*, 2017), most value chain studies have investigated the governance of global value chains mainly by examining the relationships among actors (Passuello *et al.*, 2015; Severine, 2016; David *et al.*, 2018). The focus of this literature has been export-oriented, standardized and self-regulated global value chains (Mishra and Dey, 2018).

In Tanzania, as in other countries such as India (Mishra and Dey, 2018), few studies have studied the governance structure of domestic value chain albeit for agro-foods such as milk, spice, fruits and vegetables (see for example Nguni, 2014; Akyoo, 2017; Kilelu *et al.*, 2017 and Gramzowa *et al.*, 2018). While these studies fill the gap of domestic value chain studies, they are mainly focusing on high value crops. This trend has also been observed elsewhere in the world (see for example Trebbin and Franz, 2010). With a few notable exceptions (such as Singunda, 2010 and Kapinga, 2010), research in Tanzania has neglected the governance structures of NIPF and their implications to the incomes chain actors. To fill the gap, this paper investigates the market governance structures of non-industrial timber value chain in the Southern highlands of Tanzania particularly in Njombe district to contribute to literature. The paper seeks to answer three main questions i) what is the governance structure of non-industrial timber value chain in Njombe district? ii) what determine this structure? and iii) what is the implication of this structure to the incomes of chain actors? This analysis is important because governance structures of domestic value chains like their counterparts in global chains affect the distribution of gains in the chain and influence how production capabilities<sup>5</sup> are upgraded. Analysis the domestic governance structures can provide an

<sup>5</sup> The term production capability is used to describe the skills required by the producers to reduce the cost of production, improving quality and flow of the product (Humphrey and Schmitz, 2001).



understanding of how and why inclusion<sup>6</sup> takes place and the outcomes.

### Conceptualizing governance structures in value chains

Two types of value chain coordination can be identified in the literature; vertical and the horizontal coordination. Vertical coordination can be defined as the process of aligning and controlling price and other incentives, quantity, quality, and the terms of exchange across segments of a production or marketing system (Peterson *et al.*, 2001). Also, Hendrikse and Bijman (2002) define it as the alignment of activities and decisions by two or more independent players that have a seller-buyer relationship in a supply chain. The second type of coordination refers to horizontal coordination (HC) that describes the process of alignment and control among actors within a single segment of the value chain, such as between farmers. The common thread that binds the two types is that they involve interactions between the seller and the buyer i.e. seller-buyer relationships. The system that governs the interactions between parties within any value chain is referred to as governance structure (Ibrahim and Ghanem, 2016). In other words, governance structures are modes that govern transactions between players in a value chain (Williamson, 1993).

Gereffi *et al.* (2005) developed a typology of five governance structures which are markets, modular, relational, captive, and hierarchy governance. The *market* structure is characterized by arms-length transactions and requires little or no formal cooperation between participants and the cost of switching to new partners is low for both producers and buyers. The central governance mechanism is the price of the product. In the modular, buyer-seller relationships are more substantial than in simple markets. Under *relational* governance, interactions between buyers and sellers are characterized by the transfer of information and embedded services based on mutual reliance regulated through reputation, social and spatial proximity, family and ethnic ties. The cost of switching to new partner is high due to long time required to forge relational linkage or partnership. *Captive* governance occurs when small suppliers are dependent much on larger buyers. Suppliers face significant switching costs and are therefore, 'captive'. The relationship between the suppliers and the buyer is characterized by power asymmetry. The *Hierarchy* is the type of governance characterized by vertical integration and managerial control. Generally, the degree of explicit coordination and power<sup>7</sup> asymmetry increases as one move from spot to hierarchy type. Three variables are said to influence the dynamics of governance structures (Gereffi *et al.*, 2005). They are complexity of transactions, ability to codify information which implies the extent to which tacit information and knowledge can be converted into explicit and concrete to be understood by the producers and capabilities of suppliers that refers to suppliers' ability to utilize complex information or instructions to meet product requirements. Gereffi *et al.*'s typology has been extended by other scholars. Altenburg (2006) observed other

<sup>6</sup>Inclusion in this paper is referring to four pillars model for sustainable inclusion of smallholders in the value chain. The elements of this model are access to market, access to training, collaboration and coordination and access to finance (Fernandez-Stark *et al.*, 2012; Gerrefi and Fernandez-Stark, 2016)

<sup>7</sup>Power is defined as is the ability of a firm or organization to drive the direction of the value chain, and thus influence and control other firms in the chain (Frederick and Gereffi, 2009)



factors which also influence governance structures. They comprise the extent of market uncertainty, incentives to spread risk, consumer demands and institutional environments; they include. Other studies (Gibbon and Ponte, 2005; Tallontire *et al.*, 2009 and Bolwig *et al.*, 2010) have raised a concern that Geffi *et al.* (2005) typology dwells on vertical governance structures and pays little to the horizontal structures.

Studies have also identified the link between enterprise upgrading<sup>8</sup> and governance structures. Humphrey and Schmitz (2000) point out that certain types of chain governance favour some forms of upgrading but not others. For instance, they show that quasi-hierarchical governance supports product and process upgrading but not the design and marketing activities of the chain (Humphrey and Schmitz, 2000). In the same vein, Gereffi *et al.*, (2005) maintain that captive governance confines suppliers to a narrow range of tasks such as simple assembly and never allows them to move to the design, logistics and process technology upgrading. Although these observations relate to global value chains, they are also relevant in domestic chains. The current paper applies Gereffi *et al.* (2005) typology to the NIPF value chain to investigate the governance structure; however, it does so cautiously by considering its extension and horizontal structures, its major critiques.

## Methodology

### The context of the study area

The study was conducted in Njombe region in the Southern Highlands of Tanzania. The region was purposively selected based on the presence of many actors involved in NIPF. To narrow down, the study was conducted in Njombe district in Matembwe village. This village is among those with well-established timber market therefore represents a good case for understanding governance structures of non-industrial timber. Apart from the villagers, people from within and outside Njombe region have been attracted in this village and are involved in a number of activities including tree growing, processing, marketing and consumption. Other actors found in the area are transporters and financial institutions for credit support (both formal and informal money lenders). Although several timber products are produced from NIPF, two thirds of the plantation supply go to sawn timber (PFP, 2016). Therefore, the value chain of sawn timber among other products was studied.

### Research design and data collection

This paper adopted an exploratory cross-sectional research design. The main methods used were key informant and in-depth interviews with tree growers and timber traders. These methods were also complemented by observation where several rounds of visits to the timber market were conducted. Purposive interactions with actors were also made through participation in social events such as playing cards and draft in the evening. The number of participants in the group was ranging between 7 and 12 people

<sup>8</sup>Humphrey and Schmitz (2002) identified four types of upgrading including process, product, functional and chain upgrading.



all men<sup>9</sup>.

A list of timber traders owning timber yard at the village market (the Matembwe market) was obtained from the manager of the market. A total of 11 timber traders were selected from the list and interviewed. Other traders who could not be found in the list were identified by a snowball method and they constituted 12 of them. The list of tree growers with membership in the growers' association was obtained from the secretary of the association whereby 13 growers were purposively selected from the list. A snowball method was used to get tree growers without membership in the association and in this case a total of 12 growers were interviewed from this category. Additionally, seven (7) key informant interviews were conducted. The key informants interviewed are the three leaders of Matembwe tree growers' association (the chairperson, secretary and accountant), the manager of Matembwe timber market, the director of Matembwe village company (MVC), ward and district forest officers and the village executive officer. During discussion with key informants it became evident that the mechanisms of selling and buying of timber partly depend on the size of capital of tree growers and timber traders. Therefore, both the tree growers and timber traders were purposively selected to include all categories (small, medium and large). For the tree growers, the size (in acres) of trees owned was taken to be the proxy indicators of wealth<sup>10</sup> whereas for the traders the size of the capital was established based on the number of sawn timber sold per month. Generally, interviews with timber traders and tree growers covered their socio-demographic information, main livelihood activity, experience in tree growing/timber trading, nature of interactions in timber business, factors influencing the nature of interaction, how the interactions affect the income of each actor, challenges and opportunities. For key informants, an edited version of the checklist was used.

### Data processing and analysis

All data obtained were transcribed; after which a thematic analysis was done by following the steps as described by Braun and Clarke (2006). After familiarization with the data through reading, a non-systematic labelling of data was adopted (i.e. in some instances sentences were labelled where as in other occasions sections or paragraphs were labelled). This process generated 66 labels or codes. The coding process was done at a semantic level that is the codes communicate explicit meaning of the sentences, paragraphs or sections. Similar codes were grouped together to generate themes and sub themes. Generation of themes used a deductive or top down approach (Hayes, 1997; Braun and Clarke, 2006; Maguire and Delahunt, 2017) where the identification of themes was driven by the researcher's theoretical interest (a theory-led thematic analysis). However, this was carefully done to allow new insights that may not be explained by the guiding theoretical framework. Theme mapping resulting into

<sup>9</sup>Playing cards and draft are men's activities in Matembwe village.

<sup>10</sup> Wealth ranking study in similar village indicated that tree ownership is the reflection of wealth (unpublished Timber rush project data collected in January 2019).



thematic matrix allowed analysis of relationships between and among themes.

## Results and Discussion

### Profile of actors

Study findings indicate that all (23) traders interviewed were men with minimum and maximum age of 28 and 46 years respectively. Out of the 23 traders 16 (69.6%) operated at least one timber yard either at Matembwe market or in other regions outside Njombe. Of the 16 traders who operated timber yards, only four (25%) had timber yard outside the Matembwe market. Financial capital was stated to be the limiting factor to operate a yard outside the village because it involves transportation which is costly. Findings also revealed that traders had varied experience in timber trading ranging from three to 16 years. Some traders were employees of companies or worked for individuals in the same industry where they accumulated experience and capital that enabled them to start their own business. Most of traders were motivated to engage in timber business by a host of factors including success of their colleague who were successful in the timber business, the desire to add value to their trees for those who are also engaged in tree growing and the desire to capitalize to their experience after working for others for many years. In the context of Matembwe village, success is related to building good house, being able to pay fees in private schools, owing a car and expanding wood lots. In terms of education, 19 (82.6%) traders had attended primary education and only four had education beyond primary education. Results further revealed that 13(56.5%) timber traders were native of Matembwe village and the rest (43.5%) came from outside Njombe region. Although traders are engaged in other livelihood activities, 16 of 23(69.6%) traders reported that timber business is their main livelihood activity contributing at least 80% of their income. For the rest (30.4 %) traders, reported that timber contributed above 60% but less than 80% of their income.

Regarding tree growers, findings revealed that of the 25 growers interviewed 18 (72%) were men and seven (28%) were women and their ages ranged between 47 to 81 years. In terms of their level of education, 8 had attended beyond primary education. Findings also showed that growers had vast experience in tree planting up to 42 years and the lowest experience was 4 years. It was however noted that despite many years of experience in tree growing, tree planting was not the main livelihood activity. It is only towards the end of 1990s when the demand for grown timber appreciated and those who had planted trees reaped a huge profit out of their woodlots. This motivated many smallholders and urban dwellers to start growing trees which is now regarded the main livelihood activity among smallholders in Njombe district and Matembwe village. When asked to report on how much they think on average trees contributes to their income, they reported slightly lower contribution as compared to the traders as the minimum percentage reported was 55 and the maximum was 70%. These findings are in line with what Nkwera (2010) observed in Mufindi district where it was found that NIPF contributed 61% of the households' income and 73% percent of households' physical assets. The difference in contribution of NIPF to household income between growers and traders can be attributed to the fact that timber business was an everyday full-time activity for the most of traders whereas tree growing is a part time activity and



growers may earn income from trees once in a year or after several years. Furthermore, the difference can also be attributed to the fact that most of tree growers sell their trees on stumpage (i.e. without value addition) where as traders add value through different ways such as processing logs to obtain saw timber, seasoning and transporting to urban markets where on overage they get relatively higher profit margin as compared to selling at the village market.

### The governance structures

Findings of the study indicate that relationships between actors of NIPF value chain are based on both vertical and horizontal structures. Regarding the vertical structures, spot market is a predominant mode of relationship. Most of tree growers who do not belong to the growers' association accessed market through this structure. Spot market is practiced within and across the nodes. Across the node, the traders or middle men (also referred to as buyers in this paper) approach tree growers to inquire about the availability of woodlots which are ready for harvesting. Likewise, in some cases a tree grower may approach one a couple of buyers to buy his/her woodlot. In both cases the two parties would go to the field to evaluate the woodlot. The grower may decide to select some few trees (selective harvesting) or to sell the whole woodlot. If the two parties agree on the price, the harvesting takes place. In the context of Matembwe, a woodlot is regarded as mature if it has at least eight years from the time it was planted. Growers are paid instantly before the trader can be allowed to harvest the woodlot. After harvesting and getting sawn timber, traders have many options. Timber can be transported to Matembwe market if the trader owns a yard at the market or can be transported to distant market (outside the region) after being seasoned at home or in the field. For traders who own timber yards at the market, seasoning is done at the market when timber is waiting for customers or when waiting to be transported. Therefore, apart from being a market place, Matembwe market serves as a place where timber is seasoned while the trader is waiting for the customers. Within the node, spot market is practiced between timber traders; the whole sellers and retailers. Some retailers from within and out of Njombe region obtain timber from the market. Selling and buying is not agreed before but rather a retailer goes around the market looking for the required timber and negotiating prices. This type of governance seems to dominate the value chain of non-industrial timber because of its flexibility (Gereffi *et al.*, 2005) on both parties that sellers can sell to anybody; likewise, buyers can buy from anybody.

Like the global value chain, the changing demands of consumers of sawn timber which itself may be associated with increased knowledge of quality timber have led to the emergence of modular governance where wholesalers are being asked by the retailers in urban centres to supply sawn timber that meet specific qualities. Retailers place orders by specifying the types, sizes and quantity of timber required and the suppliers deliver the cargo according to the retailers' specifications. Suppliers who do not deliver according to the specifications are retrenched from supplying timber. Indeed, this type of governance arises where suppliers are highly competent, and it is possible to codify transactions (Altenburg, 2006). There are few retailers as compared to the wholesalers; this structure gives the retailers more power that helps them to dictate the terms of



trade for instance the mode of payment and the quality standards. In this regard, a piece of sawn timber is regarded to be of good quality if it has no scars, non-bending and with proper dimensions (length and width). These are regarded by most value chain actors as aspects of quality timber and any piece which fall short of these is called reject. At a retail yard, rejects occur when customers send knowledgeable people to buy timber on their behalf. In most cases the knowledgeable people are carpenters or masons.

After the decision of rejecting some timber has been passed, it is upon the supplier to sell it to the same retailer at a discounted price or look for another buyer; but in most cases the suppliers resort to the former option. Recalling on his last experience of supplying timber to retailers in Dar es Salaam, the wholesaler had the following to say

*.....You know we suppliers have no unity, we compete among ourselves to maintain relationships with the retailers and sometimes when our timber are termed as reject without reasons we are ready to incur losses. I decided to quit from supplying timber to retailers because almost a half of the cargo was called reject. I have now decided to own a yard here at the Matembwe market where some retailers come to collect timber, and you know what, those who come here they pay cash.*

Although it can be argued that wholesalers have options of opening retailing yards to circumvent the emerging standard requirements, this is not an easy option for most of wholesalers as it requires a lot of capital. Although most of retailers in urban centres buy timber on credit, one must have been able to build trust with the suppliers to be supplied timber on credit. As trust requires time to be built (Lane, 2000; Vieira and Traill, 2008), a starting retailer should be capable of paying cash for some time (ranging from months to several years) before can be trusted. Apart from the cost of paying for the cargo, a new retailer needs to incur cost for hiring site or building and obtaining legal documents for selling timber. Apart from the associated challenges, this type of governance will continue is likely to persist for years due to following reasons. First, it is associated with higher barriers of entry and actors who overcome the barriers have greater profit margin compared to those operating in other structures. Secondly, under this structure, some retailers support the wholesaler with financial support during difficult times especially in the months of January and July which are the months of enrolment and beginning of new term for primary and secondary schools. During these months some wholesalers spend a significant amount of their capital for paying school fees resulting into little capital to buy trees from growers for them to continue supplying timber to retailers.

On the other hand, interview with retailers revealed that so long as the knowledge of quality timber continues spreading among customers, they will continue insisting supply of quality timber by the wholesalers for them to stay in business. The following interview with a retailer reveals that modular offers retailers many advantages than other types of governance structures.

*With this arrangement you get sawn timber on credit. This is really very helpful instead of taking a loan from the bank you just need to build trust*



*with the suppliers then you get the number of cargos you want. Apart from being supplied timber on credit, I have significantly reduced the costs per piece of sawn timber because I don't travel instead my suppliers bring timber up to my yard. Because I don't travel, I get enough time to supervise the business which also important to be successful in business. Also, the good thing with this arrangement you avoid a lot of on-transit risks (interview with a retailer who own a timber yard in Morogoro region).*

Due to the advantages offered by the modular governance to retailers, it has become the predominant governance used by them. As already explained in the previous sections, this type of governance is associated with setting and enforcing informal quality standards implying that quality standards are emerging even if not centrally defined. This implies that actors especially in the upstream end of the chain such as tree growers will need to improve the quality of timber for them continue accessing the market. As other growers continue expanding their woodlots and new entrants join and customers increasingly become knowledgeable and demand quality timber, tree growers will need to compete by supplying timber required by the market (i.e. quality timber). Their timber will also need to compete with timber from industrial plantations. Lack of quality improvement by the tree growers will result into receiving very low price of their woodlots/trees as it has already started to happen. Interviews with timber traders revealed that trees that were predicted to produce many rejects of sawn timber were fetched an average price of 2500 TAS (1.1 USD) per tree instead of 3500 TAS (1.6 USD). For suppliers, they will need to improve their capability of supplying required cargo on time. In the context of Njombe district, growers can improve the quality of timber through adoption of recommended silviculture practices for forest management; harvest mature trees and if involved in processing, adopt technology that can guarantee the required quality.

Relational governance was also found to be used by the actors of NIPF value chain. This was practiced by both timber traders and tree growers where the business relationships are based on family ties. Findings showed that some family members are engaged in timber retailing, others in whole selling and others are engaged in tree growing. This is well captured in the following conversation with a grower in Matembwe village. *For me I have no problem with selling my trees because I have my son who is a timber sawyer and my young brother is a retailer who operates timber yards in different regions. When I want to sell my trees, I call my son to buy my trees and the sawn timber is sold to his uncle who own timber yards in Morogoro and Dar es Salaam.* Another form of relational governance was found to hinge on mutual trust that has been built after many years of repeated transactions. Interviews with suppliers and retailers revealed that when a cargo is delivered, the retailer pays only the cost of transport and the bus fare to enable the supplier to go back home; the rest of money is paid to the supplier when the whole cargo has been sold out. As other research findings revealed elsewhere trust is an important governance aspect in timber value chain because it reduces transaction costs along the chain (Vieira and Traill, 2008).

Horizontal governance was another type of governance found in the non-industrial



domestic timber value chain. This is practiced by tree growers who are the member of UWAMIMA, a tree growers' association in Matembwe village. With the spirit of solving the problem of market access, this association with a total of 75 members attracted resources from donors and government. Matembwe Village Company (MVC) provided an office space for the association, the village government provided the land to build the market, the government of Finland provided financial resources that helped to build the timber market and the district government rehabilitated the road to facilitate easy access to the market. At the Matembwe market, the association owns the space where members of the association are allowed to bring their timber for seasoning and selling. While others must pay 20,000 TAS (9.1 USD) to own a yard in the market, members of the association do not pay anything. This has motivated them to add value to their trees by selling sawn timber instead of standing trees (selling on stumpage). At the market tree growers have many options; they can sell to retailers who come at the market or can sell to wholesalers who collect timber at the market to meet their orders in distant urban markets. Sometimes members of the association sell timber to their fellow tree growers at the discounted rate who later sell the same to retailers or whole sellers. A mechanism has been put in place to control members of the association who can collude with non-members to enjoy the benefit of members. Therefore, the member of the association must proof that the timber brought to the market is from own woodlot.

### **Determinants and dynamics of governance structures**

The findings show that the structure of governance in domestic value chain of timber is influenced by a host of factors. As reported in the global value chain theory, spot market was influenced by the price of timber (citation). However, in addition to the price, avoidance of complicated business relationships and lack of trust between the parties influenced the spot market relationship. Tree growers and whole sellers perceived selling on order or on contracts as complicated and risky business relationships. This is revealed in the following conversation with a whole seller at the Matembwe market....*I have bad experience of supplying timber on order; those guys (implying the retailers) do not pay on time; if you follow what they want you can go out of this business. So, for me what I do is to collect timber from tree growers, bring them here at the market wait for customers, those who want timber will come and buy on cash not otherwise.* This claim was supported by tree growers who indicated that they do not like to enter into contract of any kind with the buyers. Explaining why they would not like any other relationship beyond spot market, one tree grower said the following.....*I do not want to have any sort of repeated transaction with the same person because once he/she get used to you, next time will request to buy on credit and if you agree that's where the problems will start. We have witnessed our fellows who sold their trees on credit and have made so many phone calls to the buyers without getting their money*

Also, findings indicate that institutional environment (i.e the rules controlling production, distribution and consumption) influenced tree growers and timber traders to resort to spot market because they would like to avoid complicated processes of transporting timber outside their village. *When you get an order from the retailer to supply timber, you bear all the risks along the road. Also, you need to interact with officials of Tanzania*



revenue authority (TRA) by paying 18% VAT, if you are supplying to Dar es Salaam you must go through the 32 road blocks for timber inspection, pay cess and yet the retailer does not pay you on time; so I better get small but which I am sure of, interview with a trader in Matembwe village.

On the other hand, some whole sellers reported that although they would like to have some sort of repeated transactions with the retailers, they resorted to spot market because they lacked capital to supply timber on credit. As highlighted in the previous section, having repeated transactions with retailers reduces the uncertainty of getting access to market on the side of wholesalers; however, this type of relationship requires enough capital because retailers do not pay for the whole cargo upon delivery. As such, payment by instalment affect the wholesalers especially those with little capital. Explaining the challenges of this relationship the trader at Matembwe market had the following to say.....*you know when we deliver the cargo basically the buyers pay the cost of transport and may give you the bus fare to go back home. The rest of the money is paid on instalment and can take between one to several months.* Wholesellers especially those with small capital stop business after delivering the cargo on credit, they resume after receiving their final payment. The reason for pausing doing business is because buying trees from growers requires cash; the same applies to buying timber from the Matembwe market. Others who have relatively enough capital who used to buy sawn timber from the market or from the field, start buying trees as a way of getting cheap raw material for sawn timber. The obtained timber is not sold to retailers in cities rather is sold to anybody on cash. Thus, depending on one's capital, traders are involved in spot or modular relationships.

Contrary to the global value chain theory the emergence of relational governance was not due to the difficulties in codifying the information related to product specifications or high capabilities of the suppliers (Gereffi *et al.*, 2005), rather it emerged through sharing experience of timber business within the family circles. When a member of the family become successful, other members become interested in the business and for them acquire experience, they are assigned some activities to coordinate such as becoming casual labourers who are employed as sawyers, collecting sawn timber from different places or going around looking for mature woodlots (middlemen) for their relative who is a trader. Their engagement in various activities, afford them some income and gain experience to start their own businesses but do not sever relationship with their mentors. In other occasions relational governance was influenced by the desire to reduce dependencies within the family. This is demonstrated by the following interview. *Relatives will always blame you if they see you doing business and you are supporting them. In order to avoid supporting relatives who do not like to work, I decided to employ my nephews and young brothers as casual labourers for searching mature woodlots, sawing timber and delivering timber to my yard at the Matembwe market. I did this purposively so that they get money by working.....* a trader at Matembwe market explained.

Although placement of relatives in strategic positions facilitated coordination and hence easy access to market by the actors, the prospect of the business to grow and compete under this arrangement is questionable due to its associated challenges. Some folks



perceive their engagement into business as a punishment for them to request support from their relatives. As such, they do not struggle to become innovative and make profit. This arrangement is also a ground of conflicts within the family. When sanctions are imposed to the person who causes losses due to misuse of funds or other business malpractices, it results into hatred between the parties involved.

### **Effect of governance structure on incomes of chain actors**

As already highlighted in the previous section, four types of governance structures were used in the timber value chain. In some cases, one type of governance structure was used and in other cases actors used a combination of governance structures. Findings showed that tree growers who used a combination of horizontal and vertical structures obtained more income compared to those who used one structure. A key informant who is the leader of tree growers' association reported that in an acre of woodlot of ten years one can get 3,000,000 TZS if it is sold through spot market *alone*. The same woodlot would make around 3,500,000 TZS if the transaction is made through the association and the spot market. Denoting how selling through a combination of structures affect the income, a key informant had the following to say. *A tree grower who is a member of the grower association does not pay any money when his timber enters the Matembwe market. Others (implying non-members of the association) must pay 50 TAS per each piece of sawn timber entering the market regardless of its size. In addition to this, one must have paid 20,000 TAS for the timber yard in that month (Interview on with a manager of the market on 16/01/2019).*

Further to the explanation of the key informant, growers who sell through the association, do so at the prevailing market price, this is contrary to their counterpart non-members who sometimes sell at any price because they either lack information of the current price or compete amongst themselves by lowering the price trees. As reported by the manager of the Matembwe market. *This market has completely changed how tree growers relate with timber traders. Their bargaining power has increased; initially, tree growers were given wrong information related to price of timber; at the market we display the price of all sizes of timber. It is upon the grower to sell according to the displayed price or offer a discount to the customer, but even when they offer a discount, they do it knowing the actual price (Interview with the manager of the market on 23<sup>rd</sup> January 2019)*

It was also reported that there is a slight difference in profit margin between traders who use spot market and modular governance. Findings showed that, traders who supply timber according to the specifications of retailers in big cities have few rejects compared to those who sell through spot market. In Njombe district, rejects can be associated with many factors such as technology used to saw the logs, field supervision during sawing, harvested, management of woodlot (silviculture practices), experience of sawyers, how timber was stored during seasoning and the age of woodlot.

### **Conclusion**

Both vertical and horizontal governance structures were found in the timber value chain. Spot market, relational and modular governance were the major types of vertical structures while horizontal structure was found to be through the association of tree



growers. Actors of the value chain used either one or a combination of these structures. However, spot market was found to be used mostly by tree growers who were not members of the association. This is notwithstanding the fact that tree growers earned more income when a combination of horizontal and vertical structures was used. Market uncertainty, incentive to spread risk, institutional environment and financial capabilities of both the sellers and the buyers were the main determinants of the governance structure. Except for the capability factor, the rest of factors that determined the structure were those proposed by the critics of the global value chain theory. Even with the capability factor, contrary to the global value chain theory which posits that only capability of the suppliers determines the structure, findings of the study showed that capabilities of both the suppliers and the buyers influenced the governance structure. For instance, higher income of timber traders enabled one to become a wholesaler of timber in urban centres where modular was the main governance structure and low income of timber traders was associated with spot market. Even though the timber value chain in Njombe district has previously been without any coordination or centralized governance, standards are emerging through a modular governance between retailers in urban centres and wholesalers. This emerging type of governance which seems to drive the chain has a far-reaching implication to the incomes of actors especially in the upstream part of the chain. Findings show that when one structure is used, modular governance gives a higher benefit albeit associated challenges of delayed payment and the requirement to comply with the informal quality standards. But, in Njombe district smallholders rarely use this type of governance. Therefore, the paper recommends that efforts to improve smallholders' income should be geared toward improving vertical and horizontal structures because they play a complementary role.

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